



**mitsubishi  
ELECTRIC**

**mitsubishi ELECTRIC  
HYDRONICS & IT COOLING SYSTEMS S.p.A.**

MANUAL CODE:

UM\_W3000+\_TA22\_00\_04\_26\_EN\_DA\_NL\_PL

## W3000+ Version TA22

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### USER MANUAL

**EN**

Italian is the original language. All other languages are translations of the original.

For safe and correct use, carefully read the installation, use and maintenance manual of the unit.

---

### BRUGSVEJLEDNING

**DA**

Den originale udgave er på italiensk. De andre sprogversioner er oversættelser af den originale.

For sikker og korrekt brug, skal denne installations-, brugs- og vedligeholdelsesvejledningen læses med omhu.

---

### GEBRUIKERSHANDLEIDING

**NL**

Italiaans is de oorspronkelijke taal. De versies in andere talen zijn vertalingen van het origineel.

Lees de handleiding voor installatie, gebruik en onderhoud van de unit aandachtig voor een veilig en correct gebruik.

---

### PODRĘCZNIK UŻYTKOWNIKA

**PL**

Językiem oryginału jest język włoski. Pozostałe wersje językowe są tłumaczeniem oryginału.

W celu zapewnienia bezpiecznego i prawidłowego użytkowania, należy dokładnie zapoznać się z podręcznikiem instalacji, obsługi i konserwacji agregatu.

---



**Before carrying out any operation on the machine, you must carefully read this manual and make sure you understand all the instructions and information given**

**Keep this manual in a known and easily accessible place to refer to as necessary during the entire life-span of the machine.**

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**WARNING:**

The W3000+ controller software is protected by a digital signature. This means that it can only work on boards supplied by MEHITS S.p.A. and not on boards purchased from other dealers. Additionally, the plastic elements and screen prints on the installed hardware are exclusive to MEHITS S.p.A.

**SYMBOLS:**

A number of symbols are used to highlight some parts of the text that are of particular importance. These are described below.

**WARNING:**

Information on the occurrence of situations/operations which, if ignored or not duly acted upon, could put not only the Unit but also the functions of the Software and the various electronic parts at risk.

**OBLIGATION:**

Indicates the need to take appropriate precautions/perform specific operations to avoid compromising protection of the points of access reserved for authorised operators and/or operators who guarantee the proper operation of the Unit.

**INFORMATION:**

Indicates technical/functional information of particular importance not to be overlooked.

**NOTICE:**

This is used to address practices not connected with possible physical injury.

# 1 Introduction

## 1.1 Operating requirements

The application software described in this document is designed for use on units for the production of system water at different (also simultaneous) temperature setpoints for Comfort, Process and IT Cooling.

The application software is used on a W3000+ control system with a dedicated graphical user interface terminal. Please refer to the following chapters for a detailed list of available user interfaces and compatible hardware.

**INFORMATION:**

The W3000+ controller software is protected by a digital signature.

This means that it can only work on boards supplied by MEHITS and not on boards purchased from other dealers.

## 1.2 General functions

Below is a non-exhaustive list of the functions of the application:

- Regulation of the water temperature in the system according to the setpoints entered using the user terminal.
- Management of different types of units such as Chillers, Heat Pumps, Energy Raisers and Heat Pumps with total recovery.
- Compatibility with different compressor technologies such as hermetic, screw and centrifugal.
- Complete visualisation of the operating status of the unit.
- Possibility of setting the adjustment parameters. Possibility of setting both the fundamental ones, by entering the “**User**” password, and the more advanced ones, by entering the “**Service**” and “**Factory**” (Manufacturer) password.
- Management and signalling of faults (alarms), events and maintenance. It can store up to 200 events.
- Possibility of serial control and management.
- Possibility of operation of up to 4 units connected together in a local LAN network via the Master-Client system.

### 1.3 Management of licensed functions

The management of licensed functions enables and disables password-protected functions. Passwords are unique and are generated by the system according to the serial number of the unit and the function code.

Purchased licences can be activated through the User Menu by entering the code of the function to be enabled and the relative password in the Licence Management mask.

|             |            |
|-------------|------------|
| Licence     | Management |
| Func. Code: | 1234       |
| Password:   | 12345678   |
| Function    | enabled    |

Activating a licence does not automatically enable a function, but deactivating it disables the relative function.

It is also possible to enable password-protected functions free of charge for a temporary period of **three months**.

If the temporary licence has never been activated, it can be activated by entering the function code **9999** and the password **00001234**.

During the trial period it is still possible to license functions. The status of the licence for the function will change from temporary to active.

|             |            |       |
|-------------|------------|-------|
| Licence     | Management |       |
| Func. Code: | 9999       |       |
| Password:   | 00001234   |       |
| Time        | licences   | start |

The status of the licences can be viewed via the Licences menu, where the end of the trial period can also be displayed.

|           |        |
|-----------|--------|
| Licence   | status |
| Function: | 6461   |
| Status:   | active |

|           |            |
|-----------|------------|
| Licence   | status     |
| Function: | 1234       |
| Status:   | temporary  |
| Expiry:   | 31/12/2021 |

The available licensed functions are shown in the table below:

| Function code | Function name             |
|---------------|---------------------------|
| 6461          | HPC for Multi Manager LAN |



#### INFORMATION:

Changing the unit's date and time during the trial period will cause the trial period to be cancelled with consequent disabling of the unlicensed functions.

Entering an incorrect password for a licensed function will cause it to be disabled.

## 1.4 Setting adjustment methods

Depending on the type of compressor used, various adjustment methods may be selected.

| Compressor                                                                           | Unit type                    | Adjustment available                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hermetic                                                                             | Water/water heat pump        | <ul style="list-style-type: none"> <li>Quick Mind on outlet probe (*).</li> <li>Quick Mind on inlet probe.</li> <li>Proportional step on inlet probe.</li> <li>Proportional step on inlet probe + integral on inlet probe.</li> </ul>              |
|                                                                                      | Water/water chiller          |                                                                                                                                                                                                                                                    |
|                                                                                      | Evaporating units            |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/air heat pump          |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/air chiller            |                                                                                                                                                                                                                                                    |
|                                                                                      | Chiller with heat recovery   |                                                                                                                                                                                                                                                    |
|                                                                                      | Chiller with Free-Cooling    |                                                                                                                                                                                                                                                    |
|                                                                                      | Energy Raisers               |                                                                                                                                                                                                                                                    |
|                                                                                      | Heat pump with heat recovery |                                                                                                                                                                                                                                                    |
| Hermetic with inverter on all circuits                                               | Water/air chiller            | <ul style="list-style-type: none"> <li>Flexible step proportional on inlet probe + PID on outlet probe.</li> <li>Neutral zone on outlet probe + PID on outlet probe (*).</li> <li>Sequential on outlet probe + PID on outlet probe (*).</li> </ul> |
|                                                                                      | Water/air heat pump          |                                                                                                                                                                                                                                                    |
|                                                                                      | Energy raiser                |                                                                                                                                                                                                                                                    |
| Hermetic with inverter on one circuit + hermetic and fixed speed on the same circuit | Water/air chiller            | <ul style="list-style-type: none"> <li>Sequential on outlet probe + PID on outlet probe (*).</li> </ul>                                                                                                                                            |
|                                                                                      | Water/air heat pump          |                                                                                                                                                                                                                                                    |
| Alternative                                                                          | Chiller with Free-Cooling    | <ul style="list-style-type: none"> <li>Proportional step on inlet probe.</li> <li>Proportional step on inlet probe + integral on inlet probe.</li> </ul>                                                                                           |
|                                                                                      | Energy Raisers               |                                                                                                                                                                                                                                                    |
|                                                                                      | Heat pump with heat recovery |                                                                                                                                                                                                                                                    |
|                                                                                      | Chiller with heat recovery   |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/water heat pump        |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/water chiller          |                                                                                                                                                                                                                                                    |
|                                                                                      | Evaporating units            |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/air heat pump          |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/air chiller            |                                                                                                                                                                                                                                                    |
| Screw                                                                                | Water/water heat pump        | <ul style="list-style-type: none"> <li>Modulating on outlet probe + PID on outlet probe (*).</li> <li>Proportional step on inlet probe.</li> <li>Proportional step on inlet probe + integral on inlet probe.</li> </ul>                            |
|                                                                                      | Water/water chiller          |                                                                                                                                                                                                                                                    |
|                                                                                      | Evaporating units            |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/air heat pump          |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/air chiller            |                                                                                                                                                                                                                                                    |
|                                                                                      | Chiller with heat recovery   |                                                                                                                                                                                                                                                    |
|                                                                                      | Chiller with Free-Cooling    |                                                                                                                                                                                                                                                    |
|                                                                                      | Energy Raisers               |                                                                                                                                                                                                                                                    |
|                                                                                      | Heat pump with heat recovery |                                                                                                                                                                                                                                                    |
| Screw with inverter on all circuits                                                  | Water/water chiller          | <ul style="list-style-type: none"> <li>Flexible step proportional on inlet probe + PID on outlet probe.</li> <li>Neutral zone on outlet probe + PID on outlet probe (*).</li> <li>Sequential on outlet probe + PID on outlet probe (*).</li> </ul> |
|                                                                                      | Water/air chiller            |                                                                                                                                                                                                                                                    |
|                                                                                      | Chiller with heat recovery   |                                                                                                                                                                                                                                                    |
|                                                                                      | Energy Raisers               |                                                                                                                                                                                                                                                    |
|                                                                                      | Heat pump with heat recovery |                                                                                                                                                                                                                                                    |
| Screw with inverter on one circuit + fixed-speed screw on the other circuits         | Water/air chiller            | <ul style="list-style-type: none"> <li>Sequential on outlet probe + PID on outlet probe (*).</li> </ul>                                                                                                                                            |
|                                                                                      | Water/water chiller          |                                                                                                                                                                                                                                                    |
| Centrifugal                                                                          | Water/water chiller          | <ul style="list-style-type: none"> <li>Flexible step proportional on inlet probe + PID on outlet probe.</li> <li>Neutral zone on outlet probe + PID on outlet probe (*).</li> </ul>                                                                |
|                                                                                      | Water/air chiller            |                                                                                                                                                                                                                                                    |
|                                                                                      | Water/water heat pump        |                                                                                                                                                                                                                                                    |
|                                                                                      | Evaporating units            |                                                                                                                                                                                                                                                    |

**Table 1:** heat adjustment methods available by compressor type.

(\*) adjustment necessary for units with pump speed control.

The various heat adjustment methods are described below.



## 1.4.1 Proportional step adjustment on inlet probe

Some examples of proportional “step” adjustment on the input temperature probe.

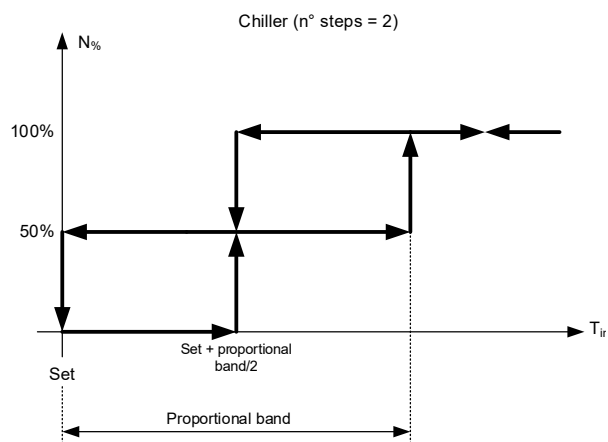


**Figure 1-1:**  $T_{in}$  is the input variable,  $N_{\%}$  is the n° of active steps expressed in % (chiller).

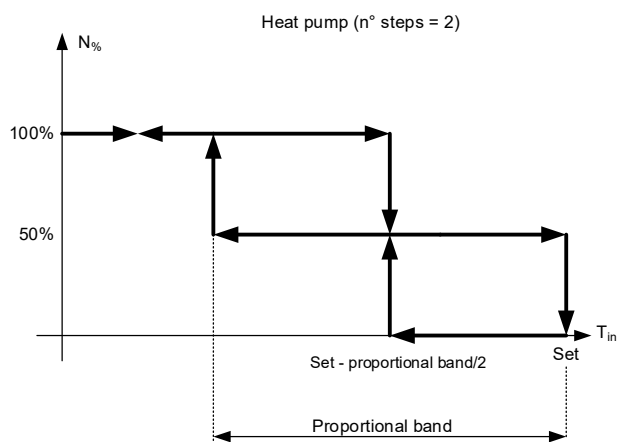


**Figure 1-2:**  $T_{in}$  is the input variable,  $N_{\%}$  is the n° of active steps expressed in % (heat pump).

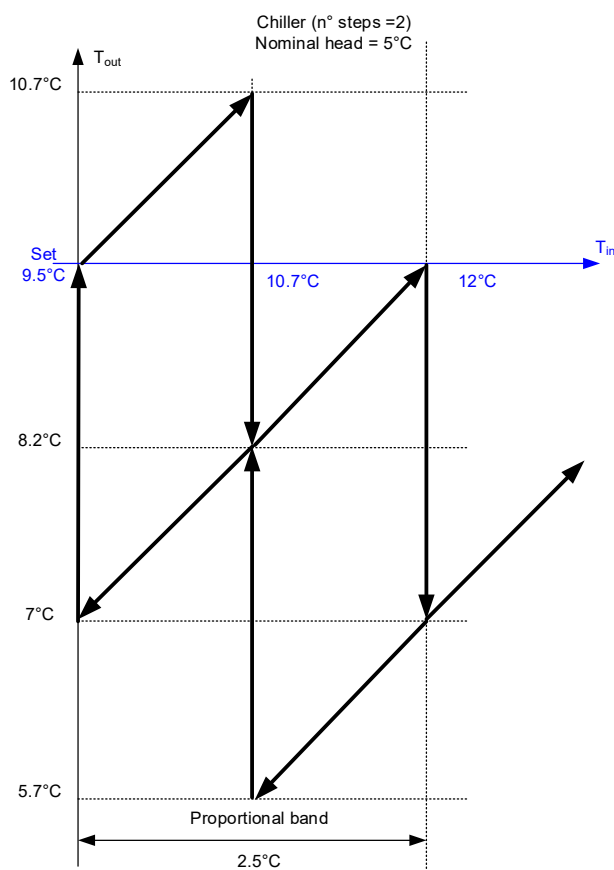


**Figure 1-3:** Relationship between  $T_{in}$  and  $T_{out}$ , with 2 steps (chiller).

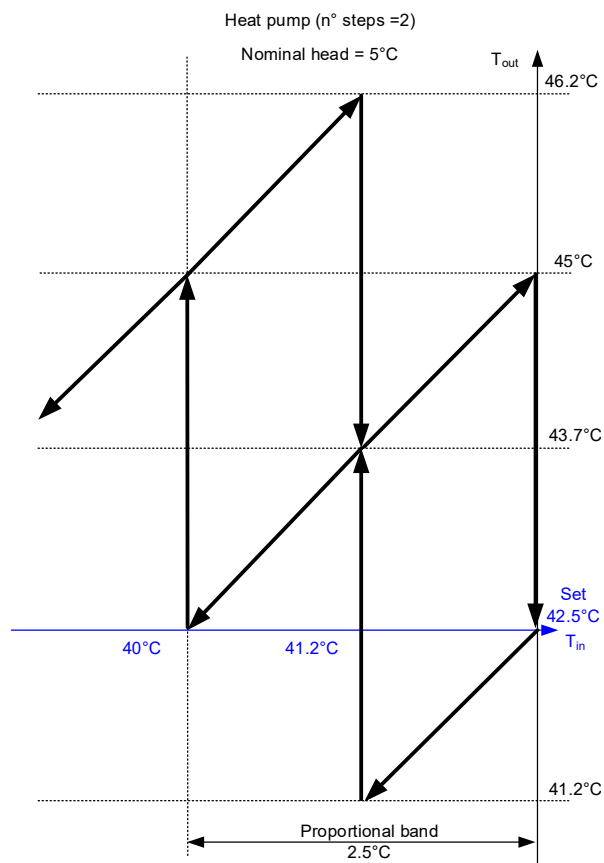


**Figure 1-4:** Relationship between  $T_{in}$  and  $T_{out}$ , with 2 steps (heat pump).

The following tables show some typical values for the parameters in question. The theoretical maximum and minimum outlet temperature values refer to operation at nominal flow rates (with a temperature difference at the evaporator of 5.0 °C and sufficient water in the system to ensure a litre / kW ratio equal to or greater than 7).

| No. steps | Setpoint (°C) | Proportional band (°C) | Theoretical min. outlet T (°C) | Theoretical max. outlet T (°C) |
|-----------|---------------|------------------------|--------------------------------|--------------------------------|
| 1         | 9.5           | 2.5                    | 4.5                            | 12.0                           |
| 2         | 9.5           | 2.5                    | 5.7                            | 10.8                           |
| 4         | 7.0           | 5.0                    | 5.7                            | 8.3                            |
| 5         | 7.0           | 5.0                    | 6.0                            | 8.0                            |
| 6         | 7.0           | 5.0                    | 6.2                            | 7.8                            |
| 8         | 7.0           | 5.0                    | 6.4                            | 7.6                            |

**Table 2:** normal setpoint and proportional band values according to the number of steps (chiller).

| No. steps | Setpoint (°C) | Proportional band (°C) | Theoretical min. outlet T (°C) | Theoretical max. outlet T (°C) |
|-----------|---------------|------------------------|--------------------------------|--------------------------------|
| 1         | 42.5          | 2.5                    | 40.0                           | 47.5                           |
| 2         | 42.5          | 2.5                    | 41.2                           | 46.3                           |
| 4         | 45.0          | 5.0                    | 43.7                           | 46.3                           |
| 5         | 45.0          | 5.0                    | 44.0                           | 46.0                           |
| 6         | 45.0          | 5.0                    | 44.2                           | 45.8                           |
| 8         | 45.0          | 5.0                    | 44.4                           | 45.6                           |

**Table 3:** normal setpoint and proportional band values according to the number of steps (heat pump).

## 1.4.2 Proportional step adjustment on inlet probe + integral on inlet probe

This adjustment method is based on the sum of two components: proportional and integral.

The proportional component generates the percentage demand for activating/deactivating the steps, as illustrated in the previous paragraph "Proportional step adjustment on inlet probe".

The integral component adds the integral error to the proportional component at regular intervals (integral time). The integral error is calculated according to the following formula:

$$\text{Integral error} = \frac{\text{Inlet temperature} - \text{Set point}}{\text{Proportional band}} \times 100 \quad [\%]$$

However, the integral component is limited (integral limit) to prevent the adjustment.

If the inlet temperature varies by 5% or more in one second, a rapid change, therefore, the integral component is not calculated.

The integral time is counted from when the thermoregulator request is stable.

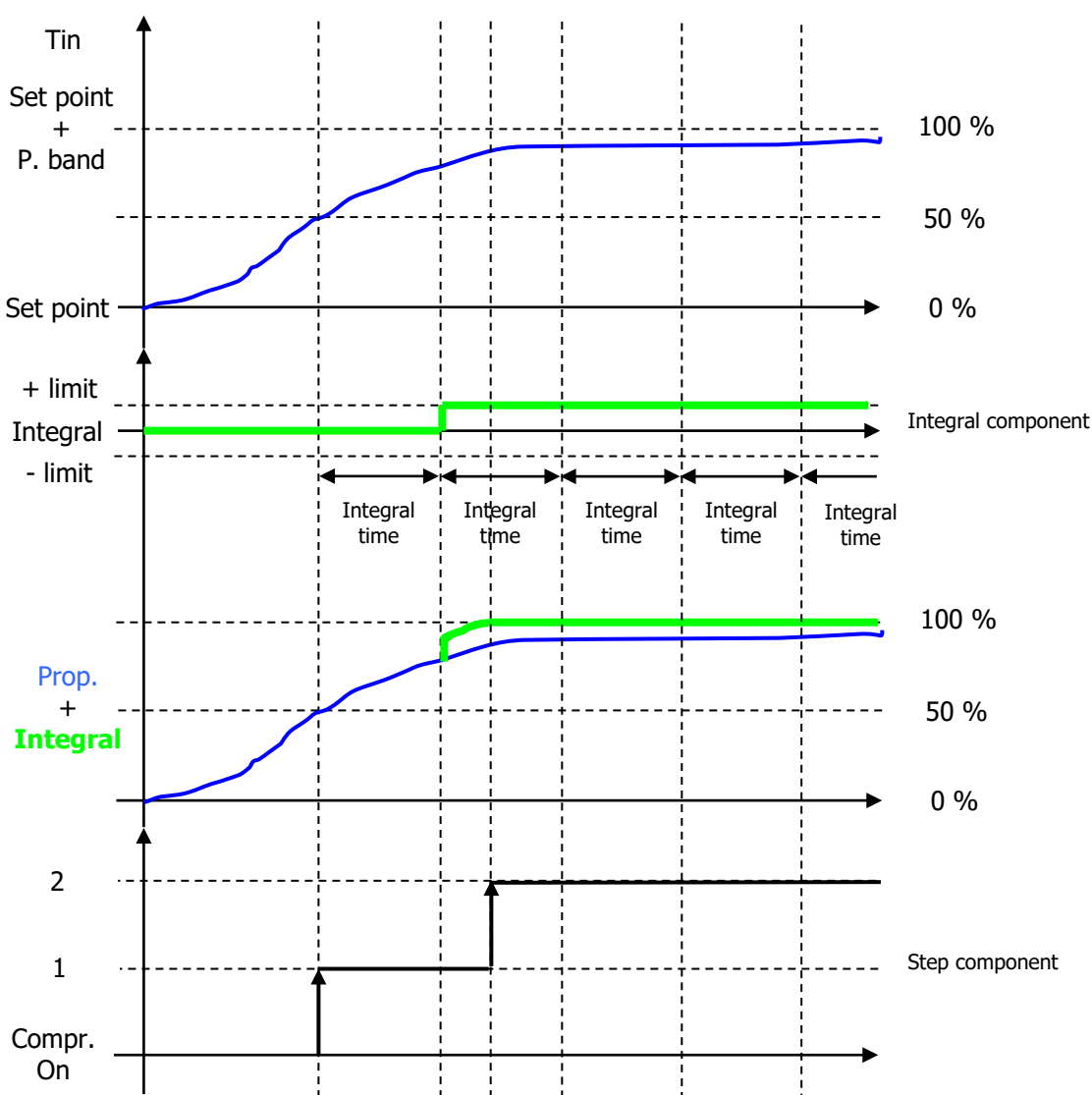


Figure 1-5: example of chiller adjustment with 2 steps.

### 1.4.3 Quick mind adjustment

Users must only set the required setpoint as all the other parameters are adapted to the system by the Quick Mind algorithm.

QUICK MIND is a self-adapting algorithm for adjusting the temperature of the water treated by an all-in-one unit. The following figure shows how this adjustment is made when adjusting the outlet probe:

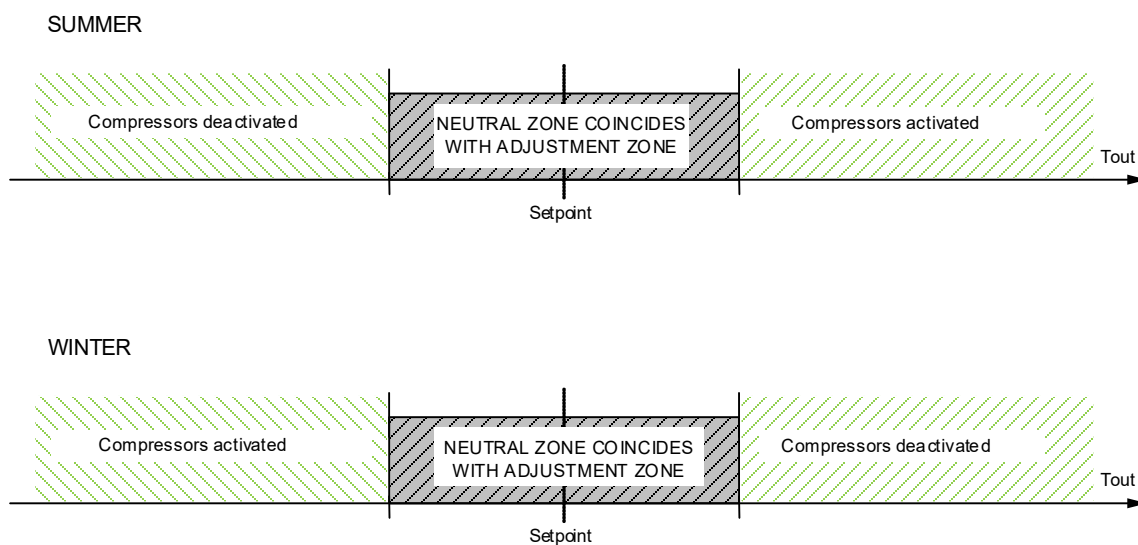


**Figure 1-6:** QUICK MIND adjustment model (chiller and heat pump).

The setpoint remains within a neutral zone. If the temperature also remains within this area, no change is made to the number of active compressors.

When the temperature leaves the neutral zone following a change in system load, the compressors are either activated or deactivated in order to bring the temperature back to the neutral zone.

The amplitude of the neutral zone depends on the dynamic characteristics of the system and, in particular, on the amount of water it contains and the load. The self-adapting algorithm is able to “measure” plant dynamics and calculate the minimum neutral zone in order to respect compressor activation times and the maximum number of start-ups per hour. Both return and delivery temperatures can be adjusted.

Special functions are also present which reduce the number of compressor start-ups in the event of very low loads or start-ups of units with significantly higher or lower temperatures than the setpoint.

| 2 compressors - with maximum permitted number of start-ups per hour 10 |      |     |     |     |     |     |     |     |     |
|------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litres / kW                                                            | 10.5 | 9.5 | 8.5 | 7.5 | 6.5 | 5.5 | 4.5 | 3.5 | 2.5 |
| $\Delta$ Tout                                                          | 3.2  | 3.3 | 3.4 | 3.5 | 3.6 | 3.8 | 4.1 | 4.5 | 5.3 |

| 4 compressors - with maximum permitted number of start-ups per hour 10 |      |     |     |     |     |     |     |     |     |
|------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litres / kW                                                            | 10.5 | 9.5 | 8.5 | 7.5 | 6.5 | 5.5 | 4.5 | 3.5 | 2.5 |
| $\Delta$ Tout                                                          | 1.6  | 1.6 | 1.7 | 1.7 | 1.8 | 1.9 | 2.0 | 2.2 | 2.6 |

| 5 compressors - with maximum permitted number of start-ups per hour 10 |      |     |     |     |     |     |     |     |     |
|------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litres / kW                                                            | 10.5 | 9.5 | 8.5 | 7.5 | 6.5 | 5.5 | 4.5 | 3.5 | 2.5 |
| $\Delta$ Tout                                                          | 1.3  | 1.3 | 1.3 | 1.4 | 1.5 | 1.5 | 1.6 | 1.9 | 2.1 |

| 6 compressors - with maximum permitted number of start-ups per hour 10 |      |     |     |     |     |     |     |     |     |
|------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litres / kW                                                            | 10.5 | 9.5 | 8.5 | 7.5 | 6.5 | 5.5 | 4.5 | 3.5 | 2.5 |
| $\Delta$ Tout                                                          | 1.1  | 1.1 | 1.1 | 1.2 | 1.2 | 1.3 | 1.4 | 1.5 | 1.8 |

| 8 compressors - with maximum permitted number of start-ups per hour 10 |      |     |     |     |     |     |     |     |     |
|------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litres / kW                                                            | 10.5 | 9.5 | 8.5 | 7.5 | 6.5 | 5.5 | 4.5 | 3.5 | 2.5 |
| $\Delta$ Tout                                                          | 0.8  | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 1.0 | 1.1 | 1.3 |

**Table 4:** maximum theoretical delivery temperature range at constant part load (depending on the quantity of water contained in the system) with outlet Quick Mind adjustment.

An example of real data acquired during operation with the Quick Mind adjuster on the delivery side is shown below. Reference is made to the following figure:

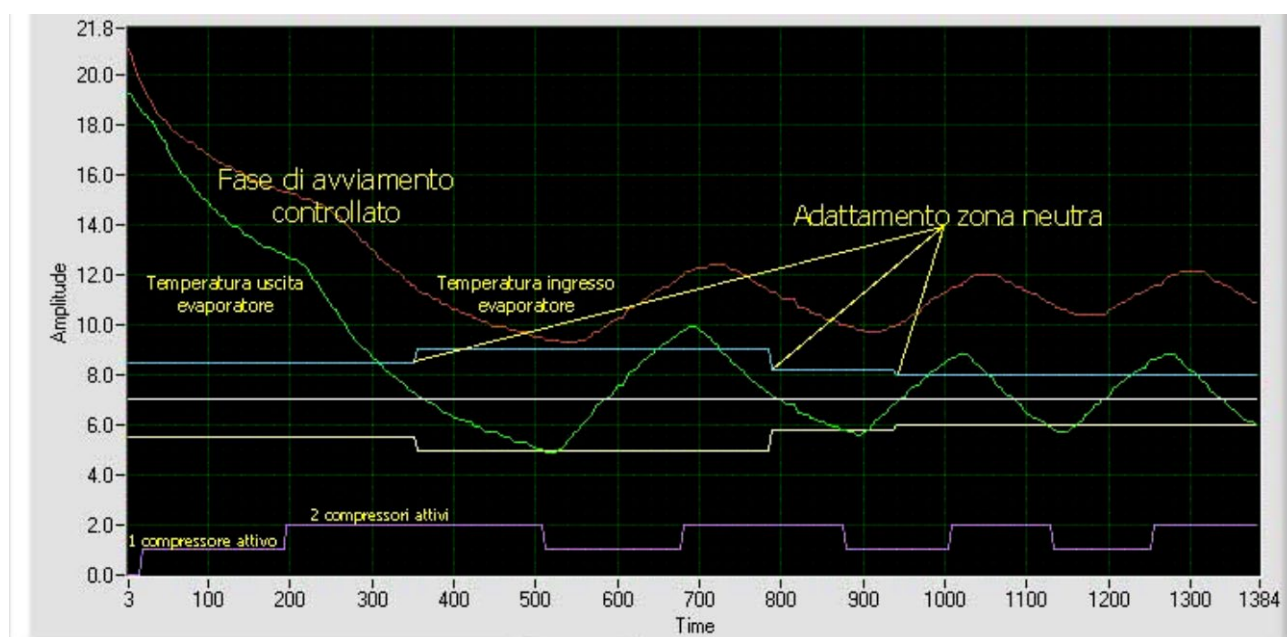


**Figure 1-7:** example of real data with quick-mind outlet adjustment (x-axis: time in [s]; y-axis: Tout in [°C]).

This is an example of start-up with a very high initial temperature compared with the setpoint (7°C). About 10 seconds after data acquisition began, one compressor switches on. The second compressor does not switch on immediately as the algorithm which handles start-up checks if one compressor is enough to return supply temperature to the setpoint and avoid unnecessary start-ups. As the supply temperature is still at 12 °C after about 200 seconds, the second compressor is also switched on, otherwise it would take too long to reach setpoint.

Following the controlled starting phase, the supply temperature falls until it “enters” the neutral zone. The algorithm (at t= 350 s) begins to adapt the amplitude of the neutral zone in order to respect compressor safety times. As can be seen, the neutral zone is later reduced (t= 780 s, 950 s) to the absolute minimum amplitude which allows safety times to be respected. It can also be seen that the compressors are activated and deactivated when the outlet temperature reaches the upper or lower limits of the neutral zone. The example shows that outlet temperature varies by about 3.5 °C during regular operation.

#### 1.4.4 Modulating adjustment on outlet probe + PID on outlet probe for screw compressors

This adjustment is performed by two coordinated regulators:

- Neutral zone** (step adjuster) on the outlet probe;
- PID** (adjustment) on the outlet probe.

The setpoint is identical for both regulators.

a) This is a neutral zone step adjuster whose control variable is the output temperature from the **Tout** unit and whose controlled variable is the number of steps to enable (compressors).

The setpoint remains within a neutral zone. If the temperature also remains within this area, no change is made to the number of active compressors.

When the temperature leaves the neutral zone following a change in system load, the compressors are either activated or deactivated in order to return the temperature to the neutral zone (see figure below).

The amplitude of the neutral zone depends on the dynamic characteristics of the system. The self-adapting algorithm is able to “measure” plant dynamics and calculate the minimum neutral zone in order to respect compressor activation times and the maximum number of start-ups per hour.

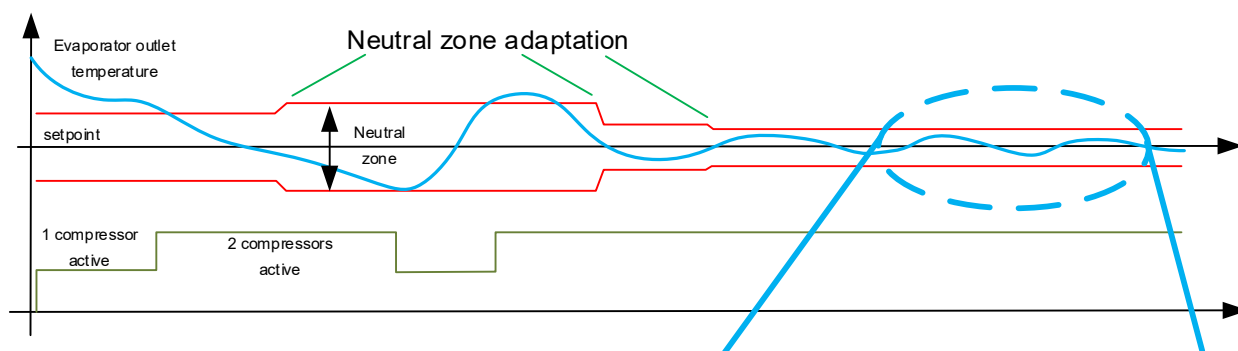


Figure 1-8: modulating adjustment on the outlet probe.

b) Reference is made to the *figure on the side*:

The setpoint remains within a holding zone (ZM). If the outlet temperature also remains within this zone, no change is made to the number of active compressors or their load percentages (position of modulating chamber).

When the outlet temperature rises above zone B following a change in the system load, the compressors are activated in order to return the temperature to the adjustment area.

Inside zone B, if the outlet temperature derivative is greater than or equal to 0, compressor power is increased in order to return the temperature to the holding zone (ZM). The amount of the increase is calculated by a PID regulator according to the outlet temperature.

When the outlet temperature falls below zone C following a change in the system load, the compressors are deactivated in order to return the temperature to the adjustment area.

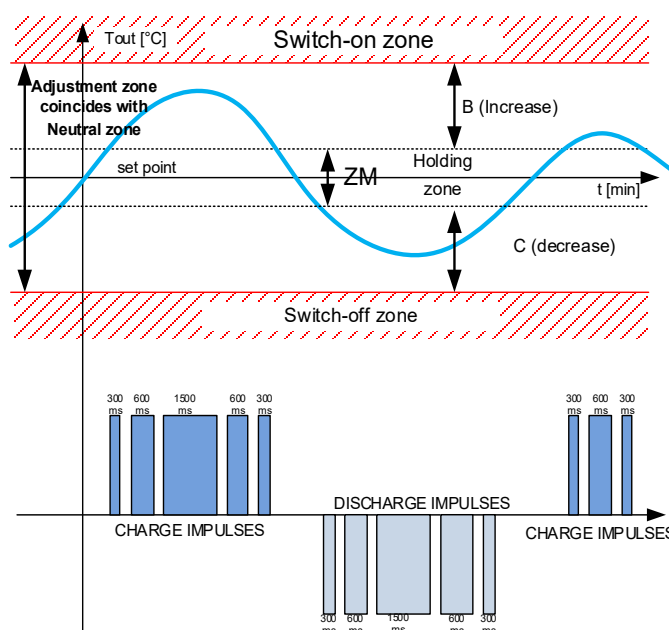


Figure 1-9: modulating adjustment for screw compressors.

Inside zone C, if the outlet temperature derivative is less than or equal to 0, compressor power is decreased in order to return the temperature to the holding zone (ZM). The amount of the decrease is calculated by a PID regulator according to the outlet temperature.

The amplitude of the adjustment zone depends on the dynamic characteristics of the system and, in particular, on the amount of water it contains and the load. The self-adapting algorithm is able to “measure” plant dynamics and calculate the minimum neutral zone in order to respect compressor activation times and the maximum number of start-ups per hour.

When a second or subsequent compressor is switched on, the ones that are already running are forced to a minimum, and the subsequent power increases/decreases are applied to all the compressors.

## 1.4.5 Flexible step proportional adjustment on inlet + PID on outlet probe

This adjustment is performed by two coordinated regulators:

- Proportional step adjustment** (step adjuster) on the inlet probe;
- PID** (adjustment) on the outlet probe.

The set point is identical for both regulators.

a) This is a proportional step adjuster, whose control variable is the unit input temperature **T<sub>in</sub>**, and whose controlled variable is the number of steps to enable (compressors).

Compared with the traditional step adjuster, 2 further parameters have been added.

**R<sub>b</sub>**: is a percentage of the proportional band **BP** and allows the steps to be compressed in this part of the proportional band.

Operating example with 4 cooling steps **R<sub>b</sub> < BP**

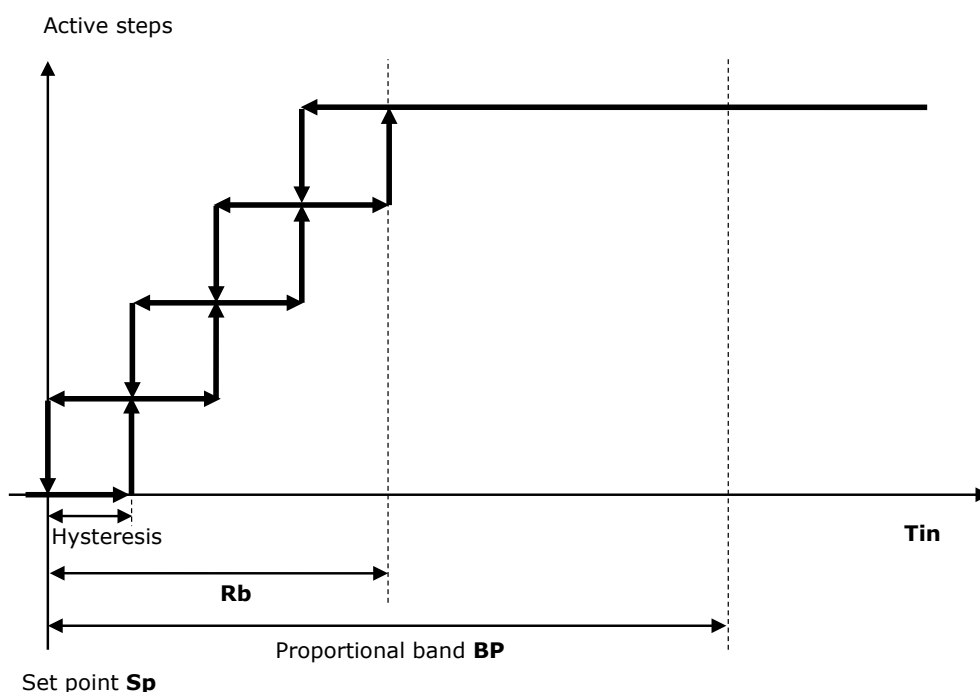


Figure 1-10: proportional step adjuster with offset > 0 and  $R_b = 50\%$ .

The hysteresis of each step is the reference proportional band **R<sub>b</sub>** divided by the number of steps to manage.

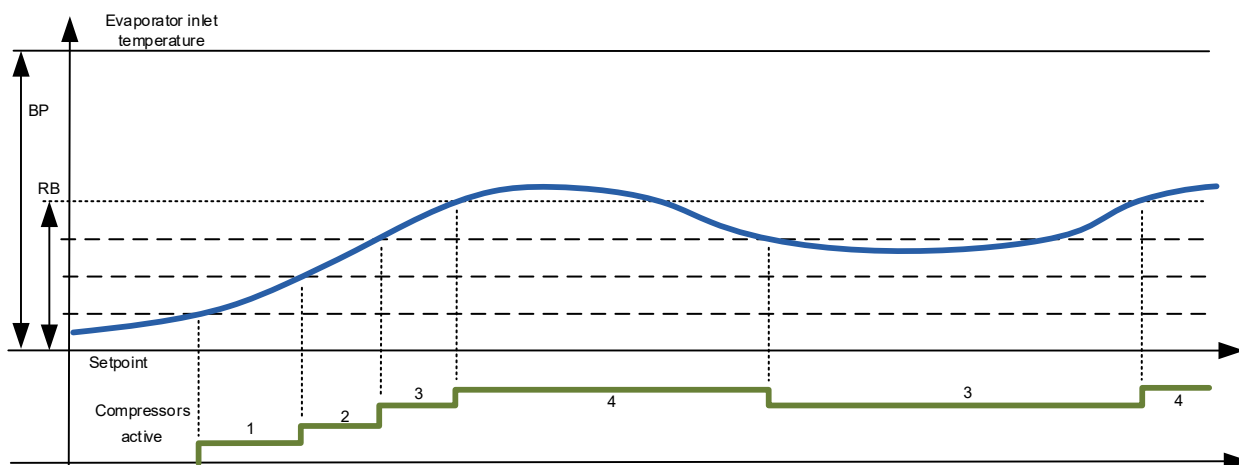


**Figure 1-11:** proportional adjustable with flexible steps on the inlet probe with offset = 0 and Rb = 50%.

The **Offset** moves the enable/disable of the second half of the steps to a higher value with respect to offset = 0, and refers to the proportional band BP.

Operating example with 4 cooling steps and Offset > 0

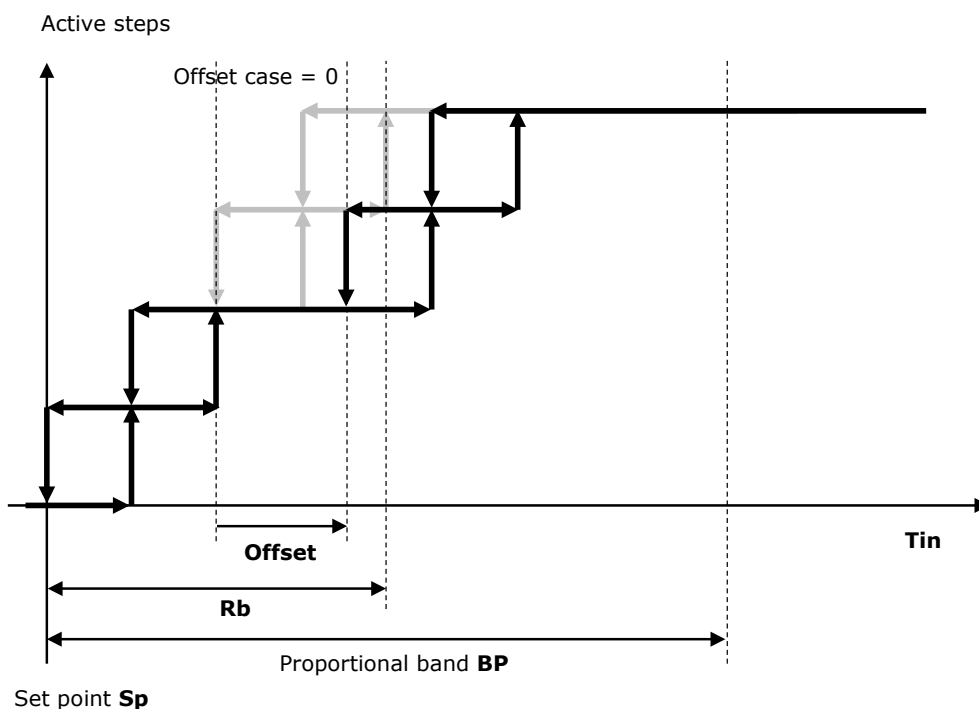


**Figure 1-12:** proportional step adjuster with offset > 0 and Rb = 50%.

b) The **PID** (Proportional Integral Derivative adjuster), whose control variable is the outlet temperature, is activated when the first compressor starts and deactivated when the last compressor stops.

The controlled variable is the number of compressor revs (absorbed power per unit with centrifugal compressors), changing them from the setttable minimum to maximum, thus achieving continuous adjustment of the outlet temperature.

The following parameters can be also set: kp (proportional component coefficient) and Ti (integral time). The derivative time is factory set.



When the output temperature lies within the *holding zone*, the compressor revs are not modified.

When the outlet temperature lies within the *PID adjustment zone*, the value of the compressor revs is modified to return the temperature to within the *holding zone*.

The *zfi*, *holding zone* and *zfs* parameters are factory set.

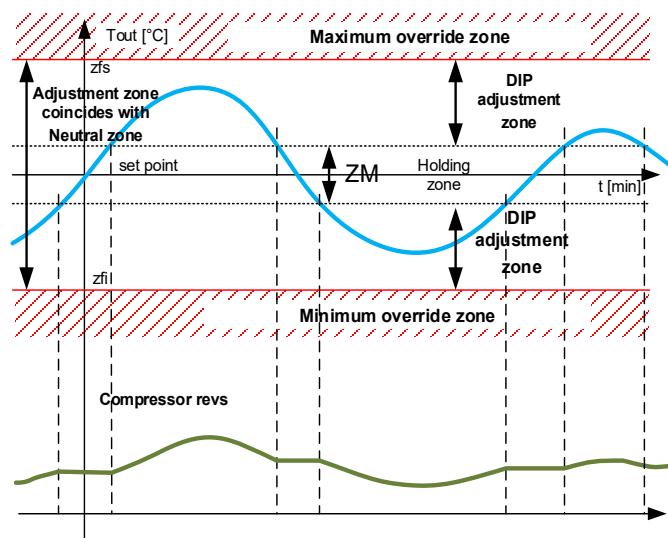


Figure 1-13: operating diagram of PID adjuster output.

### 1.4.6 Neutral zone adjustment on outlet probe + PID on outlet probe

This adjustment is performed by two coordinated regulators:

- Neutral zone** (step adjuster) on the outlet probe;
- PID** (adjustment) on the outlet probe.

The set point is identical for both regulators.

a) This is a neutral zone step adjuster whose control variable is the output temperature from the **Tout** unit and whose controlled variable is the number of steps to enable (compressors).

The setpoint remains within a neutral zone. If the temperature also remains within this area, no change is made to the number of active compressors.

When the temperature leaves the neutral zone following a change in system load, the compressors are either activated or deactivated in order to return the temperature to the neutral zone (see figure below).

The amplitude of the neutral zone depends on the dynamic characteristics of the system. The self-adapting algorithm is able to “measure” plant dynamics and calculate the minimum neutral zone in order to respect compressor activation times and the maximum number of start-ups per hour.

b) The **PID** (Proportional Integral Derivative regulator), whose control variable is the output temperature, is activated when the first compressor starts and deactivated when the last compressor stops.

The controlled variable is the number of compressor revs (input power per unit with centrifugal compressors), changing them from the settable minimum to maximum, thus achieving continuous adjustment of the output temperature.

The following parameters can be also set:  $k_p$  (proportional component coefficient) and  $T_i$  (integral time). The derivative time is factory set.

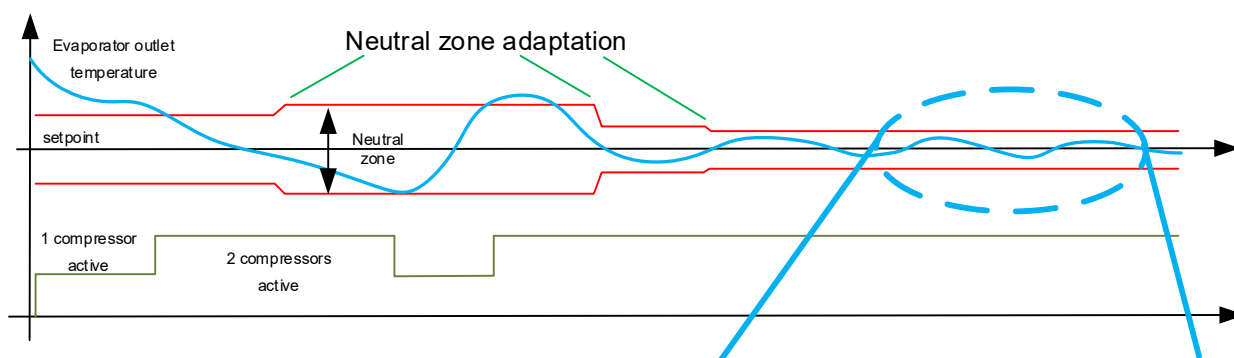


Figure 1-14: neutral zone adjustment on outlet probe.

Operating diagram of PID regulator:

When the output temperature lies within the *holding zone*, the compressor revs are not modified.

When the output temperature lies within the *PID adjustment zone*, the value of the compressor revs is modified to return the temperature to within the *holding zone*.

The  $z_{fi}$ , *holding zone* and  $z_{fs}$  parameters are set to a fixed offset value with respect to the neutral zone.

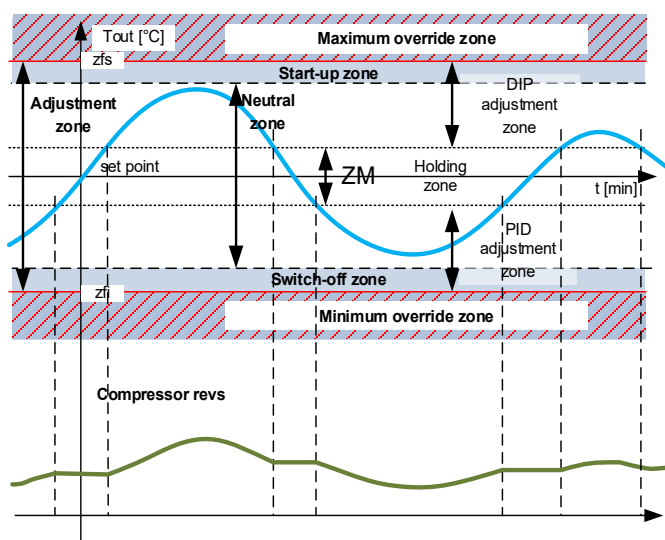


Figure 1-15: operating diagram of PID adjuster output.

### 1.4.7 Sequential adjustment on outlet probe + PID on outlet probe

This adjustment is available on units with inverter compressor and one or more fixed-speed compressors, or on units with all inverter compressors.

#### 1.4.7.1 Sequential adjustment on units with one inverter compressor and one or more fixed-speed compressors

The adjustment is performed by two coordinated regulators:

- Sequential** (step adjuster) on the outlet probe;
- PID** (adjustment) on the outlet probe.

The setpoint is identical for both regulators.

a) This is a neutral zone step adjuster whose control variables are the output temperature **Tout** from the unit and the speed of the inverter compressor and whose controlled variable is the number of steps to enable (compressors and/or partialisation of the fixed-speed compressors).

The following operating descriptions refer to the chiller operating mode.

The setpoint remains within a neutral zone. If the unit has no compressor running, the adjuster waits for the output temperature to exceed the upper limit of the neutral zone, after which the first step is requested. This involves starting the inverter compressor: the compressor is kept at the starting revolutions (CMP0091) for the compressor start time (or no-load startup, parameter CMP0028). The adjuster then starts to monitor the revs of the inverter compressor and to request further steps (which are allocated to the fixed-speed compressors, see Figure 1-16 and Figure 1-17) on the basis of certain percentage thresholds, set in the parameters, referring to the maximum revs for the modulation of the inverter compressor. The increase in the number of steps enabled on the fixed-speed compressors corresponds to a suitable percentage reduction of the revs of the compressor with inverter in order to supply an even cooling capacity.

If the demand of the system decreases, the adjuster reduces the number of steps assigned to the fixed-speed compressors, still on the basis of certain thresholds for the revs of the inverter compressor set in the parameters.

Whether they are fixed-speed compressors or the compressor with inverter, the resources can only be switched off if the output temperature falls below the lower limit of the neutral zone.

The amplitude of the neutral zone depends on the dynamic characteristics of the system. The self-adapting algorithm is able to “measure” plant dynamics and calculate the minimum neutral zone in order to respect compressor activation times and the maximum number of start-ups per hour.

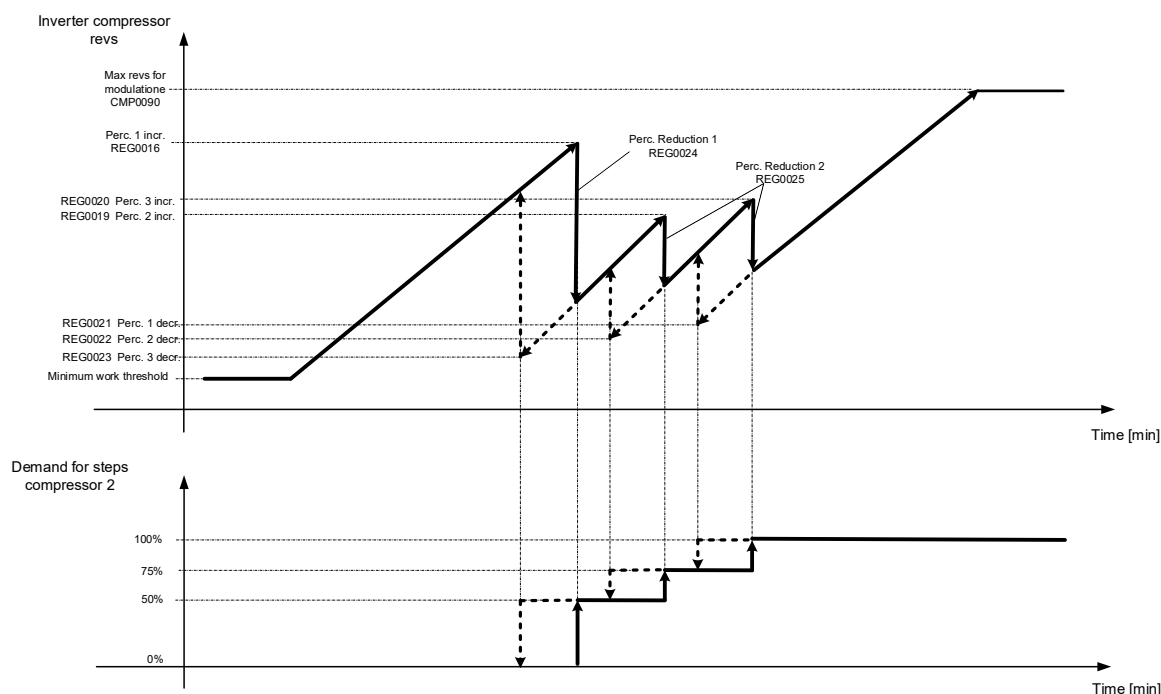


Figure 1-16: operating diagram of sequential adjuster for units with 2 screw compressors, one of which inverter driven.

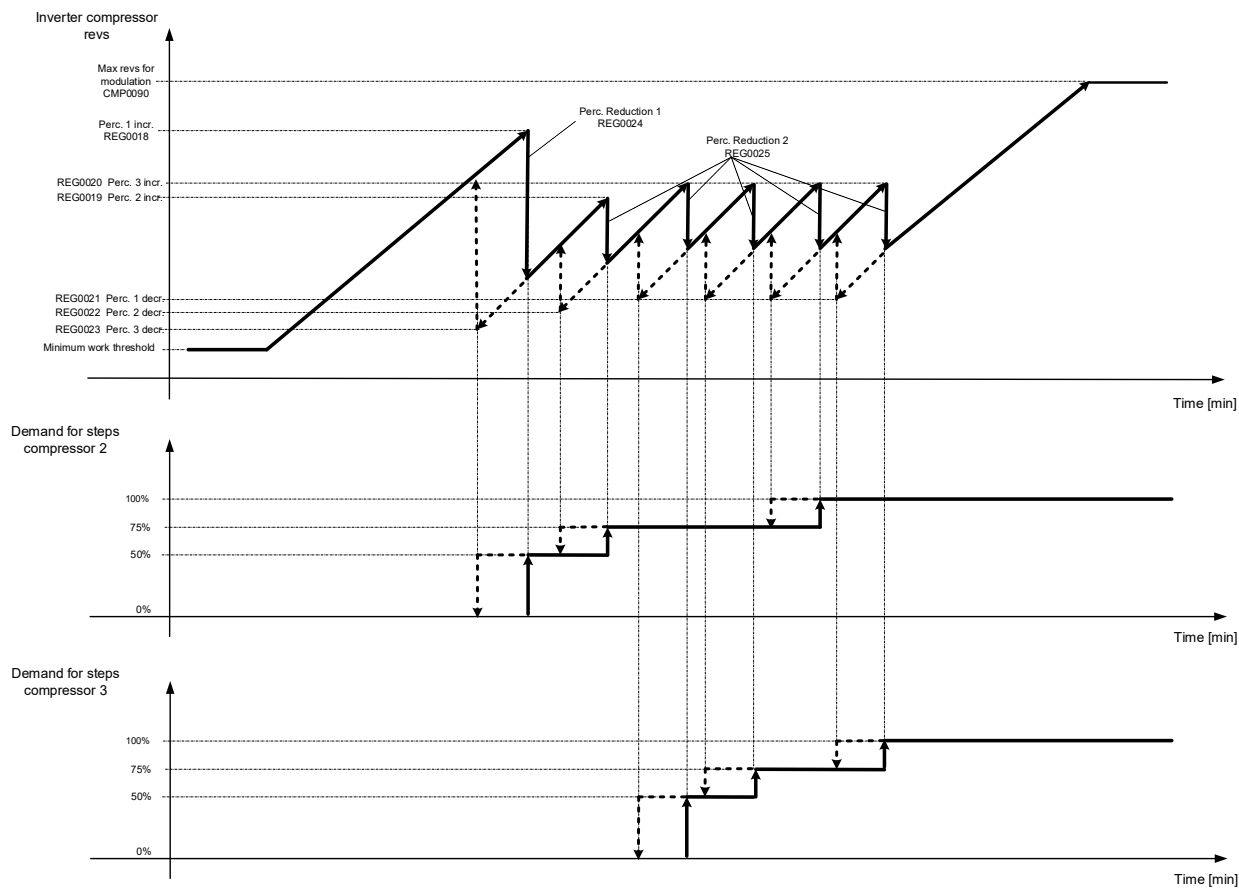


**Figure 1-17:** operating diagram of sequential adjuster for units with 3 screw compressors, one of which inverter driven.

b) The **PID** (Proportional Integral Derivative regulator), whose control variable is the output temperature, is activated when the inverter compressor starts and deactivated when the inverter compressor stops. The variable concerned is the number of revs of the compressor with inverter. This can be set in a speed range between a minimum value (Figure 1-18) and a maximum value (Figure 1-19) that are defined according to the condensation temperature of the circuit:

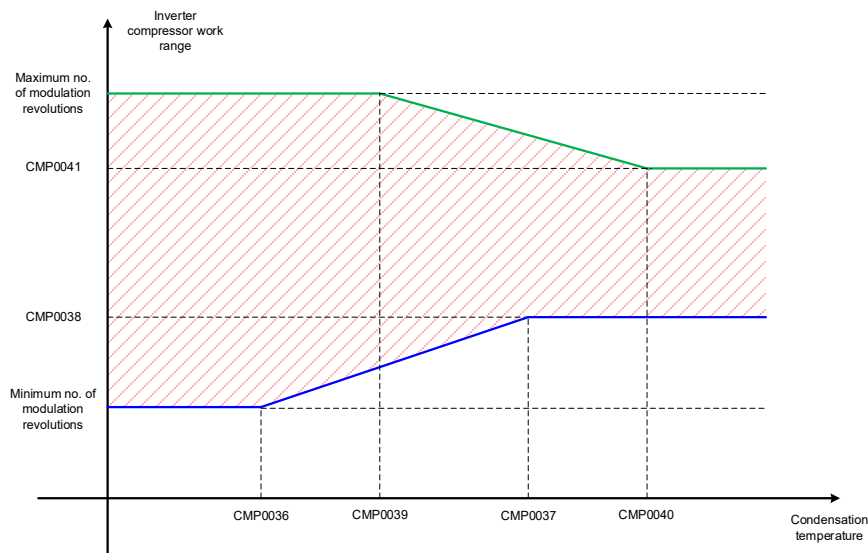


**Figure 1-18:** calculation of the Minimum and Maximum Operating Threshold of the inverter compressor.

The following parameters can also be set for the PID regulator: proportional band (proportional component) and Ti (integral time). The derivative time is factory set.

To side:

Operating diagram of PID regulator:  
the supply temperature is continuously monitored, thus constantly controlling the number of compressor revs.

The PID adjustment zone is related to the pb (proportional band) above the setpoint.

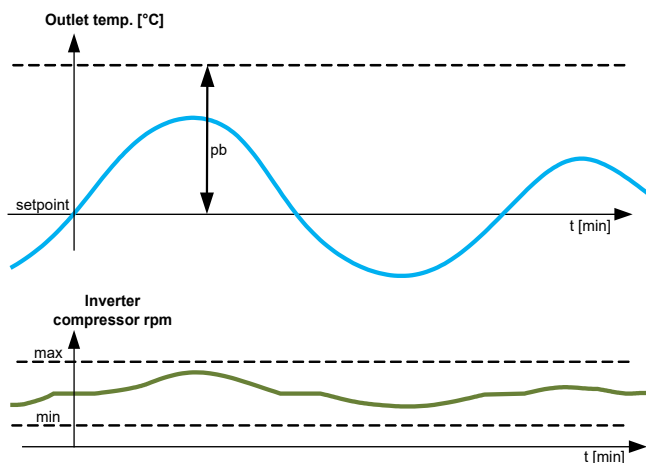


**Figure 1-19:** PID detail on the output temperature.

### 1.4.7.2 Sequential adjustments for units with all inverter compressors

The adjustment is performed by two coordinated regulators:

- Sequential** (step adjuster) on the outlet probe;
- PID** (adjustment) on the outlet probe.

The setpoint is identical for both regulators.

a) This is a neutral zone step adjuster whose control variables are the output temperature **Tout** from the unit and the number of revs of the inverter compressors, and whose controlled variable is the number of compressors to enable.

The following operating descriptions refer to the chiller operating mode for units with two inverter compressors.

The setpoint remains within a neutral zone. If the unit has no compressor running, the regulator waits for the output temperature to exceed the upper limit of the neutral zone, after which the first compressor is requested. This involves starting the first inverter compressor: the compressor is kept at the starting revolutions (parameters CMP0091 and CMP0095) for the compressor startup time (or no-load startup, parameter CMP0028). The regulator then starts to monitor the revs of the inverter compressor and to request starting of the second inverter compressor on the basis of certain percentage thresholds, set in the parameters, referring to the maximum revs for the modulation of the inverter compressor. Starting of the second compressor corresponds to a suitable percentage reduction of the revs of the first inverter compressor in order to supply an even cooling capacity. On start-up, the second compressor is kept at the starting revs for the time required to start the compressors (or no-load start), after which the second compressor is then brought up to the same revs as the first.

If the demand of the system decreases, the regulator reduces the number of resources still on the basis of certain thresholds for the revs of the inverter compressor set in the parameters, by switching off a compressor.

The resources can only be switched off if the output temperature falls below the lower limit of the neutral zone.

The amplitude of the neutral zone depends on the dynamic characteristics of the system. The self-adapting algorithm is able to “measure” plant dynamics and calculate the minimum neutral zone in order to respect compressor activation times and the maximum number of start-ups per hour.

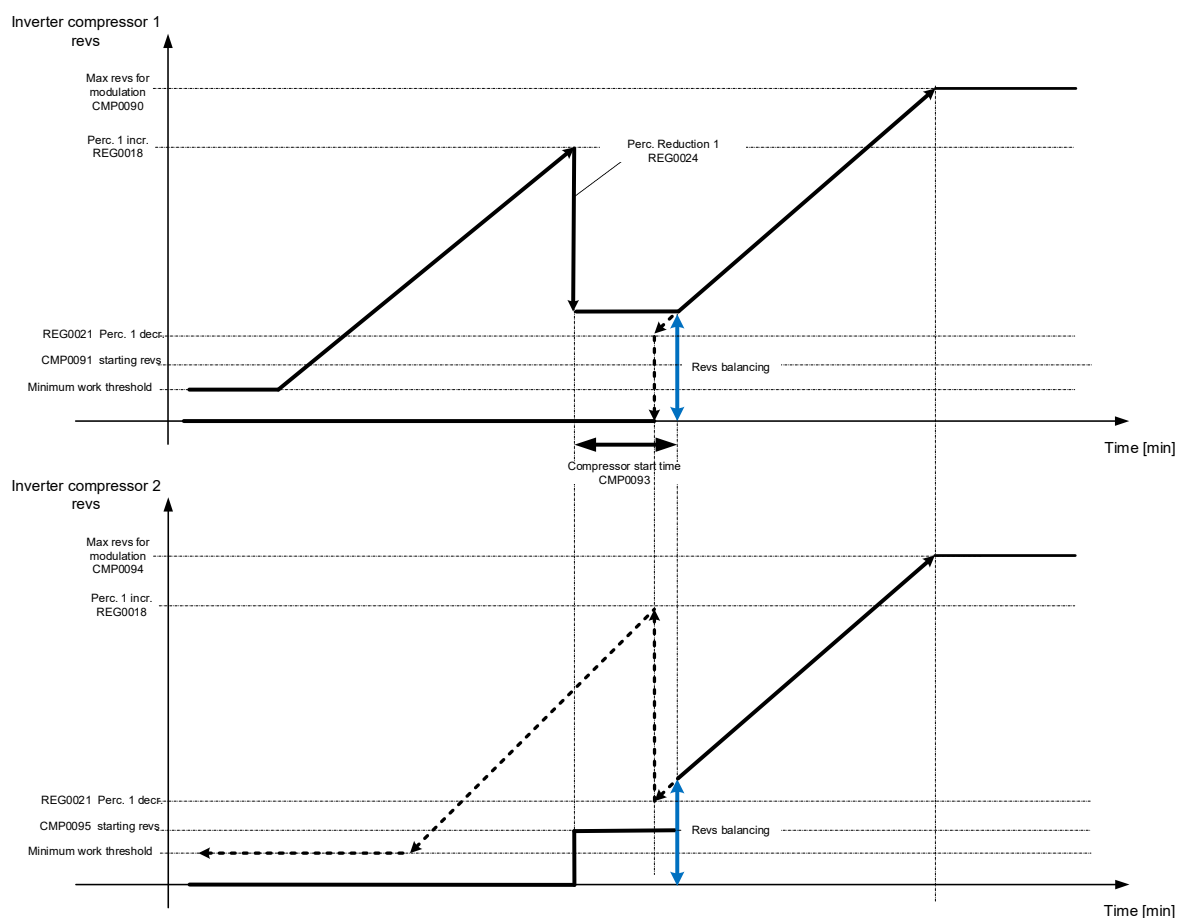


Figure1-20: diagram of operation of the sequential adjuster for unit with 2 inverter compressors.

The adjustment logic can be applied to full inverter units with up to 4 non-homogeneous (independent speed adjustment for each compressor) inverter compressors. The reduction of the revolutions of active compressors due to the switching on of the third or fourth compressor is equal to 2/3 of the reduction percentage set in parameter REG0021.

b) The **PID** (Proportional Integral Derivative regulator), whose control variable is the output temperature, is activated when the inverter compressor starts and deactivated when the inverter compressor stops.

The variable concerned is the number of revs of the compressors with inverter. This can be set in a speed range between a minimum value (Figure 1-21) and a maximum value (Figure 1-22) that are defined according to the condensation temperature of the circuit:

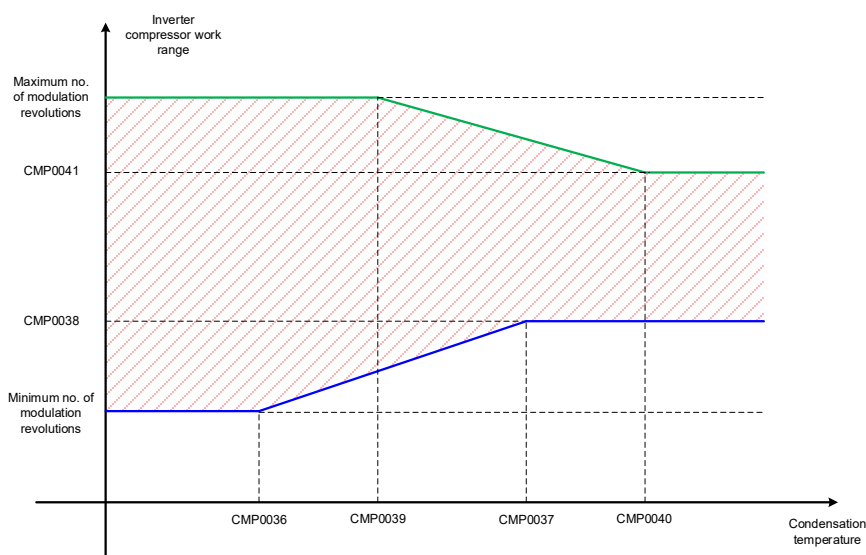


**Figure 1-21:** calculation of the Minimum and Maximum Operating Threshold of inverter compressors.

The following parameters can also be set for the PID regulator: proportional band (proportional component) and Ti (integral time). The derivative time is factory set.

To side:

Operating diagram of PID regulator: the supply temperature is continuously monitored, thus constantly controlling the number of compressor revs.

The PID adjustment zone is related to the pb (proportional band) above the setpoint.

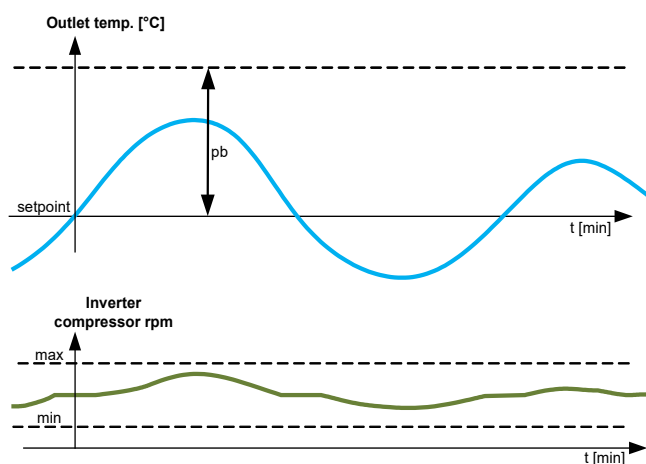


**Figure 1-22:** PID detail on the output temperature.

## **1.5 Setpoint setting**

There are several procedures for setting the setpoint:

1. setpoint from the W3000 compact/W3000 large/W3000+ touch keyboard;
2. setpoint from Supervision or Mitsubishi Electric system remote controllers;
3. setpoint from KIPLink;
4. setpoint from time bands;
5. dual setpoint external contact.

The setpoint set from the keyboard, or selected by the external contact for the dual setpoint, is modified by enabled functions, which transform it into the active setpoint passed to the regulators.



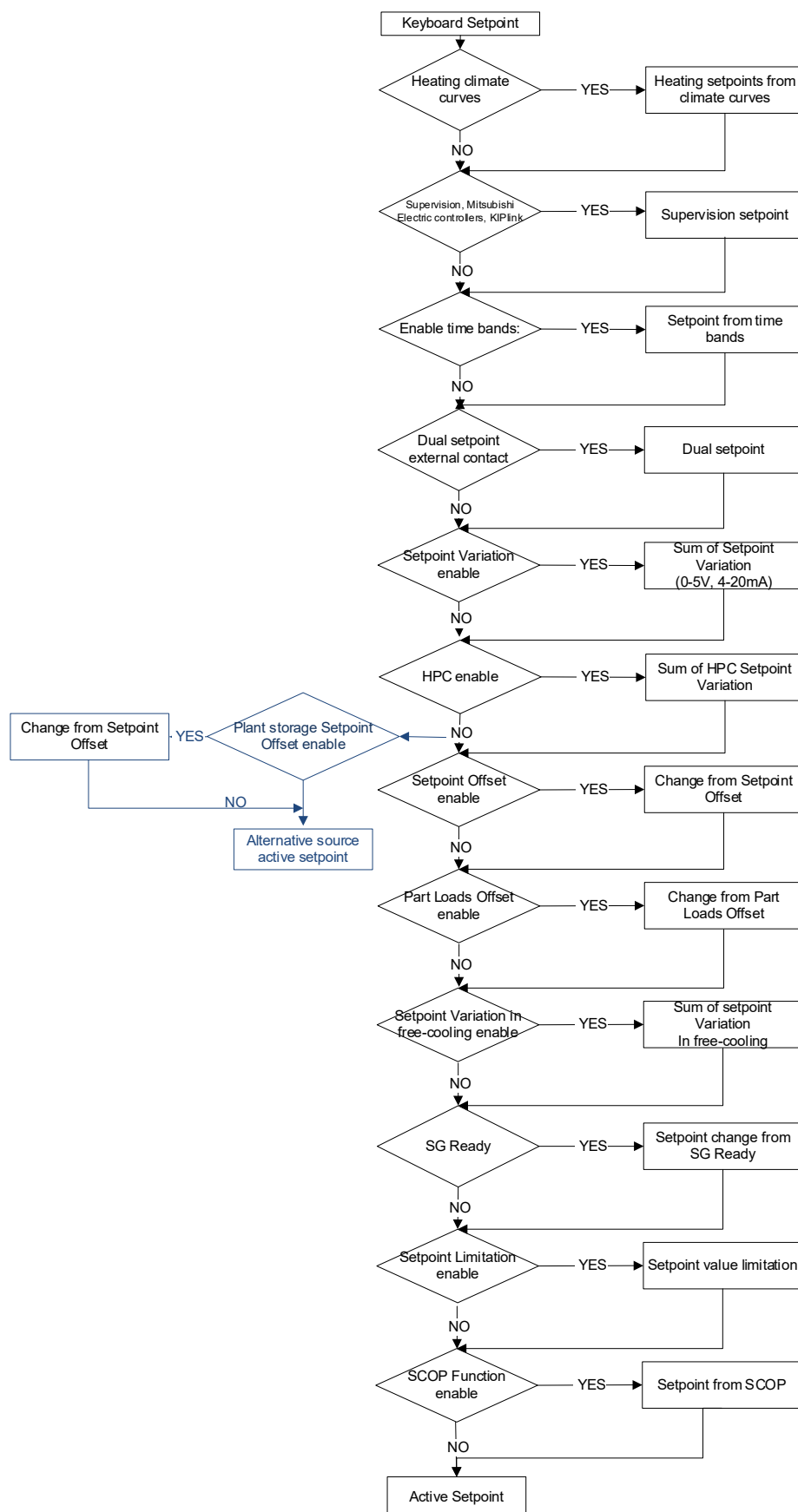


Figure 1-23: sequence of functions for modifying the setpoint so as to obtain the active setpoint.

Example:

Setpoint from keyboard: 7.0°C

Dual setpoint: 10.0°C

A setpoint variation of 50% corresponds to 2.5°C

Active setpoint with contact open:  $7.0 + 2.5 = 9.5^\circ\text{C}$

Active setpoint with closed contact:  $10.0 + 2.5 = 12.5^\circ\text{C}$

**Note:**

The signal applied by the setpoint variation is always summed, regardless of the operating mode of the unit.

**Note:**

If Manager or Sequencer control is enabled, the time band, dual set point and set point variation functions are forcibly disabled.

**Note:**

The setpoint limitation and compensation functions are only available if the external air temperature probe is fitted. This probe is not available in for water-cooled units.

**Note:**

The SCOP function disables the functions of compensation and limitation of the setpoint of the heat pump.

The setpoint menu shows the active temperature setpoint (of both the main setpoint and the recovery/DHW setpoint).

With the System Management function active, the active group temperature setpoint is displayed.

The captions of the flashing symbols indicating the functions active by setpoint and operating mode are indicated below:

**R:** change from remote contact function or external temperature.

**V:** change from external signal function.

**B:** change from time band function.

**C:** offset function according to external temperature.

**L:** limitation from external temperature function.

**P:** part load offset function.

**S:** value received from Sequencer.

**M:** value received from Manager 3000.

**Q:** value changed from Moving Band function.

**F:** Free-Cooling variation function.

**A:** value received from ClimaPRO.

**E:** SCOP function.

**D:** group adaptive setpoint function.

**O:** HPC function.

Active setpoint:

Main 07.0 °C **B**  
Recovery/DHW 42.5 °C **R**

Unit type:

chiller

Operating mode:

auto

Adjustment enabled:

Quick Mind

in output

Active group

setpoint: 07.0 °C **D**

When enabled at the same time:

- Configuration of the serial line USR0002 = 5 Supervision with watchdog.
- Enable consent for autonomous operation in case of disconnection of the supervisor (only for serial line configured in "Supervision with watchdog" mode) (with the Modbus, Modbus over IP and Bacnet protocols).
- Stand-Alone local settings reset USR0010 = 1:enabled.

The supervisor cannot modify the setpoint set from the keyboard since this is used in case of disconnection (U.ALONE unit status).

## 1.6 Additional functions

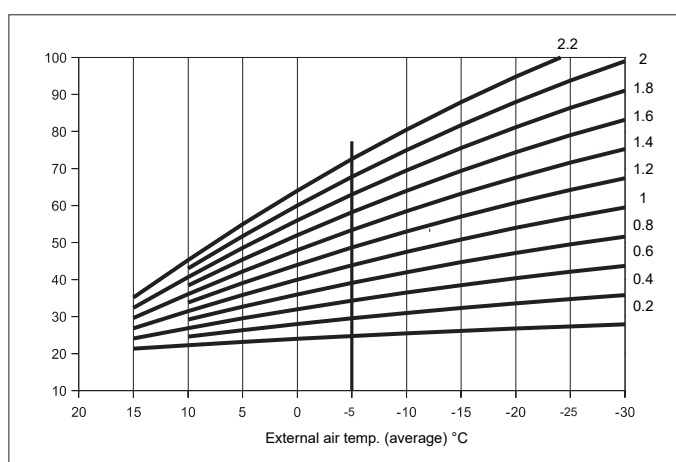
The water temperature at the heating or cooling circuit is a value calculated by the controller and depends on the following factors:

- A) System water setpoint offset in heating or cooling.
- B) Room temperature influence.
- C) Room temperature setpoint value.

### A) System water temperature setpoint offset

The setpoint of the water temperature in heating or cooling is calculated by following the trend of the external temperature according to settable curves.

Heating setpoint offset diagram:



The heating climate curve can be changed to allow the heat pump to operate correctly depending on the heating system (radiant panels, radiators, fan coils).

Example: selecting heating curve 1.4 with an external air temperature of -5°C results in a water temperature of approx. + 53°C.

A heating curve that is too high corresponds to excessive delivery temperatures, a curve that is too low may result in the desired room temperature not being reached.

The contribution to the climate curve given by the difference between the room setpoint and the room temperature is only available with Touch Room HMI.

The following offset curves are suggested:

| Type of Terminal | Coefficient |
|------------------|-------------|
| Radiant panels   | 0.2 ÷ 0.7   |
| Fancoil units    | 0.9 - 1.1   |
| Radiators        | 1.2 ÷ 1.5   |

## The climate curves in heating are divided into:

- System curve (HT zone): determines the operating setpoint of the heat pump and any high temperature zones. The calculated setpoint refers to the delivery water temperature of the heat pump. Check that the temperature delta is within the manufacturer's required limits.
- LT zone curve: determines the water supply temperature value of the mixed circuit. In the case of systems configured with mixed zones, the system curve and the zone curve must be selected.

The system and zone curves work in cascade. Therefore, the climate curve of the mixed zone cannot request a value higher than that supplied by the system curve. The climate curves refer to a room setpoint of 20°C on the Touch Room HMI control.

| Par.N.  | Description of parameter                                 | Default | U.M. | Min. | Max. | Menu     | Submenu  |
|---------|----------------------------------------------------------|---------|------|------|------|----------|----------|
| SET0034 | Zone climate curve enable (0:No - 1:HT - 2:LT - 3:HT+LT) | 0       | -    | 0    | 3    | Setpoint | Setpoint |
| SET0035 | HT zone climate curve coefficient                        | 1.0     | -    | 0    | 2    | Setpoint | Setpoint |
| SET0036 | HT zone climate curve offset                             | 0.0     | °C   | -9.9 | 9.9  | Setpoint | Setpoint |
| SET0037 | HT zone climate curve offset at 20°C                     | 0.0     | °C   | -9.9 | 9.9  | Setpoint | Setpoint |
| SET0039 | LT zone climate curve coefficient                        | 1.0     | -    | 0    | 2    | Setpoint | Setpoint |
| SET0040 | LT zone climate curve offset                             | 0.0     | °C   | -9.9 | 9.9  | Setpoint | Setpoint |
| SET0041 | LT zone climate curve offset at 20°C                     | 0.0     | °C   | -9.9 | 9.9  | Setpoint | Setpoint |

## B) Room temperature influence in heating



### NOTICE:

Function active only if Touch Room HMI room controls are present.

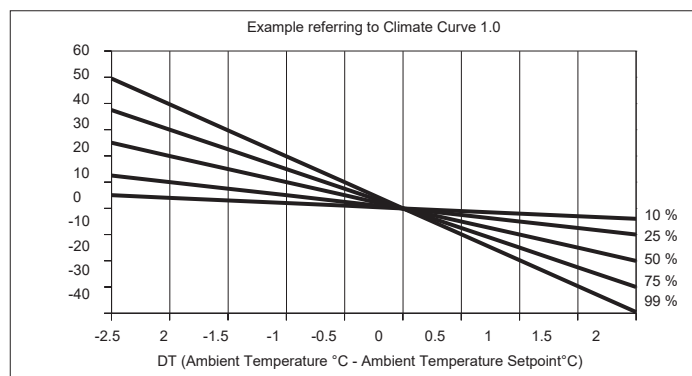
The climate curve determines the value of the heating water temperature, which can be corrected according to the difference between the desired room setpoint and the actual room temperature. The correction made to the water temperature depends on the coefficient "system room temperature influence". The higher the value of the coefficient "system room temperature influence", the greater the correction of the system water temperature and vice versa.

It allows the water temperature to be quickly adjusted to changes in internal room environment combinations.

Set system room temperature influence values equal to or greater the LT zones.

Set an appropriate value of the system room temperature influence to obtain a calculated setpoint deviation of the water return temperature to the heat pump.

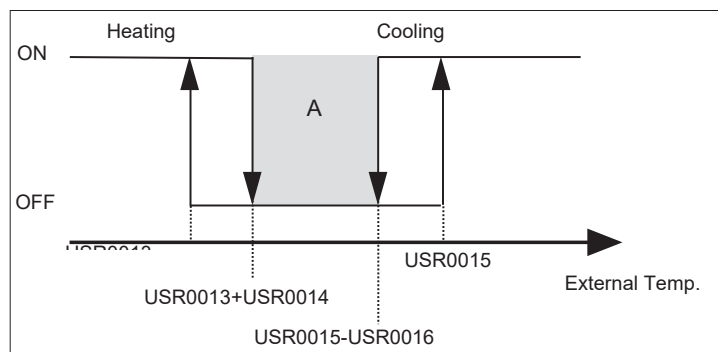
Similarly for the LT zone room temperature influence, a deviation of the calculated setpoint of the system delivery water temperature, regulated by the mixing valve, is obtained.



| Par.N.  | Description of parameter                      | Default | U.M. | Min. | Max. | Menu     | Submenu  |
|---------|-----------------------------------------------|---------|------|------|------|----------|----------|
| SET0038 | HT zone room temperature influence percentage | 0       | %    | 0    | 99   | Setpoint | Setpoint |
| SET0042 | LT zone room temperature influence percentage | 0       | %    | 0    | 99   | Setpoint | Setpoint |

### Automatic change mode for external temperature

In automatic mode, the change of season (heating/cooling) occurs automatically without manual intervention by the user. The change of season considers the diagram in the figure:



The central zone A corresponds to an idle phase as the external climate conditions require neither heating nor cooling.

| Par.No. | Description of parameter                                 | Default | U.M. | Min   | Max  | Menu | Submenu |
|---------|----------------------------------------------------------|---------|------|-------|------|------|---------|
| USR0012 | Operating mode automatic change (0:disabled - 1:enabled) | 0       | -    | 0     | 1    | User | User    |
| USR0013 | Operating mode automatic change heating setpoint         | 16.0    | °C   | -99.9 | 99.9 | User | User    |
| USR0015 | Operating mode automatic change cooling setpoint         | 24.0    | °C   | -99.9 | 99.9 | User | User    |
| USR0014 | Operating mode automatic change heating differential     | 2.0     | °C   | -99.9 | 99.9 | User | User    |
| USR0016 | Operating mode automatic change cooling differential     | 2.0     | °C   | -99.9 | 99.9 | User | User    |

## 1.7 Symbols used

The following symbols are used in the W3000+ and W3000 compact masks.

| Flashing items on main mask | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BANDS                       | Time bands active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| FCOOL                       | Unit in Free Cooling mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| LIMIT                       | The demand limit, the limit for high room temperature or for current, is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NIGHT ON                    | The night function is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| FREEZE                      | Output temperature approaching antifreeze setpoint or room temperature below room antifreeze setpoint and room antifreeze activation.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| PUMP ON                     | Pump running due to low temperature of the water/external air.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| FULL LOAD                   | Maximum forcing of at least one circuit is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| U.ALONE                     | The unit works independently after disconnecting the Manager3000, Sequencer or ClimaPRO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| HPTC                        | Circuit limitation enabled due to elevated condensation pressures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| DEFROST                     | Defrosting is active on one or more circuits of the unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| DRIP                        | Dripping is active on one or more circuits of the unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| STORAGE                     | The energy storage function is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| MIN LOAD                    | Minimum forcing of at least one circuit or shutdown for oil recovery is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| DHW COMPR                   | The unit is producing domestic hot water (DHW) using the compressors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| DHW BOILER                  | The unit is producing domestic hot water (DHW) using the heaters or boiler.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| DHW BOOST                   | The unit is producing domestic hot water (DHW) at the overboost setpoint.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| PLT COMPR                   | The unit is heating the plant storage tank using the compressors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| PLT BOILER                  | The unit is heating the plant storage tank using the heaters or boiler.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ANTILEG                     | The anti-legionellosis function is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| OFF SNIFF.                  | To enable the Sniffer function, the pumps are off or, if they are working, the system delivery/return temperatures are being updated before re-enabling the thermoregulators.                                                                                                                                                                                                                                                                                                                                                                                  |
| OFF STOR.                   | The unit is switched off to allow the inertial storage tank to reach the temperature setpoint.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| POWER-ON                    | The unit is waiting for start delay after power failure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| WAIT                        | The unit is on and the thermoregulators are waiting for the current timers.<br>The reasons why "WAIT" is flashing can be: <ul style="list-style-type: none"> <li>- Waiting to stabilise the coil exchange (units with Free-cooling).</li> <li>- Partialisation at start-up (hybrid units with hermetic compressors).</li> <li>- Unit start-up shutdown due to high heat exchanger inlet temperature.</li> <li>- Increase in the number of compressors switched on.</li> <li>- Active intercompressor safety times (also between separate circuits).</li> </ul> |
| FAST                        | The Fast Restart function is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| PUMPDOWN ON                 | The pumpdown function is active in at least one of the unit circuits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| +2P ENABLED                 | +2P module enabled.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| KIPLink FOUND               | KIPLink module found.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| OIL T. LOW                  | Low motor oil temperature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| SG READY                    | SG Ready active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NO REG                      | With automatic mode change active, the external climate conditions do not require the compressors to be activated (neither heating nor cooling).                                                                                                                                                                                                                                                                                                                                                                                                               |
| PLANT OFF                   | Hot or cold water production on the plant side is switched off due to lack of demand from the zones of the plant.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| BOOST                       | The Boost function is active.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| CIRC 1 LOCK                 | Circuit 1 shut down.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| CIRC 2 LOCK                 | Circuit 2 shut down.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| CIRC 3 LOCK                 | Circuit 3 shut down.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| CIRC 4 LOCK                 | Circuit 4 shut down.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| CHDT                        | Forced shutdown of compressors is active due to high discharge temperature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

BANDS, LIMIT, NIGHT ON, NO REG, PLANT OFF, BOOST only flash if the unit is ON.

| Group menu symbol | Description                                                                            |
|-------------------|----------------------------------------------------------------------------------------|
| GRP FCOOL         | At least one unit of the group is in Free Cooling.                                     |
| GRP LIMIT         | The group power limit is active (group demand limit).                                  |
| GRP FAST          | The group Fast Restart function is active.                                             |
| WAIT LAN          | Fault in the connection among units within the group. Group On/Off command prohibited. |

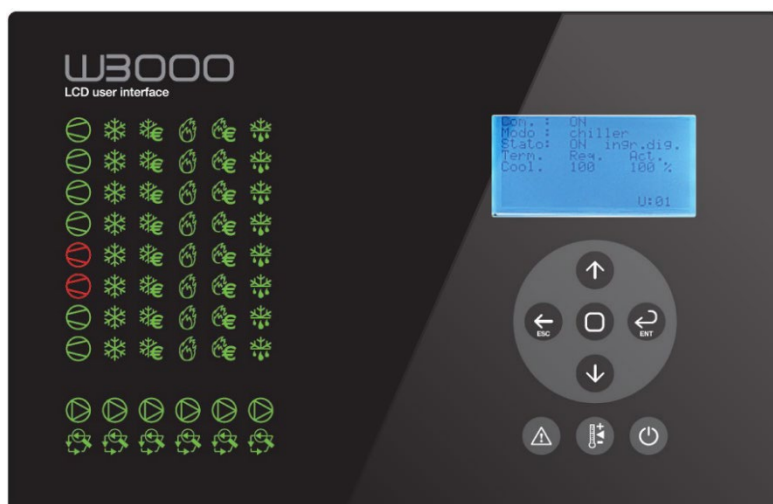
GRP FCOOL, GRP LIMIT and GRP FAST will only flash with the system ON.

| Unit menu symbol | Description                                                |
|------------------|------------------------------------------------------------|
| Off              | Unit/circuit off.                                          |
| Ch nr            | Chiller circuit not demanded by thermoregulator.           |
| Ch               | Chiller circuit demanded by thermoregulator.               |
| Ch+R             | Chiller circuit plus recovery demanded by thermoregulator. |
| Hp nr            | Heat pump circuit not demanded by thermoregulator.         |
| Hp               | Heat pump circuit demanded by thermoregulator.             |
| R nr             | Recovery only circuit not demanded by thermoregulator.     |
| R                | Recovery only circuit demanded by thermoregulator.         |
| Pd               | Circuit in pump-down mode.                                 |
| Defr             | Circuit in defrost mode.                                   |
| Drip             | Circuit in drip mode.                                      |

## 2 USER INTERFACE

### 2.1 User terminal

There are three types of user interface:



W3000 large



W3000 compact



W3000Touch+



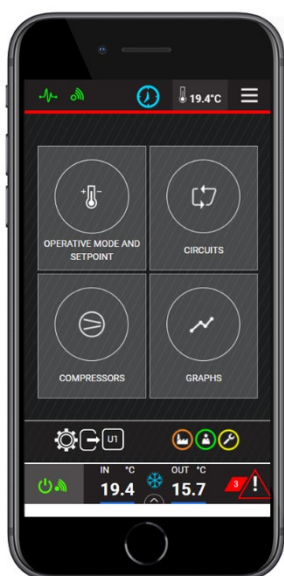


Figure 2-1: Mobile phone version.



Figure 2-2: Tablet version.

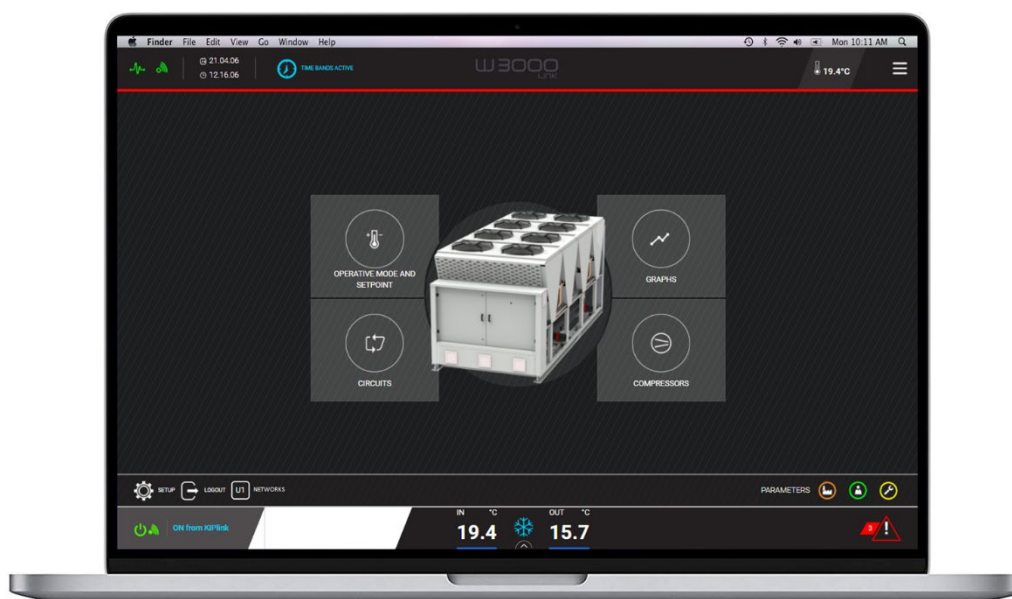


Figure 2-3: Notebook version (Local Monitoring use).



#### INFORMATION:

The image of the main screen shown in the figures in this manual is an example of a certain type of machine. It may therefore not be consistent with what is displayed on the unit control user interface.

### 2.1.1 W3000 large keyboard

## Meanings of keys:

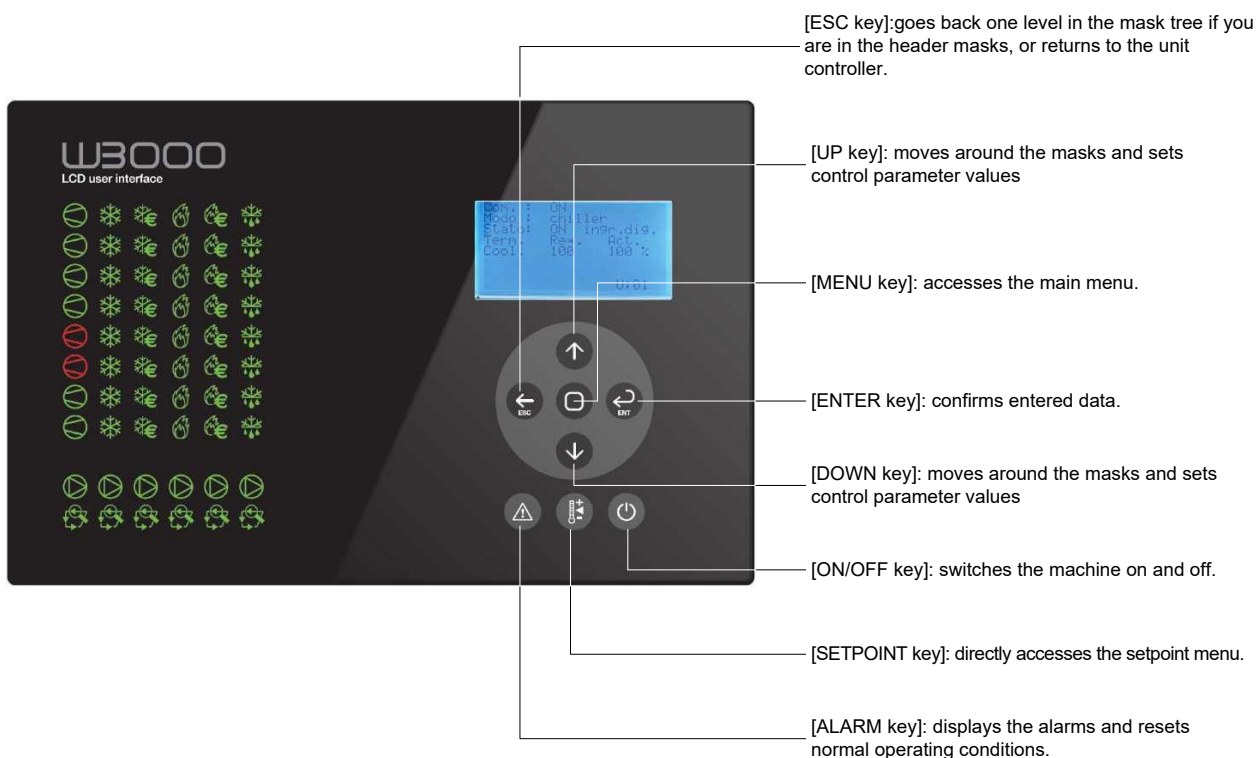


**Figure 2-4:** Meanings of the keys on the W3000 large keyboard.

## Meanings of the compressor LEDs:

- [Compressor LED]
  - Fixed green: the compressor is on
  - ◐ Flashing green: compressor demand
  - Red: The compressor is blocked by a compressor or circuit alarm
- [Chiller LED]
  - Fixed green: The compressor is in the "chiller" mode
- [Freecooling LED]
  - Fixed green: "freecooling" active
- [Heat pump LED]
  - Fixed green: The compressor is in the "heat pump" mode
- [Recovery LED]
  - Fixed green: The compressor is in the "recovery" mode
  - ◐ Flashing green: compressor in "recovery alarm"
- [Defrost LED]
  - Fixed green: The compressor is in the "defrost" mode
  - ◐ Flashing green: The compressor is in the "drip" mode

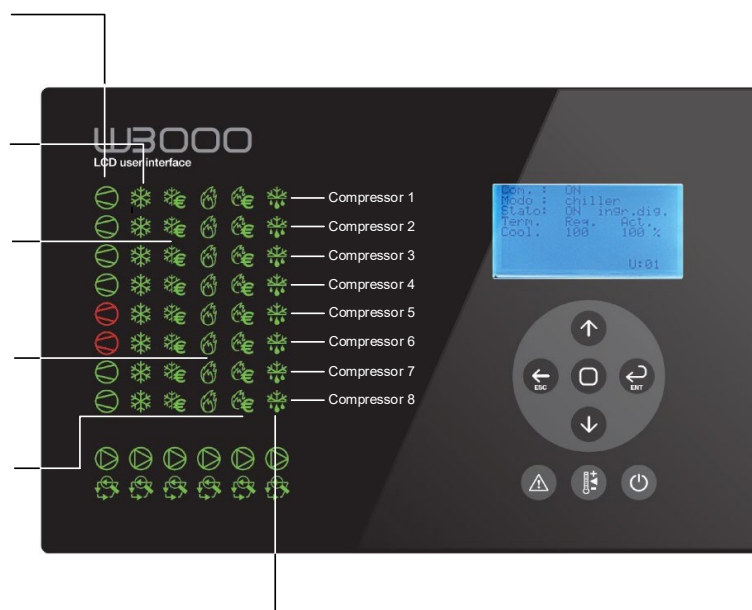


**Figure 2-5:** Meanings of the Compressor LEDs on the W3000 large keyboard.

## Meanings of the pump and condenser (ventilation or condensation valve) LEDs:

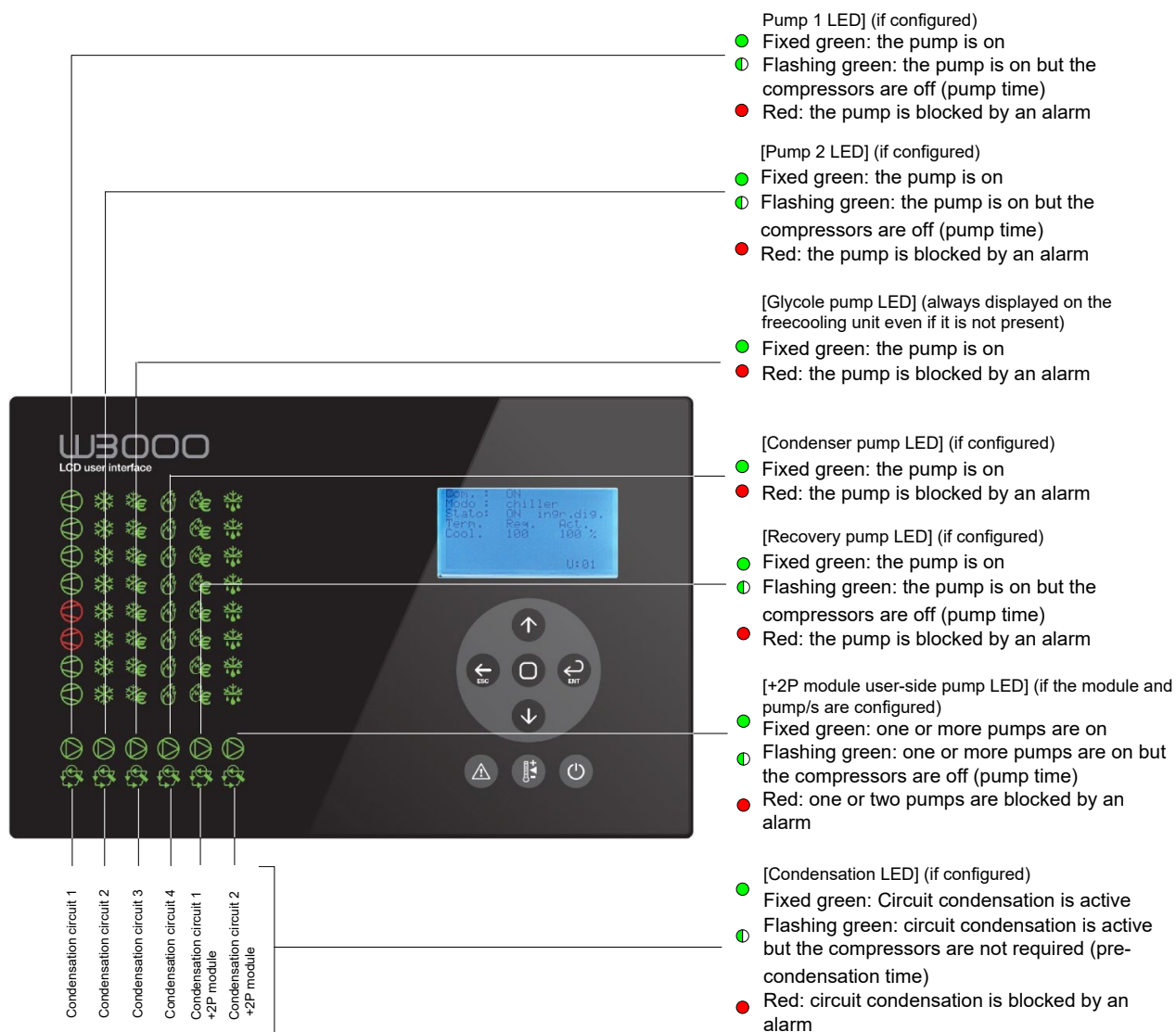


**Figure 2-6: Meanings of the Pump and Condenser LEDs on the W3000 large keyboard**

### Note:

- When the unit is powered, all the LEDs on the keyboard are tested for a couple of seconds by turning them on all together (for two-colour LEDs, first red and then green).
- The example in the figure shows an 8-compressor unit. The compressor rows light up depending on the number of compressors present.
- The condenser LEDs can light up simultaneously on more than one circuit if the condenser is shared by two or more circuits.
- The back-lighting of the keyboard turns off after 2 minutes when no buttons are pressed.
- The keyboard's back-lighting flashes when the unit is in alarm mode and there is no interaction with the keyboard.

### Notes for units fitted with +2P module:

- The data and parameters of the +2P module can be displayed by pressing ESC+UP, repeat this key combination to return to the main user interface.
- The unit cannot be switched on/off if the user interface is positioned on the +2P module controller; in this case press ESC+UP to switch to the main interface and give the required command.
- In this case, the LEDs that are usually dedicated to compressors 5, 6, 7, 8 show the status of compressors 1, 2, 3, 4 on the +2P module.

### 2.1.2 W3000 compact keyboard

[ALARM key]: displays the alarms and resets normal operating conditions. If it shines red at least one alarm/signal is present.

[MENU key]: accesses the main menu. It turns yellow when inside the menu.

[ESC key]: goes back one level in the mask tree if you are in the header masks, or returns to the unit controller.



[UP key]: moves around the masks and sets control parameter values

[ENTER key]: confirms entered data.

[DOWN key]: moves around the masks and sets control parameter values

**Note:**

- The back-lighting of the keyboard turns off after 2 minutes when no buttons are pressed.
- The keyboard's back-lighting flashes when the unit is in alarm mode and there is no interaction with the keyboard.

**Figure 2-7:** Meanings of the keys and LEDs on the W3000 compact keyboard.

Key combinations activate a set of specific functions:

| Key                                                                                                                                                                                                                                                             | Description                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
|  +  +     | <b>[PRG + ALARM + UP keys]:</b><br>Increase screen contrast.                                                                                       |
|  +  +  | <b>[PRG + ALARM + DOWN keys]:</b><br>Decrease screen contrast.                                                                                     |
|  +                                                                                        | <b>[ESC + ALARM keys]:</b><br>In the shared keyboard mode, this combination allows to share screenshots and parameters among pLAN connected units. |
|  +  +  | <b>[UP + DOWN + ENTER keys]:</b><br>Press for 5 seconds to set the pLAN address on the user terminal.                                              |
|  +                                                                                        | <b>[ALARM + UP keys]:</b><br>With the user terminal set to 0, it allows to configure the pLAN address on the control board.                        |

These combinations of keys (even though with different symbols) are also valid for the W3000 large keyboard.

## 2.1.3 W3000Touch+ keyboard

Version with 7" screen:

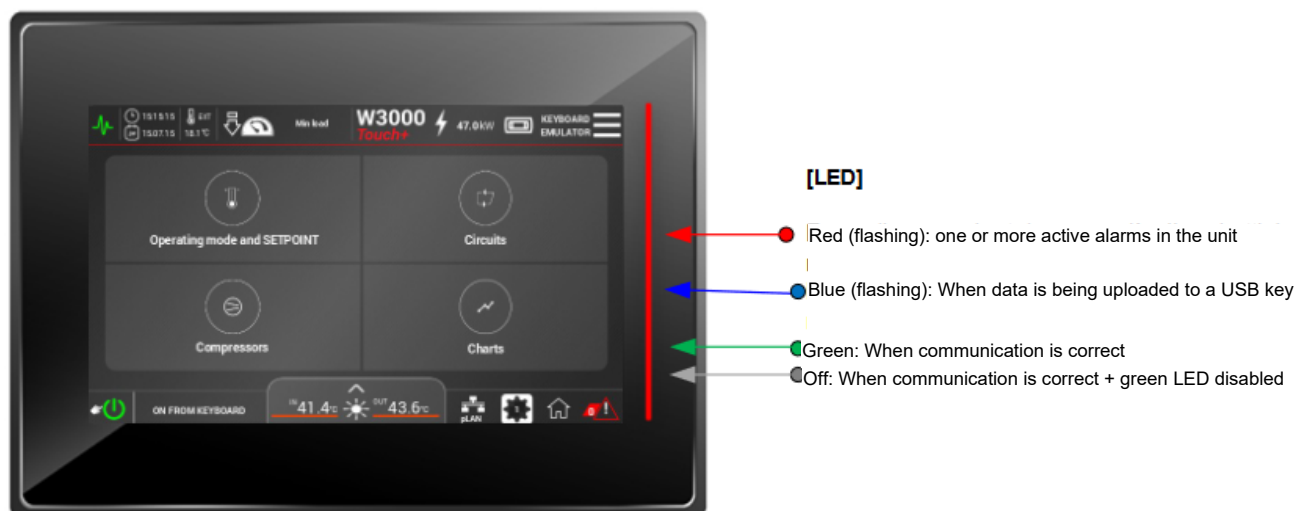


**Figure 2-8:** Explanation of the various elements of the W3000+ touch keyboard with 7" screen.

For further information about the keyboard, consult the dedicated manual corresponding to the software version of the W3000+.

## 2.1.4 Access via the app

To access and control the unit:

- First install the KIPLink in the unit, if it is not already installed.
- Then download the KIPLink app from melcohit.com onto a mobile device.

The app can be installed on mobile devices with Operating System: Android 5 or higher / iOS 8 or higher.

To access the app:

- Scan the QR code on the unit.
- Follow the on-screen instructions to access the unit's KIPLink via Wi-Fi.
- Use the keys in the app to control the unit.



### INFORMATION:

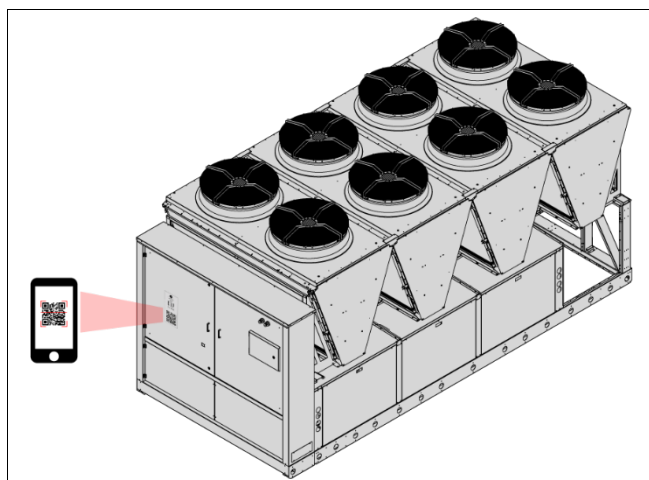
At first access, it is necessary to log in to control the unit.



### INFORMATION:

An adhesive label for the KIPLink is attached to the unit's electrical panel. The label is an encrypted QR code that can only be read through the app. In addition to the QR code, the label shows:

- the serial number of the unit where the KIPLink is installed.
- whether the KIPLink is the Master if several KIPLinks are connected to the network.



### INFORMATION:

If the QR code is damaged or missing, contact the service department to request a new QR code.



### INFORMATION:

For more information on how to use the app, refer to the tutorial provided therein.

Further information on the KIPLink device is available in the specific manuals with the following codes.

| KIPLink device | KIPLink User Manual Code                                                                                    |
|----------------|-------------------------------------------------------------------------------------------------------------|
| W3000+ link    | C024456140-IT, C024456141-EN, C024456142-FR<br>C024456143-DE, C024456144-ES, C024456145-RU<br>C024456146-ML |

Units configured with KIPLink that do not have a physical keyboard have instead a function button, as shown in the image below, for switching the unit on/off and viewing the power and alarm status of the unit.

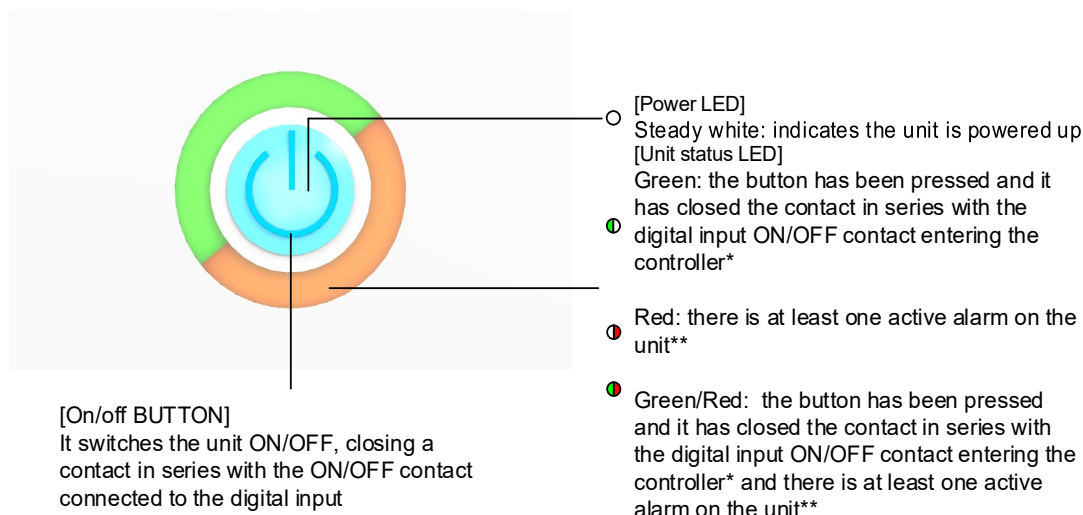


**Figure 2-9:** ON/OFF button for units with only the KIPLink user interface.



### INFORMATION:

\* The contact that closes in the button is fitted in series with the digital ON/OFF contact. If the green LED is shining but the machine does NOT start up, this means another element used to switch the machine on or off is keeping the machine switched OFF. Check that all the elements (time bands, supervision, remote on/off, KIPLink, etc.) give the ON command. To identify the element preventing the machine from switching on, simply check the "unit status" on the KIPLink homepage or main page of any other type of keyboard.



### INFORMATION:

\*\* The red LED depends on the digital output in the controller for the "cumulative alarms". The signals do not show the red LED shining.



## 2.2 General characteristics of the interface

### 2.2.1 Language selection

A special feature of the new hardware is that it has an additional memory containing all the supported languages. During programming, all the languages are loaded to the controller and the end user performs a simple procedure to select the language to display.

|           |           |           |            |           |           |           |           |           |           |
|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Italian   | Danish    | German    | Greek      | English   | Spanish   | Finnish   | French    | Croatian  | Hungarian |
| <b>IT</b> | <b>DA</b> | <b>DE</b> | <b>EL</b>  | <b>EN</b> | <b>ES</b> | <b>FI</b> | <b>FR</b> | <b>HR</b> | <b>HU</b> |
| Dutch     | Norwegian | Polish    | Portuguese | Romanian  | Russian   | Swedish   | Turkish   | Chinese   |           |
| <b>NL</b> | <b>NO</b> | <b>PL</b> | <b>PT</b>  | <b>RO</b> | <b>RU</b> | <b>SV</b> | <b>TR</b> | <b>ZH</b> |           |

**Table 5:** table showing the correspondence between the language and the international language code.

To select any of the available languages, proceed as follows:

|    |                                                                                                                                                                                                                                                                 |                                                                                                                                                   |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 0) | Make sure the unit is OFF.<br>Make sure "OFF" (or OFF from keyboard, OFF from digital input...) appears in the first row of the main menu screen.<br>If the unit is ON, accessing the system menu described below causes the compressors to turn off instantly. | 09:26 ON ALXXX<br>Mode: chiller<br>Status: Keyb. ON<br>Term. Req. Act.<br>Cool. 050 050 %<br>Hot 000 000 %<br>Pump time 000s<br>LIMIT ID:011 U:01 |
| 1) | Press <b>[ALARM]</b> and <b>[ENTER]</b> together and hold down until the mask shown to the side appears.                                                                                                                                                        | > SYSTEM INFORMATION<br>LOG DATA<br>OTHER INFORMATION<br>FLASH NAND FILES                                                                         |
| 2) | Press <b>[UP]</b> and <b>[DOWN]</b> to move the cursor ">" to the "FLASH NAND FILES" row, and press <b>[ENTER]</b> to select.                                                                                                                                   | SYSTEM INFORMATION<br>LOG DATA<br>OTHER INFORMATION<br>> FLASH NAND FILES                                                                         |
| 3) | The mask to the side will appear, to confirm access to the "FLASH NAND FILES" menu. Press <b>[ESC]</b> to exit the menu without changing the language.                                                                                                          | [ ]<br>TA001_PGD1_IT.iup                                                                                                                          |
| 4) | Now select the file for the required language. Press <b>[ENTER]</b> to select the language. An "X" appears between square brackets. Press <b>[ENTER]</b> again to deselect the language.                                                                        | [X]<br>TA001_PGD1_IT.iup                                                                                                                          |
| 5) | Press <b>[UP]</b> and <b>[DOWN]</b> to view other files.<br>Files with ".iup" extensions concern the language.<br>The ".bin" file concerns the application.<br>The ".grp" file concerns the graphic resources.                                                  | [ ]<br>TA.grp                                                                                                                                     |
| 6) | It is necessary to choose <b>exclusively an ".iup" file</b> depending on the language that you want to display (refer to the table showing corresponding languages and international language codes).                                                           | [X]<br>TA001_PGD1_IT.iup                                                                                                                          |
| 7) | Select the ".bin" file.                                                                                                                                                                                                                                         | [X]<br>TA.bin                                                                                                                                     |
| 8) | Select the ".grp" file.                                                                                                                                                                                                                                         | [X]<br>TA.grp                                                                                                                                     |
| 9) | After selecting one of the ".iup" files, the ".bin" file and the ".grp" file, move to the mask on the side and press <b>[ENTER]</b> .                                                                                                                           | Press Enter<br>to start copying                                                                                                                   |

|     |                                                                                                                                                                              |                                                  |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 9b) | When requested by the mask at the side press <b>[ENTER]</b> and leave "NO" indicated. This mask only appears in large size software versions. Therefore it may not appear.   | Erase Log data?<br>NO<br>press<br>ENTER to conf. |
| 10) | The mask to the side appears indicating that the files are being copied.                                                                                                     | copy process<br>is running                       |
| 11) | After the installation process ends, the mask on the side appears.                                                                                                           | ok, copy completed.<br>wait for restart          |
| 12) | During the process, messages such as "I/O BOARD FAULT" and "NO LINK" may appear. This is caused by the application restart process. They will disappear after a few seconds. | I/O BOARD FAULT                                  |
| 13) | Once the operation has finished, the masks will appear in the selected language. The installed language can be checked in the "Unit" menu.                                   | W 3000 +<br>Cod. TA 22.00 IT                     |

All the steps of the procedure must be completed. If even just one file is omitted, the following faults may occur:

|                                                                                                                                                                                                                                     |                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| If no ".iup" file is selected, this means that no language has been selected and an empty mask will appear! Repeat the operation taking care to select a ".iup" file.                                                               | Select one iup file                       |
| If the ".bin" file is not selected, the application file has also not been selected. Therefore, the mask on the side will appear. Press [ESC] and repeat the operation taking care to select the ".bin" file.                       | ERROR : press menu<br>select one blb file |
| If the ".grp" file is not selected, the graphics file have also not been selected. The language and the application have been installed but images will not be processed. Repeat the operation taking care to select a ".grp" file. | Select one blb file                       |
| No file has been selected.                                                                                                                                                                                                          | No files selected                         |
| An error occurred while copying to the NOR memory                                                                                                                                                                                   | Error copying files                       |
| An error occurred while reading the file from the NAND memory                                                                                                                                                                       | Error reading file (11)                   |
| CRC incorrectly calculated while copying to the NOR memory                                                                                                                                                                          | Error reading file (12)                   |
| An error occurred while reading the file from the NAND memory                                                                                                                                                                       | Error reading file (13)                   |
| An error occurred while writing to the NOR memory                                                                                                                                                                                   | Writing error (14)                        |
| The file is too large to be a correct DEV file.                                                                                                                                                                                     | DEV file not valid                        |
| The file is not a correct DEV (heading not recognised).                                                                                                                                                                             | Code error 9                              |
| All other situations.                                                                                                                                                                                                               | Code error X                              |

## 2.2.2 Menu structure

The tree structures for moving around the various menus are shown below.

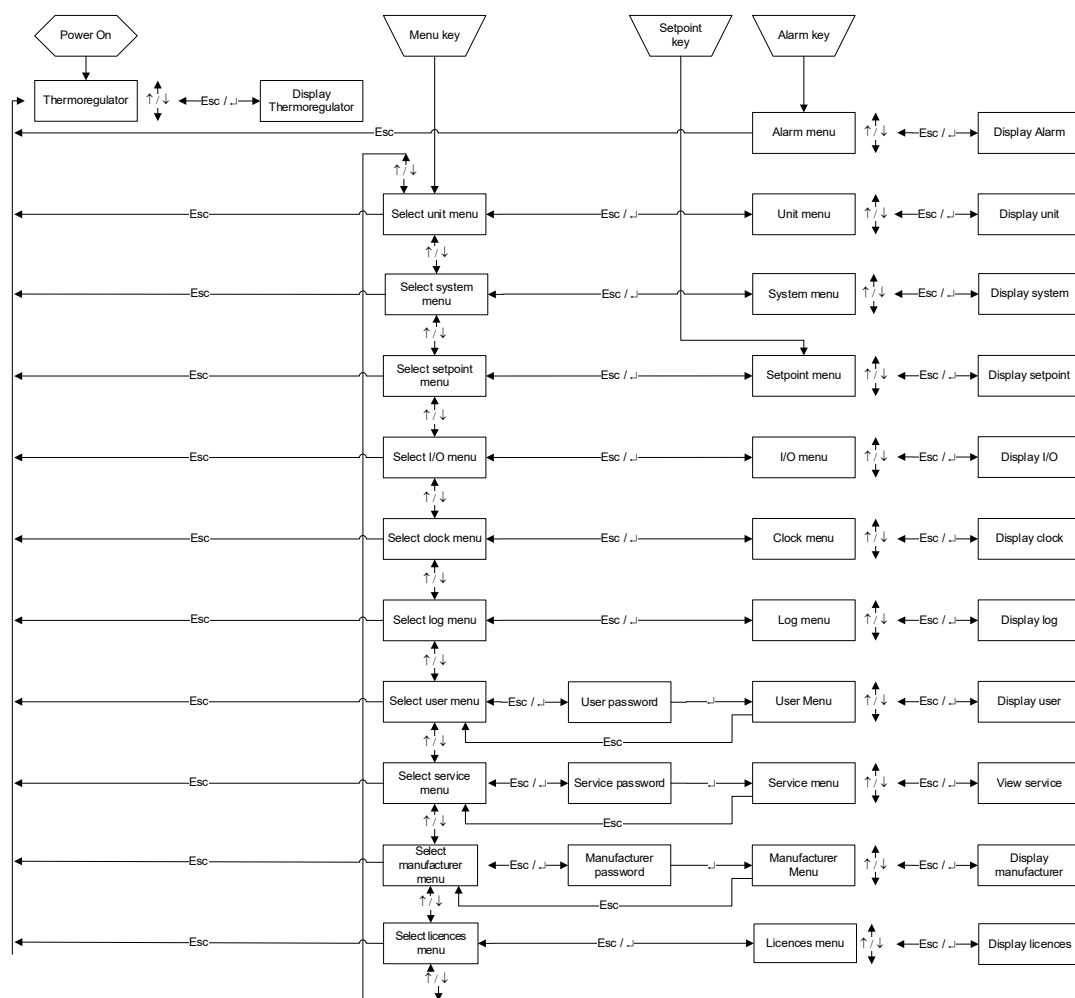


Figure 2-10: navigation tree used to move around the menus.

The menus are briefly described below:

- The “Unit Menu” displays information such as temperature, pressure and circuit states.
- The “System Menu” displays information on the management of the system with Multi Manager (if available) or the management of residential units.
- The “Setpoint Menu” is used to set the setpoints for the various available functions. Different setpoints can be set depending on the available operating modes (chiller, heat pump and recovery). Dual setpoint values can also be set for chiller and heat pump operation (only if the digital input is fitted and the “dual setpoint” function is enabled in the “user menu”).
- The “I/O menu” shows the status of the digital inputs and values read from the analogue inputs. It also shows the status of the digital outputs and the voltage supplied to the analogue outputs. If expansions are necessary (depending on the configuration parameters), the inputs and outputs of the latter are also shown.

- The “Clock menu”, if the clock board is present, is used to set and display the date and time and configure the time bands.
- The list of events recorded by the unit can be viewed in the “Log menu” (only accessible if the clock board is installed).
- The “User menu” is used to display and set parameters relative to user programming of the unit.
- The “Service menu” is used by service engineers to display and set parameters.
- The “Manufacturer menu” is used to display and set unit configuration parameters.
- In the “Licence Menu”, it is possible to display and manage licence related functions.

### 3 TABLE OF MASKS

Press **[UP]** or **[DOWN]** to move from one Mask to another inside the same menu.

Press **[ENTER]** to access the parameter, press **[UP]** or **[DOWN]** to change the value of the parameter.

| Manual mask                                                                                                                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Parameter ID |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 09:26 ON ALXXXX<br>Mode: chiller<br>Status: Keyb. ON<br>Term. Req. Act.<br>Cool. 050 050 %<br>Rec. 000 000 %<br>Pump time 000s<br>LIMIT ID:011 U:01 | <p>Main display mask. Shows the operating mode and status.</p> <p>It is possible to turn the unit on or off using the On/Off control: press the <b>[ENTER]</b> key to go to "ON/OFF", use the <b>[UP]</b> or <b>[DOWN]</b> key to select the control and confirm by pressing <b>[ENTER]</b> again.</p> <p><b>For air evaporation units, the on/off command is given by the air-handling controller.</b></p> <p>Also displays the following messages:</p> <p>"ALxxx" : alarm active,<br/>           "Sxxx" : signal active,<br/>           "U:xx" : unit configuration address,<br/>           "ID:xxx" : unit supervision address,</p> <p>Symbols describing unit status also appear.</p> <p>Depending on the characteristics of the unit, some fields may not be displayed.</p> <p>If "Standby" appears in the "status" line, this means some of the mechanical components of the unit can be started even when the unit is OFF.</p> |              |
| GROUP STATUS<br>15:19 OFF ALXXXX<br>Mode : chiller<br>Status: Keyb. ON<br>Term. Req. Act.<br>Cool. 100 100 %<br>ID:00                               | <p>Main mask showing the status of the Multi Manager LAN unit group.</p> <p>It is possible to turn the system ON/OFF using the On/Off command: press <b>[ENTER]</b>, use <b>[UP]</b> or <b>[DOWN]</b> to select the command, and confirm by pressing <b>[ENTER]</b> again.</p> <p>Also displays the following messages:</p> <p>"ID:xxx" : this is the address of the unit within the Multi Manager LAN network,</p> <p>Depending on the characteristics of the unit, some fields may not be displayed.</p> <p>If "Standby" appears in the "status" line, this means some of the mechanical components of the unit can be started even when the unit is OFF.</p>                                                                                                                                                                                                                                                                       |              |
| Master-Client STATUS<br>15:19 ON<br>Mode : Cooling+DHW<br>Status: Keyb. ON<br>Act.<br>Plant 100 %<br>DHW 000 %                                      | <p>Main mask showing the status of the group of Master-Client units.</p> <p>It is possible to turn the system ON/OFF using the On/Off command: press <b>[ENTER]</b>, use <b>[UP]</b> or <b>[DOWN]</b> to select the command, and confirm by pressing <b>[ENTER]</b> again.</p> <p>Depending on the characteristics of the unit, some fields may not be displayed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |
| Master-Client<br>Status Act.<br>1:ON Plant 100 %<br>2:OFF --- %<br>3:ON Plant 100 %<br>4:Offline --- %                                              | <p>Mask displaying the status of the units in the group with their active percentages.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |
| Temp. In. Out.<br>Evap. 12.5 07.0 °C<br>Rec. 35.6 40.5 °C<br>Cond. 38.0 42.5 °C<br>DHW St. 59.8 °C<br>PLANT St. 44.0 °C                             | <p>Shows the unit's inlet and outlet water temperature. (evaporator, recuperator, condenser and DHW Storage and Plant Storage visible only if present).</p> <p>In units with more than one evaporator, if the shared outlet probe is disabled, the average temperature between the two outlet probes of the individual evaporators is displayed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |
| Temp. In. Out.<br>Evap. 12.5 07.0 °C<br>Evap1 07.2 °C<br>Evap2 06.9 °C                                                                              | <p>(If more than one evaporator is fitted) displays inlet and outlet temperatures of the evaporator or condenser (depending on whether the unit is in the chiller or heat pump operating mode) and the outlet temperature of the evaporators.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |

| Manual mask                                                                                                                                                   | Description                                                                                                                                                                                                                                                                                                                                                                        | Parameter ID |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Temp. In. Out.<br>Cond. 24.3 22.4°C<br>Cond.1 22.3°C<br>Cond.2 22.4°C                                                                                         | (If 2 condensers are fitted) displays inlet and outlet temperatures of the evaporator or condenser (depending on whether the unit is in the chiller or heat pump operating mode) and the outlet temperature of the two condensers.                                                                                                                                                 |              |
| Temp. In. Out.<br>Evap. 45.0 40.0°C<br>Evap.1 38.0°C<br>Evap.2 42.0°C<br>Cond. 70.0 75.0°C<br><br>+2P MODULE                                                  | (If a +2P module is present) displays the inlet and outlet temperatures of the evaporator and the outlet temperature of the condenser.                                                                                                                                                                                                                                             |              |
| Temp.<br>Freecooling 12.3°C<br>External Air 15.4°C<br>Optional 19.6°C<br>Plant stor. 12.5°C<br>Recov. stor. 40.5°C<br>Dry cooler 10.0°C<br>Compr.comp. 32.7°C | (For air-cooled units) displays Free Cooling temperature (in chiller + Free-Cooling units), external air temperature and optional temperature (if the probes are enabled).<br>Displays the temperature values of the plant and recovery storage tanks (if the probes are enabled), of the Dry Cooler (if enabled) and of the compressor compartment (if the probes is controlled). |              |

| Manual mask                                                         | Description                                                                                                                                                                                                                                                                                                                                   | Parameter ID                  |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| User<br>Password: 0000                                              | Access mask to user menu. Enter the user password for access.                                                                                                                                                                                                                                                                                 |                               |
| User<br>↑<br>← ↓                                                    | Access mask to user menu. Press <b>[UP]</b> or <b>[DOWN]</b> to scroll through the other masks and <b>[ESC]</b> to return to the submenu.                                                                                                                                                                                                     |                               |
| Enable time bands:<br>Disabled                                      | Activates/deactivates time bands. The time bands cannot be activated if the external setpoint is enabled.                                                                                                                                                                                                                                     | USR0001                       |
| Serial line configuration:<br>Disabled                              | Enables and selects the devices connected on the serial interface board ("0":Disabled - "1":Supervision - "2":Sequencer - "3":Manager 3000 - "4":ClimaPRO - "5":Supervision with Watchdog - "6":Multi Manager LAN - "7":Manager 3000+ - "8":W3000-NET - "9":Data Center Manager+).<br>N.B.: the Service software does not need to be enabled. | USR0002                       |
| Enabling control Master-Client multi-unit:<br>Disabled              | Enables multi-unit Master-Client control.                                                                                                                                                                                                                                                                                                     | USR0018                       |
| En. from superv.:<br>On/Off: N<br>Operating mode: N                 | Selects the switch on/shutdown status of the unit from a supervision system. Also performs operating mode switching (to modify the latter, the unit must be switched off).                                                                                                                                                                    | USR0003<br>USR0004            |
| Reset local settings in Stand-Alone:<br>Disabled                    | Sets whether the unit in stand-alone mode returns to keyboard settings if watch-dog supervision is set.<br>This function is only valid for the chiller setpoint set using the BMS and for the power limitation set using the BMS.                                                                                                             | USR0010                       |
| Serial line setting<br>Modbus Protocol<br>Speed 9600 baud<br>ID 011 | Defines the connection parameters with the supervisor: protocol type, communication speed and unit identification number.                                                                                                                                                                                                                     | USR0005<br>USR0006<br>USR0007 |

| Manual mask                                                                                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameter ID                  |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Enable from dig. in:<br>On/Off: Y<br>Operating mode: N<br>Plant/DHW: N                                         | Enables unit control from external enabling signal.<br>The ON/OFF command can be enabled to switch the unit on or off from a digital input.<br>It is possible to change the operating mode (in heat pump units, chiller units with recovery and chiller units with Free Cooling a digital input is sufficient. In energy raiser units or heat pump units with recovery, three digital inputs are required).<br>It is possible to switch between Plant and DHW mode. | USR0008<br>USR0009<br>USR0017 |
| Operating mode<br>automatic change<br>Enabled<br><br>Heating setpoint:<br>16.0 °C<br>Heating diff.:<br>02.0 °C | Enables automatic change of operating mode based on external temperature.<br>A setpoint for switching to heating (heat pump) and a corresponding differential can be set. Above the setpoint + differential, the compressors are switched off.                                                                                                                                                                                                                      | USR0012<br>USR0013<br>USR0015 |
| Operating mode<br>automatic change<br><br>Cooling setpoint:<br>24.0 °C<br>Cooling diff.:<br>02.0 °C            | A setpoint for switching cooling (chiller) and a corresponding differential can be set.<br>Below the setpoint - differential, the compressors are switched off.                                                                                                                                                                                                                                                                                                     | USR0014<br>USR0016            |
| Enab. by KIPlink:<br>On/Off: N                                                                                 | Enables on/off control of the unit via KIPlink.                                                                                                                                                                                                                                                                                                                                                                                                                     | USR0011                       |
| Restore default<br>onlyread password<br>KIPlink Local<br>Monitoring: N<br>Please wait...                       | When the field is switched to "YES", the password of the RO (read only) login profile for the KIPlink monitoring function is reset to the default value. After the reset has been completed, which will take a few seconds, the field returns to "NO": 1234                                                                                                                                                                                                         |                               |
| Reset default<br>read/write password<br>touchscreen: N                                                         | Resets the touchscreen read/write password to the default value.                                                                                                                                                                                                                                                                                                                                                                                                    |                               |
| Licence Management<br><br>Func. Code: 0000<br><br>Password: 00000000                                           | The management of licensed functions enables and disables password-protected functions. Passwords are unique and are generated by the system according to the serial number of the unit and the function code.                                                                                                                                                                                                                                                      |                               |
| Enter new<br>user<br>password<br><br>0000                                                                      | Personalises the password by defining one that will replace the default password.                                                                                                                                                                                                                                                                                                                                                                                   |                               |



| Manual mask                                                                                                                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Parameter ID |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| W 3000 +<br><br>Code TA 22.00 EN <br>Man. C024456220<br>HW pCO5+ L NAND 50MB<br>Flash 2MB +7MB +4MB<br>Ram 2048KB<br>Boot 5.01 Bios 6.52 | <p>This mask contains the reference information for the application [Code TA 22.00 EN] and the Technical Reference Manual [Man. C024456220-EN].</p> <p>The closed padlock symbol shows that the board is provided with its propriety software; two padlocks appear on units with 3 or 4 circuits.</p> <p>The second part of the mask shows information about the hardware: size (M, L, XL), memories (50MB NAND, 2+7+4MB flash, 2048KB RAM) and the versions of the installed operating system (boot and bios).</p> |              |

| Manual mask                                                                                    | Description                                                                                                                                                                                            | Parameter ID |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <div> <div>↑</div> <div>↓</div> <div>←</div> </div> <p>Licences</p>                            | Access mask to the Licences menu. Press <b>[UP]</b> or <b>[DOWN]</b> to scroll through the other masks and <b>[ESC]</b> to return to the submenu.                                                      |              |
| <p>Licence Status</p> <p>Function: 1234</p> <p>Status: temporary</p> <p>Expiry: 31/12/2021</p> | <p>Licence status display mask.</p> <p>Active, inactive or temporary status is associated with the function code.</p> <p>If temporarily enabled, the expiry date of the licence will be available.</p> |              |

| Manual mask                                                                                                                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Parameter ID |
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| <div> <div>↑</div> <div>↓</div> <div>←</div> </div> <p>Log</p>                                                                                                   | Access mask to Events Log menu. Press <b>[UP]</b> or <b>[DOWN]</b> to scroll the other masks and <b>[ESC]</b> to return to the submenu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |
| <p>10:36:04 01/05/08</p> <p>No.001 S A0711 A - 032</p> <p>Power alarm</p> <p>inverter 1</p> <p>Reset : Auto</p> <p>Position: Compr.</p> <p>Shutdown : Compr.</p> | <p>Mask showing the events log (only visible if the clock board is installed). Each event recorded contains the following details:</p> <ul style="list-style-type: none"> <li>• Date and Time.</li> <li>• Activation or deactivation event (S= set, R= reset).</li> <li>• Alarm or notification code.</li> <li>• Event number.</li> <li>• Type of reset (Automatic or Manual).</li> <li>• Event description.</li> <li>• Position affected by the alarm and shutdown type.</li> </ul> <p>For alarms concerning certain types of compressor inverters, the specific code of the inverter generated alarm is provided.</p> |              |

| Manual mask                                                                                                                                                          | Description                                                                                                                                                                                                                         | Parameter ID                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <div> <div>↑</div> <div>Clock</div> <div>←</div> <div>↓</div> </div>                                                                                                 | Access mask to clock menu. Press <b>[UP]</b> or <b>[DOWN]</b> to scroll through the other masks and <b>[ESC]</b> to return to the submenu.                                                                                          |                                                                                                                                  |
| Clock board not installed                                                                                                                                            | Mask indicating the lack or damage to the clock board.                                                                                                                                                                              |                                                                                                                                  |
| Clock configuration:<br>Date            Time<br>01/05/08    10:40                                                                                                    | Current date and time setting.                                                                                                                                                                                                      |                                                                                                                                  |
| Time bands not enabled.<br><br>See user menu                                                                                                                         | Indicates that the time bands have been set correctly, though they are not enabled. To enable them, see user menu.                                                                                                                  |                                                                                                                                  |
| Daily time band programming:<br>advanced                                                                                                                             | Advanced time band programming manages four different daily time bands, type A and type B; each type can be personalised and each is independent from the other. Standard programming only allows for the use of A-type time bands. | BND0001                                                                                                                          |
| Weekly timetable<br>Monday    type A<br>Tuesday    type B<br>Wednesday type B<br>Thursday   type B<br>Friday      type B<br>Saturday   type C<br>Sunday     disabled | Weekly timetable setting.                                                                                                                                                                                                           | BND0002<br>BND0003<br>BND0004<br>BND0005<br>BND0006<br>BND0007<br>BND0008                                                        |
| Time band 1A Off<br>Time 00:00 / 06:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 2A Adj.<br>Time 06:00 / 20:00<br>Sp E 07.0°C I 42.0°C<br>Sp R 42.0°C      | Setting band A, first and second daily time band.                                                                                                                                                                                   | BND0009<br>BND0010<br>BND0011<br>BND0012<br>BND0013<br>BND0014<br>BND0015<br>BND0016<br>BND0017<br>BND0018<br>BND0019<br>BND0020 |

| Manual mask                                                                                                                                                     | Description                                         | Parameter ID                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time band 3A Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 4A Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band A, third and fourth daily time band.   | BND0021<br>BND0022<br>BND0023<br>BND0024<br>BND0025<br>BND0026<br>BND0027<br>BND0022<br>BND0023<br>BND0028<br>BND0029<br>BND0030<br>BND0031<br>BND0032 |
| Time band 5A Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 6A Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band A, fifth and sixth daily time band.    | BND0033<br>BND0034<br>BND0035<br>BND0036<br>BND0037<br>BND0038<br>BND0039<br>BND0034<br>BND0035<br>BND0040<br>BND0041<br>BND0042<br>BND0043<br>BND0044 |
| Time band 7A Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 8A Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band A, seventh and eighth daily time band. | BND0045<br>BND0046<br>BND0047<br>BND0048<br>BND0049<br>BND0050<br>BND0051<br>BND0046<br>BND0047<br>BND0052<br>BND0053<br>BND0054<br>BND0055<br>BND0056 |
| Time band 9A Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 10A Off<br>Time 20:00 / 23:59<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C | Setting band A, ninth and tenth daily time band.    | BND0057<br>BND0058<br>BND0059<br>BND0060<br>BND0061<br>BND0062<br>BND0063<br>BND0058<br>BND0059<br>BND0064<br>BND0065<br>BND0066                       |
| Time band 1B Off<br>Time 00:00 / 07:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 2B Adj.<br>Time 07:00 / 12:00<br>Sp E 07.0°C I 42.0°C<br>Sp R 42.0°C | Setting band B, first and second daily time band.   | BND0067<br>BND0068<br>BND0069<br>BND0070<br>BND0071<br>BND0072<br>BND0073<br>BND0068<br>BND0069<br>BND0074<br>BND0075<br>BND0076<br>BND0077<br>BND0078 |

| Manual mask                                                                                                                                                     | Description                                         | Parameter ID                                                                                                                                           |
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| Time band 3B Off<br>Time 12:00 / 14:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 4B Adj.<br>Time 14:00 / 20:00<br>Sp E 07.0°C I 42.0°C<br>Sp R 42.0°C | Setting band B, third and fourth daily time band.   | BND0079<br>BND0080<br>BND0081<br>BND0082<br>BND0083<br>BND0084<br>BND0085<br>BND0080<br>BND0081<br>BND0086<br>BND0087<br>BND0088<br>BND0089<br>BND0090 |
| Time band 5B Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 6B Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band B, fifth and sixth daily time band.    | BND0091<br>BND0092<br>BND0093<br>BND0094<br>BND0095<br>BND0096<br>BND0097<br>BND0092<br>BND0093<br>BND0098<br>BND0099<br>BND0100<br>BND0101<br>BND0102 |
| Time band 7B Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 8B Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band B, seventh and eighth daily time band. | BND0103<br>BND0104<br>BND0105<br>BND0106<br>BND0107<br>BND0108<br>BND0109<br>BND0104<br>BND0105<br>BND0110<br>BND0111<br>BND0112<br>BND0113<br>BND0114 |
| Time band 9B Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 10B Off<br>Time 20:00 / 23:59<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C | Setting band B, ninth and tenth daily time band.    | BND0115<br>BND0116<br>BND0117<br>BND0118<br>BND0119<br>BND0120<br>BND0121<br>BND0116<br>BND0117<br>BND0122<br>BND0123<br>BND0124                       |
| Time band 1C Off<br>Time 00:00 / 07:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 2C Adj.<br>Time 07:00 / 12:00<br>Sp E 07.0°C I 42.0°C<br>Sp R 42.0°C | Setting band C, first and second daily time band.   | BND0125<br>BND0126<br>BND0127<br>BND0128<br>BND0129<br>BND0130<br>BND0131<br>BND0126<br>BND0127<br>BND0132<br>BND0133<br>BND0134<br>BND0135<br>BND0136 |

| Manual mask                                                                                                                                                     | Description                                         | Parameter ID                                                                                                                                           |
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| Time band 3C Off<br>Time 12:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 4C Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band C, third and fourth daily time band.   | BND0137<br>BND0138<br>BND0139<br>BND0140<br>BND0141<br>BND0142<br>BND0143<br>BND0138<br>BND0139<br>BND0144<br>BND0145<br>BND0146<br>BND0147<br>BND0148 |
| Time band 5C Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 6C Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band C, fifth and sixth daily time band.    | BND0149<br>BND0150<br>BND0151<br>BND0152<br>BND0153<br>BND0154<br>BND0155<br>BND0150<br>BND0151<br>BND0156<br>BND0157<br>BND0158<br>BND0159<br>BND0160 |
| Time band 7C Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 8C Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band C, seventh and eighth daily time band. | BND0161<br>BND0162<br>BND0163<br>BND0164<br>BND0165<br>BND0166<br>BND0167<br>BND0162<br>BND0163<br>BND0168<br>BND0169<br>BND0170<br>BND0171<br>BND0172 |
| Time band 9C Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 10C Off<br>Time 20:00 / 23:59<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C | Setting band C, ninth and tenth daily time band.    | BND0173<br>BND0174<br>BND0175<br>BND0176<br>BND0177<br>BND0178<br>BND0179<br>BND0174<br>BND0175<br>BND0180<br>BND0181<br>BND0182                       |
| Time band 1D Off<br>Time 00:00 / 07:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 2D Adj.<br>Time 07:00 / 12:00<br>Sp E 07.0°C I 42.0°C<br>Sp R 42.0°C | Setting band D, first and second daily time band.   | BND0183<br>BND0184<br>BND0185<br>BND0186<br>BND0187<br>BND0188<br>BND0189<br>BND0184<br>BND0185<br>BND0190<br>BND0191<br>BND0192<br>BND0193<br>BND0194 |

| Manual mask                                                                                                                                                     | Description                                         | Parameter ID                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time band 3D Off<br>Time 12:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 4D Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band D, third and fourth daily time band.   | BND0195<br>BND0196<br>BND0197<br>BND0198<br>BND0199<br>BND0200<br>BND0201<br>BND0196<br>BND0197<br>BND0202<br>BND0203<br>BND0204<br>BND0205<br>BND0206 |
| Time band 5D Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 6D Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band D, fifth and sixth daily time band.    | BND0207<br>BND0208<br>BND0209<br>BND0210<br>BND0211<br>BND0212<br>BND0213<br>BND0208<br>BND0209<br>BND0214<br>BND0215<br>BND0216<br>BND0217<br>BND0218 |
| Time band 7D Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 8D Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C  | Setting band D, seventh and eighth daily time band. | BND0219<br>BND0220<br>BND0221<br>BND0222<br>BND0223<br>BND0224<br>BND0225<br>BND0220<br>BND0221<br>BND0226<br>BND0227<br>BND0228<br>BND0229<br>BND0230 |
| Time band 9D Off<br>Time 20:00 / 20:00<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C<br>Time band 10D Off<br>Time 20:00 / 23:59<br>Sp E 09.0°C I 40.0°C<br>Sp R 40.0°C | Setting band D, ninth and tenth daily time band.    | BND0231<br>BND0232<br>BND0233<br>BND0234<br>BND0235<br>BND0236<br>BND0237<br>BND0232<br>BND0233<br>BND0238<br>BND0239<br>BND0240                       |

| Manual mask                                                                                                                                                                       | Description                                                                                                                                                                                                                                                                                                                               | Parameter ID |
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| <p style="text-align: right;">↑</p> <p>In/Out</p> <p style="text-align: left;">←      ↓</p>                                                                                       | Access mask to In/Out menu. Press <b>[UP]</b> or <b>[DOWN]</b> to scroll through the other masks and <b>[ESC]</b> to return to the submenu.                                                                                                                                                                                               |              |
| <p>Dig. In. 12345 67890<br/>master CCCCC CCCCC<br/>          CCCCC CCC</p> <p>Dig. Out. 12345 67890<br/>master CCCCC CCCCC<br/>          CCCCC CCCCC<br/>          CCCCC CCCC</p> | <p>Displays the state of the digital inputs and outputs and specifies their state.<br/>C: Contact closed<br/>A: Contact open</p> <p>The number of inputs and outputs displayed depends on the type of unit.<br/>Master is only specified on units with 3 or 4 circuits.</p>                                                               |              |
| <p>An. In. master<br/>No. Value<br/>1 07.3 bar<br/>2 12.3 °C<br/>3 12.3 °C<br/>4 12.3 °C<br/>5 12.3 °C</p>                                                                        | <p>Displays analogue inputs 1, 2, 3, 4 and 5.<br/>Master is only specified on units with 3 or 4 circuits.</p>                                                                                                                                                                                                                             |              |
| <p>An. In. master<br/>No. Value<br/>6 15.2 °C<br/>7 27.6 °C<br/>8 04.0 °C<br/>9 15.3 °C<br/>10 C</p>                                                                              | <p>Displays analogue inputs 6, 7, 8, 9 and 10.<br/>C: Contact closed<br/>A: Contact open<br/>(If the analogue inputs are configured as digital)<br/>The number of analogue inputs displayed depends on the type of unit.<br/>Master is only specified on units with 3 or 4 circuits.</p>                                                  |              |
| <p>An. In. master<br/>No. Value<br/>11 02.1 bar<br/>12 15.1 °C</p>                                                                                                                | <p>Displays analogue inputs 11.12.<br/>Master is only specified on units with 3 or 4 circuits.</p>                                                                                                                                                                                                                                        |              |
| <p>An. Out. master<br/>No. Value<br/>1 00.0 V<br/>2 00.0 V<br/>3 00.0 V<br/>4 00.0 V<br/>5 00.0 V<br/>6 00.0 V</p>                                                                | <p>Voltage applied to analogue outputs.<br/>The number of outputs displayed depends on the type of unit.<br/>Master is only specified on units with 3 or 4 circuits.</p>                                                                                                                                                                  |              |
| <p>Masters required<br/>Exp.1: Y Exp.2: N<br/>Exp.3: Y Exp.4: N<br/>Exp.5: N<br/>On-line master<br/>Exp.1: Y Exp.2: N<br/>Exp.3: Y Exp.4: N<br/>Exp.5: N</p>                      | <p>Mask indicating the address for the expansion boards. This changes depending on the parameter settings.<br/>Moreover, the second part of the mask shows the link with the expansion boards. N means that there is no link with the expansion indicated in the address.<br/>Master is only specified on units with 3 or 4 circuits.</p> |              |
| <p>Dig. In. 12345 67890<br/>expl CCCC<br/>master</p> <p>Dig. Out. 12345 67890<br/>expl ACAA<br/>master</p>                                                                        | <p>Displays the state of the digital inputs and outputs of expansion 1 (if present) and specifies their state.<br/>C: Contact closed<br/>A: Contact open<br/>Master is only specified on units with 3 or 4 circuits.</p>                                                                                                                  |              |



| Manual mask                                                                                                      | Description                                                                                                                                                                                                                       | Parameter ID |
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| An. In. master exp1<br>No. Value<br>1 35.6 °C<br>2 40.5 °C<br>3 37.2 °C<br>4 37.2 °C                             | Displays analogue inputs 1, 2, 3 and 4 of expansion 1 (if present).<br>Master is only specified on units with 3 or 4 circuits.                                                                                                    |              |
| An. Out. master exp1<br>No. Value<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V                                            | Voltage applied to the analogue outputs of expansion 1.<br>The number of outputs displayed depends on the type of unit.<br>Master is only specified on units with 3 or 4 circuits.                                                |              |
| Dig.In. 12345 67890<br>exp2 CCCC<br>master<br><br>Dig.Out. 12345 67890<br>exp2 ACAA<br>master                    | Displays the state of the digital inputs and outputs of expansion 2 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open<br>Master is only specified on units with 3 or 4 circuits.                    |              |
| An. In. master exp2<br>No. Value<br>1 04.2 bar<br>2 03.9 bar<br>3 35.6 °C<br>4 40.5 °C<br>5 22.3 °C<br>6 24.2 °C | Displays analogue inputs 1, 2, 3, 4, 5 and 6 of expansion 2 (if present).<br>Master is only specified on units with 3 or 4 circuits.                                                                                              |              |
| An. In. master exp2<br>No. Value<br>7 22.4 °C<br>8 - °C                                                          | Displays analogue inputs 7 and 8 of expansion 2 (if present).<br>Master is only specified on units with 3 or 4 circuits.                                                                                                          |              |
| An. Out. master exp2<br>No. Value<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V<br>4 00.0 V                                | Voltage applied to the analogue outputs of expansion 2.<br>The number of outputs displayed depends on the type of unit.<br>Master is only specified on units with 3 or 4 circuits.                                                |              |
| Dig.In. 12345 67890<br>exp3 CCCC<br>master<br><br>Dig.Out. 12345 67890<br>exp3 ACAA<br>master                    | Displays the state of the digital inputs and outputs of expansion 3 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open<br>Master is only specified on units with 3 or 4 circuits.                    |              |
| An. In. master exp3<br>No. Value<br>1 06.0 °C<br>2 00.0 °C<br>3 00.0 °C<br>4 00.0 °C<br>5 A<br>6 A               | Displays analogue inputs 1, 2, 3 and 4 of expansion 3 (if present).<br>Master is only specified on units with 3 or 4 circuits.<br><br>C: Contact closed<br>A: Contact open<br>(If the analogue inputs are configured as digital). |              |

| Manual mask                                                                                            | Description                                                                                                                                                                                                                      | Parameter ID |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| An. Out. master exp3<br>No. Value<br>1 05.0 V<br>2 06.1 V<br>3 04.5 V                                  | Voltage applied to analogue outputs 1, 2 and 3 of expansion 3 (if present).<br>Master is only specified on units with 3 or 4 circuits.                                                                                           |              |
| Dig. In. 12345 67890<br>exp4 CCCC<br>master<br><br>Dig. Out. 12345 67890<br>exp4 ACAA<br>master        | Displays the state of the digital inputs and outputs of expansion 4 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open<br>Master is only specified on units with 3 or 4 circuits.                   |              |
| An. In. master exp4<br>No. Value<br>1 058.2 °C<br>2 067.3 °C<br>3 04.2 bar<br>4 03.9 bar<br>5 C<br>6 A | Displays analogue inputs 1, 2, 3 and 4 of expansion 4 (if present).<br>Master is only specified on units with 3 or 4 circuits.<br><br>C: Contact closed<br>A: Contact open<br>(If the analogue inputs are configured as digital) |              |
| An. Out. master exp4<br>No. Value<br>1 05.0 V<br>2 06.1 V<br>3 04.5 V                                  | Voltage applied to analogue outputs 1, 2 and 3 of expansion 4 (if present).<br>Master is only specified on units with 3 or 4 circuits.                                                                                           |              |
| Dig. In. 12345 67890<br>exp5 CCCC<br>master<br><br>Dig. Out. 12345 67890<br>exp5 ACAA<br>master        | Displays the state of the digital inputs and outputs of expansion 5 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open<br>Master is only specified on units with 3 or 4 circuits.                   |              |
| An. In. master exp5<br>No. Value<br>1 00.0 °C<br>2 00.0 °C<br>3 00.0 °C<br>4 00.0 °C                   | Displays analogue inputs 1, 2, 3 and 4 of expansion 5 (if present).<br>Master is only specified on units with 3 or 4 circuits.                                                                                                   |              |
| An. In. master exp5<br>No. Value<br>7 055.3 kPa<br>8 -<br>9 12.0 mA<br>10 14.0 mA                      | Displays analogue inputs 7, 8, 9 and 10 of expansion 5 (if present).<br>Master is only specified on units with 3 or 4 circuits.<br>(only appears with the M-type expansion 5).                                                   |              |
| An. Out. master exp5<br>No. Value<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V                                  | Voltage applied to the analogue outputs of expansion 5.<br>The number of outputs displayed depends on the type of unit.<br>Master is only specified on units with 3 or 4 circuits.                                               |              |

| Manual mask                                                                                                                                  | Description                                                                                                                                                                                                                                                           | Parameter ID |
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| Dig. In. 12345 67890<br>slave CCCCC CCCCC<br>CCCCC CCC<br><br>Dig. Out. 12345 67890<br>slave CCCCC CCCCC<br>CCCCC CCCCC<br>CCCCC CCCC        | Displays the state of the digital inputs and outputs and specifies their state.<br>C: Contact closed<br>A: Contact open<br>The number of inputs and outputs displayed depends on the type of unit.                                                                    |              |
| An. In. slave<br>No. Value<br>1 07.3 bar<br>2 12.3 °C<br>3 12.3 °C<br>4 12.3 °C<br>5 12.3 °C                                                 | Displays analogue inputs 1, 2, 3, 4 and 5 of the slave (for 3 or 4 circuit units).                                                                                                                                                                                    |              |
| An. In. slave<br>No. Value<br>6 07.3 bar<br>7 27.6 °C<br>8 04.0 °C<br>9 -<br>10 -                                                            | Displays analogue inputs 6, 7, 8, 9 and 10 of the slave (for 3 or 4 circuit units).<br>C: Contact closed<br>A: Contact open<br>(If the analogue inputs are configured as digital)<br>The number of analogue inputs displayed depends on the type of unit.             |              |
| An. Out. slave<br>No. Value<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V<br>4 00.0 V<br>5 00.0 V<br>6 00.0 V                                          | Voltage applied to the analogue outputs of the slave (for units with 3 or 4 circuits).<br>The number of outputs displayed depends on the type of unit.                                                                                                                |              |
| Slaves required<br>Exp.1: N Exp.2: N<br>Exp.3: N Exp.4: N<br>Exp.5: N<br>On-line slave<br>Exp.1: N Exp.2: N<br>Exp.3: N Exp.4: N<br>Exp.5: N | Mask indicating the address for the expansion boards. This changes depending on the parameter settings.<br>Moreover, the second part of the mask shows the link with the expansion boards. N means that there is no link with the expansion indicated in the address. |              |
| Dig.In. 12345 67890<br>expl CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>expl ACAA<br>slave                                                  | Displays the state of the digital inputs and outputs of expansion 1 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open                                                                                                                   |              |
| An. In. slave expl<br>No. Value<br>1 35.6 °C<br>2 40.5 °C<br>3 37.2 °C<br>4 37.2 °C                                                          | Displays analogue inputs 1, 2, 3, and 4 of slave expansion 1 (if present for 3 or 4 circuit units).                                                                                                                                                                   |              |
| An. Out. slave expl<br>No. Value<br>1 00.0 V                                                                                                 | Voltage applied to the analogue outputs of slave expansion 1 (for units with 3 or 4 circuits).<br>The number of outputs displayed depends on the type of unit.                                                                                                        |              |

| Manual mask                                                                                                          | Description                                                                                                                                                                                                    | Parameter ID |
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| Dig.In. 12345 67890<br>exp2 CCCCC CCCCC<br>master CCCC<br><br>Dig.Out. 12345 67890<br>exp2 CCCCC CCCCC<br>master CCC | Displays the state of the digital inputs and outputs of expansion 2 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open<br>Master is only specified on units with 3 or 4 circuits. |              |
| An. In. slave exp2<br>No. Value<br>1 04.2 bar<br>2 03.9 bar<br>3 35.6 °C<br>4 40.5 °C<br>5 22.3 °C<br>6 24.2 °C      | Displays analogue inputs 1, 2, 3, 4, 5 and 6 of slave expansion 2 (if present for 3 or 4 circuit units).                                                                                                       |              |
| An. In. slave exp2<br>No. Value<br>7 22.4 °C<br>8 - °C                                                               | Displays analogue inputs 7 and 8 of expansion 2 (if present).                                                                                                                                                  |              |
| An. Out. slave exp2<br>No. Value<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V<br>4 00.0 V                                     | Voltage applied to the analogue outputs of slave expansion 2 (for units with 3 or 4 circuits).<br>The number of outputs displayed depends on the type of unit.                                                 |              |
| Dig.In. 12345 67890<br>exp3 CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>exp3 ACAA<br>slave                          | Displays the state of the digital inputs and outputs of expansion 3 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open                                                            |              |
| An. In. slave exp3<br>No. Value<br>1 06.0 °C<br>2 00.0 °C<br>3 00.0 °C<br>4 00.0 °C                                  | Displays analogue inputs 1, 2, 3, and 4 of slave expansion 3 (if present for 3 or 4 circuit units).                                                                                                            |              |
| An. Out. slave exp3<br>No. Value<br>1 00.0 V                                                                         | Voltage applied to analogue output 1 of expansion 3 (if present).                                                                                                                                              |              |
| Dig.In. 12345 67890<br>exp4 CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>exp4 ACAA<br>slave                          | Displays the state of the digital inputs and outputs of expansion 4 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open                                                            |              |

| Manual mask                                                                                   | Description                                                                                                                                         | Parameter ID |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| An. In. slave exp4<br>No. Value<br>1 A<br>2 A<br>3 A<br>4 A                                   | Displays analogue inputs 1, 2, 3, and 4 of slave expansion 4 (if present for 3 or 4 circuit units).                                                 |              |
| Dig. In. 12345 67890<br>exp5 CCCC<br>slave<br><br>Dig. Out. 12345 67890<br>exp5 ACAA<br>slave | Displays the state of the digital inputs and outputs of expansion 5 (if present) and specifies their state.<br>C: Contact closed<br>A: Contact open |              |
| An. In. slave exp5<br>No. Value<br>1 00.0 °C<br>2 00.0 °C<br>3 00.0 °C<br>4 00.0 °C           | Displays analogue inputs 1, 2, 3, and 4 of slave expansion 5 (if present for 3 or 4 circuit units).                                                 |              |
| An. Out. slave exp5<br>No. Value<br>1 00.0 V                                                  | Voltage applied to analogue output 1 of expansion 5 (if present).                                                                                   |              |

| Manual mask                                                                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Parameter ID                             |
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| <div> <div>↑</div> <div>Setpoint</div> <div>←</div> <div>↓</div> </div>                                                   | Access mask to Setpoint menu. Press <b>[UP]</b> or <b>[DOWN]</b> to scroll through the other masks and <b>[ESC]</b> to return to the submenu.                                                                                                                                                                                                                                                                                                                                                   |                                          |
| Unit type:<br>chiller<br>Operating mode:<br>auto<br>Adjustment enabled:<br>Quick Mind<br>in output                        | Mask for displaying the unit type and setting the operating mode. Also shows the type of adjustment enabled. If an R is displayed to the right of the operating mode, the latter is remote controlled with the digital inputs.<br>Captions to symbols: see manual.                                                                                                                                                                                                                              | SET0001                                  |
| PLANT<br>Mode: WINTER<br>Storage tank load:<br>HeatPump<br>DHW<br>Mode: OFF<br>Storage tank load:<br>HeatPump+Rep. Boiler | Sets the type of regulation for the system (OFF / WINTER / SUMMER) and the type of plant storage load if present (Heatpump, HeatP+Rep. Boiler, HeatP+Integr.Boiler, Boiler Only).<br>Control the temperature of the DHW storage tank (OFF/ON) (when applicable). Set the type of DHW storage tank load (HeatPump, HeatPump+Rep. Boiler, Boiler Only) and bring the DHW storage tank up to the DHW setpoint with a single heat pump or with a heat pump and replaced boiler or with boiler only. | SET0002<br>SET0003<br>SET0004<br>SET0005 |
| Plant status:<br><br>OFF<br><br>DHW Status:<br><br>OFF                                                                    | Displays the status of the plant and of the DHW operation (if enabled).                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          |
| Active setpoint:<br>Main 07.0 °C<br><br>Recovery/DHW 42.5 °C<br>+2P module 75.0 °C<br>Plant St. 45.0 °C                   | Mask showing the main current setpoint, recovery setpoint, DHW setpoint (when applicable), +2P module setpoint (when applicable) and plant storage tank (when applicable). If the letter R appears to the right of the value, the active setpoint is the secondary one.<br>Captions to symbols: see manual.                                                                                                                                                                                     |                                          |
| Set setpoint:<br>Chiller 07.0 °C<br>Heatpump 42.5 °C<br>Recovery/DHW 42.5 °C<br>Overboost 80.0 °C                         | Sets the chiller, heat pump and recovery setpoint (DHW if present). Set also the overboost setpoint (if enabled) when there is a DHW storage tank.                                                                                                                                                                                                                                                                                                                                              | SET0006<br>SET0007<br>SET0008<br>SET0009 |
| Active neutral zone:<br>Main<br>high 01.6 °C<br>low 05.5 °C<br><br>Recovery<br>high 02.0 °C<br>low 05.5 °C                | Displays the limits of the neutral zone for the main thermoregulator and the recovery one.                                                                                                                                                                                                                                                                                                                                                                                                      |                                          |
| DHW forcing<br>No                                                                                                         | Mask for manually forcing the unit so as to satisfy the demand for DHW.                                                                                                                                                                                                                                                                                                                                                                                                                         |                                          |

| Manual mask                                                                                                                          | Description                                                                                                                                                                                                                               | Parameter ID                  |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Dual setpoint:<br>Chiller 07.0 °C<br>Heatpump 45.0 °C<br>Recovery/DHW 45.0 °C                                                        | Mask for setting the second setpoint (only visible if the dual setpoint function is enabled).                                                                                                                                             | SET0010<br>SET0011<br>SET0012 |
| +2P module setpoint<br>75.0 °C<br><br>+2P enable ON                                                                                  | Mask for setting the +2P module setpoint and for enabling the module                                                                                                                                                                      | SET0013<br>SET0014            |
| Active group<br>setpoint: 07.0 °C                                                                                                    | Mask showing the main group current setpoint.                                                                                                                                                                                             |                               |
| Group parameters<br>Set setpoint:<br>Chiller 7.0 °C<br>Heatpump 43.5 °C                                                              | Mask for setting the group setpoint.                                                                                                                                                                                                      | SET0015<br>SET0023            |
| Group parameters:<br>Adjustment band:<br>Chiller: 05.0 °C<br>Heatpump: 05.0 °C<br>DHW: 05.0 °C                                       | Mask for setting the group adjustment band (DHW present if Master-Client enabled).                                                                                                                                                        | SET0016<br>SET0024<br>SET0045 |
| Group parameters<br>Dual setpoint:<br>Chiller 5.0 °C<br>Heatpump 45.0 °C                                                             | Mask for setting the dual setpoint (only visible if the dual setpoint function is enabled).                                                                                                                                               | SET0017<br>SET0025            |
| Group operating<br>mode:<br>chiller                                                                                                  | Mask for setting the group operating mode.                                                                                                                                                                                                | SET0021                       |
| Current limitation<br>Active setpoint:<br>0100 A<br>Set setpoint:<br>0100 A<br>Setpoint limits<br>minimum: 0060 A<br>maximum: 0100 A | Mask that displays the active setpoint and the setpoint set from the keyboard or from the BMS for the "Current limitation" function. It also displays the permitted input current limits associated with the analogue input (if enabled). | SET0022<br>SET0026<br>SET0027 |

| Manual mask                                                                                                                                                               | Description                                                                                                                                                           | Parameter ID                             |
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| Demand Limit<br><br>Active percentage:<br><br>Chiller            050%<br>Heat pump        050%<br>Recovery          050%                                                  | Mask for displaying the active power limitation percentage. Displayed in case of units with Demand Limit enabled through analogue input.                              |                                          |
| SG Ready offset<br>Intermediate boost:<br><br>Chiller:   -1.0   °C<br><br>Heatpump:   2.0   °C<br><br>Rec/DHW:   1.0   °C                                                 | Defines the offsets to be applied to the setpoints of the different unit operating modes when pattern 2 (intermediate) of the Smart Grid Ready function is activated. | SET0028<br>SET0030<br>SET0032            |
| SG Ready offset<br>Maximum boost:<br><br>Chiller:   -1.5   °C<br><br>Heatpump:   2.0   °C<br><br>Rec/DHW:   2.0   °C                                                      | Defines the offsets to be applied to the setpoints of the different unit operating modes when pattern 3 (maximum) of the Smart Grid Ready function is activated.      | SET0029<br>SET0031<br>SET0033            |
| Enable<br>heating climate<br>curves:<br>Yes                                                                                                                               | Enables climate curves in heating that act on zone setpoints.                                                                                                         | SET0034                                  |
| HT climate curve<br>Room setpoint:   25.0<br>°C<br>Coefficient:   1.0<br>Offset:            0.0 °C<br>Offset at 20°C: 0.0 °C<br><br>Perc. influence<br>room temp.:   25 % | Displays the HT zone room setpoint and sets the specific parameters for the HT zone climate curve.                                                                    | SET0035<br>SET0036<br>SET0037<br>SET0038 |
| LT climate curve<br>Room setpoint: 20.0 °C<br>Coefficient:   1.0<br>Offset:            0.0 °C<br>Offset at 20°C: 0.0 °C<br><br>Perc. influence<br>room temp.:   25        | Displays the LT zone room setpoint and sets the specific parameters for the LT zone climate curve.                                                                    | SET0039<br>SET0040<br>SET0041<br>SET0042 |
| Zone ambient setpoint<br><br>HT active setpoint:<br>25.0 °C<br>HT on diff.:     0.5 °C<br><br>LT active setpoint:<br>18.0 °C<br>LT on diff.:     0.5 °C                   | Displays the active setpoints and sets the relevant HT and LT zone differentials.                                                                                     | SET0043<br>SET0044                       |
| Active setpoint<br>LT zone water:<br><br>018.0   °C                                                                                                                       | Displays the active water setpoint on the LT zone.                                                                                                                    |                                          |



| Manual mask         | Description                 | Parameter ID |
|---------------------|-----------------------------|--------------|
| Boost activation: N | Enables the Boost function. |              |

| Manual mask                                                                                                                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                   | Parameter ID |
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| <div>Unit</div> <div>↑</div> <div>←</div> <div>↓</div>                                                                                                      | Access mask to unit menu. Press <b>[UP]</b> or <b>[DOWN]</b> to scroll through the other masks and <b>[ESC]</b> to return to the submenu.                                                                                                                                                                                                                                                                     |              |
| Temp. In. Out.<br>Evap. 12.5 07.0°C<br>Rec. 35.6 40.5°C<br>Cond. 38.0 42.5°C<br><br>Plant St. 38.2 °C<br>DHW St. 59.8 °C                                    | Shows the unit's inlet and outlet water temperature. (evaporator, recuperator, condenser and Plant Storage and DHW Storage visible only if present).<br>In units with more than one evaporator, if the shared outlet probe is disabled, the average temperature between the two outlet probes of the individual evaporators is displayed.                                                                     |              |
| Temp. In. Out.<br>Evap. 12.5 07.0°C<br>Evap1 07.2°C<br>Evap2 06.9°C                                                                                         | (if more than one evaporator is fitted) displays inlet and outlet temperatures of the evaporator or condenser (depending on whether the unit is in the chiller or heat pump operating mode) and the outlet temperature of the evaporators.                                                                                                                                                                    |              |
| Temp. In. Out.<br>Cond. 24.3 22.4°C<br>Cond.1 22.3°C<br>Cond.2 22.4°C                                                                                       | (if 2 condensers are fitted) Displays inlet and output temperatures of the evaporator or condenser (depending on whether the unit is in the chiller or heat pump operating mode) and the output temperature of the two condensers.                                                                                                                                                                            |              |
| Temp.<br>Freecooling 12.3°C<br>External air 15.4°C<br>Optional 19.6°C<br>Plant st. 12.5°C<br>Recovery st. 40.5°C<br>Dry cooler 08.6°C<br>Compr.comp. 35.7°C | (for air-cooled units) Displays freecooling temperature (in chiller+freecooling units), external air temperature and optional temperature (if the probes are enabled).<br>Displays the temperature values of the plant and recovery storage tanks (if the probes are enabled).<br>Displays the temperature values of the Dry Cooler (if present) and the compressor compartment (if its probe is controlled). |              |
| Circ hp lp st<br>1 07.3 04.2 Off<br>2 07.3 03.9 Off<br>3 07.3 04.2 Off<br>4 07.3 03.9 Off<br>bar bar                                                        | Displays high and low pressure values (if transducers are fitted) and codifies the operating mode of circuits 1, 2, 3 and 4.                                                                                                                                                                                                                                                                                  |              |
| Comp hp lp<br>1 07.3 04.2 bar<br>2 07.3 03.9 bar<br><br>Circuit status<br>1: Ch                                                                             | Displays high and low pressure values (if transducers are fitted) in case of transducer distribution at compressor level instead of circuit level.<br>Coding of the operating mode of the circuits.                                                                                                                                                                                                           |              |
| Circ tc tl subc<br>1 07.3 00.0 00.0<br>2 07.3 00.0 00.0<br>3 07.3 00.0 00.0<br>4 07.3 00.0 00.0<br>°C °C °C                                                 | (in chiller units with recovery) Displays pressure converted into temperature values, temperature of the liquid and calculated subcooling values of circuits 1, 2, 3 and 4.                                                                                                                                                                                                                                   |              |

| Manual mask                                                                                                                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Parameter ID |
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| Timer tuning defrost<br>Range 1200 - 03600 s<br><br>Free Defrost 0370 s                                                                | Displays, for timer tuning defrost, the variation range in the defrost delay calculated according to external temperature.<br>Also displays the maximum duration of the free defrost calculated according to external temperature.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |
| Circ Time<br>1 02700<br>2 02700<br>3 02700<br>4 02700<br>s<br>Timer tuning defrost                                                     | Displays the defrost delay calculated by the timer tuning defrost algorithm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |
| Circ Time Max<br>1 0188 0125<br>2 0125 0270<br>3 0188 0125<br>4 0125 0270<br>s       s<br>Free Defrost                                 | Displays the free defrost enable time and the maximum time calculated according to the length of the delay.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |
| Circ defr Delay<br>Time<br>1 N 0904 0000<br>2 N 0000 0028<br>3 N 0904 0000<br>4 N 0000 0028<br>s       s                               | Displays the defrosting status, the delay before defrosting starts and the time taken to defrost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |
| Compressor discharge<br>temperature<br>C1:105.9 C2:058.2<br>C3:098.4 C4:067.3<br>C5:105.3 C6:104.9<br>C7:098.4 C8:068.2<br>°C       °C | Displays the discharge temperature (if probes are present) of compressors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |
| Differential transd.<br><br>evaporator: 060.1 kPa<br>recovery: 055.3 kPa<br>condenser:050.4 kPa                                        | Displays the differential pressure values (if transducers are present) of the evaporator, recuperator and condenser hydraulic circuits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |
| Ventilat. adj.:<br>Circ1: 060 %<br>Circ2: 043 %<br>Circ3: 056 %<br>Circ4: 092 %<br>Circ1-2: 060 %<br>Circ3-4: 092 %                    | Displays the ventilation percentages (or aperture of condensation valve for water-cooled units) of each circuit.<br>This demand percentage does not correspond to the voltage delivered in V for non-linear devices (fans or valves).<br>If the output controls AC fans or valves, the value indicated is the result of the demand of the condensation regulator. This demand is aligned (converted) before it is sent to the fan or valve, to make 60% of the demand correspond to 60% of the maximum permitted (fan flow rate or opening of valve).<br>In the case of EC fans, instead, the output perfectly matches the demand value of the regulator. 60% at output therefore corresponds to 6Vdc. This is because the inverter of the same fan aligns the signal.<br>Compare Circ1-2: for units with separately cooled hermetic compressors and its value corresponds to the greater of the percentages of circuit 1 and 2 (the same applies to circ3-4 for 4-circuit units). |              |

| Manual mask                                                                                                       | Description                                                                                                                                                                                     | Parameter ID |
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| Analogue outputs:<br>Condens.Adj. 1:000 %<br>Condens.Adj. 2:000 %<br>Condens.Adj. 3:000 %<br>Condens.Adj. 4:000 % | Display of condensation percentages for HW pCOEM. Shows the percentage of demand of the devices connected to it (for non-linear devices correspondence with supplied voltage V does not apply). |              |
| Analogue outputs: 5<br><br>Plant pump speed: 000%<br><br>Plant valve adjustment: 000%                             | Displays analogue outputs of expansion 5.                                                                                                                                                       |              |
| Analogue outputs: 1<br><br>Recovery pump speed: 000%<br><br>Recovery valve adjustment: 000%                       | Displays analogue outputs of expansion 1.                                                                                                                                                       |              |
| Analogue outputs: 2<br><br>Recovery pump speed: 000%<br><br>Recovery valve adjustment: 000%                       | Displays analogue outputs of expansion 2.                                                                                                                                                       |              |
| Analogue outputs: 3<br>Freecooling :000 %                                                                         | Displays analogue outputs of expansion 3.                                                                                                                                                       |              |
| Analogue outputs: 3<br>Freecooling :000 %                                                                         | Displays analogue outputs of slave expansion 3.                                                                                                                                                 |              |
| Hour counter<br><br>Pump 1 001010<br>Pump 2 000982<br>Rec pump 000450<br>Cond pump 000625                         | Displays the operating hours of the circulation pumps (depending on whether the pump is enabled or not).                                                                                        |              |
| P3 - evaporator<br>Pump 1<br>Status: OFF<br>Hours: 000000<br><br>Pump 2<br>Status: OFF<br>Hours: 000000           | Displays information on the pumps on the evaporator side associated with the P3 module, when this is present (and enabled).                                                                     |              |

| Manual mask                                                                                                  | Description                                                                                                                                                                                                 | Parameter ID |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| P3 - recuperator<br>Pump 1<br>Status: OFF<br>Hours: 000000<br><br>Pump 2<br>Status: OFF<br>Hours: 000000     | Displays information on the pumps on the recuperator (or condenser) side associated with the P3 module, when this is present (and enabled).                                                                 |              |
| Compr. hour counter<br>Av. hours 000000<br>C1 000000 C2 000000<br>C3 000000 C4 000000<br>C5 000000 C6 000000 | Displays average compressor hours.<br>Displays the operating hours of the compressors.                                                                                                                      |              |
| Act << Work 082%<br><br>RPM 32450<br>CR 2.8<br>lp 03.9bar<br>discharge t. 78.5°C                             | Displays the operating status of the Turbocor compressors, the active percentage, the rpm and the percentage delivered. Also displays other related data such as discharge temperature and suction pressure |              |
| Act << Work 080%<br><br>RPM 29500<br>CR 2.8<br>lp 03.9bar<br>discharge t. 78.5°C                             | Displays the operating status of the Turbocor compressors, the active percentage, the rpm and the percentage delivered. Also displays other related data such as discharge temperature and suction pressure |              |
| Act << Work 082%<br><br>RPM 32450<br>CR 2.8<br>lp 03.9bar<br>discharge t. 78.5°C                             | Displays the operating status of the Turbocor compressors, the active percentage, the rpm and the percentage delivered. Also displays other related data such as discharge temperature and suction pressure |              |
| Act << Work 080%<br><br>RPM 29500<br>CR 2.8<br>lp 03.9bar<br>discharge t. 78.5°C                             | Displays the operating status of the Turbocor compressors, the active percentage, the rpm and the percentage delivered. Also displays other related data such as discharge temperature and suction pressure |              |
| Act << Work 081%<br><br>RPM 32120<br>CR 2.8<br>lp 03.9bar<br>discharge t. 78.5°C                             | Displays the operating status of the Turbocor compressors, the active percentage, the rpm and the percentage delivered. Also displays other related data such as discharge temperature and suction pressure |              |
| Act << Work 078%<br><br>RPM 34550<br>CR 2.3<br>lp 03.1bar<br>discharge t. 76.5°C                             | Displays the operating status of the Turbocor compressors, the active percentage, the rpm and the percentage delivered. Also displays other related data such as discharge temperature and suction pressure |              |

| Manual mask                                                                                                                       | Description                                                                                                                                                                                                 | Parameter ID |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Work<br>Act << 081%<br><br>RPM 31450<br>CR 2.8<br>lp 03.2bar<br>discharge t. 78.5°C                                               | Displays the operating status of the Turbocor compressors, the active percentage, the rpm and the percentage delivered. Also displays other related data such as discharge temperature and suction pressure |              |
| Work<br>Act << 080%<br><br>RPM 14500<br>CR 2.6<br>lp 03.7bar<br>discharge t. 78.2°C                                               | Displays the operating status of the Turbocor compressors, the active percentage, the rpm and the percentage delivered. Also displays other related data such as discharge temperature and suction pressure |              |
| subc 03.8 03.6 °C<br>st Reg Reg<br>step 1824 1630                                                                                 | Displays the subcooling value of circuits, the status of the electronic thermostat valve drivers and the number of valve opening steps                                                                      |              |
| Circ SH % st<br>1 05.9 80 Ok<br>2 06.1 70 Ok<br>3 06.0 60 Ok<br>4 05.7 85 Ok<br>°C<br>Intake t.: 000.0 °C                         | Displays the overheating value of circuits, the status of the electronic thermostat valve drivers, the number of valve percentage aperture steps and the suction temperature with integrated driver.        |              |
| Circuit 1 EEV details<br>Valv SH Open State<br>1 02.0 0032 OK<br>2 05.7 0012 Alarm<br>3 01.1 0040 OK<br>4 01.2 0041 OK<br>°C %    | Displays for circuit 1: the overheating value, status and number of thermostatic valve opening steps in percentage.                                                                                         |              |
| Circuit 2 EEV details<br>Valv SH Open State<br>1 03.0 0075 Ok<br>2 02.9 0071 Ok<br>3 02.9 0082 Ok<br>4 03.1 0091 Ok<br>°C %       | Displays for circuit 2: the overheating value, status and number of thermostatic valve opening steps in percentage.                                                                                         |              |
| Circuit 3 EEV details<br>Valv SH Open State<br>1 11.0 0100 Alarm<br>2 03.0 0080 Alarm<br>3 03.0 0087 Ok<br>4 02.2 0081 Ok<br>°C % | Displays for circuit 3: the overheating value, status and number of thermostatic valve opening steps in percentage.                                                                                         |              |
| Circuit 4 EEV details<br>Valv SH Open State<br>1 01.0 0050 Ok<br>2 01.7 0051 Ok<br>3 03.3 0100 Alarm<br>4 02.1 0053 Alarm<br>°C % | Displays for circuit 4: the overheating value, status and number of thermostatic valve opening steps in percentage.                                                                                         |              |

| Manual mask                                             | Description                                                                                                                                     | Parameter ID |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Inverter 1: Online<br>Control 1200 rpm<br>Revs 1200 rpm | Displays whether inverter 1 is online with the controller. Also displays the command and actual rotation speed of the compressor with inverter. |              |
| Inverter 2: Online<br>Control 1400 rpm<br>Revs 1400 rpm | Displays whether inverter 2 is online with the controller. Also displays the command and actual rotation speed of the compressor with inverter. |              |
| Inverter 3: Online<br>Control 1200 rpm<br>Revs 1200 rpm | Displays whether inverter 3 is online with the controller. Also displays the command and actual rotation speed of the compressor with inverter. |              |
| Inverter 4: Online<br>Control 1400 rpm<br>Revs 1400 rpm | Displays whether inverter 4 is online with the controller. Also displays the command and actual rotation speed of the compressor with inverter. |              |
| Compr. 1: Online<br>Control 060%<br>Active perc. 060%   | Displays whether inverter 1 is online with the controller. Also displays the command and active percentage of the CSW105 screw compressor.      |              |
| Compr. 2: Online<br>Control 080%<br>Active perc. 080%   | Displays whether inverter 2 is online with the controller. Also displays the command and active percentage of the CSW105 screw compressor.      |              |
| Compr. 3: Online<br>Control 055%<br>Active perc. 055%   | Displays whether inverter 3 is online with the controller. Also displays the command and active percentage of the CSW105 screw compressor.      |              |
| Compr. 4: Online<br>Control 070%<br>Active perc. 070%   | Displays whether inverter 4 is online with the controller. Also displays the command and active percentage of the CSW105 screw compressor.      |              |

| Manual mask                                                                                                             | Description                                                                                                                                                                                                             | Parameter ID |
|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Comp.1 Work<br>IGV 063.0%                                                                                               | Displays the operating status of the Hanbell centrifugal compressors, the percentage of IGV and the operating frequency. Also displays other data such as discharge temperature, oil temperature and compression ratio. |              |
| Frequency 50.0Hz<br>CR 2.2<br>Oil temp 47.0°C<br>Discharge t. 52.0°C                                                    |                                                                                                                                                                                                                         |              |
| Energy meter<br>Voltage (V)<br>L1-L2 400<br>L2-L3 401<br>L3-L1 403<br>Neutral 1 233<br>Neutral 2 231<br>Neutral 3 230   | Displays the values read by the energy meter.                                                                                                                                                                           |              |
| Energy meter<br>Current (A)<br>L1 0030.0<br>L2 0035.0<br>L3 0028.0                                                      | Displays the values read by the energy meter.                                                                                                                                                                           |              |
| Energy meter<br>Active power (kW)<br>L1 0017.2<br>L2 0021.4<br>L3 0019.0<br>Total 0057.6                                | Displays the values read by the energy meter.                                                                                                                                                                           |              |
| Energy meter<br>Reactive power (kVar)<br>L1 0014.2<br>L2 0028.4<br>L3 0012.0<br>Total 0054.6                            | Displays the values read by the energy meter.                                                                                                                                                                           |              |
| Energy meter<br>Apparent power (kVA)<br>L1 0024.2<br>L2 0018.4<br>L3 0021.1<br>Total 0063.7                             | Displays the values read by the energy meter.                                                                                                                                                                           |              |
| Energy meter<br><br>Energy 0000009kWh<br><br>Time 0000002h                                                              | Displays the values read by the energy meter.                                                                                                                                                                           |              |
| Power meter<br>thermal<br><br>Flow rate 0015.6 m3/h<br>T1 012.3 °C<br>T2 007.2 °C<br>Delta T 005.1 °C<br>Power 00092 kW | Displays the measured data and the thermal power calculated by the thermal power meter.                                                                                                                                 |              |



| Manual mask                                                                                                                                          | Description                                                                                                                                                                                                                                                                   | Parameter ID                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Instantaneous efficiency<br>4.50                                                                                                                     | Efficiency calculated as the cooling/heating capacity to input power ratio. It is available in the following conditions: <ul style="list-style-type: none"> <li>Both meters (Thermal meter and Energy meter) are present and functioning.</li> <li>The unit is on.</li> </ul> |                                                                                                                                  |
| Recovery heat meter<br><br>Flow rate 0015.0 m3/h<br>T1 032.4 °C<br>T2 039.0 °C<br>Delta T 006.6 °C<br>Power 00078 kW                                 | Displays the measured data and the thermal power calculated by the thermal power meter on the recovery branch.                                                                                                                                                                |                                                                                                                                  |
| Instant recovery efficiency<br>03.65                                                                                                                 | Displays the instant efficiency of the recovery branch.                                                                                                                                                                                                                       |                                                                                                                                  |
| Line switch<br>Electric<br>Power supply 1:<br>Absent<br>Disconnected<br>Power supply 2:<br>Absent<br>Disconnected                                    | Displays the status of the power line switch.                                                                                                                                                                                                                                 |                                                                                                                                  |
| Enable circuits<br>Circ1: Y Circ2: Y<br>Circ3: N Circ4: N<br><br>compressors<br>C1:Y C2:Y C3:Y C4:Y<br>C5:Y C6:Y C7:N C8:N                           | Selects/deselects circuits and compressors.                                                                                                                                                                                                                                   | UNT0001<br>UNT0002<br>UNT0003<br>UNT0004<br>UNT0005<br>UNT0006<br>UNT0007<br>UNT0008<br>UNT0009<br>UNT0010<br>UNT0011<br>UNT0012 |
| KIPlink<br>Status: online<br>SSID Wi-Fi network:<br>KIPlink_032078434<br><br>IP address:<br>192,168,030,001                                          | Mask showing the status and main information of the KIPlink module.                                                                                                                                                                                                           |                                                                                                                                  |
| KIPlink<br>Type of module:<br>Master-EthOFF-WifiON<br>Active channel: WIFI<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000,000,000,000 | Mask showing the status and main information of the KIPlink module.                                                                                                                                                                                                           |                                                                                                                                  |
| KIPlink<br>ETHERNET channel<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000,000,000,000                                                | Mask that displays the information of the KIPlink Ethernet network.                                                                                                                                                                                                           |                                                                                                                                  |

| Manual mask                                                                                                                                          | Description                                                                                                                                                                                                                                     | Parameter ID |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| KIPlink<br>WIFI channel<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000,000,000,000                                                    | Mask that displays the information of the KIPlink Wi-Fi network.                                                                                                                                                                                |              |
| Network of several<br>KIPlink<br>Master WiFi network<br>name<br>KIPlink_032078434<br><br>Network master IP:<br>192.168.030.001<br><br>Network ID: 01 | Mask showing the main information of the master module of the KIPlink network.                                                                                                                                                                  |              |
| Gas leak sensor<br>Online<br><br>Days to<br>calibration: 0400 days<br><br>Useful life: 1800<br>days                                                  | Displays information relating to the refrigerant gas leak detection<br>sensor: <ul style="list-style-type: none"> <li>• The remaining days before the next maintenance.</li> <li>• The sensor's guaranteed remaining operating time.</li> </ul> |              |
| Cooling capacity:<br>000000.0 kW<br><br>Input power:<br>000000.0 kW<br><br>EER: 00.00                                                                | Displays cooling and heating capacity and input power.<br>Also displays the efficiency value (EER/COP/DHW COP).                                                                                                                                 |              |
| Energy produced<br>current day<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br><br>Tot: 000000.0 kWh                                 | Displays the energy produced for the current day.                                                                                                                                                                                               |              |
| Energy absorbed<br>current day<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br><br>Tot: 000000.0 kWh                                 | Displays the energy absorbed for the current day.                                                                                                                                                                                               |              |
| Energy produced<br>previous day<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br><br>Tot: 000000.0 kWh                                | Displays the energy produced for the previous day.                                                                                                                                                                                              |              |
| Energy absorbed<br>previous day<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br><br>Tot: 000000.0 kWh                                | Displays the energy absorbed for the previous day.                                                                                                                                                                                              |              |

| Manual mask                                                                                                                                  | Description                                                                         | Parameter ID |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------|
| Integrated energy efficiency<br>day curr   prev<br> <br>Ch: 00.00   00.00<br>Hp: 00.00   00.00<br>DHW: 00.00   00.00<br>Tot: 00.00   00.00   | Displays the integrated energy efficiency for the current day and previous day.     |              |
| Energy produced current month<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br>Tot: 000000.0 kWh                              | Displays the energy produced for the current month.                                 |              |
| Energy absorbed current month<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br>Tot: 000000.0 kWh                              | Displays the energy absorbed for the current month.                                 |              |
| Energy produced previous month<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br>Tot: 000000.0 kWh                             | Displays the energy produced for the previous month.                                |              |
| Energy absorbed previous month<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br>Tot: 000000.0 kWh                             | Displays the energy absorbed for the previous month.                                |              |
| Integrated energy efficiency<br>month curr   prev<br> <br>Ch: 00.00   00.00<br>Hp: 00.00   00.00<br>DHW: 00.00   00.00<br>Tot: 00.00   00.00 | Displays the integrated energy efficiency for the current month and previous month. |              |
| Energy produced current year<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br>Tot: 000000000.0 kWh                   | Displays the energy produced for the current year.                                  |              |
| Energy absorbed current year<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br>Tot: 000000000.0 kWh                   | Displays the energy absorbed for the current year.                                  |              |

| Manual mask                                                                                                                                                              | Description                                                                                                                             | Parameter ID |
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| Energy produced<br>previous year<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Tot: 000000000.0 kWh                                       | Displays the energy produced for the previous year.                                                                                     |              |
| Energy absorbed<br>previous year<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Tot: 000000000.0 kWh                                       | Displays the energy absorbed for the previous year.                                                                                     |              |
| Energy produced<br>year -2<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Tot: 000000000.0 kWh                                             | Displays the energy produced 2 years ago.                                                                                               |              |
| Energy absorbed<br>year -2<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Tot: 000000000.0 kWh                                             | Displays the energy absorbed 2 years ago.                                                                                               |              |
| Integrated energy<br>efficiency<br>year curr  prev  -2<br>        <br>Ch: 00.00 00.00 00.00<br>Hp: 00.00 00.00 00.00<br>DHW: 00.00 00.00 00.00<br>Tot: 00.00 00.00 00.00 | Displays the integrated energy efficiency for the current year, previous year and 2 years ago.                                          |              |
| Cooling capacity:<br>000 000.0 kW<br>Thermal power:<br>000 000.0 kW<br>Input power:<br>000000.0 kW<br><br>TER: 00-00                                                     | Displays cooling and heating capacity and input power.<br>Also displays the efficiency value (TER).<br>Visible per units with recovery. |              |
| Energy produced<br>current day<br>Cooling:<br>000000.0 kWh<br>Heating:<br>000000.0 kWh<br>Tot:<br>000000.0 kWh                                                           | Displays the energy produced for the current day. Visible per units with recovery.                                                      |              |
| Energy absorbed<br>current day<br><br>000000.0 kWh                                                                                                                       | Displays the energy absorbed for the current day. Visible per units with recovery.                                                      |              |

| Manual mask                                                                                              | Description                                                                                                          | Parameter ID |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------|
| Energy produced<br>previous day<br>Cooling: 000000.0 kWh<br>Heating: 000000.0 kWh<br>Tot: 000000.0 kWh   | Displays the energy produced for the previous day. Visible per units with recovery.                                  |              |
| Energy absorbed<br>previous day<br>000000.0 kWh                                                          | Displays the energy absorbed for the previous day. Visible per units with recovery.                                  |              |
| Integrated energy<br>efficiency<br>day curr   prev<br> <br>TER: 00.00   00.00                            | Displays the integrated energy efficiency for the current day and previous day. Visible per units with recovery.     |              |
| Energy produced<br>current month<br>Cooling: 000000.0 kWh<br>Heating: 000000.0 kWh<br>Tot: 000000.0 kWh  | Displays the energy produced for the current month. Visible per units with recovery.                                 |              |
| Energy absorbed<br>current month<br>000000.0 kWh                                                         | Displays the energy absorbed for the current month. Visible per units with recovery.                                 |              |
| Energy produced<br>previous month<br>Cooling: 000000.0 kWh<br>Heating: 000000.0 kWh<br>Tot: 000000.0 kWh | Displays the energy produced for the previous month. Visible per units with recovery.                                |              |
| Energy absorbed<br>previous month<br>000000.0 kWh                                                        | Displays the energy absorbed for the previous month. Visible per units with recovery.                                |              |
| Integrated energy<br>efficiency<br>month curr   prev<br> <br>TER: 00.00   00.00                          | Displays the integrated energy efficiency for the current month and previous month. Visible per units with recovery. |              |

| Manual mask                                                                                                               | Description                                                                                                                                                                                         | Parameter ID |
|---------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Energy produced<br>current year<br>Cooling:<br>000000000.0 kWh<br>Heating:<br>000000000.0 kWh<br>Tot:<br>000000000.0 kWh  | Displays the energy produced for the current year. Visible per units with recovery.                                                                                                                 |              |
| Energy absorbed<br>current month<br><br>000000000.0 kWh                                                                   | Displays the energy absorbed for the current year. Visible per units with recovery.                                                                                                                 |              |
| Energy produced<br>previous year<br>Cooling:<br>000000000.0 kWh<br>Heating:<br>000000000.0 kWh<br>Tot:<br>000000000.0 kWh | Displays the energy produced for the previous year. Visible per units with recovery.                                                                                                                |              |
| Energy absorbed<br>previous year<br><br>000000000.0 kWh                                                                   | Displays the energy absorbed for the previous year. Visible per units with recovery.                                                                                                                |              |
| Energy produced<br>year -2<br>Cooling:<br>000000000.0 kWh<br>Heating:<br>000000000.0 kWh<br>Tot:<br>000000000.0 kWh       | Displays the energy produced 2 years ago. Visible per units with recovery.                                                                                                                          |              |
| Energy absorbed<br>year -2<br><br>000000000.0 kWh                                                                         | Displays the energy absorbed 2 years ago. Visible per units with recovery.                                                                                                                          |              |
| Integrated energy<br>efficiency<br>year curr  prev  -2<br>        <br>TER: 00.00 00.00 00.00                              | Displays the integrated energy efficiency for: <ul style="list-style-type: none"> <li>• Current year.</li> <li>• Previous year.</li> <li>• 2 years ago.</li> </ul> Visible for units with recovery. |              |
| Exchanger approaches<br><br>Exchanger 1: 02.0°C<br>Exchanger 2: 01.6°C<br>Exchanger 3: 01.5°C<br>Exchanger 4: 03.9°C      | Displays the approaches of the main user-side exchangers present.                                                                                                                                   |              |

| Manual mask                                                                                                                                                                                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 | Parameter ID |
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| Disposer approaches<br><br>Disposer 1: 01.0°C<br>Disposer 2: 02.6°C<br>Disposer 3: 02.5°C<br>Disposer 4: ---                                                                                               | Displays the approaches of the disposer exchangers present.                                                                                                                                                                                                                                                                                                                                                                                 |              |
| Recuperator approaches<br><br>Recuperator 1:04.0°C<br>Recuperator 2:03.6°C<br>Recuperator 3:---<br>Recuperator 4:---                                                                                       | Displays the approaches of the recuperator exchangers present.                                                                                                                                                                                                                                                                                                                                                                              |              |
| Unit serial number:<br>032078434                                                                                                                                                                           | Mask that displays the serial number of the unit.                                                                                                                                                                                                                                                                                                                                                                                           |              |
| W 3000 +<br><br>Code TA 22.00 EN <br><br>HW pCO5+ L NAND 50MB<br>Flash 2MB +7MB +4MB<br>Ram 2048KB<br>Boot 5.01 Bios 6.52 | This mask contains the reference information for the application [Code TA 22.00 EN]<br>The closed padlock symbol shows that the board is provided with its propriety software; two padlocks appear on units with 3 or 4 circuits.<br>The second part of the mask shows information about the hardware: size (M, L, XL), memories (50MB NAND, 2+7+4MB flash, 2048KB RAM) and the versions of the installed operating system (boot and bios). |              |

| Manual mask                                                                                                                                                                          | Description                                                                                                                                 | Parameter ID                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <div> <div>↑</div> <div>Plant</div> <div>← ↓</div> </div>                                                                                                                            | Access mask to system menu. Press <b>[UP]</b> or <b>[DOWN]</b> to scroll through the other masks and <b>[ESC]</b> to return to the submenu. |                                                                                      |
| <div> <div>Temp. In. Out.</div> <div>Plant 10.3 6.5 °C</div> <div>External air 27.4 °C</div> </div>                                                                                  | Mask showing the system water loop and external air temperature (average of unit probes or single system probe).                            |                                                                                      |
| <div> <div>Demand limit from analogue input:</div> <div>040%</div> </div>                                                                                                            | Mask showing the demand limit value acquired from the analogue input.                                                                       |                                                                                      |
| <div> <div>Enable external units</div> <div>1:Y 2:N 3:Y 4:Y</div> <div>5:N 6:N 7:N 8:N</div> </div>                                                                                  | Enables and/or disables the configured external units.                                                                                      | GRO0001<br>GRO0002<br>GRO0003<br>GRO0004<br>GRO0005<br>GRO0006<br>GRO0007<br>GRO0008 |
| <div> <div>Status of external units</div> <div>1:On 5:Alarm</div> <div>2:On 6:On</div> <div>3:On 7:Offline</div> <div>4:Off 8:Offline</div> </div>                                   | Mask showing the status of external units.                                                                                                  |                                                                                      |
| <div> <div>Operating mode of external units</div> <div>1:chiller 5:chiller</div> <div>2:chiller 6:chiller</div> <div>3:chiller 7:chiller</div> <div>4:chiller 8:chiller</div> </div> | Mask that displays the operating mode of external units.                                                                                    |                                                                                      |
| <div> <div>Unit active perc.</div> <div>1:030% 5:060%</div> <div>2:050% 6:060%</div> <div>3:100% 7:000%</div> <div>4:100% 8:000%</div> </div>                                        | Display of the active percentages of external units.                                                                                        |                                                                                      |
| <div> <div>Status of internal groups</div> <div>1:ON 6:OFFLINE</div> <div>2:-- 7:OFFLINE</div> <div>3:ON 8:ON</div> <div>4:-- 9:--</div> <div>5:OFF 10:OFFLINE</div> </div>          | Mask showing the status of internal groups.                                                                                                 |                                                                                      |



| Manual mask                                                                                                                                                                                      | Description                                                                                                                                                          | Parameter ID |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Status of internal groups<br><br>11:ON      16:OFF<br>12:ON      17:OFFLINE<br>13:--      18:ON<br>14:--      19:ON<br>15:OFF     20:--                                                          | Mask showing the status of internal groups.                                                                                                                          |              |
| Adaptive set point of internal groups<br>01: 03.0°C 06: ----°C<br>02: ----°C 07: ----°C<br>03: 00.6°C 08: 00.2°C<br>04: ----°C 09: ----°C<br>05: ----°C 10: ----°C                               | Mask displaying the adaptive setpoint request received by the groups of internal units.                                                                              |              |
| Adaptive set point of internal groups<br>11: 01.0°C 16: ----°C<br>12: 00.6°C 17: ----°C<br>13: ----°C 18: 00.9°C<br>14: ----°C 19: 00.2°C<br>15: ----°C 20: ----°C                               | Mask displaying the adaptive setpoint request received by the groups of internal units.                                                                              |              |
| Inter. groups setpoint of internal groups<br>01:ok 06:-----<br>02:optimis.07:ok<br>03:----- 08:reset<br>04:reduce 09:ok<br>05:----- 10:-----                                                     | Mask displaying the dynamic setpoint request in HPC mode received by the groups of internal units.                                                                   |              |
| Inter. groups setpoint of internal groups<br>11:----- 16:ok<br>12:ok      17:reset<br>13:----- 18:-----<br>14:----- 19:-----<br>15:reduce 20:ok                                                  | Mask displaying the dynamic setpoint request in HPC mode received by the groups of internal units.                                                                   |              |
| Dynamic setpoint:<br>02.3°C                                                                                                                                                                      | Mask displaying the dynamic setpoint value that is passed to the external units as a value to be added to the setpoint.                                              |              |
| Group master unit ID:            02<br><br>Master KIPlink unit ID:            03                                                                                                                 | Mask showing the ID of the unit with master KIPlink within the KIPlan and of the master external unit within the Multi Manager LAN network.                          |              |
| Room temperature<br>HT Zone:            20.0 °C<br>LT Zone:            18.0 °C<br><br>Room relative humidity.<br>HT Zone:            060 %<br>LT Zone:            045 %<br>Dehumidif.:        On | Visible only with touch room thermostat.<br>Displays the room temperature and humidity for HT and LT zones and, if configured, the start status of the dehumidifier. |              |

| Manual mask                                                                                   | Description                                                                                                                                                                                                                        | Parameter ID |
|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Zone status<br>HT: Active request<br>LT: Not present<br>Recirc. DHW: On                       | Displays the status of the request from the touch room thermostat, depending on the zone on which it is enabled.<br>The DHW recirculation activation status is also visible, if configured.                                        |              |
| LT mixed circuit<br>Water temp.: 035.0 °C<br>Pump status: On<br>Valve opening<br>perc.: 045 % | Displays the water temperature of the mixed circuit, the pump status and the valve opening percentage.                                                                                                                             |              |
| Multi Manager LAN<br>Code TG 03.00 EN<br>HW pCO5+ S<br>Boot 5.01 Bios 6.52                    | This mask contains the reference information for the application [Code TG 03.00 EN].<br>The second part of the mask shows information about the hardware: size (S) and versions of the installed operating system (boot and bios). |              |

## 4 ALARMS

Pressing **[ALARM]** once opens the alarm menu which shows an alarm message with the code, date and time of the alarm, type of reset (Automatic or Manual), position of the alarm and type of block. For alarms concerning certain types of compressor inverters, the specific code of the inverter generated alarm is provided.

This information is shown in a mask an example of which is given below:

```
10:36:04    01/05/23
            A0721-0032

Power alarm
inverter 1

Reset       : Auto
Position: Compr.
Block      : Compr.
```

If there is more than one alarm, scroll the menu using the **[UP]** and **[DOWN]** keys.

Press any other button to exit this menu.

**To reset the alarm** press the **[ALARM]** key again and hold it down until the message “No Alarm Active” is displayed. If the message does not appear it means that one or more alarm conditions are still active.

### 4.1 Event log on display

The function registers and displays alarm events, indicating the date and time of the event, the event number, the activation or deactivation event, the alarm or notification code, the event description, the type of reset (Automatic or Manual), position of the alarm and type of block. For alarms concerning certain types of compressor inverters, the specific code of the inverter generated alarm is provided. This information is shown in a mask an example of which is given below. The clock board is required to correctly view the events log.

```
10:36:04    01/05/23
No.001 S A0711 A - 0032
Power alarm
inverter 1

Reset       : Auto
Position: Compr.
Shutdown    : Compr.
```

The information in the event log, taken from the control of the W3000+, is also shown on the dedicated page of the W3000+ touch keyboard.

## 4.2 Table of W3000+ alarms

Key to “Reset” column:

|                |                                                                                                                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>M</b>       | Manual reset alarm (if the condition that generated the alarm is eliminated, the alarm must be reset from the keyboard); sets “cumulative alarms”.                                                                   |
| <b>A</b>       | Automatic reset alarm (if the condition that generated the alarm is eliminated, the alarm is reset automatically); sets “cumulative alarms”.                                                                         |
| <b>A/M</b>     | Alarm with automatic reset of the first “n” interventions, then manual; set the “alarm cumulative” (*: specific for PSD compressor model. Refer to the relevant alarm correspondence table for further information). |
| <b>S</b>       | Indication on display (does not set “cumulative alarms”)                                                                                                                                                             |
| <b>S-A</b>     | Automatic reset signal (that does not stop the machine) or alarm. One mode or the other may be selected from the parameter.                                                                                          |
| <b>S-M</b>     | Manual reset signal (that does not stop the machine) or alarm. One mode or the other may be selected from the parameter.                                                                                             |
| <b>S-M</b>     | Signalling (without stopping the machine) with manual reset.                                                                                                                                                         |
| <b>M - A/M</b> | Manual reset alarm (in hermetic, alternative and screw compressors), automatic for the first “n” interventions, after that manual (in Turbocor compressors).                                                         |
| <b>B</b>       | Block that cannot be reset from the display; sets “cumulative alarms”. To eliminate the alarm, switch the relative compressor off and then back on again.                                                            |

Key to “Action” column:

|            |                                                                                                                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-</b>   | No block.                                                                                                                                                                                            |
| <b>U</b>   | Unit block.                                                                                                                                                                                          |
| <b>-/U</b> | No block or unit block. The type of action depends on the parameter set for the reset.                                                                                                               |
| <b>U*</b>  | Unit shutdown in forced operating modes. In the automatic mode the unit does not shut down but switches to the available operating modes.                                                            |
| <b>CI</b>  | Block of circuit affected by event.                                                                                                                                                                  |
| <b>CO</b>  | Block of the compressor involved in the event.                                                                                                                                                       |
| <b>FC*</b> | Shutdown of the freecooling function, the unit switches to the available operating modes.                                                                                                            |
| <b>*</b>   | Depending on the sensor in alarm, there may not be any blocks, or the compressors, the circuits or the whole unit may be blocked.                                                                    |
| <b>PR</b>  | Pre-alarm: the unit is not blocked in any way; it is an indication (enabled in the settings) that the monitored size has exceeded a limit (set in the settings) close to the actual alarm threshold. |
| <b>GR</b>  | Alarms that limit the functions of the system.                                                                                                                                                       |

| Code | Description                           | Details                                                                                                                                                                                                                           | Reset | Action | Threshold |
|------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|
| 002  | Phase sequence / Voltage out of range | Faulty phase connection. Totally shuts down the unit (only displayed if the input that detects it is fitted).                                                                                                                     | A     | U      |           |
| 003  | No water flow on evaporator           | Indicates no flow to evaporator. The alarm automatically resets 3 times in the same hour if flow is restored within the maximum operating time of the pumps with a small amount of water, otherwise manual reset is required.     | A/M   | U      |           |
| 005  | Low inlet temperature                 | Only enabled in “heat pump” mode. Low water temperature at exchanger inlet on the heating side.                                                                                                                                   | S-A   | -/U    | STG0085   |
| 006  | High inlet temperature                | Only enabled in “chiller” mode. Indicates high water temperature at evaporator inlet.                                                                                                                                             | S-A   | -/U    | STG0084   |
| 007  | Plant alternative source blocked      | The alternative source used to fill the plant storage tank is blocked.                                                                                                                                                            | S     | -      |           |
| 008  | DHW alternative source blocked        | The alternative source used to fill the DHW storage tank is blocked.                                                                                                                                                              | S     | -      |           |
| 010  | Evaporator antifreeze                 | Low evaporator outlet water temperature. The actual evaporator affected by the alarm condition is also indicated (if more than one). The alarm also appears if the antifreeze limit trips more than 5 times in 8 operating hours. | M     | CI     | STG0073   |
| 014  | Too low system pressure               | Only displayed if the relative input is present (see I/O menu). Unit stops due to an external pressure switch.                                                                                                                    | S/M   | -/U    |           |

| Code | Description                                  | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Reset | Action | Threshold          |
|------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|--------------------|
| 017  | Low external air temperature                 | Indicates that the external air temperature has fallen below the set point.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | S-A   | -      | STG0071            |
| 021  | Low water charge in plant circuit            | The temperature at evaporator inlet (condenser if heat pump) changes too quickly, due to the low water content in the plant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | S     | -      |                    |
| 022  | Low water flow in plant circuit              | Indicates that the temperature difference between the system exchanger inlet and outlet is too high, or that the flow of water to the exchanger is too low.<br>In detail, the alarm is generated if the temperature difference is greater than a certain setpoint (PMP0065 or PMP0083) for a time at least equal to PMP0066 or PMP0084. The alarm automatically resets the number of times in the same hour defined in par.SFT0014 if flow is restored within the set maximum time in par.STG0081, otherwise, it must be reset manually. During defrosting or draining with the compressors on, control is immediate and does not wait for the STG0081 time to elapse.<br>In the case of heat pumps with water side inversion, the alarm is activated controlling the adjustment probes (evaporator in chiller mode, condenser in heat pump mode). | A/M   | U*     | PMP0065<br>PMP0083 |
| 023  | High water flow in plant circuit             | Indicates that the water flow to the evaporator is too high.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | M     | U*     | PMP0058            |
| 041  | Low temperature at condenser input           | Only enabled in "heat pump" and recovery mode. Low water temperature at condenser inlet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | S-A   | -/U    | STG0112            |
| 042  | High temperature at condenser output         | Only enabled in "chiller" mode. Indicates high water temperature at condenser outlet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | S-A   | -/U    | STG0111            |
| 043  | Low water flow rate in the condenser         | Indicates that the temperature difference between the condenser inlet and outlet is too high, or that the flow of water to the condenser is too low. The alarm automatically resets the number of times in the same hour defined in par.SFT0014 if flow is restored within the set maximum time in par.SFT0020, otherwise, it must be reset manually.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A/M   | U      | PMP0063            |
| 044  | High water flow rate in the condenser        | Indicates that the water flow to the condenser is too high.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | M     | U      | PMP0062            |
| 045  | No water flow on condenser                   | Similarly to "No water flow on evaporator" (only for water/water units with freon reversal).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | A/M   | U      |                    |
| 046  | No water flow on recuperator                 | No water flow on the recuperator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | A/M   | U*     |                    |
| 051  | Pump 1 maintenance                           | Maintenance hours limit exceeded (in units with just one pump, pump 1 is the evaporator pump).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | S     | -      | STG0001            |
| 052  | Pump 2 maintenance                           | Pump 2 maintenance hours limit exceeded (in units with more than one pump).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | S     | -      | STG0004            |
| 057  | Recuperator pump maintenance/DHW             | (in units with recuperator pump) Recuperator pump maintenance hours limit exceeded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | S     | -      | STG0007            |
| 058  | Condenser pump maintenance                   | (in units with condenser pump) Condensation pump maintenance hours limit exceeded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | S     | -      | STG0010            |
| 060  | Input condenser maintenance                  | (only for units with Turbocor compressors) Powering condenser maintenance hours limit exceeded.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | S     | -      | STG0053            |
| 061  | Subcooling driver offline / first stage no.1 | It indicates the disconnection of the driver for the management of the subcooling of circuit 1 / compressor 1 first stage valve (only for units with Turbocor compressors).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | A     | CI     |                    |
| 062  | Subcooling driver offline / first stage no.2 | "as above, for circuit no. 2" / compressor 2 first stage valve.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A     | CI     |                    |
| 063  | Subcooling driver offline / first stage no.3 | "as above, for circuit no. 1" / compressor 3 first stage valve.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A     | CI     |                    |
| 064  | Subcooling driver offline / first stage no.4 | "as above, for circuit no. 2" / compressor 4 first stage valve.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A     | CI     |                    |

| Code | Description                           | Details                                                                                                                                                                                                                                                                                                                                                                                   | Reset | Action | Threshold |
|------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|
| 065  | Low water content in recovery circuit | The recuperator inlet temperature changes too quickly and creates a low water level in the recovery circuit.                                                                                                                                                                                                                                                                              | S     | -      |           |
| 066  | Low water flow in recovery circuit    | Indicates that the temperature difference between the recuperator inlet and outlet is too high, or that the flow of water to the recuperator is too low. The alarm automatically resets 3 times in the same hour if flow is restored within the set maximum time, otherwise, it must be reset manually. During defrost or dripping with the compressors on it immediately becomes manual. | A/M   | U*     | PMP0061   |
| 067  | Anti-legionellosis alarm              | The anti-legionellosis function has exceeded the maximum time set (DHW0022) for the maximum permitted number of cycles (DHW0021).                                                                                                                                                                                                                                                         | S     | -      | DHW0021   |
| 068  | Refrigeration section control fault   | Signals an alarm from the main controller in units fitted with a +2P module.<br>To view details of the alarm and reset it, switch to the main controller interface by pressing <b>[ESC+UP]</b> .                                                                                                                                                                                          | S     | -      |           |
| 069  | Air section control fault             | Alarm from the controller of the air section of the rooftop units.<br>To view details of the alarm and reset it, switch to the main controller interface by pressing <b>[ESC+UP]</b> .                                                                                                                                                                                                    | S     | -      |           |
| 070  | +2P module control fault              | Indicates an alarm from the +2P module controller.<br>To view details of the alarm and reset it, switch to the +2P controller interface by pressing <b>[ESC+UP]</b> .                                                                                                                                                                                                                     | S     | -      |           |
| 072  | High water flow in recovery circuit   | Indicates that the water flow to the recuperator is too high.                                                                                                                                                                                                                                                                                                                             | M     | U*     | PMP0060   |
| 075  | Condenser antifreeze                  | Low water temperature at condenser outlet. Except for W3000+ base, it also specifies which condenser (if more than one) is involved in the alarm condition. The alarm also appears if the antifreeze limit trips more than 5 times in 8 operating hours (only for water/water units with freon reversal).                                                                                 | M     | U*     | STG0077   |
| 076  | Recuperator antifreeze                | Low water temperature at recuperator outlet.                                                                                                                                                                                                                                                                                                                                              | A     | U*     | STG0079   |
| 079  | VPF management module disconnected    | Disconnection of the module that adjusts the water flow rate on the primary circuit                                                                                                                                                                                                                                                                                                       | A     | -      |           |
| 080  | VPF management module faulty          | The module that adjusts the water flow rate on the primary circuit is faulty. Check the fault on the user interface of the module.                                                                                                                                                                                                                                                        | A     | -      |           |
| 081  | Pump 1 thermal switch                 | Indicates overheating of pump 1. (in units with just 1 pump, pump 1 = evaporator pump).                                                                                                                                                                                                                                                                                                   | M     | U*     |           |
| 082  | Pump 2 thermal switch                 | (in units with more than one pump) it indicates overheating of pump 2.                                                                                                                                                                                                                                                                                                                    | M     | U*     |           |
| 085  | Condenser pump thermal switch         | It indicates overheating of the condenser pump (only for units with water condensation).                                                                                                                                                                                                                                                                                                  | M     | U      |           |
| 086  | Recuperator pump thermal switch       | It indicates overheating of recuperator pump.                                                                                                                                                                                                                                                                                                                                             | M     | U*     |           |
| 087  | Glycol pump thermal switch            | It indicates overheating of glycol pump (in freecooling units).                                                                                                                                                                                                                                                                                                                           | A     | FC*    |           |
| 090  | Slave no-link                         | The slave board is disconnected (only for units with 3 or 4 circuits).<br>If the unit is fitted with a +2P module, it signals when the module is disconnected.                                                                                                                                                                                                                            | A     | U      |           |
| 091  | Expansion 1 no-link                   | Master expansion 1 unlinked, the word master appears in units with 3 or 4 circuits.                                                                                                                                                                                                                                                                                                       | A     | U      |           |
| 092  | Expansion 2 no-link                   | "as above, for expansion 2"                                                                                                                                                                                                                                                                                                                                                               | A     | U      |           |
| 093  | Expansion 3 no-link                   | "as above, for expansion 3"                                                                                                                                                                                                                                                                                                                                                               | A     | U      |           |
| 094  | Expansion 4 no-link                   | "as above, for expansion 4"                                                                                                                                                                                                                                                                                                                                                               | A     | U      |           |
| 095  | Expansion 5 no-link                   | "as above, for expansion 5"                                                                                                                                                                                                                                                                                                                                                               | A     | U      |           |
| 100  | Energy meter no-link                  | Indicates that the energy meter is disconnected.                                                                                                                                                                                                                                                                                                                                          | S     | -      |           |
| 101  | Slave expansion 1 no-link             | Slave expansion 1 unlinked.                                                                                                                                                                                                                                                                                                                                                               | A     | U      |           |

| Code | Description                             | Details                                                                                                                                                                     | Reset                         | Action | Threshold           |
|------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------|---------------------|
| 102  | Slave expansion 2 no-link               | "as above, for expansion 2".                                                                                                                                                | A                             | U      |                     |
| 103  | Slave expansion 3 no-link               | "as above, for expansion 3".                                                                                                                                                | A                             | U      |                     |
| 104  | Slave expansion 4 no-link               | "as above, for expansion 4".                                                                                                                                                | A                             | U      |                     |
| 105  | Slave expansion 5 no-link               | "as above, for expansion 5".                                                                                                                                                | A                             | U      |                     |
| 106  | P3 module disconnected                  | It indicates that module P3 for the management of more than 2 pumps is disconnected.                                                                                        | A                             | -      |                     |
| 111  | Compressor 1 oil                        | No oil on compressor 1 due to low compressor oil level or pressure.                                                                                                         | A/M                           | CO     |                     |
| 112  | Compressor 2 oil                        | "as above, for compressor 2".                                                                                                                                               | A/M                           | CO     |                     |
| 113  | Compressor 3 oil                        | "as above, for compressor 3".                                                                                                                                               | A/M                           | CO     |                     |
| 114  | Compressor 4 oil                        | "as above, for compressor 4".                                                                                                                                               | A/M                           | CO     |                     |
| 121  | Compressor 1 high discharge temperature | Indicates that the compressor 1 discharge temperature has exceeded the set threshold.                                                                                       | A/M                           | CO     | SFT0009             |
| 122  | Compressor 2 high discharge temperature | "as above, for compressor 2".                                                                                                                                               | A/M                           | CO     |                     |
| 123  | Compressor 3 high discharge temperature | "as above, for compressor 3".                                                                                                                                               | A/M                           | CO     |                     |
| 124  | Compressor 4 high discharge temperature | "as above, for compressor 4".                                                                                                                                               | A/M                           | CO     |                     |
| 125  | Compressor 5 high discharge temperature | "as above, for compressor 5".                                                                                                                                               | A/M                           | CO     |                     |
| 126  | Compressor 6 high discharge temperature | "as above, for compressor 6".                                                                                                                                               | A/M                           | CO     |                     |
| 127  | Compressor 7 high discharge temperature | "as above, for compressor 7".                                                                                                                                               | A/M                           | CO     |                     |
| 128  | Compressor 8 high discharge temperature | "as above, for compressor 8".                                                                                                                                               | A/M                           | CO     |                     |
| 131  | Compressor 1 fault                      | Indicates overheating of compressor 1 electric motor or any another fault. For units with Turbocor centrifugal compressors, it can indicate compressor reactor overheating. | M - A/M                       | CO     |                     |
| 132  | Compressor 2 fault                      | "as above, for compressor low lift pump 2".                                                                                                                                 | M - A/M                       | CO     |                     |
| 133  | Compressor 3 fault                      | "as above, for compressor low lift pump 3".                                                                                                                                 | M - A/M                       | CO     |                     |
| 134  | Compressor 4 fault                      | "as above, for compressor low lift pump 4".                                                                                                                                 | M - A/M                       | CO     |                     |
| 135  | Compressor 5 fault                      | "as above, for compressor low lift pump 5".                                                                                                                                 | M - A/M                       | CO     |                     |
| 136  | Compressor 6 fault                      | "as above, for compressor low lift pump 6".                                                                                                                                 | M - A/M                       | CO     |                     |
| 137  | Compressor 7 fault                      | "as above, for compressor low lift pump 7".                                                                                                                                 | M - A/M                       | CO     |                     |
| 138  | Compressor 8 fault                      | "as above, for compressor low lift pump 8".                                                                                                                                 | M - A/M                       | CO     |                     |
| 141  | Compressor 1 offline                    | No communication with compressor 1 (only for units with centrifugal compressors).                                                                                           | A                             | CO     |                     |
| 142  | Compressor 2 offline                    | "as above, for compressor 2".                                                                                                                                               | A                             | CO     |                     |
| 143  | Compressor 3 offline                    | "as above, for compressor 3".                                                                                                                                               | A                             | CO     |                     |
| 144  | Compressor 4 offline                    | "as above, for compressor 4".                                                                                                                                               | A                             | CO     |                     |
| 151  | Compressor 1 maintenance                | Maintenance hours limit exceeded on compressor 1.                                                                                                                           | S                             | -      | STG0013             |
| 152  | Compressor 2 maintenance                | "as above, for compressor 2".                                                                                                                                               | S                             | -      | STG0018             |
| 153  | Compressor 3 maintenance                | "as above, for compressor 3".                                                                                                                                               | S                             | -      | STG0023             |
| 154  | Compressor 4 maintenance                | "as above, for compressor 4".                                                                                                                                               | S                             | -      | STG0028             |
| 155  | Compressor 5 maintenance                | "as above, for compressor 5".                                                                                                                                               | S                             | -      | STG0033             |
| 156  | Compressor 6 maintenance                | "as above, for compressor 6".                                                                                                                                               | S                             | -      | STG0038             |
| 157  | Compressor 7 maintenance                | "as above, for compressor 7".                                                                                                                                               | S                             | -      | STG0043             |
| 158  | Compressor 8 maintenance                | "as above, for compressor 8".                                                                                                                                               | S                             | -      | STG0048             |
| 161  | Compressor 1 motor power input          | Compressor 1 motor alarm (only for units with Turbocor compressors).                                                                                                        | A/B                           | CO     |                     |
| 162  | Compressor 2 motor power input          | "as above, for compressor 2".                                                                                                                                               | A/B                           | CO     |                     |
| 163  | Compressor 3 motor power input          | "as above, for compressor 3".                                                                                                                                               | A/B                           | CO     |                     |
| 164  | Compressor 4 motor power input          | "as above, for compressor 4".                                                                                                                                               | A/B                           | CO     |                     |
| 165  | Compressor 5 motor power input          | "as above, for compressor 5".                                                                                                                                               | A/B                           | CO     |                     |
| 166  | Compressor 6 motor power input          | "as above, for compressor 6".                                                                                                                                               | A/B                           | CO     |                     |
| 167  | Compressor 7 motor power input          | "as above, for compressor 7".                                                                                                                                               | A/B                           | CO     |                     |
| 168  | Compressor 8 motor power input          | "as above, for compressor 8".                                                                                                                                               | A/B                           | CO     |                     |
| 171  | Compressor 1 start-up timeout           | For Turbocor compressors: compressor 1 not started within the set Timeout limit.<br><br>For screw compressors: possible attempt at starting compressor 1 without freon.     | Turbocor: A/M<br><br>screw: A | CO     | 180s<br><br>SFT0003 |
| 172  | Compressor 2 start-up timeout           | "as above, for compressor 2".                                                                                                                                               | Turbocor: A/M<br><br>screw: A | CO     | 180s<br><br>SFT0003 |
| 173  | Compressor 3 start-up timeout           | "as above, for compressor 3".                                                                                                                                               | Turbocor: A/M<br><br>screw: A | CO     |                     |

| Code | Description                                 | Details                                                                                                                | Reset                            | Action | Threshold                     |
|------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------|-------------------------------|
| 174  | Compressor 4 start-up timeout               | "as above, for compressor 4".                                                                                          | Turbocor:<br>A/M<br><br>screw: A | CO     |                               |
| 175  | Compressor 5 start-up timeout               | "as above, for compressor 5".                                                                                          | Turbocor:<br>A/M                 | CO     |                               |
| 176  | Compressor 6 start-up timeout               | "as above, for compressor 6".                                                                                          | Turbocor:<br>A/M                 | CO     |                               |
| 177  | Compressor 7 start-up timeout               | "as above, for compressor 7".                                                                                          | Turbocor:<br>A/M                 | CO     |                               |
| 178  | Compressor 8 start-up timeout               | "as above, for compressor 8".                                                                                          | Turbocor:<br>A/M                 | CO     |                               |
| 191  | Economiser compressor 1                     | Indicates a high level of refrigerant in the economiser of compressor 1.                                               | A                                | CO     |                               |
| 192  | Economiser compressor 2                     | "as above, for compressor 2".                                                                                          | A                                | CO     |                               |
| 193  | Economiser compressor 3                     | "as above, for compressor 3".                                                                                          | A                                | CO     |                               |
| 194  | Economiser compressor 4                     | "as above, for compressor 4".                                                                                          | A                                | CO     |                               |
| 201  | Circuit 1 fault                             | Indicates a ventilation adjustment fault in cooling circuit 1.<br><b>Contact the nearest technical service centre.</b> | S                                | -      |                               |
| 202  | Circuit 2 fault                             | "as above, for circuit 2".                                                                                             | S                                | -      |                               |
| 203  | Circuit 3 fault                             | "as above, for circuit 3".                                                                                             | S                                | -      |                               |
| 204  | Circuit 4 fault                             | "as above, for circuit 4".                                                                                             | S                                | -      |                               |
| 211  | Circuit 1 high pressure                     | Indicates high pressure on cooling circuit 1                                                                           | A/M                              | CI     |                               |
| 212  | Circuit 2 high pressure                     | "as above, for circuit 2".                                                                                             | A/M                              | CI     |                               |
| 213  | Circuit 3 high pressure                     | "as above, for circuit 3".                                                                                             | A/M                              | CI     |                               |
| 214  | Circuit 4 high pressure                     | "as above, for circuit 4".                                                                                             | A/M                              | CI     |                               |
| 221  | Circuit 1 fan fault                         | The condensation fan in circuit 1 is malfunctioning and has stopped.                                                   | M                                | CI     |                               |
| 222  | Circuit 2 fan fault                         | "as above, for circuit 2".                                                                                             | M                                | CI     |                               |
| 223  | Circuit 3 fan fault                         | "as above, for circuit 3".                                                                                             | M                                | CI     |                               |
| 224  | Circuit 4 fan fault                         | "as above, for circuit 4".                                                                                             | M                                | CI     |                               |
| 231  | Circuit 1 low pressure                      | Low pressure detected by the transducer/pressure switch on circuit 1.                                                  | A/M                              | CI     | SFT0002<br>SFT0003            |
| 232  | Circuit 2 low pressure                      | "as above, for circuit 2".                                                                                             | A/M                              | CI     |                               |
| 233  | Circuit 3 low pressure                      | "as above, for circuit 3".                                                                                             | A/M                              | CI     |                               |
| 234  | Circuit 4 low pressure                      | "as above, for circuit 4".                                                                                             | A/M                              | CI     |                               |
| 241  | Transducer 1 high pressure                  | Indicates high pressure detected by the transducer on cooling circuit 1                                                | A/M                              | CI     | STG0057                       |
| 242  | Transducer 2 high pressure                  | "as above, for circuit 2".                                                                                             | A/M                              | CI     |                               |
| 243  | Transducer 3 high pressure                  | "as above, for circuit 3".                                                                                             | A/M                              | CI     |                               |
| 244  | Transducer 4 high pressure                  | "as above, for circuit 4".                                                                                             | A/M                              | CI     |                               |
| 251  | Circuit 1 start-up timeout                  | Possible start-up attempt with no Freon in circuit 1                                                                   | A                                | CI     | SFT0003                       |
| 252  | Circuit 2 start-up timeout                  | "as above, for circuit 2".                                                                                             | A                                | CI     |                               |
| 253  | Circuit 3 start-up timeout                  | "as above, for circuit 3".                                                                                             | A                                | CI     |                               |
| 254  | Circuit 4 start-up timeout                  | "as above, for circuit 4".                                                                                             | A                                | CI     |                               |
| 261  | No freon in circuit 1                       | Possible Freon leakage in circuit 1 as the "Start-up timeout" alarm has continued for at least 8 hours.                | A                                | CI     |                               |
| 262  | No freon in circuit 2                       | "as above, for circuit 2".                                                                                             | A                                | CI     |                               |
| 263  | No freon in circuit 3                       | "as above, for circuit 3".                                                                                             | A                                | CI     |                               |
| 264  | No freon in circuit 4                       | "as above, for circuit 4".                                                                                             | A                                | CI     |                               |
| 271  | Circuit 1 finned coil                       | Circuit 1 condensation coil obstructed in defrost mode.                                                                | S-M                              | CI     | DFR0011                       |
| 272  | Circuit 2 finned coil                       | "as above, for circuit 2".                                                                                             | S-M                              | CI     |                               |
| 273  | Circuit 3 finned coil                       | "as above, for circuit 3".                                                                                             | S-M                              | CI     |                               |
| 274  | Circuit 4 finned coil                       | "as above, for circuit 4".                                                                                             | S-M                              | CI     |                               |
| 281  | Insufficient evaporation pressure circuit 1 | There may not be any freon in circuit 1 as the evaporation pressure has fallen below the set point.                    | M                                | CI     | STG0068<br>STG0167<br>STG0168 |
| 282  | Insufficient evaporation pressure circuit 2 | "as above, for circuit 2".                                                                                             | M                                | CI     |                               |
| 283  | Insufficient evaporation pressure circuit 3 | "as above, for circuit 3".                                                                                             | M                                | CI     |                               |
| 284  | Insufficient evaporation pressure circuit 4 | "as above, for circuit 4".                                                                                             | M                                | CI     |                               |
| 291  | Insufficient freon in circuit 1             | The freon content in circuit 1 is insufficient as the unit has worked below the approach threshold.                    | A/M                              | CI     | SFT0022                       |
| 292  | Insufficient freon in circuit 2             | "as above, for circuit 2".                                                                                             | A/M                              | CI     |                               |



| Code | Description                        | Details                                                                                                                                                                                       | Reset                             | Action | Threshold |
|------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------|-----------|
| 293  | Insufficient freon in circuit 3    | "as above, for circuit 3".                                                                                                                                                                    | A/M                               | CI     |           |
| 294  | Insufficient freon in circuit 4    | "as above, for circuit 4".                                                                                                                                                                    | A/M                               | CI     |           |
| 301  | Compressor 1 inverter temperature  | Compressor 1 inverter overtemperature (only for units with Turbocor compressors).                                                                                                             | A/M/B                             | CO     |           |
| 302  | Compressor 2 inverter temperature  | "as above, for compressor 2".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 303  | Compressor 3 inverter temperature  | "as above, for compressor 3".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 304  | Compressor 4 inverter temperature  | "as above, for compressor 4".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 305  | Compressor 5 inverter temperature  | "as above, for compressor 5".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 306  | Compressor 6 inverter temperature  | "as above, for compressor 6".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 307  | Compressor 7 inverter temperature  | "as above, for compressor 7".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 308  | Compressor 8 inverter temperature  | "as above, for compressor 8".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 311  | Compressor 1 discharge temperature | Compressor 1 discharge overtemperature (only for units with Turbocor compressors).                                                                                                            | A/M/B                             | CO     |           |
| 312  | Compressor 2 discharge temperature | "as above, for compressor 2".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 313  | Compressor 3 discharge temperature | "as above, for compressor 3".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 314  | Compressor 4 discharge temperature | "as above, for compressor 4".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 315  | Compressor 5 discharge temperature | "as above, for compressor 5".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 316  | Compressor 6 discharge temperature | "as above, for compressor 6".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 317  | Compressor 7 discharge temperature | "as above, for compressor 7".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 318  | Compressor 8 discharge temperature | "as above, for compressor 8".                                                                                                                                                                 | A/M/B                             | CO     |           |
| 321  | Compressor 1 low pressure          | For Turbocor compressors: suction pressure below the minimum limit of compressor 1<br><br>For screw compressors: low pressure acquired from compressor 1 transducer/pressure switch pre-alarm | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 322  | Compressor 2 low pressure          | "as above, for compressor 2".                                                                                                                                                                 | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 323  | Compressor 3 low pressure          | "as above, for compressor 3".                                                                                                                                                                 | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 324  | Compressor 4 low pressure          | "as above, for compressor 4".                                                                                                                                                                 | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 325  | Compressor 5 low pressure          | "as above, for compressor 5".                                                                                                                                                                 | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 326  | Compressor 6 low pressure          | "as above, for compressor 6".                                                                                                                                                                 | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 327  | Compressor 7 low pressure          | "as above, for compressor 7".                                                                                                                                                                 | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 328  | Compressor 8 low pressure          | "as above, for compressor 8".                                                                                                                                                                 | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 331  | Compressor 1 high pressure         | For Turbocor compressors: compression pressure exceeding the maximum limit for compressor 1<br><br>For screw compressors: indicates high pressure of compressor 1                             | Turbocor: A/M/B<br><br>Screw: A/M | CO     |           |
| 332  | Compressor 2 high pressure         | "as above, for compressor 2".                                                                                                                                                                 | Turbocor: A/M/B                   | CO     |           |

| Code | Description                    | Details                                                                                                | Reset                                   | Action | Threshold |
|------|--------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------|--------|-----------|
|      |                                |                                                                                                        | Screw:<br>A/M                           |        |           |
| 333  | Compressor 3 high pressure     | "as above, for compressor 3".                                                                          | Turbocor:<br>A/M/B<br><br>Screw:<br>A/M | CO     |           |
| 334  | Compressor 4 high pressure     | "as above, for compressor 4".                                                                          | Turbocor:<br>A/M/B<br><br>Screw:<br>A/M | CO     |           |
| 335  | Compressor 5 high pressure     | "as above, for compressor 5".                                                                          | Turbocor:<br>A/M/B                      | CO     |           |
| 336  | Compressor 6 high pressure     | "as above, for compressor 6".                                                                          | Turbocor:<br>A/M/B                      | CO     |           |
| 337  | Compressor 7 high pressure     | "as above, for compressor 7".                                                                          | Turbocor:<br>A/M/B                      | CO     |           |
| 338  | Compressor 8 high pressure     | "as above, for compressor 8".                                                                          | Turbocor:<br>A/M/B                      | CO     |           |
| 341  | Compressor 1 input current     | Compressor 1 input current exceeding the maximum limit (only for units with Turbocor compressors).     | A/M/B                                   | CO     |           |
| 342  | Compressor 2 input current     | "as above, for compressor 2".                                                                          | A/M/B                                   | CO     |           |
| 343  | Compressor 3 input current     | "as above, for compressor 3".                                                                          | A/M/B                                   | CO     |           |
| 344  | Compressor 4 input current     | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 345  | Compressor 5 input current     | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 346  | Compressor 6 input current     | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 347  | Compressor 7 input current     | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 348  | Compressor 8 input current     | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 351  | Compressor 1 rotor temperature | Compressor 1 rotor temperature exceeding the maximum limit (only for units with Turbocor compressors). | A/M/B                                   | CO     |           |
| 352  | Compressor 2 rotor temperature | "as above, for compressor 2".                                                                          | A/M/B                                   | CO     |           |
| 353  | Compressor 3 rotor temperature | "as above, for compressor 3".                                                                          | A/M/B                                   | CO     |           |
| 354  | Compressor 4 rotor temperature | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 355  | Compressor 5 rotor temperature | "as above, for compressor 5".                                                                          | A/M/B                                   | CO     |           |
| 356  | Compressor 6 rotor temperature | "as above, for compressor 6".                                                                          | A/M/B                                   | CO     |           |
| 357  | Compressor 7 rotor temperature | "as above, for compressor 7".                                                                          | A/M/B                                   | CO     |           |
| 358  | Compressor 8 rotor temperature | "as above, for compressor 8".                                                                          | A/M/B                                   | CO     |           |
| 361  | Compressor 1 compression ratio | Compressor 1 compression ratio exceeding the maximum limit (only for units with Turbocor compressors). | A/M/B                                   | CO     |           |
| 362  | Compressor 2 compression ratio | "as above, for compressor 2".                                                                          | A/M/B                                   | CO     |           |
| 363  | Compressor 3 compression ratio | "as above, for compressor 3".                                                                          | A/M/B                                   | CO     |           |
| 364  | Compressor 4 compression ratio | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 365  | Compressor 5 compression ratio | "as above, for compressor 5".                                                                          | A/M/B                                   | CO     |           |
| 366  | Compressor 6 compression ratio | "as above, for compressor 6".                                                                          | A/M/B                                   | CO     |           |
| 367  | Compressor 7 compression ratio | "as above, for compressor 7".                                                                          | A/M/B                                   | CO     |           |
| 368  | Compressor 8 compression ratio | "as above, for compressor 8".                                                                          | A/M/B                                   | CO     |           |
| 371  | Compressor 1 bearings          | Compressor 1 bearings faulty (only for units with Turbocor compressors).                               | A/M/B                                   | CO     |           |
| 372  | Compressor 2 bearings          | "as above, for compressor 2".                                                                          | A/M/B                                   | CO     |           |
| 373  | Compressor 3 bearings          | "as above, for compressor 3".                                                                          | A/M/B                                   | CO     |           |
| 374  | Compressor 4 bearings          | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 375  | Compressor 5 bearings          | "as above, for compressor 5".                                                                          | A/M/B                                   | CO     |           |
| 376  | Compressor 6 bearings          | "as above, for compressor 6".                                                                          | A/M/B                                   | CO     |           |
| 377  | Compressor 7 bearings          | "as above, for compressor 7".                                                                          | A/M/B                                   | CO     |           |
| 378  | Compressor 8 bearings          | "as above, for compressor 8".                                                                          | A/M/B                                   | CO     |           |
| 381  | Compressor 1 SCR temperature   | Compressor 1 SCR temperature exceeding the maximum limit (only for units with Turbocor compressors).   | A/M/B                                   | CO     |           |
| 382  | Compressor 2 SCR temperature   | "as above, for compressor 2".                                                                          | A/M/B                                   | CO     |           |
| 383  | Compressor 3 SCR temperature   | "as above, for compressor 3".                                                                          | A/M/B                                   | CO     |           |
| 384  | Compressor 4 SCR temperature   | "as above, for compressor 4".                                                                          | A/M/B                                   | CO     |           |
| 385  | Compressor 5 SCR temperature   | "as above, for compressor 5".                                                                          | A/M/B                                   | CO     |           |
| 386  | Compressor 6 SCR temperature   | "as above, for compressor 6".                                                                          | A/M/B                                   | CO     |           |
| 387  | Compressor 7 SCR temperature   | "as above, for compressor 7".                                                                          | A/M/B                                   | CO     |           |
| 388  | Compressor 8 SCR temperature   | "as above, for compressor 8".                                                                          | A/M/B                                   | CO     |           |

| Code | Description                 | Details                                                          | Reset | Action | Threshold |
|------|-----------------------------|------------------------------------------------------------------|-------|--------|-----------|
| 391  | Compressor 1 rotor shutdown | Compressor 1 blocked (only for units with Turbocor compressors). | A/M/B | CO     |           |
| 392  | Compressor 2 rotor shutdown | "as above, for compressor 2".                                    | A/M/B | CO     |           |
| 393  | Compressor 3 rotor shutdown | "as above, for compressor 3".                                    | A/M/B | CO     |           |
| 394  | Compressor 4 rotor shutdown | "as above, for compressor 4".                                    | A/M/B | CO     |           |
| 395  | Compressor 5 rotor shutdown | "as above, for compressor 5".                                    | A/M/B | CO     |           |
| 396  | Compressor 6 rotor shutdown | "as above, for compressor 6".                                    | A/M/B | CO     |           |
| 397  | Compressor 7 rotor shutdown | "as above, for compressor 7".                                    | A/M/B | CO     |           |
| 398  | Compressor 8 rotor shutdown | "as above, for compressor 8".                                    | A/M/B | CO     |           |
| 400  | Probe 10 error              | Probe 10 error. The values read by probe 10 out of range.        | A     | *      |           |
| 401  | Probe 1 error               | "analogue, as above".                                            | A     | *      |           |
| 402  | Probe 2 error               | "analogue, as above".                                            | A     | *      |           |
| 403  | Probe 3 error               | "analogue, as above".                                            | A     | *      |           |
| 404  | Probe 4 error               | "analogue, as above".                                            | A     | *      |           |
| 405  | Probe 5 error               | "analogue, as above".                                            | A     | *      |           |
| 406  | Probe 6 error               | "analogue, as above".                                            | A     | *      |           |
| 407  | Probe 7 error               | "analogue, as above".                                            | A     | *      |           |
| 408  | Probe 8 error               | "analogue, as above".                                            | A     | *      |           |
| 409  | Probe 9 error               | "analogue, as above".                                            | A     | *      |           |
| 410  | Expansion 1 probe 10 error  | Probe 10, expansion 1 fault                                      | A     | *      |           |
| 411  | Expansion 1 probe 1 error   | "analogue, as above".                                            | A     | *      |           |
| 412  | Expansion 1 probe 2 error   | "analogue, as above".                                            | A     | *      |           |
| 413  | Expansion 1 probe 3 error   | "analogue, as above".                                            | A     | *      |           |
| 414  | Expansion 1 probe 4 error   | "analogue, as above".                                            | A     | *      |           |
| 415  | Expansion 1 probe 5 error   | "analogue, as above".                                            | A     | *      |           |
| 416  | Expansion 1 probe 6 error   | "analogue, as above".                                            | A     | *      |           |
| 417  | Expansion 1 probe 7 error   | "analogue, as above".                                            | A     | *      |           |
| 418  | Expansion 1 probe 8 error   | "analogue, as above".                                            | A     | *      |           |
| 419  | Expansion 1 probe 9 error   | "analogue, as above".                                            | A     | *      |           |
| 420  | Expansion 2 probe 10 error  | "analogue, as above".                                            | A     | *      |           |
| 421  | Expansion 2 probe 1 error   | "analogue, as above".                                            | A     | *      |           |
| 422  | Expansion 2 probe 2 error   | "analogue, as above".                                            | A     | *      |           |
| 423  | Expansion 2 probe 3 error   | "analogue, as above".                                            | A     | *      |           |
| 424  | Expansion 2 probe 4 error   | "analogue, as above".                                            | A     | *      |           |
| 425  | Expansion 2 probe 5 error   | "analogue, as above".                                            | A     | *      |           |
| 426  | Expansion 2 probe 6 error   | "analogue, as above".                                            | A     | *      |           |
| 427  | Expansion 2 probe 7 error   | "analogue, as above".                                            | A     | *      |           |
| 428  | Expansion 2 probe 8 error   | "analogue, as above".                                            | A     | *      |           |
| 429  | Expansion 2 probe 9 error   | "analogue, as above".                                            | A     | *      |           |
| 430  | Expansion 3 probe 10 error  | "analogue, as above".                                            | A     | *      |           |
| 431  | Expansion 3 probe 1 error   | "analogue, as above".                                            | A     | *      |           |
| 432  | Expansion 3 probe 2 error   | "analogue, as above".                                            | A     | *      |           |
| 433  | Expansion 3 probe 3 error   | "analogue, as above".                                            | A     | *      |           |
| 434  | Expansion 3 probe 4 error   | "analogue, as above".                                            | A     | *      |           |
| 435  | Expansion 3 probe 5 error   | "analogue, as above".                                            | A     | *      |           |
| 436  | Expansion 3 probe 6 error   | "analogue, as above".                                            | A     | *      |           |
| 437  | Expansion 3 probe 7 error   | "analogue, as above".                                            | A     | *      |           |
| 438  | Expansion 3 probe 8 error   | "analogue, as above".                                            | A     | *      |           |
| 439  | Expansion 3 probe 9 error   | "analogue, as above".                                            | A     | *      |           |
| 440  | Expansion 4 probe 10 error  | "analogue, as above".                                            | A     | *      |           |
| 441  | Expansion 4 probe 1 error   | "analogue, as above".                                            | A     | *      |           |
| 442  | Expansion 4 probe 2 error   | "analogue, as above".                                            | A     | *      |           |
| 443  | Expansion 4 probe 3 error   | "analogue, as above".                                            | A     | *      |           |
| 444  | Expansion 4 probe 4 error   | "analogue, as above".                                            | A     | *      |           |
| 445  | Expansion 4 probe 5 error   | "analogue, as above".                                            | A     | *      |           |
| 446  | Expansion 4 probe 6 error   | "analogue, as above".                                            | A     | *      |           |
| 447  | Expansion 4 probe 7 error   | "analogue, as above".                                            | A     | *      |           |
| 448  | Expansion 4 probe 8 error   | "analogue, as above".                                            | A     | *      |           |
| 449  | Expansion 4 probe 9 error   | "analogue, as above".                                            | A     | *      |           |
| 450  | Expansion 5 probe 10 error  | "analogue, as above".                                            | A     | *      |           |
| 451  | Expansion 5 probe 1 error   | "analogue, as above".                                            | A     | *      |           |
| 452  | Expansion 5 probe 2 error   | "analogue, as above".                                            | A     | *      |           |
| 453  | Expansion 5 probe 3 error   | "analogue, as above".                                            | A     | *      |           |
| 454  | Expansion 5 probe 4 error   | "analogue, as above".                                            | A     | *      |           |
| 455  | Expansion 5 probe 5 error   | "analogue, as above".                                            | A     | *      |           |
| 456  | Expansion 5 probe 6 error   | "analogue, as above".                                            | A     | *      |           |
| 457  | Expansion 5 probe 7 error   | "analogue, as above".                                            | A     | *      |           |

| Code | Description                      | Details                                                          | Reset | Action | Threshold |
|------|----------------------------------|------------------------------------------------------------------|-------|--------|-----------|
| 458  | Expansion 5 probe 8 error        | "analogue, as above".                                            | A     | *      |           |
| 459  | Expansion 5 probe 9 error        | "analogue, as above".                                            | A     | *      |           |
| 460  | Probe 11 error                   | Probe 11 fault                                                   | A     | *      |           |
| 461  | Probe 12 error                   | Probe 12 fault                                                   | A     | *      |           |
| 500  | Probe 10 slave error             | Slave probe 10 faulty - only in units with more than 2 circuits. | A     | *      |           |
| 501  | Probe 1 slave error              | "analogue, as above".                                            | A     | *      |           |
| 502  | Probe 2 slave error              | "analogue, as above".                                            | A     | *      |           |
| 503  | Probe 3 slave error              | "analogue, as above".                                            | A     | *      |           |
| 504  | Probe 4 slave error              | "analogue, as above".                                            | A     | *      |           |
| 505  | Probe 5 slave error              | "analogue, as above".                                            | A     | *      |           |
| 506  | Probe 6 slave error              | "analogue, as above".                                            | A     | *      |           |
| 507  | Probe 7 slave error              | "analogue, as above".                                            | A     | *      |           |
| 508  | Probe 8 slave error              | "analogue, as above".                                            | A     | *      |           |
| 509  | Probe 9 slave error              | "analogue, as above".                                            | A     | *      |           |
| 510  | Expansion 1 Slave Probe 10 error | Probe 10, expansion 1, connected to slave fault.                 | A     | *      |           |
| 511  | Expansion 1 Slave Probe 1 error  | "analogue, as above".                                            | A     | *      |           |
| 512  | Expansion 1 Slave Probe 2 error  | "analogue, as above".                                            | A     | *      |           |
| 513  | Expansion 1 Slave Probe 3 error  | "analogue, as above".                                            | A     | *      |           |
| 514  | Expansion 1 Slave Probe 4 error  | "analogue, as above".                                            | A     | *      |           |
| 515  | Expansion 1 Slave Probe 5 error  | "analogue, as above".                                            | A     | *      |           |
| 516  | Expansion 1 Slave Probe 6 error  | "analogue, as above".                                            | A     | *      |           |
| 517  | Expansion 1 Slave Probe 7 error  | "analogue, as above".                                            | A     | *      |           |
| 518  | Expansion 1 Slave Probe 8 error  | "analogue, as above".                                            | A     | *      |           |
| 519  | Expansion 1 Slave Probe 9 error  | "analogue, as above".                                            | A     | *      |           |
| 520  | Expansion 2 Slave Probe 10 error | "analogue, as above".                                            | A     | *      |           |
| 521  | Expansion 2 Slave Probe 1 error  | "analogue, as above".                                            | A     | *      |           |
| 522  | Expansion 2 Slave Probe 2 error  | "analogue, as above".                                            | A     | *      |           |
| 523  | Expansion 2 Slave Probe 3 error  | "analogue, as above".                                            | A     | *      |           |
| 524  | Expansion 2 Slave Probe 4 error  | "analogue, as above".                                            | A     | *      |           |
| 525  | Expansion 2 Slave Probe 5 error  | "analogue, as above".                                            | A     | *      |           |
| 526  | Expansion 2 Slave Probe 6 error  | "analogue, as above".                                            | A     | *      |           |
| 527  | Expansion 2 Slave Probe 7 error  | "analogue, as above".                                            | A     | *      |           |
| 528  | Expansion 2 Slave Probe 8 error  | "analogue, as above".                                            | A     | *      |           |
| 529  | Expansion 2 Slave Probe 9 error  | "analogue, as above".                                            | A     | *      |           |
| 530  | Expansion 3 Slave Probe 10 error | "analogue, as above".                                            | A     | *      |           |
| 531  | Expansion 3 Slave Probe 1 error  | "analogue, as above".                                            | A     | *      |           |
| 532  | Expansion 3 Slave Probe 2 error  | "analogue, as above".                                            | A     | *      |           |
| 533  | Expansion 3 Slave Probe 3 error  | "analogue, as above".                                            | A     | *      |           |
| 534  | Expansion 3 Slave Probe 4 error  | "analogue, as above".                                            | A     | *      |           |
| 535  | Expansion 3 Slave Probe 5 error  | "analogue, as above".                                            | A     | *      |           |
| 536  | Expansion 3 Slave Probe 6 error  | "analogue, as above".                                            | A     | *      |           |
| 537  | Expansion 3 Slave Probe 7 error  | "analogue, as above".                                            | A     | *      |           |
| 538  | Expansion 3 Slave Probe 8 error  | "analogue, as above".                                            | A     | *      |           |
| 539  | Expansion 3 Slave Probe 9 error  | "analogue, as above".                                            | A     | *      |           |
| 540  | Expansion 4 Slave Probe 10 error | "analogue, as above".                                            | A     | *      |           |
| 541  | Expansion 4 Slave Probe 1 error  | "analogue, as above".                                            | A     | *      |           |
| 542  | Expansion 4 Slave Probe 2 error  | "analogue, as above".                                            | A     | *      |           |
| 543  | Expansion 4 Slave Probe 3 error  | "analogue, as above".                                            | A     | *      |           |
| 544  | Expansion 4 Slave Probe 4 error  | "analogue, as above".                                            | A     | *      |           |
| 545  | Expansion 4 Slave Probe 5 error  | "analogue, as above".                                            | A     | *      |           |
| 546  | Expansion 4 Slave Probe 6 error  | "analogue, as above".                                            | A     | *      |           |
| 547  | Expansion 4 Slave Probe 7 error  | "analogue, as above".                                            | A     | *      |           |
| 548  | Expansion 4 Slave Probe 8 error  | "analogue, as above".                                            | A     | *      |           |
| 549  | Expansion 4 Slave Probe 9 error  | "analogue, as above".                                            | A     | *      |           |
| 550  | Expansion 5 Slave Probe 10 error | "analogue, as above".                                            | A     | *      |           |
| 551  | Expansion 5 Slave Probe 1 error  | "analogue, as above".                                            | A     | *      |           |
| 552  | Expansion 5 Slave Probe 2 error  | "analogue, as above".                                            | A     | *      |           |
| 553  | Expansion 5 Slave Probe 3 error  | "analogue, as above".                                            | A     | *      |           |
| 554  | Expansion 5 Slave Probe 4 error  | "analogue, as above".                                            | A     | *      |           |
| 555  | Expansion 5 Slave Probe 5 error  | "analogue, as above".                                            | A     | *      |           |
| 556  | Expansion 5 Slave Probe 6 error  | "analogue, as above".                                            | A     | *      |           |
| 557  | Expansion 5 Slave Probe 7 error  | "analogue, as above".                                            | A     | *      |           |
| 558  | Expansion 5 Slave Probe 8 error  | "analogue, as above".                                            | A     | *      |           |
| 559  | Expansion 5 Slave Probe 9 error  | "analogue, as above".                                            | A     | *      |           |
| 580  | HT zone temperature probe error  | Indicates an error in the temperature probe of the HT zone.      | A     | GR     |           |

| Code | Description                                                             | Details                                                                                                                                                   | Reset | Action | Threshold |
|------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|
| 581  | LT zone temperature probe error                                         | Indicates an error in the temperature probe of the LT zone.                                                                                               | A     | GR     |           |
| 582  | HT zone humidity probe error                                            | Indicates an error in the relative humidity probe of the HT zone.                                                                                         | A     | GR     |           |
| 583  | LT zone humidity probe error                                            | Indicates an error in the relative humidity probe of the LT zone.                                                                                         | A     | GR     |           |
| 590  | Mixed circuit maximum temperature                                       | Indicates that the water temperature of the mixed circuit (LT) has exceeded the set maximum value.                                                        | A     | GR     | STG0185   |
| 602  | BMS2 serial disconnection                                               | Loss of communication with the device connected to the BMS2 serial port.                                                                                  | S     | -      |           |
| 611  | Antifreeze pre-alarm evaporator 1                                       | Pre-alarm indicating low evaporator outlet water temperature. The actual evaporator affected by the alarm condition is also indicated (if more than one). | S     | PR     |           |
| 612  | Antifreeze pre-alarm evaporator 2                                       | "as above, for evaporator 2".                                                                                                                             | S     | PR     |           |
| 613  | Antifreeze pre-alarm evaporator 3                                       | "as above, for evaporator 3".                                                                                                                             | S     | PR     |           |
| 614  | Antifreeze pre-alarm evaporator 4                                       | "as above, for evaporator 4".                                                                                                                             | S     | PR     |           |
| 631  | Low pressure pre-alarm circuit 1                                        | Low pressure acquired from circuit 1 transducer pre-alarm.                                                                                                | S     | PR     |           |
| 632  | Low pressure pre-alarm circuit 2                                        | "as above, for circuit 2".                                                                                                                                | S     | PR     |           |
| 633  | Low pressure pre-alarm circuit 3                                        | "as above, for circuit 3".                                                                                                                                | S     | PR     |           |
| 634  | Low pressure pre-alarm circuit 4                                        | "as above, for circuit 4".                                                                                                                                | S     | PR     |           |
| 641  | High pressure pre-alarm circuit 1                                       | High pressure acquired from circuit 1 transducer pre-alarm.                                                                                               | S     | PR     |           |
| 642  | High pressure pre-alarm circuit 2                                       | "as above, for circuit 2".                                                                                                                                | S     | PR     |           |
| 643  | High pressure pre-alarm circuit 3                                       | "as above, for circuit 3".                                                                                                                                | S     | PR     |           |
| 644  | High pressure pre-alarm circuit 4                                       | "as above, for circuit 4".                                                                                                                                | S     | PR     |           |
| 651  | Envelope control: low overheating in delivery to circuit 1 compressors  | Indicates that the overheating value for the circuit 1 compressors is too low (depending on the active compression ratio).                                | M     | CI     |           |
| 652  | Envelope control: low overheating in delivery to circuit 2 compressors  | "as above, for circuit 2".                                                                                                                                | M     | CI     |           |
| 653  | Envelope control: low overheating in delivery to circuit 3 compressors  | "as above, for circuit 3".                                                                                                                                | M     | CI     |           |
| 654  | Envelope control: low overheating in delivery to circuit 4 compressors  | "as above, for circuit 4".                                                                                                                                | M     | CI     |           |
| 661  | Envelope control: high overheating in delivery to circuit 1 compressors | Indicates that the overheating value for the circuit 1 compressors is too high (depending on the active compression ratio).                               | M     | CI     |           |
| 662  | Envelope control: high overheating in delivery to circuit 2 compressors | "as above, for circuit 2".                                                                                                                                | M     | CI     |           |
| 663  | Envelope control: high overheating in delivery to circuit 3 compressors | "as above, for circuit 3".                                                                                                                                | M     | CI     |           |
| 664  | Envelope control: high overheating in delivery to circuit 4 compressors | "as above, for circuit 4".                                                                                                                                | M     | CI     |           |
| 671  | Envelope control: minimum high pressure limit of circuit 1 compressors  | Indicates that the compressors in cooling circuit 1 operate above the permitted limit.                                                                    | M     | CI     |           |
| 672  | Envelope control: minimum high pressure limit of circuit 2 compressors  | "as above, for circuit 2".                                                                                                                                | M     | CI     |           |
| 673  | Envelope control: minimum high pressure limit of circuit 3 compressors  | "as above, for circuit 3".                                                                                                                                | M     | CI     |           |
| 674  | Envelope control: minimum high pressure limit of circuit 4 compressors  | "as above, for circuit 4".                                                                                                                                | M     | CI     |           |
| 681  | Compressor 1 envelope alarm                                             | Indicates that compressor 1 is above the permitted limit                                                                                                  | A/M   | CO     |           |
| 682  | Compressor 2 envelope alarm                                             | "as above, for compressor 2".                                                                                                                             | A/M   | CO     |           |
| 683  | Compressor 3 envelope alarm                                             | "as above, for compressor 3".                                                                                                                             | A/M   | CO     |           |
| 684  | Compressor 4 envelope alarm                                             | "as above, for compressor 4".                                                                                                                             | A/M   | CO     |           |
| 701  | Inverter 1 offline                                                      | No communication with the inverter on compressor 1 (only for units with compressors with inverter)                                                        | A     | CO     |           |
| 702  | Inverter 2 offline                                                      | "as above, for compressor 2".                                                                                                                             | A     | CO     |           |
| 703  | Inverter 3 offline                                                      | "as above, for compressor 3".                                                                                                                             | A     | CO     |           |
| 704  | Inverter 4 offline                                                      | "as above, for compressor 4".                                                                                                                             | A     | CO     |           |
| 711  | Inverter 1 power alarm (**)                                             | Fault in inverter power on compressor 1 (only for units with compressors with inverter).                                                                  | A/M*  | CO     |           |
| 712  | Inverter 2 power alarm (**)                                             | "as above, for compressor 2".                                                                                                                             | A/M*  | CO     |           |
| 713  | Inverter 3 power alarm (**)                                             | "as above, for compressor 3".                                                                                                                             | A/M*  | CO     |           |

| Code | Description                             | Details                                                                                                   | Reset | Action | Threshold |
|------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------|-------|--------|-----------|
| 714  | Inverter 4 power alarm (**)             | "as above, for compressor 4".                                                                             | A/M*  | CO     |           |
| 721  | Inverter 1 motor power alarm (**)       | Fault in motor power of compressor 1 (only for units with compressors with inverter).                     | A/M*  | CO     |           |
| 722  | Inverter 2 motor power alarm (**)       | "as above, for compressor 2".                                                                             | A/M*  | CO     |           |
| 723  | Inverter 3 motor power alarm (**)       | "as above, for compressor 3".                                                                             | A/M*  | CO     |           |
| 724  | Inverter 4 motor power alarm (**)       | "as above, for compressor 4".                                                                             | A/M*  | CO     |           |
| 731  | Inverter 1 voltage supply alarm (**)    | Overload in inverter variator on compressor 1 (only for units with compressors with inverter).            | M     | CO     |           |
| 732  | Inverter 2 voltage supply alarm (**)    | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 733  | Inverter 3 voltage supply alarm (**)    | "as above, for compressor 3".                                                                             | M     | CO     |           |
| 734  | Inverter 4 voltage supply alarm (**)    | "as above, for compressor 4".                                                                             | M     | CO     |           |
| 741  | Inverter 1 rectifier thermal alarm (**) | Overload in inverter rectifier on compressor 1 (only for units with inverter compressors).                | M     | CO     |           |
| 742  | Inverter 2 rectifier thermal alarm (**) | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 743  | Inverter 3 rectifier thermal alarm (**) | "as above, for compressor 3".                                                                             | M     | CO     |           |
| 744  | Inverter 4 rectifier thermal alarm (**) | "as above, for compressor 4".                                                                             | M     | CO     |           |
| 751  | Inverter 1 motor thermal alarm (**)     | Heat protection of compressor 1 motor (only for units with compressors with inverter).                    | M     | CO     |           |
| 752  | Inverter 2 motor thermal alarm (**)     | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 753  | Inverter 3 motor thermal alarm (**)     | "as above, for compressor 3".                                                                             | M     | CO     |           |
| 754  | Inverter 4 motor thermal alarm (**)     | "as above, for compressor 4".                                                                             | M     | CO     |           |
| 761  | Inverter 1 thermal alarm (**)           | Heat protection of inverter variator on compressor 1 (only for units with inverter compressors).          | M     | CO     |           |
| 762  | Inverter 2 thermal alarm (**)           | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 763  | Inverter 3 thermal alarm (**)           | "as above, for compressor 3".                                                                             | M     | CO     |           |
| 764  | Inverter 4 thermal alarm (**)           | "as above, for compressor 4".                                                                             | M     | CO     |           |
| 771  | Inverter 1 IGBT alarm (**)              | Fault in inverter IGBT on compressor 1 (only for units with inverter compressors).                        | M     | CO     |           |
| 772  | Inverter 2 IGBT alarm (**)              | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 773  | Inverter 3 IGBT alarm (**)              | "as above, for compressor 3".                                                                             | M     | CO     |           |
| 774  | Inverter 4 IGBT alarm (**)              | "as above, for compressor 4".                                                                             | M     | CO     |           |
| 781  | Inverter 1 stator resistance alarm (**) | Compressor 1 inverter stator heater fault (only for units with inverter compressors).                     | M     | CO     |           |
| 782  | Inverter 2 stator resistance alarm (**) | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 783  | Inverter 3 stator resistance alarm (**) | "as above, for compressor 3".                                                                             | M     | CO     |           |
| 784  | Inverter 4 stator resistance alarm (**) | "as above, for compressor 4".                                                                             | M     | CO     |           |
| 791  | Inverter 1 overspeed alarm (**)         | Overspeed fault in inverter on compressor 1 (only for units with inverter compressors).                   | M     | CO     |           |
| 792  | Inverter 2 overspeed alarm (**)         | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 793  | Inverter 3 overspeed alarm (**)         | "as above, for compressor 3".                                                                             | M     | CO     |           |
| 794  | Inverter 4 overspeed alarm (**)         | "as above, for compressor 4".                                                                             | M     | CO     |           |
| 801  | Inverter 1 field bus alarm (**)         | Fault in inverter field bus on compressor 1 (only for units with inverter compressors).                   | A/M*  | CO     |           |
| 802  | Inverter 2 field bus alarm (**)         | "as above, for compressor 2".                                                                             | A/M*  | CO     |           |
| 803  | Inverter 3 field bus alarm (**)         | "as above, for compressor 3".                                                                             | A/M*  | CO     |           |
| 804  | Inverter 4 field bus alarm (**)         | "as above, for compressor 4".                                                                             | A/M*  | CO     |           |
| 811  | Inverter 1 communication alarm (**)     | Internal communication fault in inverter on compressor 1 (only for units with compressors with inverter). | A/M*  | CO     |           |
| 812  | Inverter 2 communication alarm (**)     | "as above, for compressor 2".                                                                             | A/M*  | CO     |           |
| 813  | Inverter 3 communication alarm (**)     | "as above, for compressor 3".                                                                             | A/M*  | CO     |           |
| 814  | Inverter 4 communication alarm (**)     | "as above, for compressor 4".                                                                             | A/M*  | CO     |           |
| 821  | Inverter 1 safety input alarm (**)      | Safety input fault in inverter on compressor 1 (only for units with inverter compressors).                | A/M*  | CO     |           |
| 822  | Inverter 2 safety input alarm (**)      | "as above, for compressor 2".                                                                             | A/M*  | CO     |           |
| 823  | Inverter 3 safety input alarm (**)      | "as above, for compressor 3".                                                                             | A/M*  | CO     |           |
| 824  | Inverter 4 safety input alarm (**)      | "as above, for compressor 4".                                                                             | A/M*  | CO     |           |
| 831  | Inverter 1 self-calibration alarm (**)  | Self-calibration fault in inverter on compressor 1 (only for units with inverter compressors).            | M     | CO     |           |
| 832  | Inverter 2 self-calibration alarm (**)  | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 833  | Inverter 3 self-calibration alarm (**)  | "as above, for compressor 3".                                                                             | M     | CO     |           |
| 834  | Inverter 4 self-calibration alarm (**)  | "as above, for compressor 4".                                                                             | M     | CO     |           |
| 841  | Inverter 1 counter rotation alarm (**)  | Counter rotation fault in inverter on compressor 1 (only for units with inverter compressors).            | M     | CO     |           |
| 842  | Inverter 2 counter rotation alarm (**)  | "as above, for compressor 2".                                                                             | M     | CO     |           |
| 843  | Inverter 3 counter rotation alarm (**)  | "as above, for compressor 3".                                                                             | M     | CO     |           |



| Code | Description                                                    | Details                                                                                                          | Reset | Action | Threshold |
|------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|
| 844  | Inverter 4 counter rotation alarm (**)                         | "as above, for compressor 4".                                                                                    | M     | CO     |           |
| 851  | Inverter 1 generic alarm (**)                                  | Generic alarm on inverter of compressor 1 (only for units with compressors with inverter).                       | A/M*  | CO     |           |
| 852  | Inverter 2 generic alarm (**)                                  | "as above, for compressor 2".                                                                                    | A/M*  | CO     |           |
| 853  | Inverter 3 generic alarm (**)                                  | "as above, for compressor 3".                                                                                    | A/M*  | CO     |           |
| 854  | Inverter 4 generic alarm (**)                                  | "as above, for compressor 4".                                                                                    | A/M*  | CO     |           |
| 871  | Compressor 1 transducer high pressure                          | Indicates high pressure on compressor 1                                                                          | A/M   | CO     | STG0057   |
| 872  | Compressor 2 transducer high pressure                          | "as above, for compressor 2".                                                                                    | A/M   | CO     |           |
| 873  | Compressor 3 transducer high pressure                          | "as above, for compressor 3".                                                                                    | A/M   | CO     |           |
| 874  | Compressor 4 transducer high pressure                          | "as above, for compressor 4".                                                                                    | A/M   | CO     |           |
| 875  | Compressor 5 transducer high pressure                          | "as above, for compressor 5".                                                                                    | A/M   | CO     |           |
| 876  | Compressor 6 transducer high pressure                          | "as above, for compressor 6".                                                                                    | A/M   | CO     |           |
| 877  | Compressor 7 transducer high pressure                          | "as above, for compressor 7".                                                                                    | A/M   | CO     |           |
| 878  | Compressor 8 transducer high pressure                          | "as above, for compressor 8".                                                                                    | A/M   | CO     |           |
| 881  | No freon in compressor 1                                       | Possible Freon leakage in compressor 1 as the "Start-up timeout" alarm has continued for at least 8 hours.       | A     | CO     |           |
| 882  | No freon in compressor 2                                       | "as above, for compressor 2".                                                                                    | A     | CO     |           |
| 883  | No freon in compressor 3                                       | "as above, for compressor 3".                                                                                    | A     | CO     |           |
| 884  | No freon in compressor 4                                       | "as above, for compressor 4".                                                                                    | A     | CO     |           |
| 885  | No freon in compressor 5                                       | "as above, for compressor 5".                                                                                    | A     | CO     |           |
| 886  | No freon in compressor 6                                       | "as above, for compressor 6".                                                                                    | A     | CO     |           |
| 887  | No freon in compressor 7                                       | "as above, for compressor 7".                                                                                    | A     | CO     |           |
| 888  | No freon in compressor 8                                       | "as above, for compressor 8".                                                                                    | A     | CO     |           |
| 891  | Low pressure pre-alarm compressor 1                            | Low pressure acquired from compressor 1 transducer pre-alarm                                                     | S     | PR     |           |
| 892  | Low pressure pre-alarm compressor 2                            | "as above, for compressor 2".                                                                                    | S     | PR     |           |
| 893  | Low pressure pre-alarm compressor 3                            | "as above, for compressor 3".                                                                                    | S     | PR     |           |
| 894  | Low pressure pre-alarm compressor 4                            | "as above, for compressor 4".                                                                                    | S     | PR     |           |
| 895  | Low pressure pre-alarm compressor 5                            | "as above, for compressor 5".                                                                                    | S     | PR     |           |
| 896  | Low pressure pre-alarm compressor 6                            | "as above, for compressor 6".                                                                                    | S     | PR     |           |
| 897  | Low pressure pre-alarm compressor 7                            | "as above, for compressor 7".                                                                                    | S     | PR     |           |
| 898  | Low pressure pre-alarm compressor 8                            | "as above, for compressor 8".                                                                                    | S     | PR     |           |
| 901  | High pressure pre-alarm compressor 1                           | High pressure acquired from compressor 1 transducer pre-alarm.                                                   | S     | PR     |           |
| 902  | High pressure pre-alarm compressor 2                           | "as above, for compressor 2".                                                                                    | S     | PR     |           |
| 903  | High pressure pre-alarm compressor 3                           | "as above, for compressor 3".                                                                                    | S     | PR     |           |
| 904  | High pressure pre-alarm compressor 4                           | "as above, for compressor 4".                                                                                    | S     | PR     |           |
| 905  | High pressure pre-alarm compressor 5                           | "as above, for compressor 5".                                                                                    | S     | PR     |           |
| 906  | High pressure pre-alarm compressor 6                           | "as above, for compressor 6".                                                                                    | S     | PR     |           |
| 907  | High pressure pre-alarm compressor 7                           | "as above, for compressor 7".                                                                                    | S     | PR     |           |
| 908  | High pressure pre-alarm compressor 8                           | "as above, for compressor 8".                                                                                    | S     | PR     |           |
| 911  | Envelope control: low overheating in delivery to compressor 1  | It indicates that the overheating value for compressor 1 is too low (depending on the active compression ratio). | M     | CO     |           |
| 912  | Envelope control: low overheating in delivery to compressor 2  | "as above, for compressor 2".                                                                                    | M     | CO     |           |
| 913  | Envelope control: low overheating in delivery to compressor 3  | "as above, for compressor 3".                                                                                    | M     | CO     |           |
| 914  | Envelope control: low overheating in delivery to compressor 4  | "as above, for compressor 4".                                                                                    | M     | CO     |           |
| 915  | Envelope control: low overheating in delivery to compressor 5  | "as above, for compressor 5".                                                                                    | M     | CO     |           |
| 916  | Envelope control: low overheating in delivery to compressor 6  | "as above, for compressor 6".                                                                                    | M     | CO     |           |
| 917  | Envelope control: low overheating in delivery to compressor 7  | "as above, for compressor 7".                                                                                    | M     | CO     |           |
| 918  | Envelope control: low overheating in delivery to compressor 8  | "as above, for compressor 8".                                                                                    | M     | CO     |           |
| 921  | Envelope control: high overheating in delivery to compressor 1 | Indicates that the overheating value for compressor 1 is too high (depending on the active compression ratio).   | M     | CO     |           |
| 922  | Envelope control: high overheating in delivery to compressor 2 | "as above, for compressor 2".                                                                                    | M     | CO     |           |
| 923  | Envelope control: high overheating in delivery to compressor 3 | "as above, for compressor 3".                                                                                    | M     | CO     |           |
| 924  | Envelope control: high overheating in delivery to compressor 4 | "as above, for compressor 4".                                                                                    | M     | CO     |           |

| Code | Description                                                    | Details                                                                                                                                              | Reset | Action | Threshold |
|------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|
| 925  | Envelope control: high overheating in delivery to compressor 5 | "as above, for compressor 5".                                                                                                                        | M     | CO     |           |
| 926  | Envelope control: high overheating in delivery to compressor 6 | "as above, for compressor 6".                                                                                                                        | M     | CO     |           |
| 927  | Envelope control: high overheating in delivery to compressor 7 | "as above, for compressor 7".                                                                                                                        | M     | CO     |           |
| 928  | Envelope control: high overheating in delivery to compressor 8 | "as above, for compressor 8".                                                                                                                        | M     | CO     |           |
| 931  | Envelope control: minimum high pressure limit of compressor 1  | Indicates that compressor 1 is above the permitted limit.                                                                                            | M     | CO     |           |
| 932  | Envelope control: minimum high pressure limit of compressor 2  | "as above, for compressor 2".                                                                                                                        | M     | CO     |           |
| 933  | Envelope control: minimum high pressure limit of compressor 3  | "as above, for compressor 3".                                                                                                                        | M     | CO     |           |
| 934  | Envelope control: minimum high pressure limit of compressor 4  | "as above, for compressor 4".                                                                                                                        | M     | CO     |           |
| 935  | Envelope control: minimum high pressure limit of compressor 5  | "as above, for compressor 5".                                                                                                                        | M     | CO     |           |
| 936  | Envelope control: minimum high pressure limit of compressor 6  | "as above, for compressor 6".                                                                                                                        | M     | CO     |           |
| 937  | Envelope control: minimum high pressure limit of compressor 7  | "as above, for compressor 7".                                                                                                                        | M     | CO     |           |
| 938  | Envelope control: minimum high pressure limit of compressor 8  | "as above, for compressor 8".                                                                                                                        | M     | CO     |           |
| 941  | Minimum compressor ratio at the start of compressor 1          | Compressor 1 is working at a low compressor ratio.                                                                                                   | M     | CO     | ENV0096   |
| 942  | Minimum compressor ratio at the start of compressor 2          | "as above, for compressor 2".                                                                                                                        | M     | CO     |           |
| 943  | Minimum compressor ratio at the start of compressor 3          | "as above, for compressor 3".                                                                                                                        | M     | CO     |           |
| 944  | Minimum compressor ratio at the start of compressor 4          | "as above, for compressor 4".                                                                                                                        | M     | CO     |           |
| 945  | Minimum compressor ratio at the start of compressor 5          | "as above, for compressor 5".                                                                                                                        | M     | CO     |           |
| 946  | Minimum compressor ratio at the start of compressor 6          | "as above, for compressor 6".                                                                                                                        | M     | CO     |           |
| 947  | Minimum compressor ratio at the start of compressor 7          | "as above, for compressor 7".                                                                                                                        | M     | CO     |           |
| 948  | Minimum compressor ratio at the start of compressor 8          | "as above, for compressor 8".                                                                                                                        | M     | CO     |           |
| 951  | Compressor 1 HGBP valve disconnection                          | The driver of the bypass valve of compressor 1 is disconnected                                                                                       | S     | CO     |           |
| 952  | Compressor 2 HGBP valve disconnection                          | "as above, for compressor 2".                                                                                                                        | S     | CO     |           |
| 953  | Compressor 3 HGBP valve disconnection                          | "as above, for compressor 3".                                                                                                                        | S     | CO     |           |
| 954  | Compressor 4 HGBP valve disconnection                          | "as above, for compressor 4".                                                                                                                        | S     | CO     |           |
| 960  | Thermal meter disconnection                                    | The thermal meter is disconnected.                                                                                                                   | S     | -      |           |
| 961  | Driver offline / first stage no. 5                             | It indicates the disconnection of the driver for the management of the first stage valve of compressor 5 (only for units with Turbocor compressors). | A     | CI     |           |
| 962  | Driver offline / first stage no. 6                             | "as above, for compressor 6".                                                                                                                        | A     | CI     |           |
| 963  | Driver offline / first stage no. 7                             | "as above, for compressor 7".                                                                                                                        | A     | CI     |           |
| 964  | Driver offline / first stage no. 8                             | "as above, for compressor 8".                                                                                                                        | A     | CI     |           |
| 965  | ATS disconnection                                              | Indicates the disconnection of the ATS switch                                                                                                        | A     | -      |           |
| 966  | HT zone touch disconnection                                    | Indicates disconnection of the HT zone touch thermostat.                                                                                             | S     | GR     |           |
| 967  | LT zone touch disconnection                                    | Indicates disconnection of the LT zone touch thermostat.                                                                                             | S     | GR     |           |
| 968  | Compressor stall prevention                                    | It indicates the forced shutdown of the inverter compressor and its circuit to prevent stalling due to excessive power consumption.                  | M     | CI     |           |
| 969  | High ext air temperature                                       | It signals that the unit is operating at too high an external temperature. The control continues even when the compressors are switched off.         | S-M   | U      | STG0200   |
| 970  | Low recovery water content.                                    | It indicates water shortage in the recovery water circuit. This shortage causes abrupt changes in the circuits' operating mode that                  | S-M   | U      |           |



| Code | Description                               | Details                                                                                                                                                                                                                                                                       | Reset | Action | Threshold |
|------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|
|      |                                           | could damage the valves of the refrigerant circuits.                                                                                                                                                                                                                          |       |        |           |
| 971  | Gas sensor maintenance                    | This message appears when the gas leak detector is off line or when the sensor needs maintenance.                                                                                                                                                                             | M     | -      |           |
| 972  | Low-lift pump 1 fault                     | For units with Turbocor centrifugal compressors, it indicates a fault in low-lift pump 1.                                                                                                                                                                                     | A/M   | -      |           |
| 973  | Low-lift pump 2 fault                     | For units with Turbocor centrifugal compressors, it indicates a fault in low-lift pump 2.                                                                                                                                                                                     | A/M   | -      |           |
| 974  | Low Dry Cooler temperature alarm          | This message is displayed for units with Dry Cooler if the temperature in the Dry Cooler installation room is lower than the setpoint.                                                                                                                                        | A     | U      |           |
| 975  | Dry Cooler fault                          | The message is displayed for units with Dry Cooler if the heat protection of the fans or dedicated pump (if present) is tripped.                                                                                                                                              | M     | U      |           |
| 979  | Recovery thermal meter disconnection      | The thermal meter is disconnected for recovery                                                                                                                                                                                                                                | S     | -      |           |
| 981  | Compressor 1 short cycle                  | The manual reset signal appears when the compressor remains on for less than the time in CMP0004. The signal turns into a manual reset alarm if the compressor is switched off due to short-cycling more times than the value set in parameter CMP0151 within a 4-hour period | S-M   | CO     |           |
| 5001 | Operating mode change fault               | Signals a fault when forcing the unit operating mode after the system operating mode is changed.<br><br>The alarm trips if forcing does not take place within the timeout set on the parameter.                                                                               | M     | GR     | GRP0126   |
| 5005 | Input water temp. probes aver. error      | Error with the average of the input water temperature readings of the probes of all the units in the group.                                                                                                                                                                   | A     | GR     |           |
| 5006 | Output water temp. probes aver. error     | Error with the average of the output water temperature readings of the probes of all the units in the group.                                                                                                                                                                  | A     | GR     |           |
| 5050 | External temp. probes aver. error         | Error with the average of the external air temperature readings of the probes of all the units in the group.                                                                                                                                                                  | A     | GR     |           |
| 5080 | System pump thermal switch                | It indicates overheating of plant pump.                                                                                                                                                                                                                                       | M     | GR     |           |
| 5100 | Group VPF management module disconnection | Disconnection of the module that adjusts the water flow rate on the system. Check the fault on the user interface of the module.                                                                                                                                              | A     | GR     |           |
| 5101 | Group VPF management module fault         | Fault of the module that adjusts the water flow rate on the system. Check the fault on the user interface of the module.                                                                                                                                                      | A     | GR     |           |

| Code | Description                   | Details                                                                                                                  | Reset | Action | Threshold |
|------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|
| 5120 | Dynamic setpoint interruption | Dynamic management of the unit's setpoint interrupted. Check that there is no disconnection of the KIPLan network.       | A     | GR     |           |
| 5201 | Group probe 1 error           | Error with probe 1 of the group controller. The values read by probe 1 out of range.                                     | A     | GR     |           |
| 5202 | Group probe 2 error           | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5203 | Group probe 3 error           | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5204 | Group probe 4 error           | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5205 | Group probe 5 error           | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5206 | Group probe 6 error           | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5207 | Group probe 7 error           | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5208 | Group probe 8 error           | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5209 | Group probe 9 error           | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5210 | Group probe 10 error          | "analogue, as above".                                                                                                    | A     | GR     |           |
| 5301 | Unit 1 offline                | Disconnection from the Multi Manager LAN network of unit 1. Check the serial connection of the unit.                     | A     | GR     |           |
| 5302 | Unit 2 offline                | "analogue, as above for unit 2".                                                                                         | A     | GR     |           |
| 5303 | Unit 3 offline                | "analogue, as above for unit 3".                                                                                         | A     | GR     |           |
| 5304 | Unit 4 offline                | "analogue, as above for unit 4".                                                                                         | A     | GR     |           |
| 5305 | Unit 5 offline                | "analogue, as above for unit 5".                                                                                         | A     | GR     |           |
| 5306 | Unit 6 offline                | "analogue, as above for unit 6".                                                                                         | A     | GR     |           |
| 5307 | Unit 7 offline                | "analogue, as above for unit 7".                                                                                         | A     | GR     |           |
| 5308 | Unit 8 offline                | "analogue, as above for unit 8".                                                                                         | A     | GR     |           |
| 5350 | Master KIPLink offline        | Disconnection of KIPLink for the exchange of data between the external and internal units. Check the serial connections. | A     | GR     |           |
| 5401 | Unit 1 fault                  | Group probe alarms attributable to unit 1                                                                                | A     | GR     |           |
| 5402 | Unit 2 fault                  | "analogue, as above for unit 2".                                                                                         | A     | GR     |           |
| 5403 | Unit 3 fault                  | "analogue, as above for unit 3".                                                                                         | A     | GR     |           |
| 5404 | Unit 4 fault                  | "analogue, as above for unit 4".                                                                                         | A     | GR     |           |
| 5405 | Unit 5 fault                  | "analogue, as above for unit 5".                                                                                         | A     | GR     |           |
| 5406 | Unit 6 fault                  | "analogue, as above for unit 6".                                                                                         | A     | GR     |           |
| 5407 | Unit 7 fault                  | "analogue, as above for unit 7".                                                                                         | A     | GR     |           |

| Code | Description  | Details                          | Reset | Action | Threshold |
|------|--------------|----------------------------------|-------|--------|-----------|
| 5408 | Unit 8 fault | "analogue, as above for unit 8". | A     | GR     |           |

(\*\*): for specific alarm events of some compressor inverters, a dedicated code is provided, detailing the event originating from the inverter that generated the alarm in the W3000+ controller.

For a complete list of specific alarm codes, please refer to the following inverter alarm tables.

### 4.3 Table of VSCM expansion probe alarms

Below are the probe alarms and their meanings according to the type of board used and the type of unit, if applicable.

| AL  | pCO Base / pCO Compact                                      |         | pCO5+                                                 |    |
|-----|-------------------------------------------------------------|---------|-------------------------------------------------------|----|
| 421 | Circuit 1 high pressure transducer / circuit 1 level sensor | B1      | Circuit 1 low pressure transducer                     | U1 |
| 422 | Circuit 2 high pressure transducer / circuit 2 level sensor | B2      | Circuit 2 low pressure transducer                     | U2 |
| 423 | Circuit 1 liquid temperature                                | B3      | Circuit 1 liquid temperature / circuit 1 level sensor | U3 |
| 424 | Circuit 2 liquid temperature                                | B4      | Circuit 2 liquid temperature / circuit 2 level sensor | U4 |
| 425 | Circuit 1 low pressure transducer                           | S1 EVO1 |                                                       |    |
| 426 | Circuit 2 low pressure transducer                           | S1 EVO2 |                                                       |    |

| AL  | uPC                                                         |         | uPC MECH/MEHP-iS                                                                         |          |
|-----|-------------------------------------------------------------|---------|------------------------------------------------------------------------------------------|----------|
| 421 | Circuit 1 high pressure transducer / circuit 1 level sensor | B5      | Circuit 1 low pressure transducer                                                        | B5       |
| 422 | Circuit 2 high pressure transducer / circuit 2 level sensor | B10     |                                                                                          |          |
| 423 | Circuit 1 liquid temperature                                | B3      | Circuit 1 liquid temperature (in heatpump)<br>Circuit 1 suction temperature (in chiller) | B3<br>B6 |
| 424 | Circuit 2 liquid temperature                                | B4      |                                                                                          |          |
| 425 | Circuit 1 low pressure transducer                           | S1 EVO1 |                                                                                          |          |
| 426 | Circuit 2 low pressure transducer                           | S1 EVO2 |                                                                                          |          |

#### 4.4 Table of Turbocor compressor alarms

Details of the Turbocor compressor alarms transmitted by the compressor to the W3000+ via the serial line are shown below.

Any groupings of several compressor alarm codes under the same W3000+ controller alarm code are also indicated.

| W3000+ alarm |                                  |                | TURBOCOR alarm |                                                                                                                 |
|--------------|----------------------------------|----------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| AL           | Description                      | Modbus address | Alarm bit      | Reason for fault                                                                                                |
| 141          | Compressor offline               |                |                | Turbocor disconnected                                                                                           |
| 161          | Compressor motor power           | 40106          | 0x0002         | DC bus high voltage detect                                                                                      |
|              |                                  |                | 0x0010         | IGBT inverter error signal active                                                                               |
|              |                                  |                | 0x0100         | Output voltage on the motor generate no current. IGBT inverter command signals disconnected or drive coil error |
|              |                                  |                | 0x0800         | Motor back EMF is low. Shaft might be demagnetized.                                                             |
|              |                                  |                | 0x2000         | Compressor is running in generator mode.                                                                        |
|              |                                  |                | 0x4000         | SCR phase loss.                                                                                                 |
|              |                                  | 40026          | 0x1000         | Winding Temperature                                                                                             |
|              |                                  |                | 0x2000         | Super Heat                                                                                                      |
|              |                                  |                | 0x4000         | Earth Leakage                                                                                                   |
|              |                                  |                | 0x8000         | Soft Start Temperature                                                                                          |
| 301          | Compressor inverter temperature  | 40026          | 0x0001         | Inverter temperature                                                                                            |
| 311          | Compressor discharge temperature |                | 0x0002         | Discharge temperature                                                                                           |
| 321          | Compressor low pressure          |                | 0x0004         | Suction pressure                                                                                                |
| 331          | Compressor high pressure         |                | 0x0008         | Discharge pressure                                                                                              |
| 341          | Compressor input current         |                | 0x0010         | 3 phase current trip                                                                                            |
| 351          | Compressor rotor temperature     |                | 0x0020         | Shaft cavity temperature                                                                                        |
| 361          | Compressor compression ratio     |                | 0x0080         | Total compression ratio fault                                                                                   |
| 371          | Compressor bearings              |                | 0x0100         | Bearing motor fault                                                                                             |
| 381          | Compressor SCR temperature       |                | 0x0400         | SCR temp fault                                                                                                  |
| 391          | Compressor rotor shutdown        | 40106          | 0x0020         | Possible rotor lock                                                                                             |

## 4.5 Table of CSCV compressor alarms

Details of the CSCV compressor alarms transmitted by the compressor to the W3000+ via the serial line are shown below. Any groupings of several compressor alarm codes under the same W3000+ controller alarm code are also indicated. Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

| W3000+ alarm |                               | CSCV compressor alarms |                                   |                                             |
|--------------|-------------------------------|------------------------|-----------------------------------|---------------------------------------------|
| AL           | Description                   | N°                     | Console                           | Reason for fault                            |
| 701          | Inverter offline              |                        |                                   | Disconnected inverter                       |
| 711          | Power alarm                   | 1200                   | Mains failure                     | Loss of alternating current mains           |
|              |                               | 5002                   | Over Voltage                      | Overvoltage                                 |
|              |                               | 5003                   | Under Voltage                     | Undervoltage                                |
| 721          | Motor power alarm             | 4000                   | Motor Overload                    | Motor overloaded                            |
| 731          | Inverter voltage supply alarm | 5001                   | Over Current                      | Output over-current                         |
| 751          | Motor thermal alarm           | 4301                   | Motor Thermal Overload            | Motor thermal probe tripped                 |
| 761          | Phase converter thermal alarm | 5300                   | Over Temperature: Power Module    | Overheating: Power Module                   |
|              |                               | 5301                   | Over Temperature: Cold Plate      | Overheating: Cold Plate                     |
|              |                               | 5302                   | Over Temperature: Power I. Board  | Overheating: Power I. Board                 |
|              |                               | 6303                   | Over Temperature: Control Board   | Overheating: Control Board                  |
| 771          | IGBT alarm                    | 5000                   | Inverter Output                   | Inverter fault                              |
|              |                               | 5004                   | FC Overload                       | Inverter overload                           |
|              |                               | 5801                   | HW Fault: Power MCU               | HW fault: Power MCU                         |
|              |                               | 5802                   | HW Fault: Inrush Fault            | HW fault: Inrush Fault                      |
|              |                               | 5803                   | HW Fault: Inrush Supply Fault     | HW fault: Inrush Supply Fault               |
|              |                               | 5810                   | HW Fault: Gate Drive U            | HW fault: Gate Drive U                      |
|              |                               | 5811                   | HW Fault: Gate Drive V            | HW fault: Gate Drive V                      |
|              |                               | 5812                   | HW Fault: Gate Drive W            | HW fault: Gate Drive W                      |
|              |                               | 5820                   | HW Fault: Fan1 Speed Low          | HW fault: Fan1 Speed Low                    |
|              |                               | 5821                   | HW Fault: Fan2 Speed Low          | HW fault: Fan2 Speed Low                    |
|              |                               | 5851                   | HW Fault: 24V                     | HW fault: 24V                               |
|              |                               | 5852                   | HW Fault: 15V                     | HW fault: 15V                               |
|              |                               | 5853                   | HW Fault: N15V                    | HW fault: N15V                              |
|              |                               | 5854                   | HW Fault: PIB 3.3V                | HW fault: PIB 3.3V                          |
|              |                               | 6801                   | HW Fault: Control MCU             | HW fault: Control MCU                       |
|              |                               | 6810                   | HW Fault: CB 3.3V                 | HW fault: CB 3.3V                           |
|              |                               | 6811                   | HW Fault: User 5V                 | HW fault: User 5V                           |
|              |                               | 6812                   | HW Fault: User/Pres 5V            | HW fault: User/Pres 5V                      |
|              |                               | 6850                   | HW Fault: Power MCU Comm          | HW fault: Power MCU Comm                    |
| 811          | Communication alarm           | 1100                   | Serial Control Timeout            | Loss of communication via serial connection |
| 821          | Inverter safety input alarm   | 2500                   | Safe Torque Off                   | Safe torque disabled                        |
|              |                               | 6814                   | HW: STO Diagnostics               | HW: STO diagnostics                         |
|              |                               | 6901                   | SW: STO Diagnostics               | SW: STO diagnostics                         |
| 851          | Generic alarm                 | 3001                   | Envelope Fault: SST Low, SDT Low  | Envelope fault: SST Low, SDT Low            |
|              |                               | 3002                   | Envelope Fault: SST Low, SDT OK   | Envelope fault: SST Low, SDT OK             |
|              |                               | 3003                   | Envelope Fault: SST Low, SDT High | Envelope fault: SST Low, SDT High           |

| W3000+ alarm |  | CSCV compressor alarms |                                                       |                                                          |
|--------------|--|------------------------|-------------------------------------------------------|----------------------------------------------------------|
|              |  | 3004                   | Envelope Fault: SST OK, SDT High                      | Envelope fault: SST OK, SDT High                         |
|              |  | 3005                   | Envelope Fault: SST High, SDT High                    | Envelope fault: SST High, SDT High                       |
|              |  | 3006                   | Envelope Fault: SST High, SDT OK                      | Envelope fault: SST High, SDT OK                         |
|              |  | 3007                   | Envelope Fault: SST High, SDT Low                     | Envelope fault: SST High, SDT Low                        |
|              |  | 3008                   | Envelope Fault: SST OK, SDT Low                       | Envelope fault: SST OK, SDT Low                          |
|              |  | 3010                   | Envelope Fault: Startup Timeout                       | Envelope fault: Startup Timeout                          |
|              |  | 3011                   | Envelope Fault: Configuration Failure                 | Envelope fault: Configuration Failure                    |
|              |  | 3300                   | High Oil Temperature                                  | High oil temperature                                     |
|              |  | 3400                   | Suction pressure low                                  | Compressor low inlet pressure                            |
|              |  | 3411                   | Discharge Pressure High                               | Compressor high discharge pressure                       |
|              |  | 5600                   | HW Configuration Fault: Power Not Supported           | HW configuration fault: Power Not Supported              |
|              |  | 5601                   | HW config: Gate Drive Missing                         | HW fault: Gate Drive missing                             |
|              |  | 6601                   | HW Configuration Fault: Control Not Supported         | HW configuration fault: Control Not Supported            |
|              |  | 6602                   | HW Configuration Fault: No XB                         | HW configuration fault: No XB                            |
|              |  | 5700                   | Configuration Data Fault: Power Data                  | Configuration data fault: Power Data                     |
|              |  | 5701                   | Configuration Data Fault: Prod Data                   | Configuration data fault: Prod Data                      |
|              |  | 6700                   | Configuration Data Fault: No File                     | Configuration data fault: No File                        |
|              |  | 6701                   | Configuration Data Fault: CRC error                   | Configuration data fault: CRC error                      |
|              |  | 6702                   | Configuration Data Fault: Wrong version               | Configuration data fault: Wrong version                  |
|              |  | 6703                   | Configuration Data Fault: Read Only                   | Configuration data fault: Read Only                      |
|              |  | 6900                   | Datalog error                                         | Datalogger Error                                         |
|              |  | 5710                   | Parameter Configuration Fault: Motor Data             | Parameter configuration fault: Motor Data                |
|              |  | 7300                   | Temperature Sensor Fault: Power Module                | Temperature sensor fault: Power Module                   |
|              |  | 7301                   | Temperature Sensor Fault: Cold Plate                  | Temperature sensor fault: Cold Plate                     |
|              |  | 7302                   | Temperature Sensor Fault: Power I. Board              | Temperature sensor fault: Power I. Board                 |
|              |  | 7303                   | Temperature Sensor Fault: Control Board               | Temperature sensor fault: Control Board                  |
|              |  | 7304                   | Temperature Sensor Fault: Motor Thermistor            | Temperature sensor fault: Motor Thermistor               |
|              |  | 7305                   | Temperature Sensor Fault: Oil Temperature             | Temperature sensor fault: Oil Temperature                |
|              |  | 7403                   | Pressure Sensor Fault: Suction Pressure Signal Low    | Pressure sensor fault: signal of low suction pressure    |
|              |  | 7404                   | Pressure Sensor Fault: Suction Pressure Signal High   | Pressure sensor fault: signal of high suction pressure   |
|              |  | 7405                   | Pressure Sensor Fault: Discharge Pressure Signal Low  | Pressure sensor fault: signal of low discharge pressure  |
|              |  | 7406                   | Pressure Sensor Fault: Discharge Pressure Signal High | Pressure sensor fault: signal of high discharge pressure |

## 4.6 Table of CSW105 compressor alarms

Details of the CSW105 compressor alarms transmitted by the compressor to the W3000+ via the serial line are shown below.

Any groupings of several compressor alarm codes under the same W3000+ controller alarm code are also indicated. Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

| W3000+ alarm |                     | CSW105 compressor alarms |                                                      |                                                      |
|--------------|---------------------|--------------------------|------------------------------------------------------|------------------------------------------------------|
| AL           | Description         | N°                       | Console                                              | Reason for fault                                     |
| 701          | Inverter offline    |                          |                                                      | Disconnected inverter                                |
| 711          | Power alarm         | 1200                     | Mains failure                                        | Loss of alternating current mains                    |
| 721          | Motor power alarm   | 3900                     | Locked rotor                                         | Rotor is locked                                      |
|              |                     | 4201                     | Motor phase loss                                     | Loss of power phase                                  |
|              |                     | 4202                     | Motor phase sequence                                 | Phase sequence error                                 |
|              |                     | 4220                     | Motor frequency low                                  | Low motor frequency                                  |
|              |                     | 4221                     | Motor frequency high                                 | High motor frequency                                 |
|              |                     | 8200                     | Low output current                                   | Low output current                                   |
|              |                     | 8201                     | High output current                                  | High output current                                  |
| 751          | Motor thermal alarm | 4301                     | Motor temperature high                               | High motor temperature                               |
|              |                     | 4302                     | Motor temperature cooldown                           | Motor cooldown                                       |
| 811          | Communication alarm | 1100                     | Serial Control Timeout                               | Loss of communication via serial connection          |
| 851          | Generic alarm       | 1000                     | Too many identical resets in 24 hours                | Too many identical resets in 24 hours                |
|              |                     | 1001                     | Too many timed resets in 1 hour                      | Too many timed resets in 1 hour                      |
|              |                     | 2700                     | Setup fault                                          | Setup fault                                          |
|              |                     | 3001                     | Envelope: SST low, SDT low                           | Envelope: SST low, SDT low                           |
|              |                     | 3002                     | Envelope: SST low                                    | Envelope: SST low                                    |
|              |                     | 3003                     | Envelope: SST low, SDT high                          | Envelope: SST low, SDT high                          |
|              |                     | 3004                     | Envelope: SDT high                                   | Envelope: SDT high                                   |
|              |                     | 3005                     | Envelope: SST high, SDT high                         | Envelope: SST high, SDT high                         |
|              |                     | 3006                     | Envelope: SST high                                   | Envelope: SST high                                   |
|              |                     | 3007                     | Envelope: SST high, SDT low                          | Envelope: SST high, SDT low                          |
|              |                     | 3008                     | Envelope: SDT low                                    | Envelope: SDT low                                    |
|              |                     | 3010                     | Envelope: startup timeout                            | Envelope: startup timeout                            |
|              |                     | 3011                     | Envelope: Configuration failure                      | Envelope: configuration failure                      |
|              |                     | 3022                     | Too many compressor starts                           | Too many compressor starts                           |
|              |                     | 3024                     | Minimum compressor stop time not respected           | Minimum compressor stop time not respected           |
|              |                     | 3025                     | Minimum compressor run time not respected            | Minimum compressor run time not respected            |
|              |                     | 3026                     | Minimum compressor start to start time not respected | Minimum compressor start to start time not respected |
|              |                     | 3027                     | Compressor start without being fully unloaded        | Compressor start without being fully discharged      |
|              |                     | 3302                     | Discharge temperature high                           | High discharge temperature                           |
|              |                     | 3400                     | Suction pressure low                                 | Low suction pressure                                 |
|              |                     | 3411                     | Discharge pressure high                              | High discharge pressure                              |
|              |                     | 3431                     | High pressure switch                                 | Pressure switch tripped                              |
|              |                     | 3501                     | Oil flow                                             | Oil flow switch                                      |
|              |                     | 3502                     | Oil pressure low                                     | Low oil pressure                                     |



| W3000+ alarm |      | CSW105 compressor alarms               |                                         |
|--------------|------|----------------------------------------|-----------------------------------------|
|              | 3503 | Oil stop valve                         | Oil stop valve                          |
|              | 3520 | Oil injection has no effect            | Oil injection has no effect             |
|              | 5851 | HW: 24 V                               | HW: 24 V                                |
|              | 6700 | Config data: no file                   | Config data: no file                    |
|              | 6701 | Config data: CRC error                 | Config data: CRC error                  |
|              | 6702 | Config data: wrong version             | Config data: wrong version              |
|              | 6703 | Config data: read only                 | Config data: read-only                  |
|              | 6810 | HW: 3.3 V                              | HW: 3.3 V                               |
|              | 6811 | HW: user 5 V                           | HW: user 5 V                            |
|              | 6813 | HW: 24 V                               | HW: 24 V                                |
|              | 6900 | Datalog error                          | Datalog error                           |
|              | 7304 | Sensor: motor thermistor               | Sensor: motor thermistor                |
|              | 7308 | Sensor: discharge temperature          | Sensor: discharge temperature           |
|              | 7320 | Sensor: aux temperature                | Sensor: auxiliary temperature           |
|              | 7401 | Sensor: suction pressure               | Sensor: suction pressure                |
|              | 7402 | Sensor: discharge pressure             | Sensor: discharge pressure              |
|              | 7403 | Sensor: suction pressure signal low    | Sensor: low suction pressure signal     |
|              | 7404 | Sensor: suction pressure signal high   | Sensor: high suction pressure signal    |
|              | 7405 | Sensor: discharge pressure signal low  | Sensor: low discharge pressure signal   |
|              | 7406 | Sensor: discharge pressure signal high | Sensor: high discharge pressure signal  |
|              | 7510 | Sensor: oil protection                 | Sensor: oil protection                  |
|              | 7511 | Sensor: oil protection 2               | Sensor: oil protection 2                |
|              | 7580 | Slider: no sensor detected             | Slider: no sensor detected              |
|              | 7581 | Slider: less than 2 magnets detected   | Slider: less than 2 magnets detected    |
|              | 7582 | Slider: sample data invalid            | Slider: wrong sample data               |
|              | 7583 | Slider: more than 2 magnets detected   | Slider: more than 2 magnets detected    |
|              | 7584 | Slider: position invalid               | Slider: wrong position                  |
|              | 8202 | Output current: oil heater low         | Output current: oil heating (low)       |
|              | 8203 | Output current: oil heater high        | Output current: oil heating (high)      |
|              | 8204 | Output current: additional fan low     | Output current: additional fan (low)    |
|              | 8205 | Output current: head fan high          | Output current: additional fan (high)   |
|              | 8206 | Output current: CR-1 low               | Output current: CR-1 (low)              |
|              | 8207 | Output current: CR-1 high              | Output current: CR-1 (high)             |
|              | 8208 | Output current: CR-2 low               | Output current: CR-2 (low)              |
|              | 8209 | Output current: CR-2 high              | Output current: CR-2 (high)             |
|              | 8210 | Output current: CR-3 low               | Output current: CR-3 (low)              |
|              | 8211 | Output current: CR-3 high              | Output current: CR-3 (high)             |
|              | 8212 | Output current: unloader low           | Output current: partialiser (low)       |
|              | 8213 | Output current: unloader high          | Output current: partialiser (high)      |
|              | 8214 | Output current: oil inj low            | Output current: oil injection (low)     |
|              | 8215 | Output current: oil inj high           | Output current: oil injection (high)    |
|              | 8216 | Output current: liquid inj low         | Output current: liquid injection (low)  |
|              | 8217 | Output current: liquid inj high        | Output current: liquid injection (high) |
|              | 8218 | Output current: HW trip                | Output current: HW error                |

| W3000+ alarm |  | CSW105 compressor alarms |                                 |                                 |
|--------------|--|--------------------------|---------------------------------|---------------------------------|
|              |  | 8580                     | Slider: Vi position control     | Slider: Vi position control     |
|              |  | 8581                     | Slider: CR position control     | Slider: CR position control     |
|              |  | 8582                     | Slider: Gap between Vi and CR   | Slider: gap between Vi and CR   |
|              |  | 8583                     | Slider: Gap between Zero and Vi | Slider: gap between Zero and Vi |

## 4.7 Table of M35A inverter compressor alarms

Details of the compressor with M35A inverter alarms transmitted by the inverter to the W3000+ via the serial line are shown below.

When applicable, the set of inverter alarm codes for the same alarm code of the W3000 + controller is also given. Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

| W3000+ alarm |                               | Compressor alarms with M35A inverter |                                                    |                                                   |
|--------------|-------------------------------|--------------------------------------|----------------------------------------------------|---------------------------------------------------|
| AL           | Description                   | N°                                   | Description                                        | Reason for fault                                  |
| 701          | Inverter offline              |                                      |                                                    | Disconnected inverter                             |
| 711          | Power alarm                   | 5                                    | DC Bus under voltage (LU)                          | Over-voltage of the DC link intermediate circuit  |
|              |                               | 6                                    | DC Bus over voltage (OU)                           | Under-voltage of the DC link intermediate circuit |
|              |                               | 10                                   | Over current at acceleration state (Software trip) | Over current of inverter during acceleration      |
|              |                               | 12                                   | Over current at steady state (Software trip)       | Over current of inverter in steady state          |
|              |                               | 13                                   | Over current at deceleration state (Software trip) | Over current of inverter during deceleration      |
| 721          | Motor power alarm             | 2                                    | Over current at acceleration state (Hardware trip) | Over current of motor during acceleration         |
|              |                               | 3                                    | Over current at steady state (Hardware trip)       | Over current of motor in steady state             |
|              |                               | 4                                    | Over current at deceleration state (Hardware trip) | Over current of motor during deceleration         |
| 731          | Inverter voltage supply alarm | 11                                   | Overload trip (OL)                                 | Exceeding of the rated current of the inverter    |
| 751          | Motor thermal alarm           | 7                                    | Compressor Overheat (Software trip)                | Engine overheat                                   |
| 811          | Communication alarm           | 14                                   | Compressor connected loss                          | Loss of communication via serial connection       |
|              |                               | 15                                   | Communication time out error                       | The time for communication has elapsed            |
| 851          | Generic alarm                 | 1                                    | Fin Overheat                                       | Overheating of the inverter dissipator            |
|              |                               | 16                                   | Power module over temperature                      | Overheating of the inverter control board         |
|              |                               | 20                                   | Driver error                                       | Generic driver error                              |
|              |                               | 30                                   | Emergency switch active (HW)                       | Emergency stop activation (hardware)              |
|              |                               | 31                                   | Emergency switch active (SW)                       | Emergency stop activation (software)              |
|              |                               | 40                                   | Abnormal condition                                 | Sub-optimal operating conditions                  |
|              |                               | 128                                  | Internal memory error                              | Fault in internal memory of inverter              |
|              |                               | 129                                  | Internal memory error                              | Fault in internal memory of inverter              |

## 4.8 Table of Danfoss inverter compressor alarms

Details of the compressor with Danfoss inverter alarms transmitted by the inverter to the W3000+ via the serial line are shown below.

When applicable, the set of inverter alarm codes for the same alarm code of the W3000 + controller is also given. Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

| W3000+ alarm |                               | Compressor alarms with Danfoss inverter |                                   |                                                                                                                                          |
|--------------|-------------------------------|-----------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| AL           | Description                   | N°                                      | Description                       | Reason for fault                                                                                                                         |
| 701          | Inverter offline              |                                         |                                   | Disconnected inverter                                                                                                                    |
| 711          | Power alarm                   | 4                                       | Mains phase loss                  | Missing mains power phase or excessively unbalanced voltage between the phases                                                           |
|              |                               | 7                                       | DC over voltage                   | Over-voltage of the DC link intermediate circuit                                                                                         |
|              |                               | 8                                       | DC under voltage                  | Under-voltage of the DC link intermediate circuit                                                                                        |
|              |                               | 36                                      | Mains failure                     | No input voltage                                                                                                                         |
| 721          | Motor power alarm             | 13                                      | Over Current                      | Output over-current                                                                                                                      |
|              |                               | 14                                      | Earth Fault                       | Dispersion from the output phases of the inverter towards the earth (in the cable between the inverter and motor or in the motor itself) |
|              |                               | 16                                      | Short Circuit                     | The motor or the connecting terminals of the motor have short-circuited                                                                  |
|              |                               | 30                                      | Motor phase U is missing          | No U phase between the inverter and the motor                                                                                            |
|              |                               | 31                                      | Motor phase V is missing          | No V phase between the inverter and the motor                                                                                            |
|              |                               | 32                                      | Motor phase W is missing          | No W phase between the inverter and the motor                                                                                            |
|              |                               | 33                                      | Inrush fault                      | Excessive number of power-ups in a short period of time                                                                                  |
| 731          | Inverter voltage supply alarm | 9                                       | Inverter overloaded               | Exceeding of the rated current of the inverter                                                                                           |
| 751          | Motor thermal alarm           | 10                                      | Motor ETR over temperature        | Motor overheating (Electronic Thermal Protection)                                                                                        |
|              |                               | 11                                      | Motor thermistor over temperature | Motor (thermistor) overheating or disconnection of the thermistor                                                                        |
| 811          | Communication alarm           | 17                                      | Control Word Timeout              | Loss of communication via serial connection                                                                                              |
|              |                               | 34                                      | Fieldbus communication fault      | Fieldbus communication board not working                                                                                                 |
| 851          | Generic alarm                 | 2                                       | Live zero error                   | The signal at terminal 53 or 54 is less than 50% of the minimum set for these terminals                                                  |
|              |                               | 12                                      | Torque limit                      | The torque supplied is above the maximum set limit                                                                                       |
|              |                               | 23                                      | Internal fans fault               | Inverter fans faulty or not installed                                                                                                    |
|              |                               | 24                                      | External fan fault                | Inverter fans faulty or not installed                                                                                                    |
|              |                               | 25                                      | Brake resistor short-circuited    | Braking resistor short-circuited                                                                                                         |
|              |                               | 26                                      | Brake resistor power limit        | The power dissipated from the braking resistor is above the maximum set limit                                                            |
|              |                               | 27                                      | Brake chopper fault               | Faulty transistor of the braking resistor                                                                                                |
|              |                               | 28                                      | Brake check failed                | Faulty braking resistor                                                                                                                  |
|              |                               | 29                                      | Drive over temperature            | Overheating of inverter (95 °C ± 5°C)                                                                                                    |
|              |                               | 38                                      | Internal fault                    | Fault in inverter                                                                                                                        |
|              |                               | 47                                      | 24 V supply low                   | Faulty inverter control board                                                                                                            |
|              |                               | 48                                      | 1.8 V supply low                  | Faulty inverter control board                                                                                                            |
|              |                               | 50+58                                   | AMA not ok                        | AMA (Automatic Motor Adaptation) error                                                                                                   |
|              |                               | 65                                      | Control Card Over Temperature     | Overheating of the inverter control board                                                                                                |

| W3000+ alarm |  | Compressor alarms with Danfoss inverter |                                    |                                                         |
|--------------|--|-----------------------------------------|------------------------------------|---------------------------------------------------------|
|              |  | 67                                      | Option Configuration has Changed   | Addition/removal of optional modules                    |
|              |  | 68                                      | Safe Stop                          | The Safe Stop function is enabled                       |
|              |  | 80                                      | Drive Initialised to Default Value | The factory settings of the inverter have been restored |
|              |  | 95                                      | Broken Belt                        | Torque below the minimum set limit                      |
|              |  | 250                                     | New Spare Part                     | A component in the inverter has been replaced           |
|              |  | 251                                     | New Type Code                      | The inverter has a new Type Code                        |

## 4.9 Table of Mitsubishi FR-F800 inverter compressor alarms

Details of the compressor with Mitsubishi inverter alarms transmitted by the inverter to the W3000 + via the serial line are shown below.

When applicable, the set of inverter alarm codes for the same alarm code of the W3000 + controller is also given.

Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

| W3000+ alarm |                               | Compressor alarms with Mitsubishi FR-F800 inverter |     |                                                            |                                                                      |
|--------------|-------------------------------|----------------------------------------------------|-----|------------------------------------------------------------|----------------------------------------------------------------------|
| AL           | Description                   | Inverter display code                              | N°  | Description                                                | Reason for fault                                                     |
| 701          | Inverter offline              |                                                    |     |                                                            | Disconnected inverter                                                |
| 711          | Power alarm                   | E.OV1                                              | 32  | Regenerative overvoltage trip during acceleration          | Over-voltage of the DC intermediate circuit in acceleration          |
|              |                               | E.OV2                                              | 33  | Regenerative overvoltage trip during constant speed        | Over-voltage of the DC intermediate circuit at constant speed        |
|              |                               | E.OV3                                              | 34  | Regenerative overvoltage trip during deceleration or stop  | Over-voltage of the DC intermediate circuit in deceleration          |
|              |                               | E.IPF                                              | 80  | Instantaneous power failure                                | No input voltage                                                     |
|              |                               | E.UVT                                              | 81  | Undervoltage                                               | Inverter power supply under-voltage                                  |
|              |                               | E.ILF                                              | 82  | Input phase loss                                           | Missing mains power phase                                            |
|              |                               | E.GF                                               | 128 | Output side earth (ground) fault overcurrent               | Dispersion to earth over-current                                     |
|              |                               | E.LF                                               | 129 | Output phase loss                                          | Missing phase between inverter and motor                             |
| 721          | Motor power alarm             | E.IOH                                              | 197 | Inrush current limit circuit fault                         | Overheating of the switch-on circuit resistance                      |
|              |                               | E.OC1                                              | 16  | Overcurrent trip during acceleration                       | Output over-current in acceleration                                  |
|              |                               | E.OC2                                              | 17  | Overcurrent trip during constant speed                     | Output over-current at constant speed                                |
|              |                               | E.OC3                                              | 18  | Overcurrent trip during deceleration or stop               | Output over-current in deceleration                                  |
|              |                               | E.THM                                              | 49  | Motor overload trip (electronic thermal relay function)    | Motor overheating (Electronic Thermal Protection)                    |
| 731          | Inverter voltage supply alarm | E.CDO                                              | 196 | Abnormal output current detection                          | Output over-current                                                  |
|              |                               | E.THT                                              | 48  | Inverter overload trip (electronic thermal relay function) | Exceeding of the rated current of the inverter                       |
|              |                               | E.OHT                                              | 144 | External thermal relay operation                           | Motor overheating detected by thermistor outside or inside the motor |
|              |                               | E.LUP                                              | 98  | Upper limit fault detection                                | Motor overloaded                                                     |
|              |                               | E.OPT                                              | 160 | Option fault                                               | Alarm definable by parameters                                        |
| 811          | Communication alarm           | E.OP1                                              | 161 | Communication option fault                                 | Loss of communication via serial connection                          |
|              |                               | E.PUE                                              | 177 | PU disconnection                                           | Loss of communication between inverter and power unit                |
|              |                               | E.SER                                              | 198 | Communication fault (inverter)                             | Loss of communication via serial connection                          |
|              |                               | E.EHR                                              | 231 | Ethernet communication fault                               | Loss of communication via ethernet connection                        |
| 821          | Inverter 1 safety input alarm | E.SAF                                              | 201 | Safety circuit error                                       | Safety circuit error                                                 |
| 851          | Generic alarm                 | E.FIN                                              | 64  | Heatsink overheat                                          | Overheating of the inverter dissipator                               |
|              |                               | E.OLT                                              | 96  | Stall prevention stop                                      | Stop due to stalling prevention function                             |
|              |                               | E.SOT                                              | 97  | Loss of synchronism detection                              | Loss of synchronism between inverter and motor                       |
|              |                               | E.LDN                                              | 99  | Lower limit fault detection                                | Motor underload                                                      |

| W3000+ alarm |       |     | Compressor alarms with Mitsubishi FR-F800 inverter                                    |  |                                                                            |
|--------------|-------|-----|---------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------|
|              | E.BE  | 112 | Internal circuit fault                                                                |  | Fault in inverter                                                          |
|              | E.PTC | 145 | PTC thermistor operation                                                              |  | Stop due to PTC thermistor overtemperature                                 |
|              | E.16  | 164 | User definition error by the PLC function                                             |  | Alarms defined by PLC functions                                            |
|              | E.17  | 165 |                                                                                       |  |                                                                            |
|              | E.18  | 166 |                                                                                       |  |                                                                            |
|              | E.19  | 167 |                                                                                       |  |                                                                            |
|              | E.20  | 168 |                                                                                       |  |                                                                            |
|              | E.PE  | 176 | Parameter storage device fault                                                        |  | Parameter saving fault (control board)                                     |
|              | E.RET | 178 | Retry count excess                                                                    |  | Exceeding maximum number of automatic alarm resets                         |
|              | E.PE2 | 179 | Parameter storage device fault                                                        |  | Parameter saving fault (main board)                                        |
|              | E.CPU | 192 | CPU fault                                                                             |  | Inverter CPU fault                                                         |
|              | E.CTE | 193 | Operation panel power supply short circuit/RS-485 terminal power supply short circuit |  | Control panel short circuit / RS-485 communication terminals short circuit |
|              | E.P24 | 194 | 24 V DC power fault                                                                   |  | 24 V AC/DC power supply short circuit                                      |
|              | E.AIE | 199 | Analog input fault                                                                    |  | Abnormal input current or voltage at terminal 2                            |
|              | E.USB | 200 | USB communication fault                                                               |  | Loss of communication via USB connection                                   |
|              | E.PBT | 202 | Internal circuit fault                                                                |  | Fault in inverter                                                          |
|              | E.OS  | 208 | Overspeed occurrence                                                                  |  | Motor overspeed                                                            |
|              | E.LCI | 228 | 4 mA input fault                                                                      |  | Analogue input current level below 2 mA                                    |
|              | E.PCH | 229 | Pre-charge fault                                                                      |  | Pre-charge operation fault                                                 |
|              | E.PID | 230 | PID signal fault                                                                      |  | PID control fault                                                          |
|              | E. 1  | 241 | Option fault                                                                          |  | Option cards connection fault                                              |
|              | E. 2  | 242 |                                                                                       |  |                                                                            |
|              | E. 3  | 243 |                                                                                       |  |                                                                            |
|              | E. 5  | 245 | CPU fault                                                                             |  | Inverter CPU fault                                                         |
|              | E.6   | 246 |                                                                                       |  |                                                                            |
|              | E. 7  | 247 |                                                                                       |  |                                                                            |
|              | E.13  | 253 | Internal circuit fault                                                                |  | Fault in inverter                                                          |

#### 4.10 Table of STEP inverter compressor alarms

Details of the compressor with STEP inverter alarms transmitted by the inverter to the W3000+ via the serial line are shown below.

When applicable, the set of inverter alarm codes for the same alarm code of the W3000 + controller is also given.

Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

| W3000+ alarm |                   | Compressor alarms with STEP inverter |                                    |                                                                                        |
|--------------|-------------------|--------------------------------------|------------------------------------|----------------------------------------------------------------------------------------|
| AL           | Description       | N°                                   | Description                        | Reason for fault                                                                       |
| 701          | Inverter offline  |                                      |                                    | Disconnected inverter                                                                  |
| 711          | Power alarm       | 8                                    | Bus over voltage protection        | Abnormal input voltage                                                                 |
|              |                   |                                      |                                    | Re-rapid starting during motor in high speed rotating                                  |
|              |                   |                                      |                                    | Too high load rotational inertia                                                       |
|              |                   |                                      |                                    | Too short deceleration time                                                            |
|              |                   |                                      |                                    | Too high braking resistance or no resistor                                             |
|              |                   |                                      |                                    | Abnormal input power                                                                   |
|              |                   |                                      |                                    | Too large load rotational inertia                                                      |
|              |                   |                                      |                                    | Too high braking resistance or no resistor                                             |
|              |                   | 9                                    | Bus undervoltage                   | Power voltage lower than minimum equipment working voltage                             |
|              |                   |                                      |                                    | Instantaneous power off                                                                |
|              |                   |                                      |                                    | Too high fluctuation of input power voltage                                            |
|              |                   |                                      |                                    | Loose power connection block                                                           |
|              |                   |                                      |                                    | Internal switch power abnormal                                                         |
|              |                   |                                      |                                    | A large starting current load existing in the same power supply system                 |
|              |                   | 23                                   | Input over-voltage                 | Too high input voltage                                                                 |
|              |                   |                                      |                                    | Problem by detection loop of switch voltage                                            |
|              |                   | 29                                   | Loss input phase                   | Abnormal voltage at input side                                                         |
|              |                   |                                      |                                    | Loss input voltage phase                                                               |
|              |                   |                                      |                                    | Input terminal block loose                                                             |
|              |                   | 44                                   | The input power supply is abnormal | The input power supply changes a lot                                                   |
|              |                   |                                      |                                    | Input contactor abnormally connected                                                   |
|              |                   |                                      |                                    | Temporary electricity                                                                  |
| 721          | Motor power alarm | 10                                   | Loss of output phase               | Abnormal wiring at inverter output, missing or breaking connection                     |
|              |                   |                                      |                                    | Loose output terminal block                                                            |
|              |                   |                                      |                                    | Insufficient motor power, less than 1/20 of maximum applicable inverter motor capacity |
|              |                   |                                      |                                    | Unbalanced three phase output                                                          |
|              |                   | 11                                   | Motor over current at low speed    | Low network voltage                                                                    |
|              |                   |                                      |                                    | Improper motor parameter setting                                                       |
|              |                   |                                      |                                    | Rapid start during motor running                                                       |
|              |                   |                                      |                                    | The acceleration time for load inertia (GD2) is too short.                             |
|              |                   |                                      |                                    | Low network voltage                                                                    |
|              |                   |                                      |                                    | Too large load rotational inertia                                                      |
|              |                   |                                      |                                    | Improper motor parameter setting                                                       |
|              |                   |                                      |                                    | Too short deceleration time                                                            |



| W3000+ alarm |                               | Compressor alarms with STEP inverter |                                           |                                                                                                     |
|--------------|-------------------------------|--------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------|
|              |                               |                                      |                                           | The deceleration time for load inertia (GD2) is too short                                           |
|              |                               |                                      |                                           | Abrupt load change in running                                                                       |
|              |                               |                                      |                                           | Improper motor parameter setting                                                                    |
|              |                               | 16                                   | Wrong motor phase                         | Motor reversed connected                                                                            |
|              |                               | 21                                   | abc over current                          | Motor single phase shorted to earth                                                                 |
|              |                               |                                      |                                           | Encoder fault                                                                                       |
|              |                               |                                      |                                           | Test loop of drive board fault                                                                      |
|              |                               | 27                                   | Output over current                       | Too long time operation under overload status. The larger the load, the shorter the time is.        |
|              |                               |                                      |                                           | Motor blocked                                                                                       |
|              |                               |                                      |                                           | Motor coil short                                                                                    |
|              |                               |                                      |                                           | Output short                                                                                        |
|              |                               | 31                                   | Over current at motor high speed          | Power grid voltage too low                                                                          |
|              |                               |                                      |                                           | Abrupt load in operation                                                                            |
|              |                               |                                      |                                           | Incorrect motor parameter                                                                           |
|              |                               |                                      |                                           | Wrong encoder parameter or interference                                                             |
|              |                               | 32                                   | Grounding protection                      | Wrong wiring                                                                                        |
|              |                               |                                      |                                           | Abnormal motor                                                                                      |
|              |                               | 35                                   | Unbalance output                          | Large drain current to earth at inverter output side                                                |
|              |                               |                                      |                                           | Abnormal wiring at inverter output side, missing or broking connection                              |
|              |                               | 39                                   | Too high instantaneous current            | Motor three phase unbalance                                                                         |
|              |                               |                                      |                                           | Three phase instantaneous current over and alarm while Ia, Ib and Ic not in operation               |
|              |                               | 42                                   | IGBT short circuit protection             | The cause is the same as Fault 1.                                                                   |
|              |                               | 45                                   | I2t instantaneous over current protection | Same as fault 21,27                                                                                 |
|              |                               | 46                                   | I2t valid over current protection         |                                                                                                     |
|              |                               | 51                                   | Abnormal running output current           | Improper parameter setting Disconnection between the inverter and the motor Inverter hardware fault |
| 731          | Inverter voltage supply alarm | 1                                    | Module over-current protection            | Too high voltage at DC terminal                                                                     |
|              |                               |                                      |                                           | Possible short connection to peripheral circuit                                                     |
|              |                               |                                      |                                           | Losing output phase                                                                                 |
|              |                               |                                      |                                           | Encoder fault                                                                                       |
|              |                               |                                      |                                           | Hardware poor contact or damage                                                                     |
|              |                               |                                      |                                           | Internal component loose                                                                            |
| 811          | Communication alarm           | 43                                   | Communication fault                       | The power circuit components overheat due to the cooling fan or cooling system problem.             |
|              |                               |                                      |                                           | Communication disconnected No communication data received within the fixed time                     |
| 851          | Generic alarm                 | 2                                    | 2 ADC fault                               | Current sensor damaged                                                                              |
|              |                               |                                      |                                           | Problem of current sampling loop                                                                    |
|              |                               | 3                                    | Heatsink overheat                         | Ambient temperature too high                                                                        |
|              |                               |                                      |                                           | The cooling fan damaged or foreign object entered into the cooling system.                          |
|              |                               |                                      |                                           | Cooling fan is abnormal                                                                             |
|              |                               |                                      |                                           | Temperature detect circuit fault                                                                    |
|              |                               | 4                                    | Braking unit failure                      | Braking unit damaged                                                                                |

| W3000+ alarm |  | Compressor alarms with STEP inverter |                                                                         |
|--------------|--|--------------------------------------|-------------------------------------------------------------------------|
|              |  |                                      | External braking resistor circuit short                                 |
|              |  | 5                                    | Blown fuse failure                                                      |
|              |  | 6                                    | Too low input voltage                                                   |
|              |  |                                      | Motor stop rotating or abrupt loading change                            |
|              |  |                                      | Encoder failure                                                         |
|              |  |                                      | Missing output phase                                                    |
|              |  | 7                                    | Too short acceleration time                                             |
|              |  |                                      | Too high load                                                           |
|              |  |                                      | Too low current limit                                                   |
|              |  | 13                                   | Current detected at stopping                                            |
|              |  | 22                                   | Current keep on flowing while motor stops                               |
|              |  |                                      | Inactive output relay                                                   |
|              |  |                                      | Relay triggered, brake not released                                     |
|              |  |                                      | No signal detected by feedback component                                |
|              |  | 30                                   | Wrong encoder parameter set or interference                             |
|              |  |                                      | Abrupt load change                                                      |
|              |  |                                      | Wrong parameter for over speed protection                               |
|              |  | 33                                   | Capacitor aged                                                          |
|              |  | 34                                   | Inverter capacitor aged                                                 |
|              |  | 36                                   | External fault                                                          |
|              |  | 37                                   | External fault signal input                                             |
|              |  | 38                                   | Wrong parameter setting                                                 |
|              |  | 40                                   | Wrong parameter setting                                                 |
|              |  | 41                                   | Current sensor fault                                                    |
|              |  | 41                                   | Drive board hardware fault                                              |
|              |  | 41                                   | Connection of external brake resistor short                             |
|              |  | 41                                   | KMY detect contactor signal and KMY control signal don't match          |
|              |  | 41                                   | Brake switch detect contactor signal and its control signal don't match |

#### 4.11 Table of PSD inverter compressor alarms

The table shows the PSD inverter alarm codes and statuses (transmitted via serial connection to the W3000+ controller) and the corresponding W3000+ controller alarm code. Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

For automatic reset alarms (see section "Table of W3000+ alarms"), the maximum number of interventions is 3 per minute, after which a manual intervention will be required.

The W3000+ controller will automatically attempt to reset alarms every 2 minutes up to a maximum of 10 attempts, after which the alarm will become manual reset.

If safety alarms are triggered (values greater than 100 or 200 under the N°/Bit column in the table), it is necessary to wait 240 seconds before the alarm can be reset.

In the following table, the codes of inverter originated alarms are shown as follows:

1-28: basic alarm code

100-115: status of safety alarms 1 (each number corresponds to the related bits of the first register in progressive order.

Example: 100 = bit 0)

200-215: status of safety alarms 2 (each number corresponds to the related bits of the second register in progressive order.

Example: 201 = bit 1)

| W3000+ alarm |                            | Compressor alarms with PSD inverter |          |                                     |
|--------------|----------------------------|-------------------------------------|----------|-------------------------------------|
| AL           | Description                | Variable                            | No. /Bit | Description                         |
| 701          | Inverter offline           |                                     |          | Disconnected inverter               |
| 711          | Power alarm                | Alarm code                          | 1        | Overcurrent                         |
|              |                            |                                     | 3        | Overvoltage                         |
|              |                            |                                     | 4        | Undervoltage                        |
|              |                            |                                     | 7        | HW Overcurrent                      |
|              |                            |                                     | 21       | Power overvoltage                   |
|              |                            |                                     | 22       | Power undervoltage or missing phase |
|              |                            |                                     | 25       | Earth fault                         |
|              |                            |                                     | 28       | Drive overload                      |
|              |                            | Alarm status 1                      | 100      | Current measurement error U,V,W     |
|              |                            |                                     | 101      | U,V,W currents unbalanced           |
|              |                            |                                     | 102      | Overcurrent or earth fault          |
|              |                            |                                     | 105      | Power input not found               |
|              |                            |                                     | 114      | Undervoltage supply                 |
|              |                            |                                     | 115      | Supply voltage measurement error    |
| 721          | Motor power alarm          | Alarm code                          | 2        | Motor overloaded                    |
|              |                            |                                     | 17       | Motor phase missing                 |
|              |                            |                                     | 19       | Motor stall                         |
|              |                            | Alarm status 1                      | 106      | Motor drive error                   |
|              |                            |                                     | 109      | Compressor stalled                  |
| 801          | Inverter 1 field bus alarm | Alarm code                          | 12       | DC bus undulation                   |
|              |                            | Alarm status 1                      | 10       | DC bus overcurrent                  |
|              |                            |                                     | 11       | DC bus current measurement error    |
|              |                            |                                     | 12       | DC bus voltage out of limit         |
|              |                            |                                     | 13       | DC bus voltage measurement error    |

| W3000+ alarm |                                     | Compressor alarms with PSD inverter |     |                               |
|--------------|-------------------------------------|-------------------------------------|-----|-------------------------------|
|              |                                     | Alarm status 2                      | 200 | DC bus overload               |
|              |                                     |                                     | 201 | DC bus load measurement error |
| 811          | Communication alarm                 | Alarm code                          | 13  | Serial communication error    |
|              |                                     | Alarm status 1                      | 108 | Serial communication error    |
| 821          | Inverter 1 safety input alarm (STO) | Alarm status 1                      | 103 | STO input open                |
|              |                                     |                                     | 104 | STO internal circuit fault    |
| 851          | Generic alarm                       | Alarm code                          | 5   | Drive overtemperature         |
|              |                                     |                                     | 6   | Drive undertemperature        |
|              |                                     |                                     | 10  | CPU error                     |
|              |                                     |                                     | 11  | Default parameters            |
|              |                                     |                                     | 14  | Internal thermistor faulty    |
|              |                                     |                                     | 20  | PFC module error              |
|              |                                     |                                     | 26  | CPU synchronisation error 1   |
|              |                                     |                                     | 27  | CPU synchronisation error 2   |
|              |                                     | Alarm status 2                      | 202 | Drive overtemperature         |
|              |                                     |                                     | 203 | Drive undertemperature        |
|              |                                     |                                     | 204 | Internal thermistor faulty    |
|              |                                     |                                     | 205 | Synchronization error         |
|              |                                     |                                     | 206 | Safety parameters invalid     |
|              |                                     |                                     | 208 | Short circuit error           |

## 4.12 Table of ABB ACH 580 inverter compressor alarms

Details of the compressor with ABB inverter alarms transmitted by the inverter to the W3000+ via the serial line are shown below.

When applicable, the set of inverter alarm codes for the same alarm code of the W3000 + controller is also given.

Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

| W3000+ alarm |                               | Compressor alarms with ABB ACH 580 inverter |                                        |                                                                                                                                                                                          |
|--------------|-------------------------------|---------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AL           | Description                   | N°                                          | Description                            | Reason for fault                                                                                                                                                                         |
| 701          | Inverter offline              |                                             |                                        | Disconnected inverter.                                                                                                                                                                   |
| 711          | Power alarm                   | 2330                                        | Ground dispersion                      | The converter has detected a load imbalance, normally due to a ground fault in the motor or motor cable.                                                                                 |
|              |                               | 3130                                        | Input phase loss                       | The intermediate circuit DC voltage fluctuates due to a lack of phase of the input power line or a blown fuse.                                                                           |
|              |                               | 3210                                        | DC link overvoltage                    | Excessive intermediate circuit DC voltage.                                                                                                                                               |
|              |                               | 3220                                        | DC link undervoltage                   | The intermediate circuit DC voltage is insufficient due to: lack of supply phase, blown fuse or failure in the rectifier bridge.                                                         |
| 721          | Motor power alarm             | 2340                                        | Short circuit                          | Short circuit in the motor cable(s) or motor.                                                                                                                                            |
|              |                               | 3181                                        | Wiring or ground fault                 | Incorrect input power and motor cable connection (i.e. the input power cable is connected to the motor connection of the frequency converter).                                           |
|              |                               | 3381                                        | Output phase loss                      | Motor circuit fault due to missing motor connection (not all three phases are connected).                                                                                                |
|              |                               | 8002                                        | ULC overload fault                     | User load curve: the signal has been above the overload curve for too long.                                                                                                              |
| 731          | Inverter voltage supply alarm | 2310                                        | Overcurrent                            | The output current has exceeded the internal fault limit. In addition to an actual overcurrent situation, this fault can also be caused by a ground fault or the loss of a supply phase. |
| 771          | IGBT alarm                    | 2381                                        | IGBT overload                          | Excessive IGBT-box junction temperature. This fault protects the IGBTs and can be triggered by a short circuit in the motor cable.                                                       |
|              |                               | 4210                                        | IGBT overtemperature                   | Excessive estimated temperature of the IGBTs of the converter.                                                                                                                           |
|              |                               | 4201                                        | IGBT temperature                       | Excessive temperature of the IGBTs of the converter.                                                                                                                                     |
|              |                               | 4380                                        | Excessive temperature difference       | Excessive temperature difference among the IGBTs of different phases.                                                                                                                    |
|              |                               | 7191                                        | Chopper short-circuit                  | Short circuit in the IGBTs of the braking chopper.                                                                                                                                       |
|              |                               | 7192                                        | Excessive chopper IGBT temperature     | The temperature of the IGBTs of the braking chopper has exceeded the internal fault limit.                                                                                               |
| 781          | Stator resistance alarm       | 7181                                        | Braking resistor                       | Braking resistor broken or not connected.                                                                                                                                                |
|              |                               | 7183                                        | Excessive braking resistor temperature | The temperature of the braking resistor has exceeded the failure limit defined by parameter 43.11 <i>Braking resistor failure limit</i> .                                                |
|              |                               | 7184                                        | Braking resistor wiring                | Braking resistor short circuit or braking chopper control failure.                                                                                                                       |
| 791          | Overspeed alarm               | 7310                                        | Overspeed                              | The motor rotation exceeds the maximum permissible speed due to: incorrect min/max speed setting, insufficient braking torque, load changes when using the torque reference.             |
| 801          | Inverter fieldbus alarm       | 6681                                        | EFB communication loss                 | Embedded fieldbus (EFB) communication interruption.                                                                                                                                      |
| 811          | Communication alarm           | 5681                                        | PU Communication                       | Communication errors detected between the converter control unit and the power supply unit.                                                                                              |
|              |                               | 5682                                        | PU loss                                | Loss of connection between the converter control unit and the power supply unit.                                                                                                         |

| W3000+ alarm |                                                           | Compressor alarms with ABB ACH 580 inverter |                                    |                                                                                                                                                                        |
|--------------|-----------------------------------------------------------|---------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                                           | 6682                                        | EFB configuration file             | Unable to read the embedded fieldbus (EFB) configuration file.                                                                                                         |
|              |                                                           | 6683                                        | Invalid EFB parameters             | The parameter settings of the embedded fieldbus (EFB) are inconsistent or incompatible with the selected protocol.                                                     |
|              |                                                           | 6684                                        | EFB load failure                   | Unable to load the firmware of the embedded fieldbus (EFB) protocol.<br>Incompatibility between the firmware versions of the EFB protocol and the frequency converter. |
|              |                                                           | 6685                                        | EFB fault 2                        | Fault reserved for EFB protocol application.                                                                                                                           |
|              |                                                           | 6686                                        | EFB fault 3                        | Fault reserved for EFB protocol application.                                                                                                                           |
|              |                                                           | 6882                                        | 32-bit text tab overflow           | Internal fault.                                                                                                                                                        |
|              |                                                           | 6885                                        | Text file overflow                 | Internal fault.                                                                                                                                                        |
|              |                                                           | 7510                                        | FBA A Communication                | Loss of cyclic communication between the converter and the fieldbus adapter A module or between the PLC and the fieldbus adapter A module.                             |
| 821          | Inverter safety input alarm (STO)                         | 5090                                        | STO hardware failure               | The STO hardware diagnostic has detected a hardware fault.                                                                                                             |
|              |                                                           | 5091                                        | Safe Torque Off                    | The Safe Torque Off function is active, i.e. loss of signal(s) of the safety circuit connected to the STO connector has occurred during start-up or operation.         |
|              |                                                           | 81                                          | Safe Torque Off 1                  | Safe Torque Off function active, i.e. the STO 1 circuit is faulty.                                                                                                     |
|              |                                                           | 82                                          | Safe Torque Off 2                  | Safe Torque Off function active, i.e. the STO 2 circuit is faulty.                                                                                                     |
| 851          | Generic alarm (specific code not displayed on the W3000+) | 1080                                        | Backup/restore timeout             | The panel or the PC tool did not communicate with the converter while performing or restoring the backup.                                                              |
|              |                                                           | 1081                                        | ID fault                           | The converter software could not read the converter ID.                                                                                                                |
|              |                                                           | 4110                                        | Control board temperature          | Excessive control board temperature.                                                                                                                                   |
|              |                                                           | 4290                                        | Cooling                            | Excessive converter module temperature.                                                                                                                                |
|              |                                                           | 4310                                        | Excessive temperature              | The temperature of the power supply module is too high.                                                                                                                |
|              |                                                           | 4981                                        | External temperature 1             | The measured temperature 1 has exceeded the failure limit.                                                                                                             |
|              |                                                           | 4982                                        | External temperature 2             | The measured temperature 2 has exceeded the failure limit.                                                                                                             |
|              |                                                           | 5081                                        | Aux fan failure                    | An auxiliary cooling fan (connected to the fan connectors on the control unit) is jammed or disconnected.                                                              |
|              |                                                           | 5092                                        | PU logic error                     | The memory of the power unit has been erased.                                                                                                                          |
|              |                                                           | 5093                                        | ID does not match                  | The converter hardware does not match the information in the memory. This can happen, for instance, after a firmware update.                                           |
|              |                                                           | 5094                                        | Measurement circuit temperature    | Problem measuring the internal temperature of the converter.                                                                                                           |
|              |                                                           | 50A0                                        | Fan                                | Cooling fan blocked or disconnected.                                                                                                                                   |
|              |                                                           | 5690                                        | Internal power input communication | Internal communication error.                                                                                                                                          |
|              |                                                           | 5691                                        | ADC measurement circuit            | Measurement circuit failure.                                                                                                                                           |
|              |                                                           | 5692                                        | No power to the power supply board | Power supply unit power supply failure.                                                                                                                                |
|              |                                                           | 5693                                        | DFF measurement circuit            | Measurement circuit failure.                                                                                                                                           |
|              |                                                           | 5696                                        | PU status feedback                 | The feedback of the status of the output phases does not correspond to the control signals.                                                                            |
|              |                                                           | 5697                                        | Charge feedback                    | Lack of charge feedback signal.                                                                                                                                        |
|              |                                                           | 6181                                        | Incompatible FPGA version          | The firmware and FPGA versions are incompatible.                                                                                                                       |

| W3000+ alarm |      | Compressor alarms with ABB ACH 580 inverter |                                                                                                                                                                                                                                                                               |
|--------------|------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | 6306 | FBA A mapping file                          | Fieldbus adapter A mapping file reading error.                                                                                                                                                                                                                                |
|              | 6481 | Task overload                               | Internal fault.                                                                                                                                                                                                                                                               |
|              | 6487 | Overflow stack                              | Internal fault.                                                                                                                                                                                                                                                               |
|              | 64A1 | Internal File loading                       | File reading error.                                                                                                                                                                                                                                                           |
|              | 64B2 | User set fault                              | <p>The loading of the set of user parameters failed because:</p> <ul style="list-style-type: none"> <li>• The requested set does not exist</li> <li>• The set is not compatible with the control program</li> <li>• The converter was switched off during loading.</li> </ul> |
|              | 64E1 | Kernel overload                             | Operating system error.                                                                                                                                                                                                                                                       |
|              | 6581 | Parameter system                            | Loading or saving of parameters failed.                                                                                                                                                                                                                                       |
|              | 65A1 | FBA A parameters conflict                   | The converter does not have the functionality required by the PLC, or the required functionality has not been activated.                                                                                                                                                      |
|              | 7081 | Control panel loss                          | The control panel or the PC tool selected as the active control station for the converter has stopped the communications.                                                                                                                                                     |
|              | 7121 | Motor stall                                 | The motor is operating in the stall range, for example due to excessive load or insufficient motor power.                                                                                                                                                                     |
|              | 73B0 | Emergency ramp failed                       | The emergency stop was not completed within the intended time.                                                                                                                                                                                                                |
|              | 8001 | ULC underload fault                         | User load curve: the signal has been below the underload curve for too long.                                                                                                                                                                                                  |
|              | 80A0 | AI supervision fault                        | An analogue signal has exceeded the specified limits for the analogue input.                                                                                                                                                                                                  |
|              | 80B0 | Signal supervision                          | Fault generated by signal supervision function 1.                                                                                                                                                                                                                             |
|              | 80B1 | Signal supervision                          | Fault generated by signal supervision function 2.                                                                                                                                                                                                                             |
|              | 80B2 | Signal supervision                          | Fault generated by signal supervision function 3.                                                                                                                                                                                                                             |
|              | 80B3 | Signal supervision                          | Fault generated by signal supervision function 4.                                                                                                                                                                                                                             |
|              | 80B4 | Signal supervision                          | Fault generated by signal supervision function 5.                                                                                                                                                                                                                             |
|              | 80B5 | Signal supervision                          | Fault generated by signal supervision function 6.                                                                                                                                                                                                                             |
|              | 9081 | External fault 1                            | Fault in external device 1.                                                                                                                                                                                                                                                   |
|              | 9082 | External fault 2                            | Fault in external device 2.                                                                                                                                                                                                                                                   |
|              | 9083 | External fault 3                            | Fault in external device 3.                                                                                                                                                                                                                                                   |
|              | 9084 | External fault 4                            | Fault in external device 4.                                                                                                                                                                                                                                                   |

| W3000+ alarm |  | Compressor alarms with ABB ACH 580 inverter |                  |                                                                            |
|--------------|--|---------------------------------------------|------------------|----------------------------------------------------------------------------|
|              |  | 9085                                        | External fault 5 | Fault in external device 5.                                                |
|              |  | FF61                                        | ID run           | The motor identification procedure was not completed successfully.         |
|              |  | FF81                                        | FB A forced trip | A fault trip command was received through fieldbus adapter A.              |
|              |  | FF8E                                        | EFB forced trip  | A fault trip command was received through the embedded fieldbus interface. |



### 4.13 Table of Sanhua inverter compressor alarms

The table shows the detail of alarms for compressors with Sanhua inverters (transmitted from the inverter to the W3000+ controller through serial connection) and the corresponding inverter alarm code of the W3000+ controller. Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

In the following table, the codes of inverter originated alarms are shown as follows:

100-115: register of alarms 1 (each number corresponds to the related bits of the first register in progressive order.

Example: 100 = bit 0)

200-215: register of safety alarms 2 (each number corresponds to the related bits of the second register in progressive order. Example: 201 = bit 1)

| W3000+ alarm |                                    | Compressor alarms with Sanhua inverter |          |                                     |
|--------------|------------------------------------|----------------------------------------|----------|-------------------------------------|
| AL           | Description                        | Variable                               | No. /Bit | Description                         |
| 701          | Inverter offline                   |                                        |          | Disconnected inverter               |
| 711          | Power alarm                        | Register 1                             | 100      | Compressor overcurrent protection   |
|              |                                    |                                        | 105      | Output phase loss protection        |
|              |                                    |                                        | 114      | Circuit change error                |
|              |                                    | Register 2                             | 200      | AC overcurrent protection           |
|              |                                    |                                        | 202      | PFC hardware overcurrent protection |
|              |                                    |                                        | 204      | Software AC phase loss protection   |
|              |                                    |                                        | 212      | AC undervoltage protection          |
| 731          | Inverter 1 power alarm             | Register 1                             | 103      | IPM hardware overcurrent protection |
|              |                                    |                                        | 112      | DC undervoltage protection          |
|              |                                    |                                        | 113      | DC software overvoltage protection  |
|              |                                    | Register 2                             | 203      | DC hardware overvoltage protection  |
| 741          | Inverter 1 rectifier thermal alarm | Register 2                             | 210      | PFC overtemperature protection      |
|              |                                    |                                        | 211      | PFC temperature sensor failure      |
| 761          | Inverter 1 converter thermal alarm | Register 1                             | 110      | IPM overtemperature protection      |
|              |                                    |                                        | 111      | IPM temperature sensor fault        |
| 811          | Inverter 1 communication alarm     | Register 1                             | 115      | Host communication loss             |
|              |                                    | Register 2                             | 209      | DLT protection                      |
|              |                                    |                                        | 214      | EEPROM data error                   |
| 851          | Inverter 1 generic alarm           | Register 1                             | 104      | A/D offset error                    |
|              |                                    |                                        | 106      | Compressor startup error            |
|              |                                    |                                        | 107      | Compressor speed misalignment error |
|              |                                    | Register 2                             | 205      | Software AC phase imbalance         |
|              |                                    |                                        | 208      | HPS protection                      |
|              |                                    |                                        | 215      | MCU autotest error                  |

## 4.14 Table of Emerson inverter compressor alarms

The table shows the detail of alarms for compressors with Emerson inverters (transmitted from the inverter to the W3000+ controller through serial connection) and the corresponding inverter alarm code of the W3000+ controller. Inverter alarm codes are shown, together with the alarm code field of the W3000+ controller, in the alarm and alarm log masks of the controller.

| W3000+ alarm |                     |                       | Compressor alarms with Emerson inverter |                                            |
|--------------|---------------------|-----------------------|-----------------------------------------|--------------------------------------------|
| AL           | Description         | Inverter display code | N°                                      | Description                                |
| 701          | Inverter offline    |                       |                                         | Disconnected inverter                      |
| 711          | Power alarm         | 63                    | 101                                     | AC input overcurrent                       |
|              |                     | 6                     | 102                                     | DC bus overvoltage                         |
|              |                     | 7                     | 103                                     | DC bus undervoltage                        |
|              |                     | 8                     | 104                                     | AC input overvoltage                       |
|              |                     | 9                     | 105                                     | AC input undervoltage                      |
|              |                     | 60                    | 106                                     | AC input phase missing / unbalanced phases |
|              |                     | 29                    | 204                                     | AC input current foldback time-out         |
|              |                     | 25                    | 313                                     | AC voltage reading error                   |
| 721          | Motor power alarm   | -                     | 100                                     | Compressor phase overcurrent               |
|              |                     | -                     | 109                                     | Compressor phase missing                   |
|              |                     | -                     | 200                                     | DC branch undervoltage                     |
|              |                     | -                     | 202                                     | Compressor phase current foldback time-out |
|              |                     | 59                    | 300                                     | Compressor phase current unbalanced        |
|              |                     | 50                    | 308                                     | Compressor phase U overcurrent             |
|              |                     | 51                    | 309                                     | Compressor phase V overcurrent             |
|              |                     | 52                    | 310                                     | Compressor phase W overcurrent             |
|              |                     | 49                    | 311                                     | Compressor HW overcurrent                  |
|              |                     | 26                    | 314                                     | DC voltage reading error                   |
|              |                     | 53                    | 315                                     | Compressor overload                        |
| 791          | Overspeed alarm     | 24                    | 303                                     | Overspeed                                  |
| 811          | Communication alarm | -                     | 206                                     | Communication self-configuration time-out  |
|              |                     | 14                    | 207                                     | Modbus communication loss                  |
| 851          | Generic alarm       | -                     | 107                                     | Inverter desaturation                      |
|              |                     | 58                    | 108                                     | Pressure switch fault                      |
|              |                     | 23                    | 110                                     | Motor control loss                         |
|              |                     | 10                    | 111                                     | Drive overtemperature                      |
|              |                     | 57                    | 113                                     | Compressor start fault                     |
|              |                     | 28                    | 203                                     | Foldback temperature control time-out      |
|              |                     | -                     | 205                                     | DLT temperature time-out                   |
|              |                     | 13                    | 208                                     | DLT overtemperature                        |
|              |                     | -                     | 211                                     | Compressor power module overtemperature    |
|              |                     | -                     | 302                                     | Microelectronics fault                     |
|              |                     | 15                    | 304                                     | EEPROM error                               |
|              |                     | 16                    | 306                                     | Compressor configuration error             |
|              |                     | -                     | 402                                     | DLT sensor error                           |

| W3000+ alarm |  |   | Compressor alarms with Emerson inverter |                                       |
|--------------|--|---|-----------------------------------------|---------------------------------------|
|              |  | - | 405                                     | Power module temperature sensor error |
|              |  | - | 411                                     | Fan fault                             |
|              |  | - | 415                                     | Limit block faults                    |

## 5 REMOTE CONTROL AND MONITORING CHARACTERISTICS

**Subject.** The units acquired can be equipped with devices that will only allow Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. (hereinafter "**MEHITS**"), through a mobile or wired connection, to (i) monitor, (ii) control, (iii) acquire and analyse the operating data of the Units remotely.

**Functionality and system.** The function can be offered in Machine-to-Machine (M2M) or Cloud mode. Each function requires the installation and use of a specific hardware and/or software product (**System**).

**Connectivity.** The use of each Service requires the connection to Internet services (**Connectivity**), which is not supplied together with the Service or System, and must be ensured by the Customer.

As far as Connectivity, it must be remembered that although in its System MEHITS implements all the safety measures aimed at fighting cyber attacks, these cannot be totally excluded. The purchaser relieves from immediate effect MEHITS from all responsibility for such attacks, and undertakes to implement appropriate safety measures (firewalls and other protective measures) for preventing unwanted connection to the System by third parties and, if necessary, ensuring an appropriate level of security for the data transferred, or that may be transferred by the System (secure connections).

The Service can be affected (without responsibility for MEHITS) by Internet failures, by the failure to adapt to the minimum required requirements/characteristics, by the impossibility for the purchaser to ensure a connection to the Mobile or Wired network, as better specified below.

**Consent.** Remote connection is subjected to preliminary written consent by the user.

## 6 DISPOSAL



### PACKAGING DISPOSAL

Packaging materials (cardboard, plastic, etc.) can be treated as standard solid city waste. Therefore, compliance with the sorting requirements for city waste is all that is required.

Before disposing of the packaging material, always refer to the specific regulations of the country of disposal.

DO NOT DISPERSE INTO THE ENVIRONMENT!



### PRODUCT DISPOSAL

Our products are made using different materials. Most of them (plastic and electric cables) can be treated as standard solid city waste. They can be recycled by taking them at authorised centres for sorted disposal.



Other components (electronic boards) may contain pollutants.

Therefore, they must be removed and handed over to companies authorised for their recovery and disposal.

Before proceeding, always refer to the specific regulations of the country of disposal.

DO NOT DISPERSE INTO THE ENVIRONMENT!



**Læs nøje denne vejledning igennem.  
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instruktioner og oplysninger før ethvert indgreb  
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## Indholdsfortegnelse

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**ADVARSEL:**

Softwaren i kontrolenheden W3000+ er beskyttet af digital signatur. Dette indebærer, at den installerede software kun fungerer ved brug af kort fra MEHITS S.p.A.. Softwaren kan ikke fungere ved brug af kort fra andre leverandører. Endvidere tilhører copyrighten for plastdetaljer og serigrafisk tryk på monteret hardware MEHITS S.p.A.

**SYMBOLER:**

Til fremhævelse af tekstafsnit af særlig vigtig betydning anvendes i vejledningen en række symboler, hvis betydning er beskrevet herunder.

**ADVARSEL:**

Anvisninger vedrørende situationer/indgreb, som i tilfælde af manglende overholdelse af oplysningerne/ukorrekt adfærd kan medføre alvorlige driftsforstyrrelser i softwaren, de elektriske dele og enheden.

**PÅBUD:**

Angiver, at egnede foranstaltninger skal træffes/særlige indgreb skal udføres med henblik på ikke at forringe beskyttelsesniveauet for adgange, som er forbeholdt autoriserede operatører, og/eller som sikrer enhedens regelmæssige funktion.

**INFORMATION:**

Angiver særlig vigtige tekniske/funktionsmæssige oplysninger, som ikke bør forsømmes.

**BEMÆRK:**

Anvendes til at tage fat på metoder, der ikke er relateret til fysiske skader.



# 1 Introduktion

## 1.1 Krav til brug

Applikationssoftwaren, der er beskrevet i dette dokument, er designet til at blive brugt i enheder til produktion af systemvand ved forskellige temperatur setpoints (også samtidige) for områderne komfort, proces og IT-køling.

Applikationssoftwaren bruges på et W3000+ kontrolsystem med en brugerterminal med dedikeret grafisk interface. Se venligst de følgende kapitler for en detaljeret liste over tilgængelige brugergrænseflader og kompatibel hardware.



### INFORMATION:

Softwaren i kontrolenheden W3000+ er beskyttet af digital signatur. Dette indebærer, at den installerede software kun fungerer ved brug af kort fra MEHITS og at softwaren ikke kan fungere ved brug af kort fra andre leverandører.

## 1.2 Generelle funktioner

Nedenfor en ikke-udtømmende liste over de funktioner, der udføres af applikationen:

- Regulering af vandtemperaturen i anlægget i henhold til de setpoints, der er indstillet via brugerterminalen.
- Styling af forskellige typer enheder såsom Chillers, Varmepumper, Multipurpose og Varmepumper med total genvinding.
- Kompatibilitet med forskellige kompressortechnologier såsom hermetisk, skrue og centrifugal.
- Komplet visning af driftsstatus for enheden.
- Mulighed for at indstille justeringsparametrene. Det er muligt at indstille både de grundlæggende ved hjælp af adgangskoden **"Bruger"** og de mere avancerede ved hjælp af adgangskoderne **"Service"** (Assistance) og **"Factory"** (Producent).
- Håndtering og rapportering af uregelmæssigheder (alarmer), hændelser og vedligeholdelse. Kan gemme op til 200 begivenheder.
- Mulighed for kontrol og styling via seriel.
- Mulighed for at betjene op til 4 enheder forbundet med hinanden i et lokalt LAN-netværk via Master-Client-systemet.

### 1.3 Administration af funktioner med licens

Administrationen af funktioner med licens gør det muligt at aktivere eller deaktivere funktioner, der er beskyttet med password. Password er unikke og genereres af systemet på grundlag af enhedens serienummer og funktionskoden.

Købte licenser kan aktiveres i brugermenuen ved at indtaste koden for funktionen, der skal aktiveres, og det tilknyttede password i skærbilledet Administration af licenser.

|                |          |
|----------------|----------|
| Administration | licenser |
| Func. Code     | 1234     |
| Password:      | 12345678 |
| Funktion       | aktiv    |

Aktivisering af en licens aktiverer ikke automatisk den pågældende funktion. Derimod deaktiveres funktionen ved deaktivering af licensen.

Endvidere er det muligt én gang at aktivere nogle passwordbeskyttede funktioner gratis i en prøveperioden på **tre måneder**.

Hvis en midlertidig licens aldrig er blevet aktiveret, er aktivering mulig ved at indtaste funktionskoden **9999** og password **00001234**.

Under prøveperioden er det muligt at købe licens til funktionerne. Licensstatus for den pågældende funktion skifter derefter fra midlertidig til aktiv.

|                     |          |
|---------------------|----------|
| Administration      | licenser |
| Func. Code          | 9999     |
| Password:           | 00001234 |
| Start af tidslicens |          |

Licensernes status kan ses i menuen Licenser, hvor det også er muligt at vise datoen for prøveperiodens udløb.

|           |          |
|-----------|----------|
| Status    | licenser |
| Funktion: | 6461     |
| Tilstand: | aktiv    |

|             |             |
|-------------|-------------|
| Status      | licenser    |
| Funktion:   | 1234        |
| Tilstand:   | midlertidig |
| Udløbsdato: | 31/12/2021  |

Funktionerne, som er tilgængelige med licens, er angivet i tabellen herunder:

| Kode funktion | Navn funktion             |
|---------------|---------------------------|
| 6461          | HPC til LAN Multi Manager |



#### INFORMATION:

Ændring af dato og klokkeslæt for enheden under prøveperioden vil annullere og deaktivere funktioner, som ikke er licenserede.

Indtastning af et forkert password ved en licenseret funktion vil deaktivere funktionen.

## 1.4 Indstillingstyper

Afhængigt af kompressortypen er det muligt at vælge forskellige indstillinger.

| Kompressor                                                                                                 | Type enhed                | Regulering tilgængelig                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hermetisk                                                                                                  | Vand/vand varmepumpe      | <ul style="list-style-type: none"> <li>Quick Mind på sonde ved udløb (*).</li> <li>Quick Mind på sonde ved indløb.</li> <li>Proportional med trininddeling på sonde ved indløb.</li> <li>Proportional med trininddeling på sonde ved indløb + integral på sonde ved indløb.</li> </ul> |
|                                                                                                            | Vand/vand chiller         |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Motordrevne fordampere    |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Varmepumpe vand/luft      |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Køler vand/luft           |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Chiller med genvinding    |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Chiller med free-cooling  |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Kombi-maskiner            |                                                                                                                                                                                                                                                                                        |
| Hermetisk med inverter på alle kredsløb                                                                    | Varmepumpe med genvinding | <ul style="list-style-type: none"> <li>Proportional med variabel trininddeling på sonde ved indgang + PID på sonde ved udgang.</li> <li>Neutral zone på sonde ved udgang + PID på sonde ved udgang (*).</li> <li>Sekvens på sonde ved udgang + PID på sonde ved udgang (*).</li> </ul> |
|                                                                                                            | Køler vand/luft           |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Varmepumpe vand/luft      |                                                                                                                                                                                                                                                                                        |
| Hermetisk kompressor med inverter i et kredsløb + Hermetisk kompressor med fast hastighed i samme kredsløb | Kombi                     | <ul style="list-style-type: none"> <li>Sekvens på sonde ved udgang + PID på sonde ved udgang (*).</li> </ul>                                                                                                                                                                           |
|                                                                                                            |                           |                                                                                                                                                                                                                                                                                        |
| Stempel                                                                                                    | Køler vand/luft           | <ul style="list-style-type: none"> <li>Sekvens på sonde ved udgang + PID på sonde ved udgang (*).</li> </ul>                                                                                                                                                                           |
|                                                                                                            |                           |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Varmepumpe vand/luft      |                                                                                                                                                                                                                                                                                        |
|                                                                                                            |                           |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Chiller med free-cooling  |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Kombi-maskiner            |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Varmepumpe med genvinding |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Chiller med genvinding    |                                                                                                                                                                                                                                                                                        |
| Skrue                                                                                                      | Vand/vand varmepumpe      | <ul style="list-style-type: none"> <li>Proportional med trininddeling på sonde ved indløb.</li> <li>Proportional med trininddeling på sonde ved indløb + integral på sonde ved indløb.</li> </ul>                                                                                      |
|                                                                                                            | Vand/vand chiller         |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Motordrevne fordampere    |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Varmepumpe vand/luft      |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Køler vand/luft           |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Chiller med genvinding    |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Chiller med free-cooling  |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Kombi-maskiner            |                                                                                                                                                                                                                                                                                        |
| Skrue med inverter i alle kredsløb                                                                         | Varmepumpe med genvinding | <ul style="list-style-type: none"> <li>Modulerende på sonde ved udløb + PID på sonde ved udløb (*).</li> <li>Proportional med trininddeling på sonde ved indløb.</li> <li>Proportional med trininddeling på sonde ved indløb + integral på sonde ved indløb.</li> </ul>                |
|                                                                                                            | Vand/vand chiller         |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Køler vand/luft           |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Chiller med genvinding    |                                                                                                                                                                                                                                                                                        |
| Skrue med inverter i et kredsløb + Skrue med fast hastighed i de andre kredsløb                            | Chiller med genvinding    | <ul style="list-style-type: none"> <li>Proportional med variabel trininddeling på sonde ved indgang + PID på sonde ved udgang.</li> <li>Neutral zone på sonde ved udgang + PID på sonde ved udgang (*).</li> <li>Sekvens på sonde ved udgang + PID på sonde ved udgang (*).</li> </ul> |
|                                                                                                            | Kombi-maskiner            |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Varmepumpe med genvinding |                                                                                                                                                                                                                                                                                        |
| Centrifugal                                                                                                | Vand/vand varmepumpe      | <ul style="list-style-type: none"> <li>Sekvens på sonde ved udgang + PID på sonde ved udgang (*).</li> </ul>                                                                                                                                                                           |
|                                                                                                            | Køler vand/luft           |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Vand/vand chiller         |                                                                                                                                                                                                                                                                                        |
|                                                                                                            | Motordrevne fordampere    |                                                                                                                                                                                                                                                                                        |

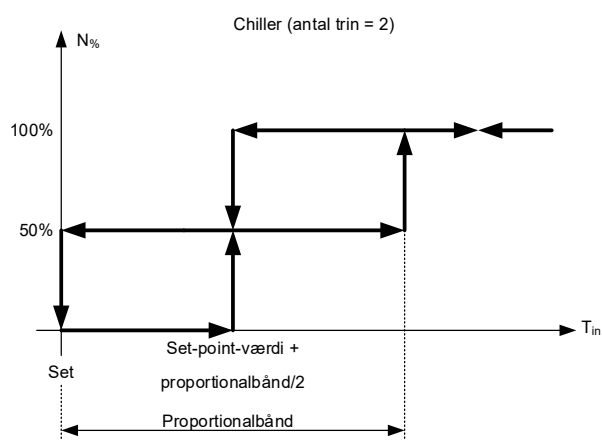
**Tabel 1:** Mulige temperaturindstillinger afhængigt af kompressortype.

(\*) nødvendig indstilling for enheder med kontrol af pumpehastighed.

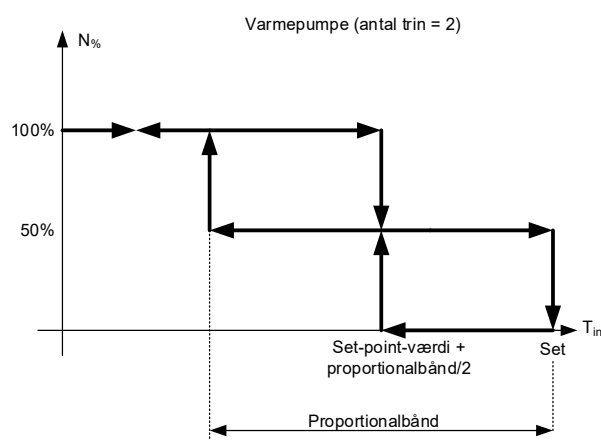
De forskellige temperaturindstillinger beskrives i de følgende afsnit.

### 1.4.1 Proportional indstilling med trininddeling på sonde ved indgang

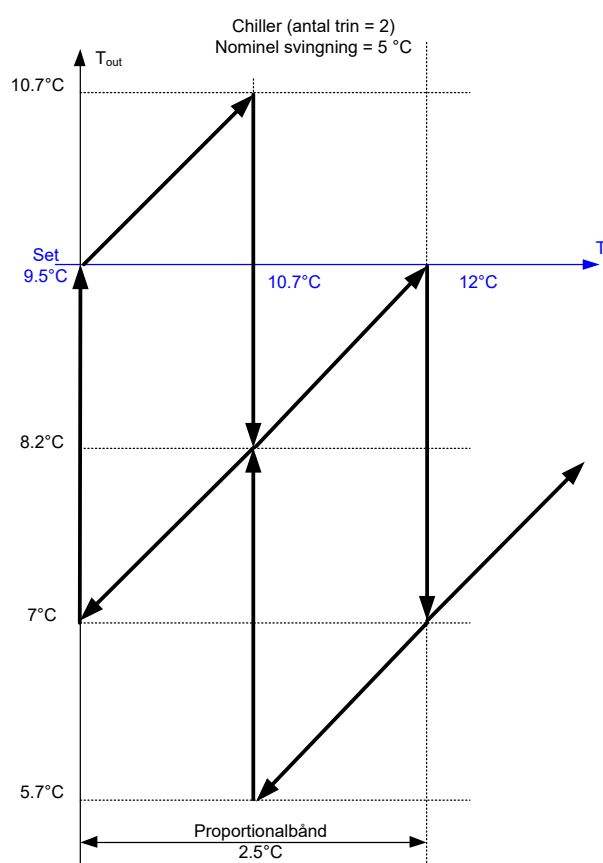
I det følgende vises et par eksempler på proportional indstilling med trininddeling på sonde for temperatur i indgang.



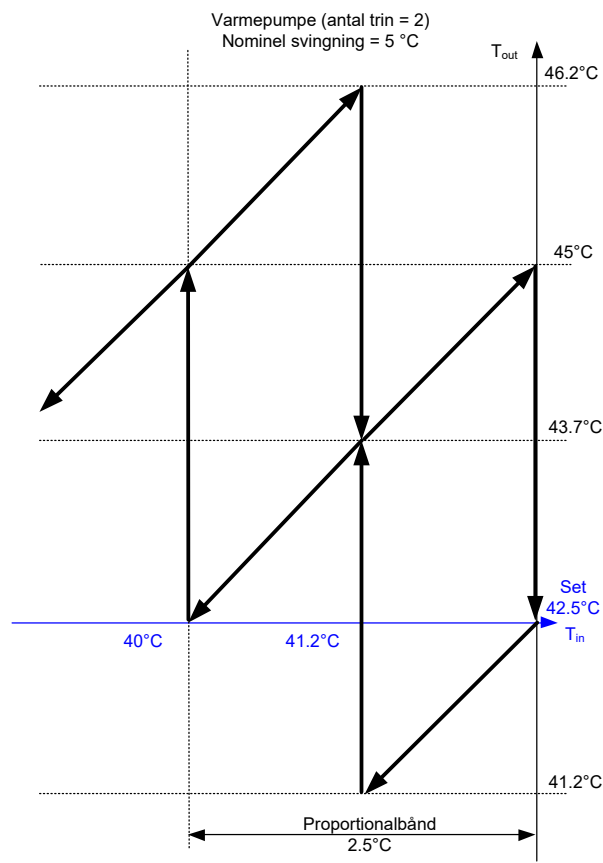
**Figur 1-1:**  $T_{in}$  er variabelen ved indgang,  $N\%$  er antallet af aktive trindinddelinger udtrykt i % (chiller).



**Figur 1-2:**  $T_{in}$  er variabelen ved indgang  $N\%$  er antallet af aktive trindinddelinger udtrykt i % (varmepumpe).



**Figur 1-3:** Forhold mellem  $T_{in}$  og  $T_{out}$ , med 2 trin (chiller).



**Figur 1-4:** Forhold mellem  $T_{in}$  og  $T_{out}$ , med 2 trin (varmepumpe).

De følgende tabeller viser en række typiske værdier for de pågældende størrelser. De teoretiske min. og max. værdier for udløbstemperaturen refererer til funktion med nominel kapacitet (dvs. med temperatursvingning i fordampere på 5,0 °C og vandmængde på anlægget, som er i stand til at garantere et liter/kW forhold på min. 7).

| Nr. trin | Setpoint (°C) | Proportionalbånd (°C) | T min. teoretisk udgang (°C) | T max. teoretisk udgang (°C) |
|----------|---------------|-----------------------|------------------------------|------------------------------|
| 1        | 9,5           | 2,5                   | 4,5                          | 12,0                         |
| 2        | 9,5           | 2,5                   | 5,7                          | 10,8                         |
| 4        | 7,0           | 5,0                   | 5,7                          | 8,3                          |
| 5        | 7,0           | 5,0                   | 6,0                          | 8,0                          |
| 6        | 7,0           | 5,0                   | 6,2                          | 7,8                          |
| 8        | 7,0           | 5,0                   | 6,4                          | 7,6                          |

**Tabel 2:** Værdier for setpoint og proportionalbånd, som normalt benyttes på baggrund af antallet af trin (ved installeret køler).

| Nr. trin | Setpoint (°C) | Proportionalbånd (°C) | T min. teoretisk udgang (°C) | T max. teoretisk udgang (°C) |
|----------|---------------|-----------------------|------------------------------|------------------------------|
| 1        | 42,5          | 2,5                   | 40,0                         | 47,5                         |
| 2        | 42,5          | 2,5                   | 41,2                         | 46,3                         |
| 4        | 45,0          | 5,0                   | 43,7                         | 46,3                         |
| 5        | 45,0          | 5,0                   | 44,0                         | 46,0                         |
| 6        | 45,0          | 5,0                   | 44,2                         | 45,8                         |
| 8        | 45,0          | 5,0                   | 44,4                         | 45,6                         |

**Tabel 3:** Setpoint værdier og proportionalbånd, som normalt benyttes på baggrund af antallet af trin (varmepumpe).

### 1.4.2 Proportional indstilling med trininddeling ved indløb + integral indstilling på sonde ved indløb

Denne indstilling er summen af to indstillinger: den proportionale indstilling og den integrale indstilling.

Den proportionale indstilling genererer procentsatsen for aktivering/frakobling af trinnene som beskrevet i det foregående afsnit "Proportional indstilling med trininddeling på sonde ved indløb".

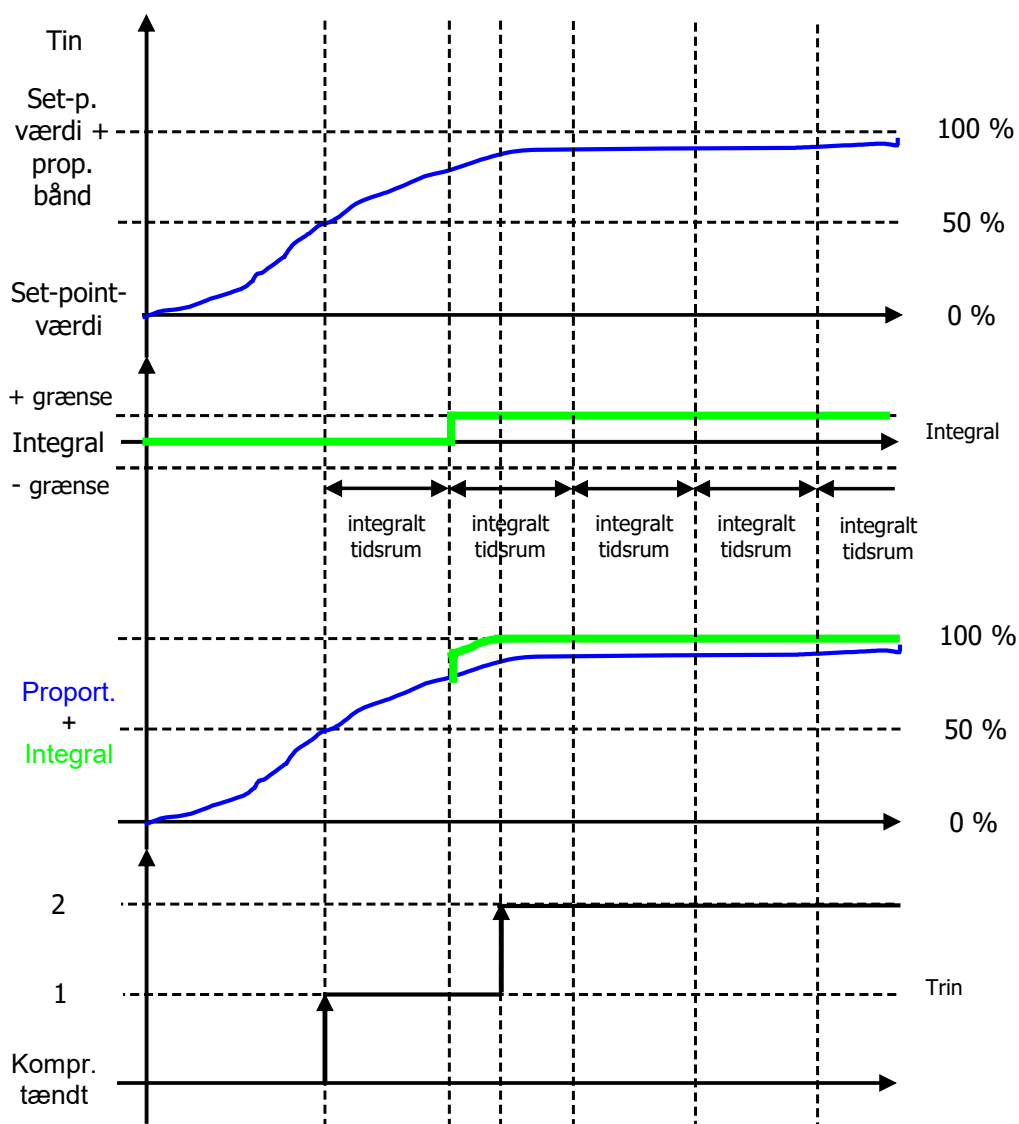
Den integrale indstilling føjer med regelmæssige mellemrum integralfejlen til den proportionale indstilling (integralt tidsrum). Fejlen beregnes ved hjælp af følgende formel:

$$\text{Integral fejl} = \frac{\text{Indløbstemperatur} - \text{Set-point værdi}}{\text{Proportionalbånd}} \times 100 \quad [\%]$$

Den integrale indstilling begrænses under alle omstændigheder for at hindre manglende stabilitet i indstillingen (grænse for integral).

Hvis indløbstemperaturen ændres med mere end 5 % i løbet af et sekund, beregnes den integrale indstilling ikke, idet der er tale om bratte ændringer.

Det integrale tidsrum tælles fra og med det tidspunkt, hvor termoregulatorens forbrug er stabilt.

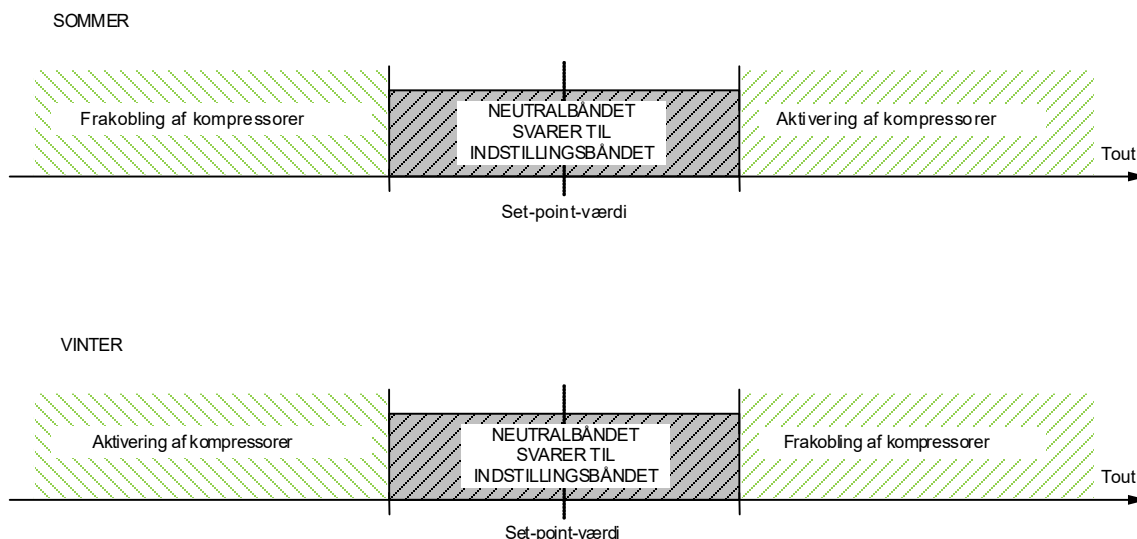


Figur 1-5: Eksempel på justering af en køler med 2 trin.

### 1.4.3 Quick Mind indstilling

Brugeren skal blot indstille den ønskede set-point værdi. Quick Mind algoritmen sørger for at tilpasse de øvrige parametre til systemet.

QUICK MIND er en selvkorrigerende algoritme til indstilling af temperaturen i vandet, som behandles i en varme-/kølemaskine. Indstillingsmønsteret er vist i følgende figur (indstilling på sonde ved udløb):



**Figur 1-6:** Justeringsmodel til QUICK MIND (eksempel med køler og eksempel med varmepumpe).

Setpoint befinder sig inden for en neutral zone. Hvis temperaturen svarer til en værdi inden for denne zone, sker der ingen ændring i antallet af aktiverede kompressorer.

Når temperaturen som følge af ændringer i belastningen i systemet svarer til værdier uden for dette bånd, aktiveres eller frakobles kompressorerne for at sikre, at temperaturen atter stabiliseres i neutralbåndet.

Omfanget af neutralbåndet afhænger af systemets dynamiske karakteristika og dette gælder specielt med hensyn til vandmængden i systemet og belastningen. Den selvtilpassende algoritme er i stand til at "måle" dynamikken på anlægget og beregne den minimale neutrale zone, så kompressorernes aktiveringstider og det maksimale antal starter pr. time overholdes.

Indstillingen kan finde sted både med hensyn til ind- og udløbstemperaturen til/fra systemet.

Endvidere findes der en række særlige funktioner, som gør det muligt at reducere antallet af starter af kompressorerne, hvis belastningen er meget begrænset eller hvis maskinen startes ved temperaturer, som afviger markant fra setpoint værdien.

| 2 kompressorer - Maks. antal starter pr. time:10 |      |     |     |     |     |     |     |     |     |
|--------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter/kW                                         | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                    | 3,2  | 3,3 | 3,4 | 3,5 | 3,6 | 3,8 | 4,1 | 4,5 | 5,3 |

| 4 kompressorer - Maks. antal starter pr. time:10 |      |     |     |     |     |     |     |     |     |
|--------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter/kW                                         | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                    | 1,6  | 1,6 | 1,7 | 1,7 | 1,8 | 1,9 | 2,0 | 2,2 | 2,6 |

| 5 kompressorer - Maks. antal starter pr. time:10 |      |     |     |     |     |     |     |     |     |
|--------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter/kW                                         | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                    | 1,3  | 1,3 | 1,3 | 1,4 | 1,5 | 1,5 | 1,6 | 1,9 | 2,1 |

| 6 kompressorer - Maks. antal starter pr. time:10 |      |     |     |     |     |     |     |     |     |
|--------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter/kW                                         | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                    | 1,1  | 1,1 | 1,1 | 1,2 | 1,2 | 1,3 | 1,4 | 1,5 | 1,8 |

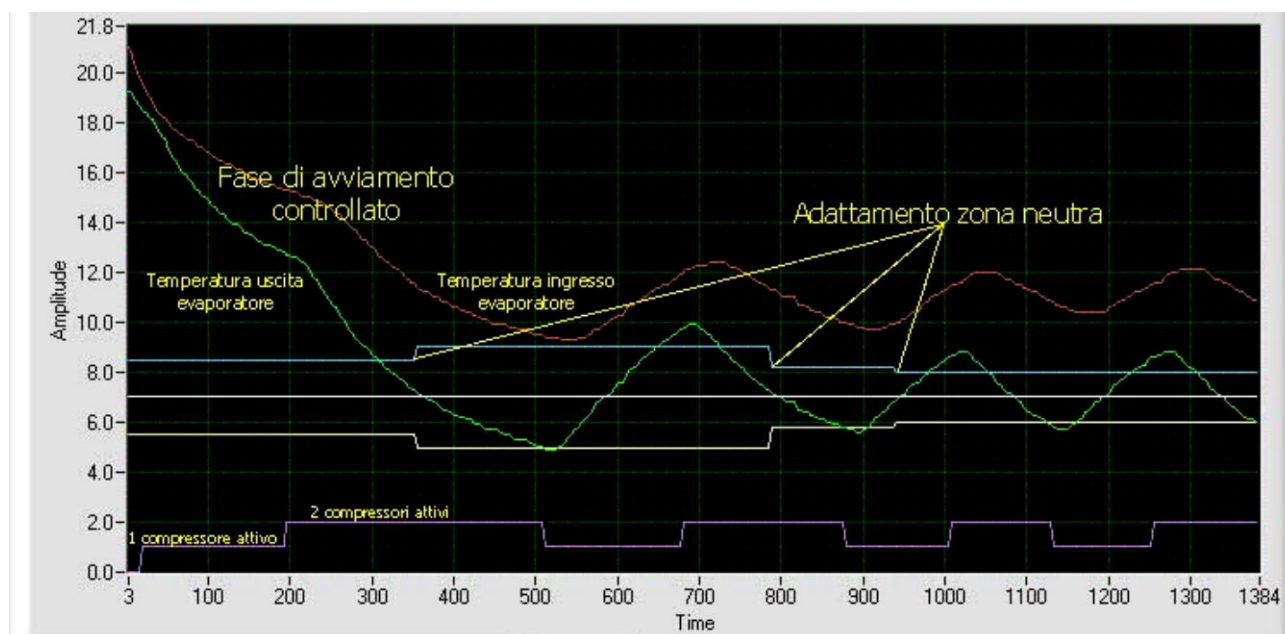
  

| 8 kompressorer - Maks. antal starter pr. time:10 |      |     |     |     |     |     |     |     |     |
|--------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter/kW                                         | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                    | 0,8  | 0,8 | 0,8 | 0,9 | 0,9 | 0,9 | 1,0 | 1,1 | 1,3 |

**Tabel 4:** Maksimale teoretiske udsving i fremløbstemperaturen ved konstant delbelastning (i forhold til vandindholdet i systemet) med Quick Mind indstilling i udløbet.

Nedenfor illustreres et eksempel med faktiske data, der er blevet indlæst i forbindelse med funktion med Quick Mind regulator ved udløbet.

Se følgende figur:



**Figur 1-7:** Eksempel på faktiske data med Quick Mind indstilling ved udløbet (X-aksen viser tidsrummet udtrykt i sekunder [sek.], og Y-aksen viser udløbstemperaturen udtrykt i grader [°C]).

Der er tale om et eksempel på start ved meget høj indledningsvis temperatur i forhold til setpoint værdien (7°C). Der tændes en kompressor ca. 10 sekunder efter indlæsningen. Den anden kompressor tændes ikke straks. Algoritmen, som styrer startfasen, kontrollerer, om en kompressor er tilstrækkelig for at korrigere udløbstemperaturen til set-point værdien og undgå unyttige starter. Hvis udløbstemperaturen fortsat svarer til 12 °C efter ca. 200 sekunder, tændes også den anden kompressor. I modsat fald varer det for lang tid, inden driftstemperaturen opnås.

Efter fasen for kontrolleret start sænkes udløbstemperaturen, indtil den befinder sig i neutralbåndet. Algoritmen (350 sekunder efter start) begynder at tilpasse omfanget af neutralbåndet således, at kompressorernes sikkerhedsintervaller overholdes. Som det fremgår sker der efterfølgende en reduktion af neutralbåndet (780 og 950 sekunder efter start), indtil der opnås en min. værdi, som stadig gør det muligt at overholde sikkerhedsintervallerne. Som det fremgår sker aktiveringen og frakoblingen af kompressorerne, når udløbstemperaturen når min. eller maks. grænsen i neutralbåndet. Eksemplet viser, at ændringen i udløbstemperaturen er på ca. 3,5 °C i forbindelse med drift.



#### 1.4.4 Modulerende indstilling på sonde ved udløb + PID på sonde ved udløb for skruekompressorer

Denne regulering er realiseret med bidrag fra to regulatorer, der arbejder koordineret:

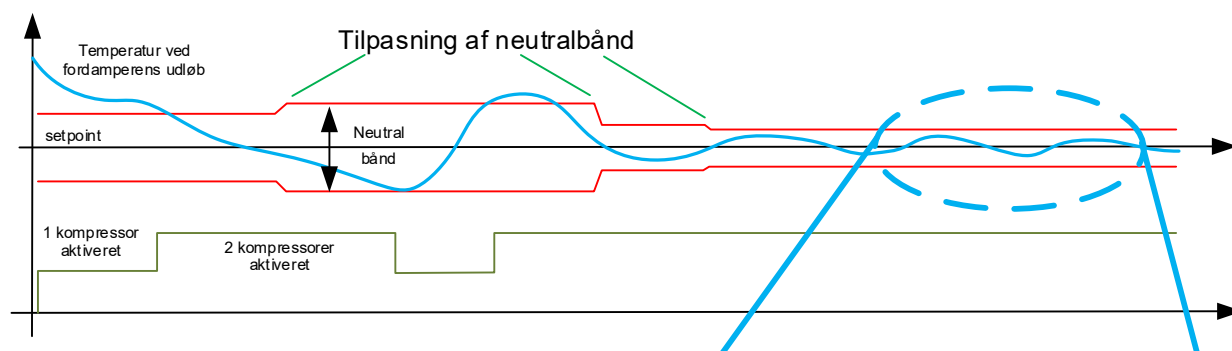
- Neutral zone** (trinvis styring) på udgangssonden.
- PID** (modulering) på sonde i udgang.

Setpoint gælder for begge regulatorer.

a) Dette er en regulator med trininddeling og neutral zone, hvis kontrolvariabel er udgangstemperaturen fra enheden **Tout**, og den kontrollerede variabel er antallet af trin, der skal aktiveres (kompressorer). Setpoint befinder sig inden for en neutral zone. Hvis temperaturen svarer til en værdi inden for denne zone, sker der ingen ændring i antallet af aktiverede kompressorer.

Når temperaturen, på grund af belastningsvariationer på anlægget, antager værdier uden for den neutrale zone, tændes eller slukkes kompressorerne for at bringe temperaturværdien tilbage i den neutrale zone (se figuren nedenfor).

Bredden af den neutrale zone afhænger af de dynamiske egenskaber på anlægget. Den selvtilpassende algoritme er i stand til at "måle" dynamikken på anlægget og beregne den minimale neutrale zone, så kompressorernes aktiveringstider og det maksimale antal starter pr. time overholdes.



Figur 1-8: Modulerende indstilling på sonde ved udløb.

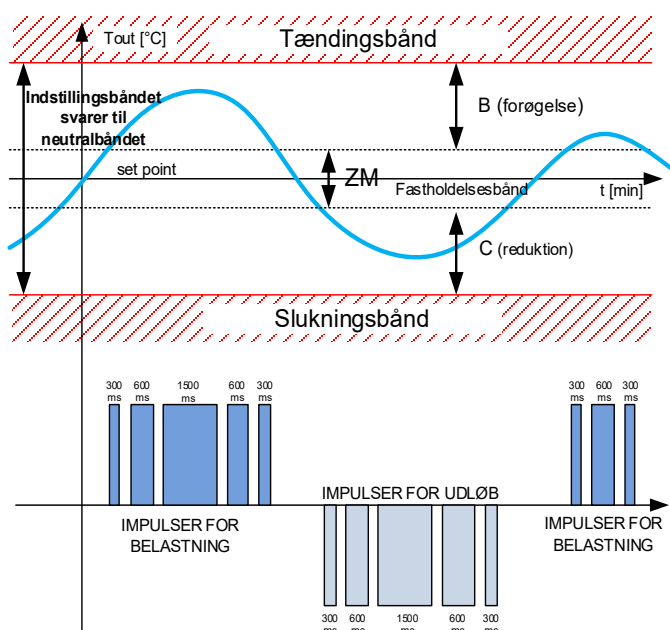
b) Se figur til venstre:

Setpoint værdien befinder sig i et fastholdelsesbånd (ZM). Hvis udløbstemperaturen svarer til en værdi inden for dette bånd, sker der ingen ændring i antallet af aktiverede kompressorer eller deres procentvise belastning (position for moduleringsventil).

Når udløbstemperaturen som følge af ændringer i belastningen i systemet svarer til værdier, som er højere end båndet B, aktiveres kompressorerne for at sikre, at temperaturen atter stabiliseres i indstillingsbåndet.

Hvis afledningen af udløbstemperaturen er større end eller lig med 0, øges kompressorernes effekt i båndet B således, at temperaturen stabiliseres i fastholdelsesbåndet (ZM). Omfanget af forøgelsen beregnes af en PID regulator på baggrund af udløbstemperaturen.

Når udløbstemperaturen som følge af ændringer i belastningen i systemet svarer til værdier, som er lavere end båndet C, frakobles kompressorerne for at sikre, at temperaturen atter stabiliseres i indstillingsbåndet.



Figur 1-9: Modulerende indstilling af skruekompressorer.

Hvis afledningen af udløbstemperaturen er mindre end eller lig med 0, reduceres kompressorernes effekt i båndet C således, at temperaturen stabiliseres i fastholdelsesbåndet (ZM). Omfanget af reduktionen beregnes af en PID regulator på baggrund af udløbstemperaturen.

Omfanget af indstillingsbåndet afhænger af systemets dynamiske karakteristika, og dette gælder specielt med hensyn til vandmængden i systemet og belastningen. Den selvtilpassende algoritme er i stand til at "måle" dynamikken på anlægget og beregne den minimale neutrale zone, så kompressorernes aktiveringstider og det maksimale antal starter pr. time overholdes.

Ved start af kompressorerne efter den første kompressor forceres de aktiverede kompressorer til min. og de efterfølgende forøgelser/reduktioner af effekten omfatter samtlige kompressorer.

#### 1.4.5 Proportional indstilling med variabel trininddeling på sonde ved indløb + PID på sonde ved udløb

Denne regulering er realiseret med bidrag fra to regulatorer, der arbejder koordineret:

- Proportional med trininddeling** (regulator med trininddeling) på sonde ved indløb.
- PID** (modulering) på sonde i udgang.

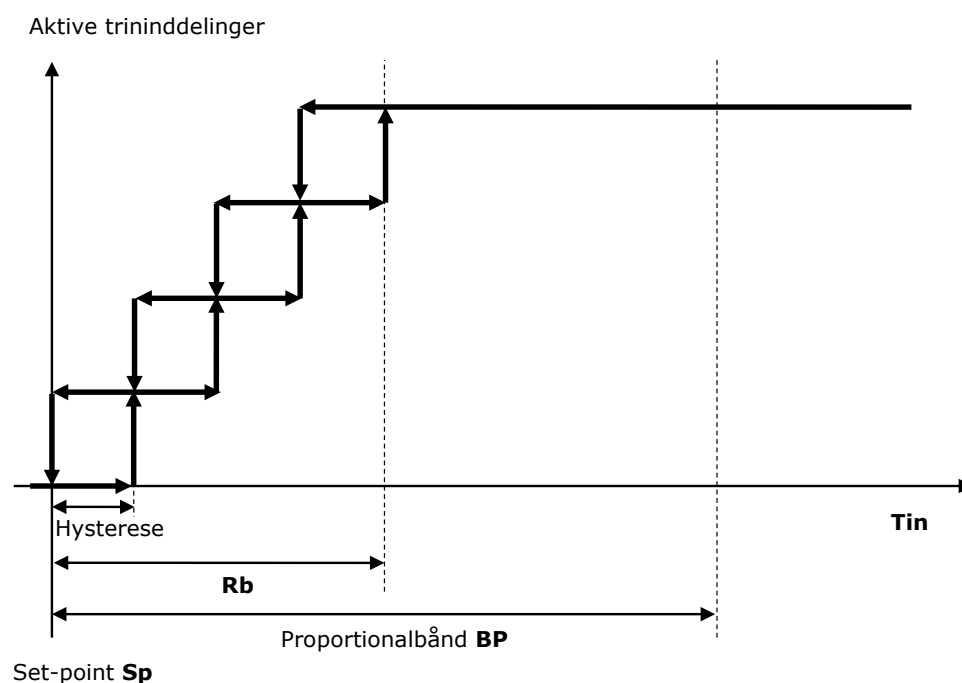
Setpoint gælder for begge regulatorer.

a) Der er tale om en proportional regulator med trininddeling, hvor kontrolvariablen er temperaturen ved indløbet til maskinen **T<sub>in</sub>**, og den kontrollerede variabel svarer til antallet af trininddelinger, som skal aktiveres (kompressorer).

Sammenlignet med den traditionelle regulator med trininddeling er der blevet tilføjet yderligere to parametre.

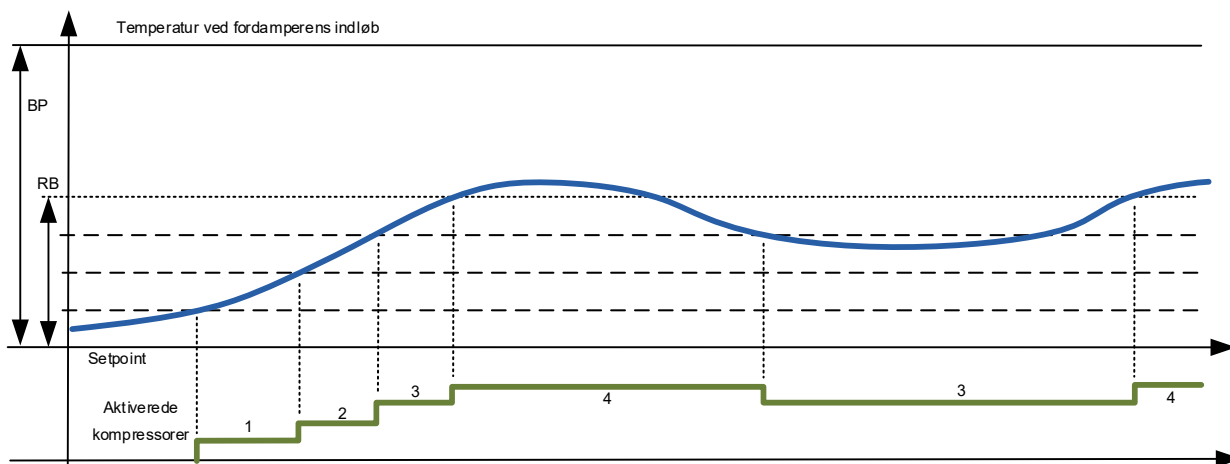
**R<sub>b</sub>**: Repræsenterer en procentdel af proportionalbåndet **BP**, og gør det muligt at komprimere trininddelingerne i denne del af proportionalbåndet.

Eksempel på funktion med 4 trininddelinger i afkøling og **R<sub>b</sub> < BP**



**Figur 1-10:** Proportional regulator med trininddeling med forskydning  $> 0$  og  $R_b = 50\%$ .

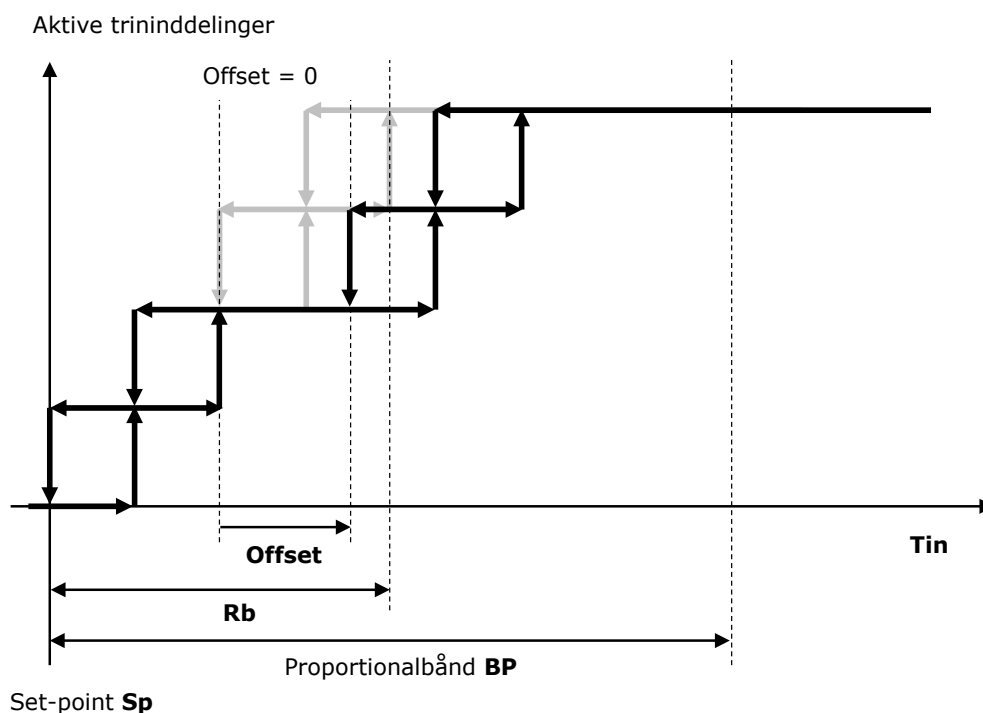
Hysteresen for hver trininddeling svarer til referenceproportionalbåndet **R<sub>b</sub>** divideret med antallet af trininddelinger, som skal styres.



Figur 1-11: Proportional indstilling med variabel trininddeling på sonde ved indløb med forskydning = 0 og Rb = 50%.

**Forskydningen** flytter aktiveringen/frakoblingen af den anden halvdel af trininddelingerne til en værdi, der er højere end tilfælde med en forskydning på = 0, og er baseret på proportionalbåndet BP.

Eksempel på funktion med 4 trininddelinger i afkøling og offset > 0



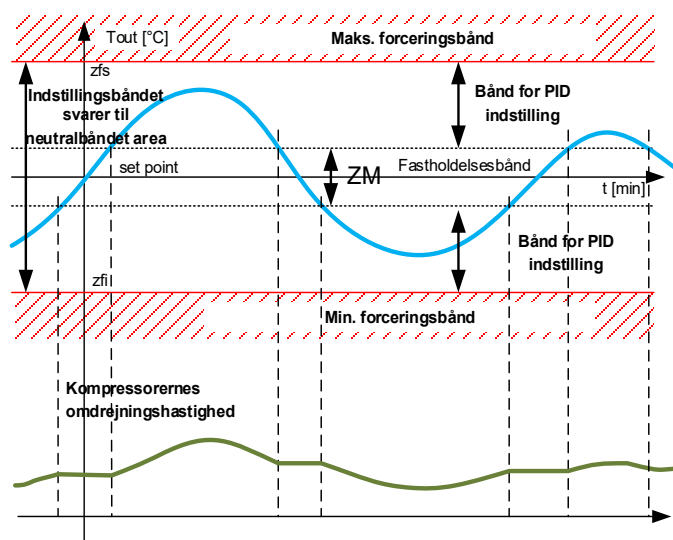
Figur 1-12: Proportional regulator med trininddeling med forskydning > 0 og Rb = 50%.

b) **PID** (proportional, integral, derivativ regulator), hvor kontrolvariabelen er udløbstemperaturen. Regulatoren aktiveres ved start af den første kompressor, og den frakobles efter slukning af den sidste kompressor.

Den kontrollerede variabel er kompressorernes omdrejningshastighed (effektforbrug i maskine med centrifugalkompressorer). Maskinens udløbstemperatur indstilles trinløst ved at ændre omdrejningshastigheden fra min. til maks.

Følgende parametre kan også indstilles: kp (koefficient for den proportionale komponent) og ti (integreret tid). Afledningstiden er indstillet til en fast fabriksværdi.

Når udgangstemperaturen er på en værdi inden for *zonen for opretholdelse*, ændres værdien for kompressorernes hastighed ikke. Når udløbstemperaturen ligger inden for *båndet for PID indstilling*, ændres kompressorernes omdrejningshastighed således, at temperaturen vender tilbage til en værdi inden for *fastholdelsesbåndet*. Parametrene Zfi, fastholdelsesbåndet og zfs er indstillet til en fast default-værdi.



Figur 1-13: Driftsdiagram regulator PID i udgang.



### 1.4.7 Sekventiel indstilling på sonde ved udgang + PID på sonde ved udgang

Denne regulering er tilgængelig på enheder med en kompressor med inverter og en eller flere kompressorer med fast hastighed eller på enheder hvor alle kompressorer har inverter.

#### 1.4.7.1 Sekventiel regulering på enheder med kompressor med inverter og en eller flere kompressorer med fast hastighed

To regulatorer med indbyrdes koordineret funktion bidrager til indstillingen:

- Sekventiel** (trinvis styring) på udgangssonden.
- PID** (modulering) på sonde i udgang.

Setpoint gælder for begge regulatorer.

a) Dette er en trinregulator med neutral zone, hvis kontrolvariabler er udgangstemperaturen på enheden **Tout** og antallet af omdrejninger på kompressoren med inverter, mens den kontrollerede variabel er antallet af trin, der skal aktiveres (kompressorer og/eller partitioner for kompressorer med fast hastighed).

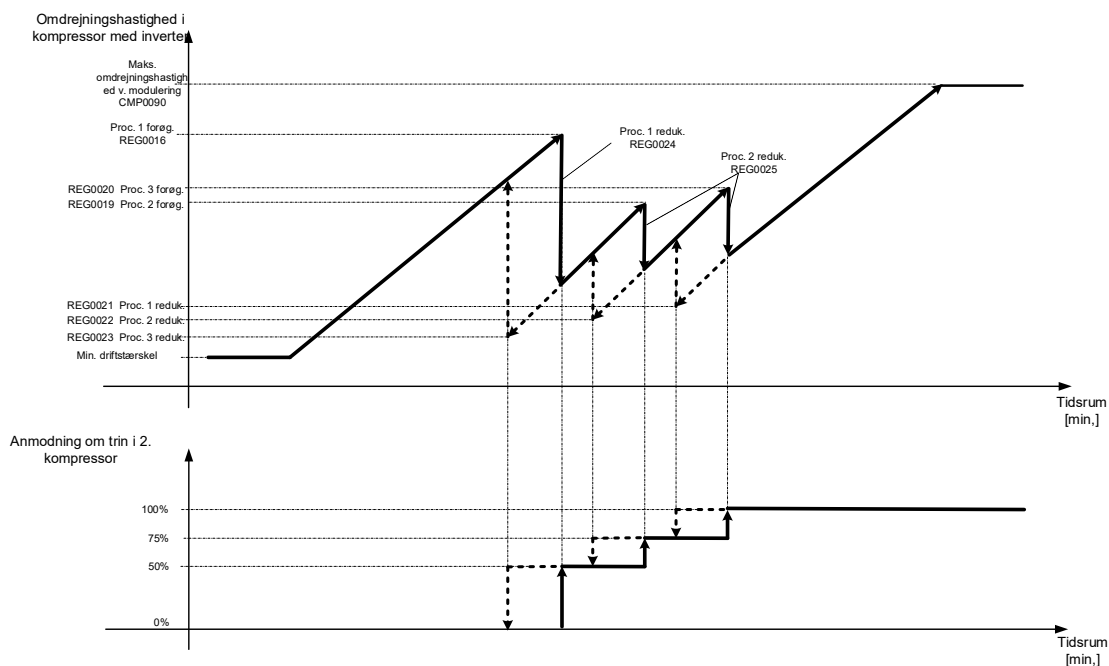
De følgende beskrivelser af driften henviser til driftstilstanden for køler.

Setpoint befinder sig indenfor en neutral zone. Hvis der ikke er nogen kompressor kørende på enheden, venter controlleren, indtil udgangstemperaturen overstiger den øvre grænse for den neutrale zone, hvorefter der anmodes om det første trin. Dette indebærer, at kompressoren startes med en inverter: Kompressoren holdes ved opstartshastigheden (CMP0091) i kompressorens opstartstid (eller start uden belastning, parameter CMP0028). Derefter begynder controlleren at overvåge kompressorhastigheden med inverteren og anmoder om yderligere trin (som vil blive tildelt kompressorer med fast hastighed, se Figur 1-16 og Figur 1-17) baseret på visse procentvise tærskler indstillet med parameter, der henviser til den maksimale hastighed for modulering af kompressoren med inverter. Når antallet af aktiverede trin i kompressorerne med fast hastighed forøges ved fast hastighed, reduceres omdrejningshastigheden i kompressoren med inverter med en passende procentvis værdi, således at den ydede køleeffekt er jævn.

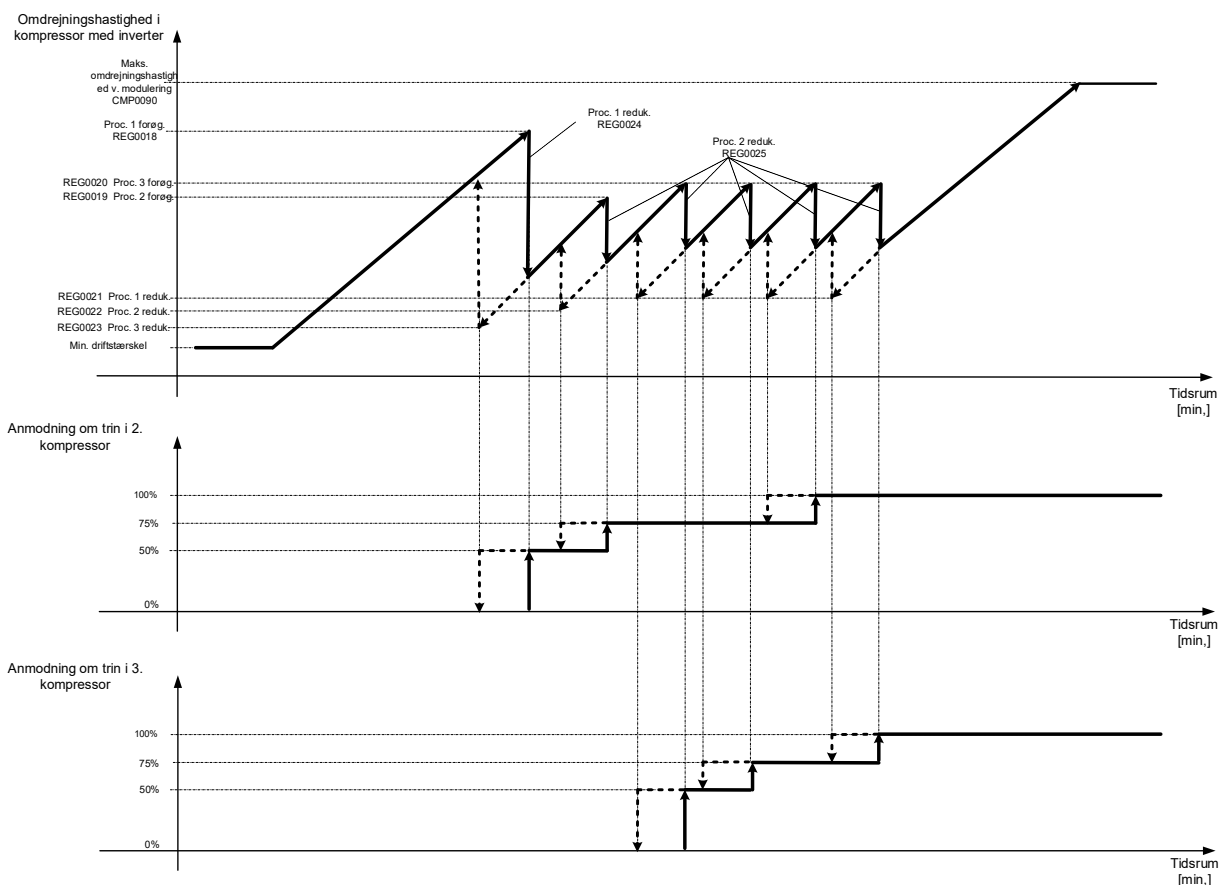
Hvis efterspørgslen på anlægget falder, vil controlleren, igen baseret på visse tærskler for antallet af omdrejninger på kompressoren med inverter, der er indstillet med parametre, reducere antallet af trin, der er tildelt kompressorerne med fast hastighed.

Nedlukning af ressourcer, hvad enten det er kompressorer med fast hastighed eller kompressorer med inverter, kan kun ske, hvis udgangstemperaturen falder til under den nedre grænse for den neutrale zone.

Bredden af den neutrale zone afhænger af de dynamiske egenskaber på anlægget. Den selvtilpassende algoritme er i stand til at "måle" dynamikken på anlægget og beregne den minimale neutrale zone, så kompressorernes aktiveringstider og det maksimale antal starter pr. time overholdes.

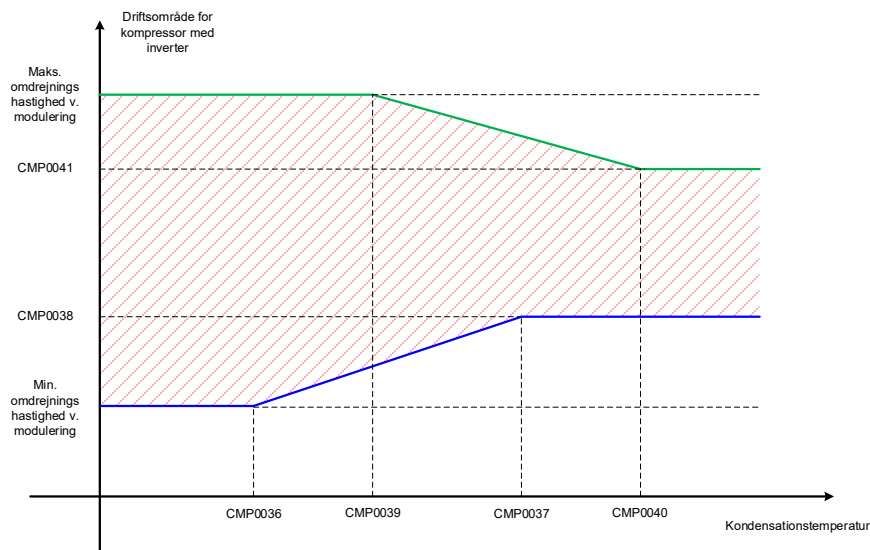


Figur 1-16: Driftsdiagram for sekventiel regulator for enheder med 2 skruekompressorer, hvoraf den ene er med inverterdrevet.



**Figur 1-17:** Driftdiagram for sekventiel regulator for enheder med 3 skruekompressorer, hvoraf den ene er med inverterdrevet.

b) **PID** (proportional integreret afledt regulator), hvis kontrolvariabel er udgangstemperaturen, aktiveres, når kompressoren med inverter starter, og deaktiveres, når den samme inverter slukkes. Den styrede variabel er kompressorens hastighed med inverter. Dette kan moduleres i et område mellem en minimumsværdi (Figur 1-18) og en maksimumsværdi (Figur 1-19), som bestemmes i henhold til kredsløbets kondenseringstemperatur:



**Figur 1-18:** Beregning af den minimale og maksimale driftstærskel for kompressoren med inverter.

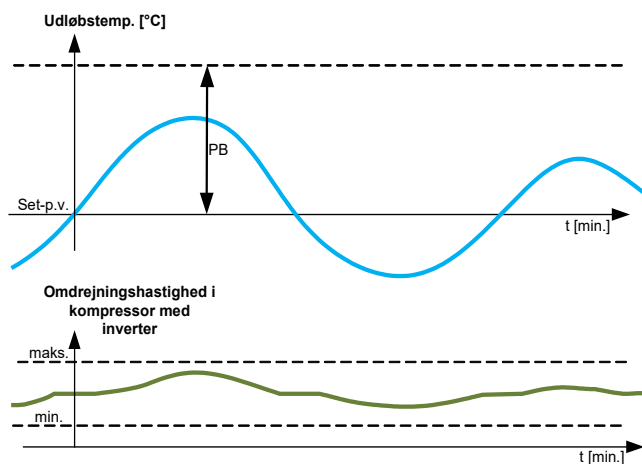
Endvidere er det muligt at indstille følgende parametre for PID-regulatoren: proportionalbånd (proportional indstilling) og Ti (integreret tid). Afledningstiden er indstillet til en fast fabriksværdi.

Ved siden af:

Driftsdiagram for PID-regulator:

Fremløbstemperaturen overvåges konstant, således at omdrejningshastigheden i kompressoren kontrolleres konstant.

Zonen for indstilling af PID refererer til bp (proportionalbånd) over setpoint.



**Figur 1-19:** Detaljeret PID for afgangstemperatur.



### 1.4.7.2 Sekventiel indstilling for enheder med kompressorer med inverter

To regulatorer med indbyrdes koordineret funktion bidrager til indstillingen:

- Sekventiel** (trinvis styring) på udgangssonden.
- PID** (modulering) på sonde i udgang.

Setpoint gælder for begge regulatorer.

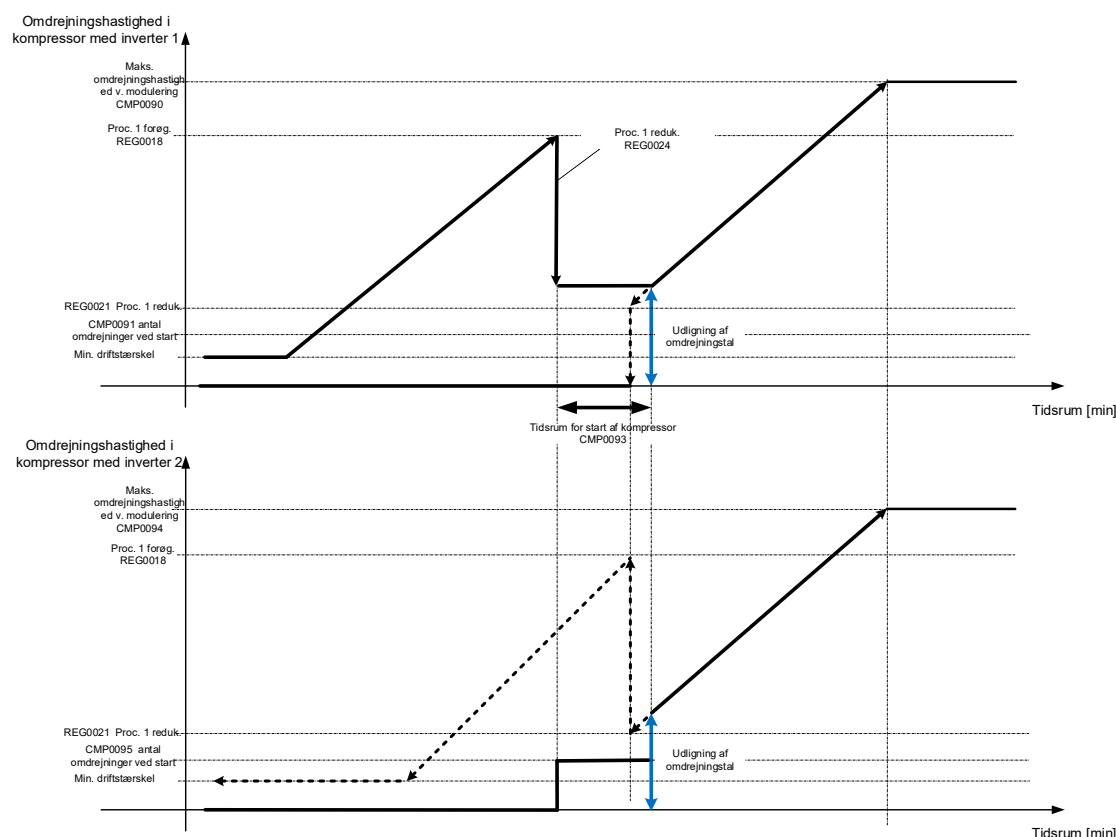
a) Dette er en regulator med trininddeling og neutral zone, hvis kontrolvariabel er udgangstemperaturen fra enheden **Tout** og antallet af kompressoromdrejninger med inverter, mens den kontrollerede variabel er antallet af kompressorer, der skal aktiveres.

De følgende beskrivelser af driften henviser til driftstilstanden køler for enheder med to kompressorer med invertere.

Setpoint befinder sig indenfor en neutral zone. Hvis ingen af enhedens kompressorer er i gang, afventer regulatoren, at udgangstemperaturen overstiger den øvre grænse for den neutrale zone, hvorefter der sendes anmodning til den første kompressor. Dette indebærer start af kompressoren med inverter: Kompressoren fastholdes ved omdrejningstallet til start (parametre CMP0091 og CMP0095) i tidsrummet for start af kompressorerne (eller start uden belastning CMP0028). Herefter overvåger regulatoren omdrejningshastigheden i kompressoren med inverter og anmoder om start af den anden kompressor med inverter, på baggrund af bestemte parameterindstillede procentvise tærskler, som refererer til maks. omdrejningshastigheden for modulering af kompressoren med inverter. Ved tænding af den anden kompressor, reduceres omdrejningshastigheden i kompressoren med inverter med en passende procentvis værdi, således at den ydede køleeffekt er jævn. Når den anden kompressor er tændt, holdes den ved opstartshastigheden under opstartstiden for kompressorerne (eller start uden belastning), hvorefter omdrejningerne for den anden kompressor tilpasses omdrejningerne for den første kompressor.

Hvis efterspørgslen på anlægget falder, vil controlleren, igen baseret på visse tærskler for antallet af omdrejninger på kompressoren med inverter, der er indstillet med parametre, reducere antallet af ressourcer, hvormed der slukkes for en kompressor.

Nedlukning af ressourcer kan kun ske, hvis udgangstemperaturen falder til under den nedre grænse for den neutrale zone. Bredden af den neutrale zone afhænger af de dynamiske egenskaber på anlægget. Den selvtilpassende algoritme er i stand til at "måle" dynamikken på anlægget og beregne den minimale neutrale zone, så kompressorernes aktiveringstider og det maksimale antal starter pr. time overholdes.



Figur 1-20: Driftsdiagram for sekventiel regulator for enheder med 2 kompressorer med inverter.

Styringslogikken kan anvendes til komplette inverterenheder med op til 4 kompressorer med ikke-homogene invertere (hastighederne kan konfigureres separat for hver kompressor). Hastighedsreduktionen for de aktive kompressorer på grund af tændingen af den tredje og fjerde kompressor er 2/3 af den reduktionsprocent, der er indstillet med parameter REG0021.

b) **PID** (proportional integreret afledt regulator), hvis kontrolvariabel er udgangstemperaturen, aktiveres, når kompressoren med inverter starter, og deaktiveres, når den samme inverter slukkes.

Den kontrollerede variabel svarer til omdrejningshastigheden for kompressoren med inverter. Dette kan moduleres i et område mellem en minimumsværdi (Figura 1-21) og en maksimumsværdi (Figur 1-22), som bestemmes i henhold til kredsløbets kondenseringstemperatur:

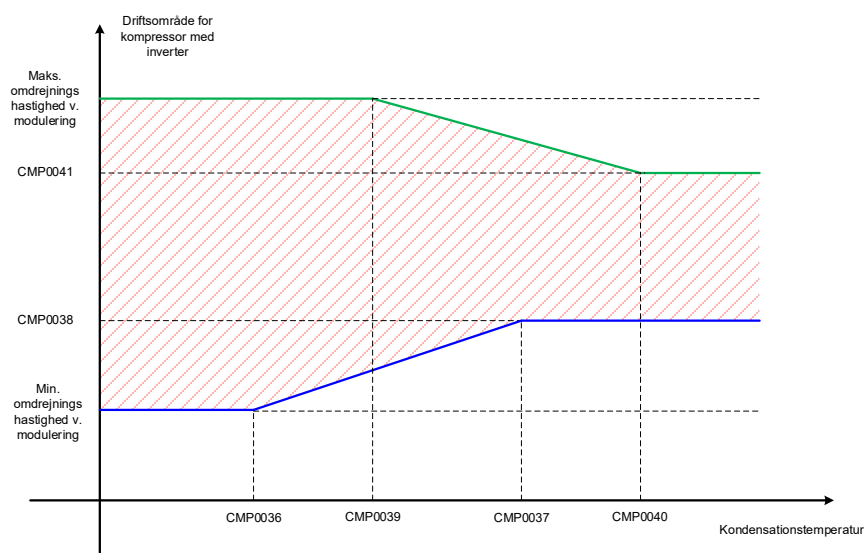


**Figura 1-21:** Beregning af den minimale og maksimale driftstærskel for kompressorer med inverter.

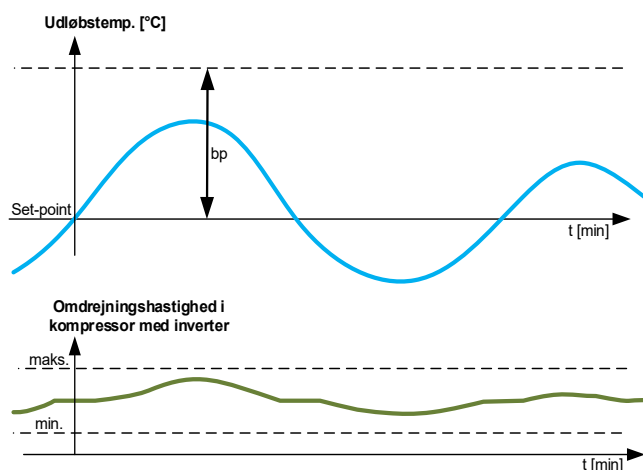
Endvidere er det muligt at indstille følgende parametre for PID-regulatoren: proportionalbånd (proportional indstilling) og Ti (integreret tid). Afledningstiden er indstillet til en fast fabriksværdi.

Ved siden af:

Driftsdiagram for PID-regulator:

Fremløbstemperaturen overvåges konstant, således at omdrejningshastigheden i kompressoren kontrolleres konstant.

Zonen for indstilling af PID refererer til bp (proportionalbånd) over setpoint.



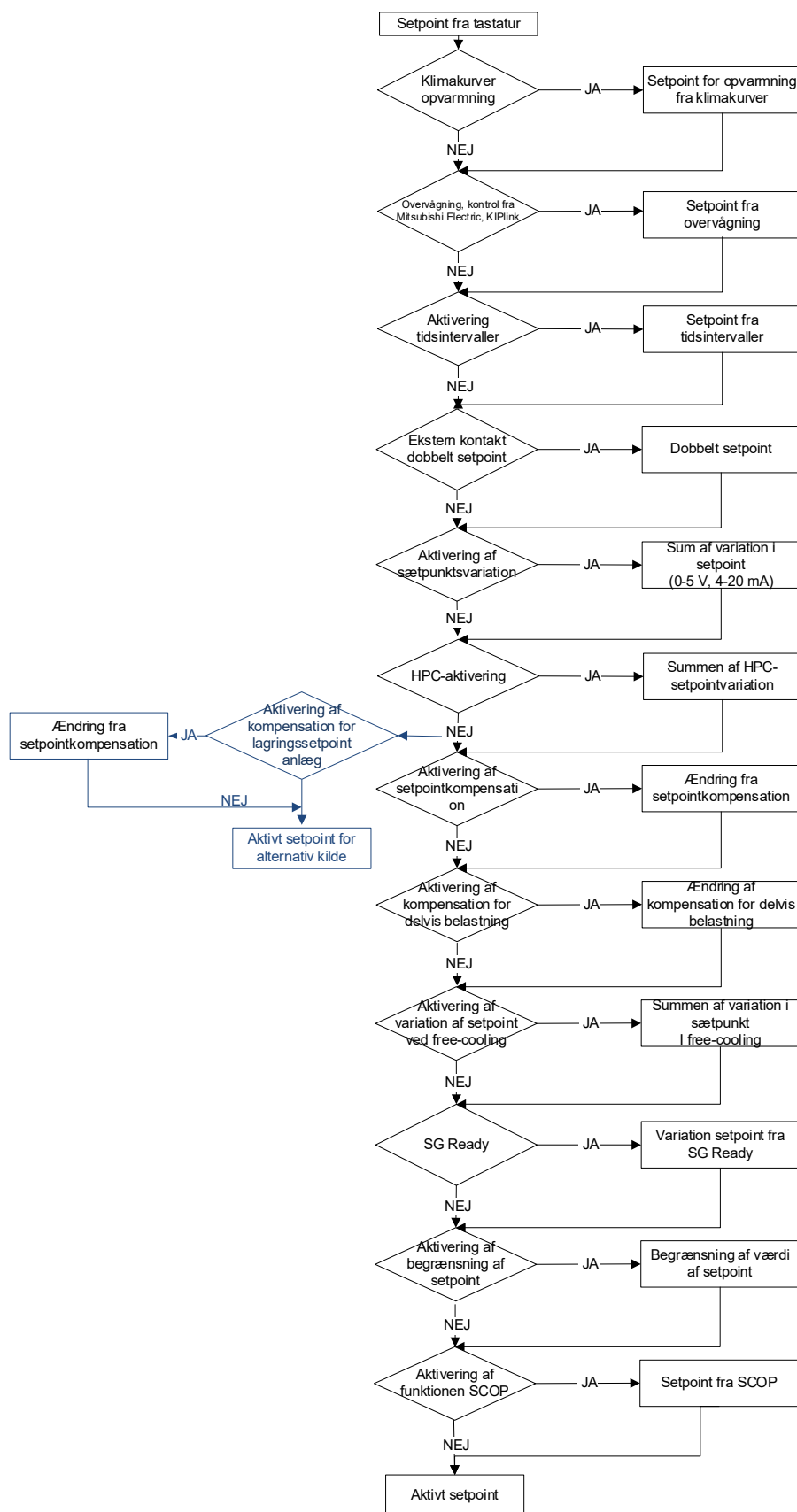
**Figur 1-22:** Detaljeret PID for afgangstemperatur.

## 1.5 Indstilling af set-point værdi

Der er flere procedurer til indstilling af setpoint:

1. Setpoint fra tastatur W3000compact/W3000large/W3000+touch.
2. Setpoint fra Overvågning eller fjernstyring af systemet Mitsubishi Electric.
3. setpoint fra KIPlink
4. setpoint fra tidszoner
5. ekstern kontakt dobbelt setpoint

Det setpoint, der indstilles med tastaturet, eller som vælges af den eksterne kontakt for det dobbelte setpoint, ændres af de funktioner, der kan aktiveres, og omdannes til det aktive setpoint, der sendes til regulatorerne.



Figur 1-23: Sekvens af funktioner til ændring af indstillingen, indtil det aktive setpoint er opnået.

## Eksempel:

Setpoint tastatur: 7,0 °C  
 Dobbelt setpoint: 10,0 °C  
 Variation af setpoint ved 50% svarende til 2,5°C  
 Aktivt setpoint med åben kontakt:  $7,0 + 2,5 = 9,5^{\circ}\text{C}$   
 Aktivt setpoint med lukket kontakt:  $10,0 + 2,5 = 12,5^{\circ}\text{C}$

**Bemærk:**

Signalet fra ændring af indstilling summeres altid, uanset enhedens driftstilstand

**Bemærk:**

Hvis styring fra Manager eller Rækkefølgerregulator er aktiveret, foretages der ved tvang deaktivering af funktionerne: Tidszoner, dobbelt setpoint og variation af setpoint.

**Bemærk:**

Funktionerne med begrænsning og kompensation af setpoint er kun tilgængelige, hvis der er monteret en føler for den eksterne lufttemperatur. Denne sonde er ikke tilgængelig på vandkølede enheder.

**Bemærk:**

Funktionen SCOP deaktiverer funktionerne for kompensation og begrænsning af varmepumpens setpoint.

Under menuen setpoint er det aktive setpoint for temperaturen (både for det primære setpoint og for setpoint genvinding/DHW).

Hvis funktionen Plant Management er aktiveret, er det aktive setpoint for gruppetemperatur synligt.

Nedenfor er teksten til de blinkende symboler, der angiver de aktive funktioner for setpoint og driftstilstand:

**R:** Skift funktion fra fjernkontakt eller udetemperatur.  
**V:** Variationsfunktion fra eksternt signal.  
**B:** Modifikationsfunktion fra tidszoner.  
**C:** kompensationsfunktion afhængig af udetemperatur.  
**L:** Begrænsningsfunktion afhængig af udetemperatur.  
**P:** Kompensationsfunktion for delvis belastning.  
**S:** værdi modtaget fra Rækkefølgerregulator.  
**M:** Værdi modtaget af Manager 3000.  
**Q:** Værdi ændret af funktionen Mobile Band.  
**F:** Variationsfunktion for free-cooling.  
**A:** Værdi modtaget fra ClimaPRO.  
**E:** Funktionen SCOP.  
**D:** Funktion adaptivt setpoint for gruppen.  
**O:** Funktionen HPC.

Aktivt setpoint:

Primær 07,0 °C **B**  
 Genvinding/DHW 42,5°C **R**

Type enhed:

køler  
 Driftstilstand:  
 auto **R**  
 Regulering aktiv:  
 Quick Mind  
 ved udgang

Setpoint aktivt

gruppe: 07,0 °C **D**

Hvis aktiveret samtidigt:

- Konfiguration af seriel linje USR0002 = 5 Overvågning med watchdog.
- Aktiverer samtykke til autonom drift i tilfælde af afbrydelse af supervisor (kun for seriel linje konfigureret i tilstanden "Supervision med watchdog") (coil15 protokoller Modbus, Modbus over IP og Bacnet).
- Gendan lokale indstillinger i standalone USR0010 = 1: aktiveret.

Supervisoren kan ikke ændre det indstillede setpoint fra tastaturet, da dette bruges i tilfælde af en afbrydelse (enhedens status U.ALONE).

## 1.6 Yderligere funktioner

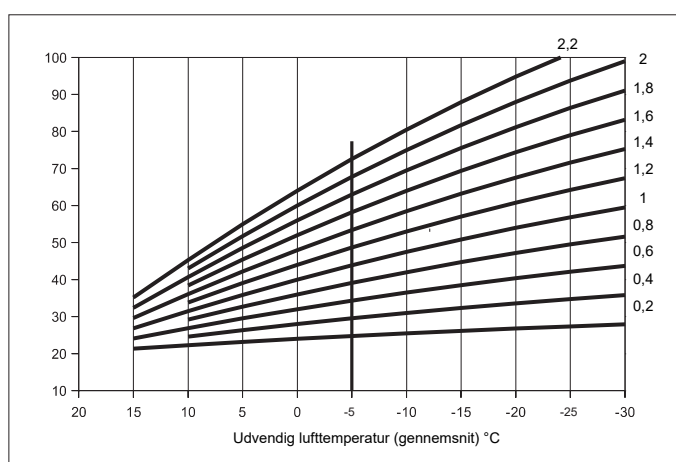
Vandtemperaturen på varme- eller kølekredsen er en værdi, der beregnes af styreenheden og afhænger af følgende faktorer:

- A) Kompensation setpoint vand anlæg ved opvarmning eller køling.
- B) Indflydelse fra omgivelsestemperatur.
- C) Indstillet værdi setpoint rumtemperatur.

### A) Kompensation setpoint vandtemperatur anlæg

Setpoint for vandtemperaturen ved opvarmning eller køling beregnes ved at følge udviklingen i udetemperaturen i henhold til de indstillelige kurver.

Diagram for kompensation af setpoint for vand i opvarmning:



Klimakurven for opvarmning kan ændres, så varmepumpen kan fungere korrekt afhængigt af varmeanlægget (strålepaneler, radiatorer, fan-coils).

Eksempel: Ved valg af varmekurve 1,4 med en udendørs lufttemperatur på -5 °C opnås en vandtemperatur på ca. + 53 °C.

En for høj varmekurve svarer til for høje fremløbstemperaturer, mens en for lav kurve kan resultere i, at den ønskede rumtemperatur ikke nås.

Bidraget til klimakurven fra forskellen mellem setpoint for rummet og rumtemperaturen er kun tilgængelig med Touch Room HMI.

Følgende kompensationskurver foreslås:

| Type terminal         | Koefficient |
|-----------------------|-------------|
| Strålepaneler         | 0,2 ÷ 0,7   |
| Ventilatorkonvektorer | 0,9 ÷ 1,1   |
| Radiatorer            | 1,2 ÷ 1,5   |

### Inden for opvarmning opdeles klimakurver i:

- Systemkurve (zone HT): Bestemmer setpoint for driften for varmepumpen og eventuelle zoner med høje temperaturer. Det beregnede setpoint refererer til temperaturen for vandet i fremløb fra varmepumpen. Kontrollér, at temperaturløbet er inden for producentens krævede grænser.
- Kurve zone LT: Bestemmer værdien for vandets fremløbstemperatur i det blandede kredsløb. I tilfælde af anlæg, der er konfigureret med blandede zoner, skal systemkurven og zonekurven vælges.

Anlægs- og zonekurverne arbejder i kaskade, og klimakurven for den blandede zone kan derfor ikke kræve en højere værdi end den, som systemkurven giver. Klimakurverne refererer til et setpoint for rummet på 20 °C på styringen Touch Room HMI.

| N.par.  | Beskrivelse parameter                                           | Default | U.M. | Min. | Max. | Menu     | Undermenu |
|---------|-----------------------------------------------------------------|---------|------|------|------|----------|-----------|
| SET0034 | Aktivering klimakurve for zoner (0:Nej - 1:HT - 2:LT - 3:HT+LT) | 0       | -    | 0    | 3    | Setpoint | Setpoint  |
| SET0035 | Koefficient for klimakurve zone HT                              | 1,0     | -    | 0    | 2    | Setpoint | Setpoint  |
| SET0036 | Offset klimakurve zone HT                                       | 0,0     | °C   | -9,9 | 9,9  | Setpoint | Setpoint  |
| SET0037 | Offset ved 20 °C klimakurve zone HT                             | 0,0     | °C   | -9,9 | 9,9  | Setpoint | Setpoint  |
| SET0039 | Koefficient for klimakurve zone LT                              | 1,0     | -    | 0    | 2    | Setpoint | Setpoint  |
| SET0040 | Offset klimakurve zone LT                                       | 0,0     | °C   | -9,9 | 9,9  | Setpoint | Setpoint  |
| SET0041 | Offset ved 20 °C klimakurve zone LT                             | 0,0     | °C   | -9,9 | 9,9  | Setpoint | Setpoint  |

### B) Påvirkning omgivelsestemperatur ved opvarmning



#### BEMÆRK:

Funktionen er kun aktiv, hvis betjeningen Touch Room HMI er installeret i rummet.

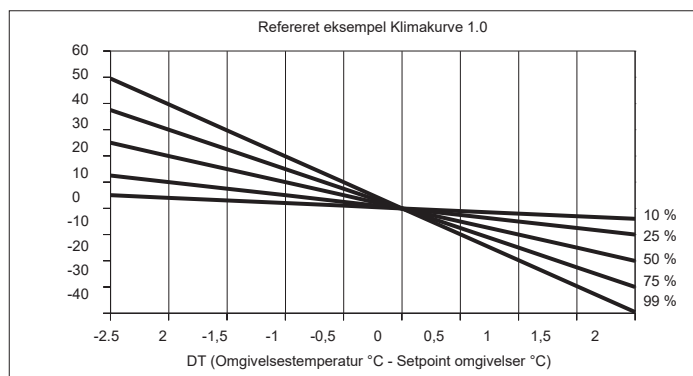
Klimakurven bestemmer værdien af opvarmningsvandets temperatur, som kan korrigeres for forskellen mellem det ønskede setpoint for rummet og den faktiske rumtemperatur. Den korrektion, der foretages af vandtemperaturen, afhænger af koefficienten "Påvirkning omgivelsestemperatur anlæg". Jo højere værdien af koefficienten for "Påvirkning omgivelsestemperatur anlæg" er, jo større er korrektionen af anlæggets vandtemperatur og omvendt.

Gør det muligt hurtigt at justere vandtemperaturen til forskellige kombinationer af indeklima.

Indstil anlæggets rumtemperatur til værdier, der er lig med eller større end zonerne LT.

Indstil en passende værdi til anlæggets rumtemperaturpåvirkning for at få en beregnet afvigelse for setpoint for temperaturen af returvand til varmepumpen.

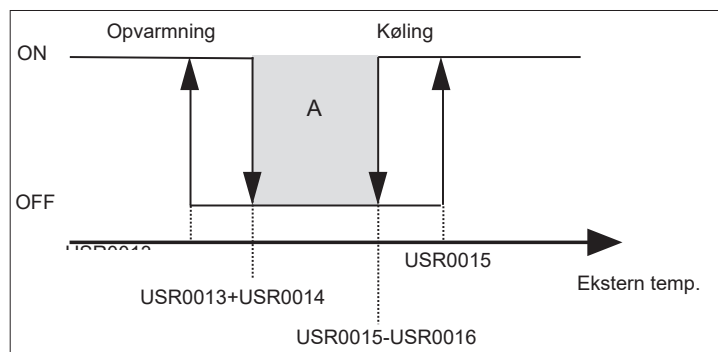
På samme måde opnås der for påvirkningen af omgivelsestemperaturen for zone LT en afvigelse fra det beregnede setpoint for temperaturen af vandet i fremløb på anlægget, der reguleres af blandeventilen.



| N.par.  | Beskrivelse parameter                            | Default | U.M. | Min. | Max. | Menu     | Undermenu |
|---------|--------------------------------------------------|---------|------|------|------|----------|-----------|
| SET0038 | Procentvis påvirkning af rumtemperaturen zone HT | 0       | %    | 0    | 99   | Setpoint | Setpoint  |
| SET0042 | Procentvis påvirkning af rumtemperaturen zone LT | 0       | %    | 0    | 99   | Setpoint | Setpoint  |

### Automatisk skift af tilstand for ekstern temperatur

I automatisk tilstand sker sæsonsiftet (opvarmning/køling) automatisk, så brugeren ikke behøver at gribe ind manuelt. Sæsonsiftet tager udgangspunkt i diagrammet på figuren:



Den midterste zone A svarer til en tomgangsfase, da de udendørs klimatiske forhold hverken kræver opvarmning eller køling.

| N. par. | Beskrivelse parameter                                           | Default | U.M. | Min   | Maks. | Menu   | Undermenu |
|---------|-----------------------------------------------------------------|---------|------|-------|-------|--------|-----------|
| USR0012 | Automatisk tilstandsskift (0:deaktiveret - 1:aktiveret)         | 0       | -    | 0     | 1     | Bruger | Bruger    |
| USR0013 | Setpoint for opvarmning til automatisk skift af driftstilstand  | 16,0    | °C   | -99,9 | 99,9  | Bruger | Bruger    |
| USR0015 | Setpoint for køling til automatisk skift af driftstilstand      | 24,0    | °C   | -99,9 | 99,9  | Bruger | Bruger    |
| USR0014 | Differens for opvarmning til automatisk skift af driftstilstand | 2,0     | °C   | -99,9 | 99,9  | Bruger | Bruger    |
| USR0016 | Differens for køling til automatisk skift af driftstilstand     | 2,0     | °C   | -99,9 | 99,9  | Bruger | Bruger    |



## 1.7 Anvendte symboler

Nedenfor angives en række symboler, som benyttes på skærbillederne på W3000+ og W3000 compact.

| Blink i hovedskærbillede | Beskrivelse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BANDS                    | Tidsintervallerne er aktiverede.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| FCOOL                    | Enheden kører i funktionen Free-Cooling.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| GRÆNSE                   | Effektbegrænsningen (demand limit) er aktiveret, begrænsning pga. høj omgivelsestemperatur eller pga. strøm.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NIGHT ON                 | Natfunktionen er aktiveret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| FRYS                     | Udgangstemperaturen nærmer sig setpoint for frostbeskyttelse, eller rumtemperaturen er lavere end setpoint for frostbeskyttelse af rummet og aktivering af frostbeskyttelse af rummet.                                                                                                                                                                                                                                                                                                                                                                                     |
| PUMP ON                  | Pumpe aktiv pga. lav temperatur for vand/ekstern luft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| FULL LOAD                | Max. forcering af mindst et kredsløb er aktiv.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| U.ALONE                  | Enheden fungerer autonomt efter frakobling fra Manager3000, rækkefølgregulator eller ClimaPRO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| HPTC                     | Kredsløbsbegrænsningen er aktiveret som følge af høje kondensationstryk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DEFR                     | Afrimning er aktiv i et eller flere af enhedens kredsløb.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| DRYP                     | Afdrypning er aktiv i et eller flere af enhedens kredsløb.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| STORAGE                  | Energiakkumulering er aktiv.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| MIN LOAD                 | Min. forceringen af mindst et kredsløb eller en slukning til oliegevinding er aktiveret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DHW KOMPR                | Enheden opvarmer brugsvand (DHW) ved hjælp af kompressorerne.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| DHW-KEDEL                | Enheden opvarmer brugsvand (DHW) ved hjælp af modstandene eller kedlen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| DHW BOOST                | Enheden er i gang med produktion af DHW til brug i husholdninger ved setpoint værdi for overboost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PLT KOMPR                | Enheden opvarmer anlægsreserven ved hjælp af kompressorerne.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| PLT-KEDEL                | Enheden opvarmer anlægsreserven ved hjælp af modstandene eller kedlen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ANTILEG                  | Funktionen til forebyggelse af vækst af legionærbakterier er aktiveret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| OFF SNIFF.               | Aktivisering af sniffer-funktionen forudsætter, at pumperne er standsede, eller hvis de er i drift, at opdatering af temperaturerne for fremløb/retur til anlægget er i gang, inden genaktivering af termoregulatorerne.                                                                                                                                                                                                                                                                                                                                                   |
| OFF STOR.                | Enheden slukkes, når setpoint for temperaturen for inertireserve er nået.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| POWER-ON                 | Enheden afventer tidsforsinkelsen for start efter strømsvigt, som er indstillet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| VENT                     | Enheden er tændt, og termoregulatorerne afventer igangværende forsinkelser.<br>Årsagerne til det blinkende "VENT" kan være: <ul style="list-style-type: none"> <li>- Venter på at stabilisere batteriskiftet (enheder med Free-cooling).</li> <li>- Segmentering ved start (hybride enheder med hermetiske kompressorer).</li> <li>- Blokering af enhedens opstart ved høj tilgangstemperatur i varmeveksleren.</li> <li>- Forøgelse af antallet af tændte kompressorer.</li> <li>- Aktive sikkerhedstider mellem kompressorer (også mellem separate kredsløb).</li> </ul> |
| HURTIG                   | Funktionen for hurtig start er aktiv.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| PUMPDOWN ON              | Funktionen for pumpdown er aktiv i et eller flere kredsløb på enheden.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| +2P ENABLED              | Modul +2P aktiveret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| KIPlink FOUND            | Modulet KIPlink er registreret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| OIL T. LOW               | Lav temperatur olie motor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| SG READY                 | SG Ready aktiv                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| REG NR                   | Når det automatiske funktionsskift er aktiveret, kræver de udendørs klimatiske forhold ikke, at kompressorerne aktiveres (hverken opvarmning eller afkøling).                                                                                                                                                                                                                                                                                                                                                                                                              |
| PLANT OFF                | Produktionen af varmt eller koldt vand på systemsiden slukkes på grund af manglende efterspørgsel fra zonerne i systemet.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| BOOST                    | Boostfunktionen er aktiveret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| CIRC 1 LOCK              | Kredsløb 1 blokeret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CIRC 2 LOCK              | Kredsløb 2 blokeret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CIRC 3 LOCK              | Kredsløb 3 blokeret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CIRC 4 LOCK              | Kredsløb 4 blokeret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CHDT                     | Tvungen slukning af kompressorer ved høj udstødningstemperatur er aktiv.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

BANDS, LIMIT, NIGHT ON, NO REG, PLANT OFF, BOOST blinker kun, når enheden er tændt (ON).

| Symbolet for gruppemenu | Beskrivelse                                                                          |
|-------------------------|--------------------------------------------------------------------------------------|
| GRP FCOOL               | Mindst en enhed i gruppen er indstillet til Free-cooling.                            |
| GRP LIMIT               | Gruppens effektbegrænsning er aktiveret (gruppens demand limit).                     |
| GRP FAST                | Funktionen for hurtig start af gruppen er aktiv.                                     |
| WAIT LAN                | Fejl på forbindelsen mellem enheder i gruppen. Kommando On/Off for udelukket gruppe. |

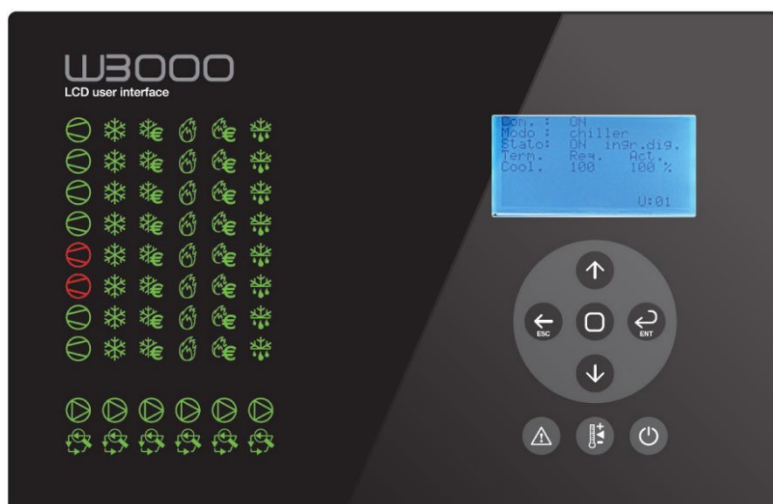
Blink med relation til GRP FCOOL, GRP LIMIT og GRP FAST er kun aktiveret for anlæg ON.

| Symbolet for enhedens menu | Beskrivelse                                               |
|----------------------------|-----------------------------------------------------------|
| Off                        | Enhed/kredsløb slukket.                                   |
| Ch nr                      | Kølerens kredsløb kræves ikke af termoregulator.          |
| Ch                         | Kølerens kredsløb kræves af termoregulator.               |
| Ch+R                       | Kølerens kredsløb og genvinding kræves af termoregulator. |
| Hp nr                      | Varmepumpekredsløb kræves ikke af termoregulator.         |
| Hp                         | Varmepumpekredsløb kræves af termoregulator.              |
| R nr                       | Genvindingskredsløb kræves ikke af termoregulator.        |
| R                          | Kun genvindingskredsløb kræves af termoregulator.         |
| Pd                         | Kredsløb i Pumpdown.                                      |
| Defr                       | Kredsløb i frostbeskyttelse.                              |
| Dryp                       | Kredsløb i afdrypning.                                    |

## 2 BRUGERFLADE

### 2.1 Brugerterminal

Der findes tre typer brugerflader:



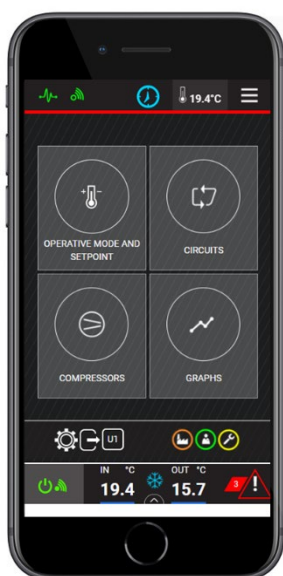
W3000 large



W3000 compact



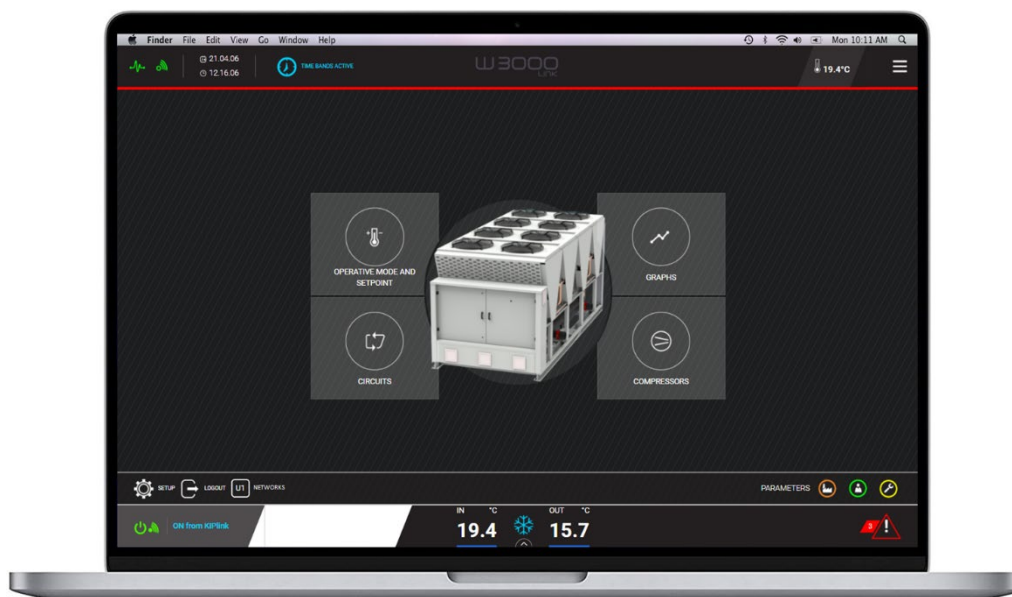
W3000Touch+



Figur 2-1: Mobilversion.



Figur 2-2: Tabletversion



Figur 2-3: Versionen Notebook (Brug af Local Monitoring).

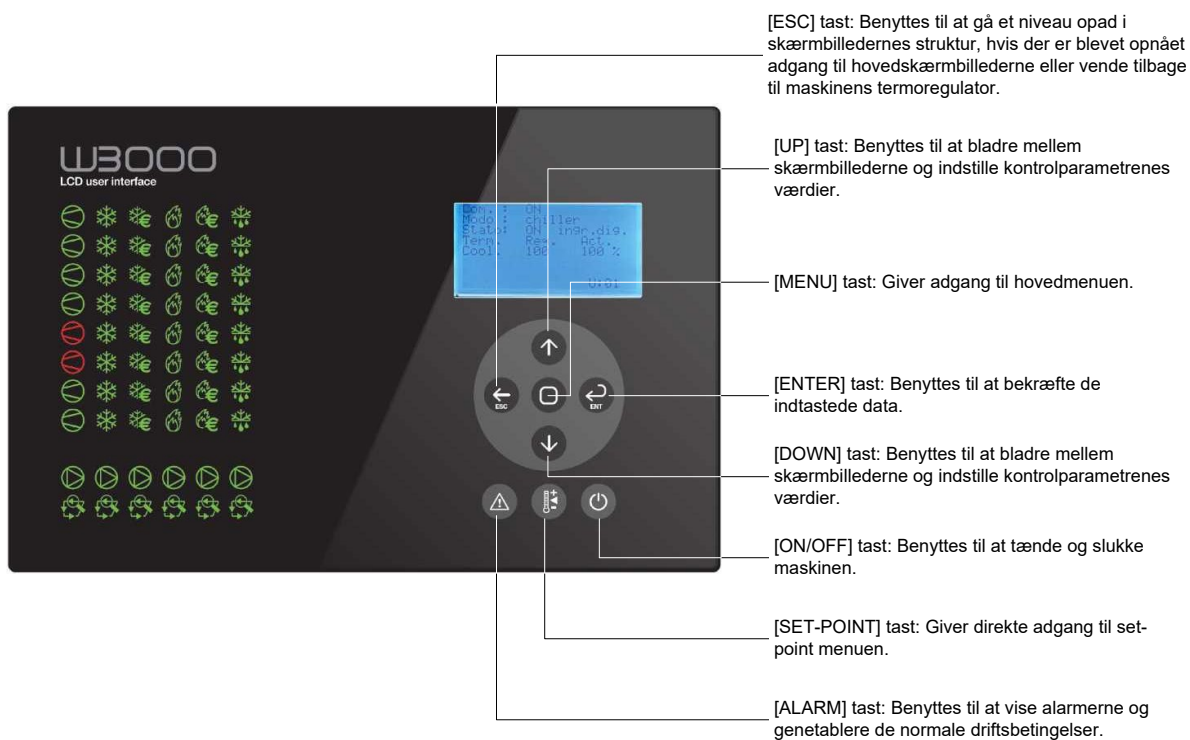


#### INFORMATION:

Billedet af hovedsynoptiken vist i figurene i denne vejledning er et eksempel på en bestemt type maskine. Det er derfor muligvis ikke i overensstemmelse med det, der vises på enhedens brugergrænseflade for kontrol.

### 2.1.1 Tastatur W3000 large

Betydning af tasterne:



**Figur 2-4:** Betydning af tasterne i tastatur W3000 large.

### Betydning af LED'erne for kompressorerne:

[LED for kompressor]

- Lyser konstant grønt: Kompressoren er tændt.
- ⓘ Blinker grønt: Der er blevet anmodet om tænding af kompressoren.
- Rødt: Kompressoren er blokeret af en alarm for kompressoren eller kredsløbet.

[LED for chiller]

- Lyser konstant grønt: Kompressoren er indstillet til chillerfunktion.

[LED for free-cooling]

- Lyser konstant grønt: Free-cooling er aktiveret.

[LED for varmepumpe]

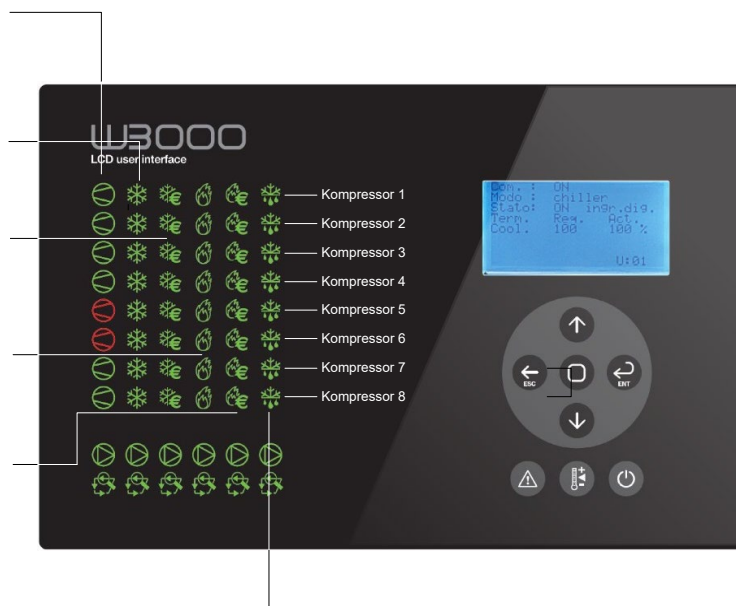
- Lyser konstant grønt: Kompressoren er indstillet til varmepumpefunktion.

[LED for genvinding]

- Lyser konstant grønt: Kompressoren er indstillet til genvindingsfunktion.
- ⓘ Blinker grønt: Alarmen for genvinding er udløst i kompressoren.

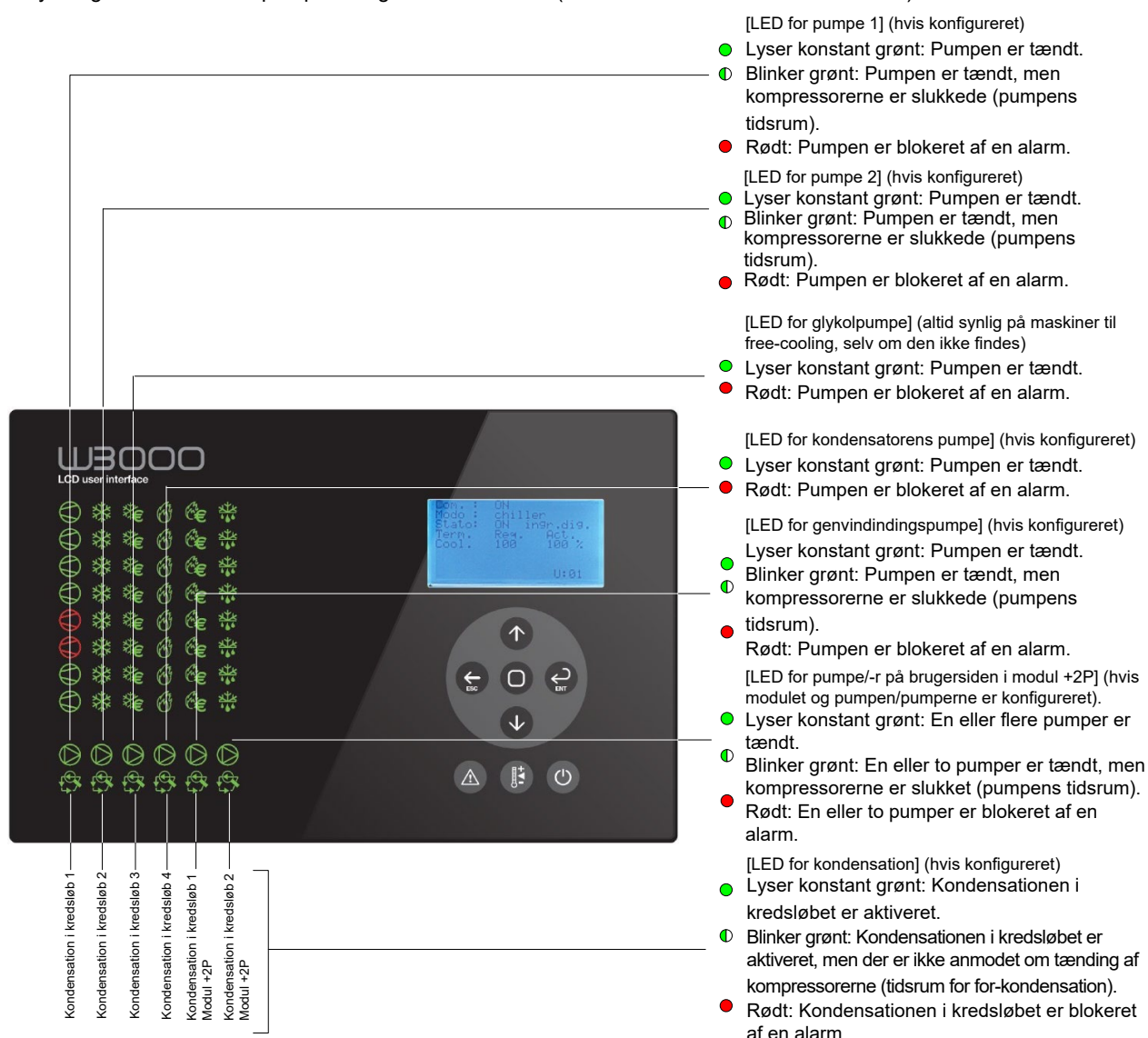
[LED for afrimning]

- Lyser konstant grønt: Kompressoren er indstillet til afrimning.
- ⓘ Blinker grønt: Kompressoren er indstillet til afdrypning.



**Figur 2-5:** Betydning af LED'erne for kompressorerne i tastatur W3000 large.

Betydning af LED'erne for pumperne og kondensationen (ventilation eller kondensationsventil):



Figur 2-6: Betydning af LED'erne for pumperne og kondensationen i tastatur W3000 large

#### Bemærkninger:

- Når der slutes strøm til maskinen og dermed til tastaturet, foretages der funktionskontroller af alle LED'er i et par sekunder, idet alle LED'er tændes samtidigt (hvad angår LED'er med to farver tændes først det røde lys og derefter det grønne).
- Eksempelet i figuren viser en maskine med 8 kompressorer. Tændingen af kompressorernes linjer afhænger af antallet af installerede kompressorer.
- LED'er for kondensation kan tændes samtidigt for flere kredsløb, hvis kondensationen er fælles for to eller flere kredsløb.
- Tastaturets baggrundsbelysning slukkes, når der ikke er blevet trykket på nogen tast i 2 minutter.
- Tastaturets baggrundsbelysning blinker i tilfælde af alarm på enheden og manglende interaktion med tastaturet.

#### Bemærkninger vedrørende maskiner med modul +2P:

- Data og parametre vedrørende modul +2P kan fremvises ved at benytte tastkombinationen (ESC+UP). Gentag tastkombinationen for at vende tilbage til hovedbrugerfladen.
- Tænding/slukning af maskinen kan ikke finde sted, hvis brugerfladen er indstillet til kontrol af modul +2P. I dette tilfælde skal du benytte tastkombinationen (ESC+UP) for at fremvise hovedbrugerfladen og give den ønskede kommando.
- De LED'er, som normalt er knyttet til kompressorerne 5, 6, 7 og 8, angiver i dette tilfælde tilstanden i kompressorerne 1, 2, 3 og 4 i modul +2P.



### 2.1.2 Tastatur W3000 compact

[ALARM] tast: Benyttes til at vise alarmerne og genetablere de normale driftsbetingelser. Hvis LED'en lyser rødt, er der blevet registreret mindst en alarm/signalering.

[MENU] tast: Giver adgang til hovedmenuen. Hvis LED'en lyser gult, er du i menuen.

[ESC] tast: Benyttes til at gå et niveau opad i skærbilledernes struktur, hvis der er blevet opnået adgang til hovedskærbillederne eller vende tilbage til maskinens termoregulator.



[UP] tast: Benyttes til at bladre mellem skærbillederne og indstille kontrolparametrene værdier.

[ENTER] tast: Benyttes til at bekræfte de indtastede data.

[DOWN] tast: Benyttes til at bladre mellem skærbillederne og indstille kontrolparametrene værdier.

#### Bemærkninger:

- Tastaturets baggrundsbelysning slukkes, når der ikke er blevet trykket på nogen tast i 2 minutter.
- Tastaturets baggrundsbelysning blinker i tilfælde af alarm på enheden og manglende interaktion med tastaturet.

**Figur 2-7:** Betydning af tasterne og LED'erne i tastatur W3000 compact.

Ved hjælp af tastkombinationer er det muligt at aktivere specifikke funktioner:

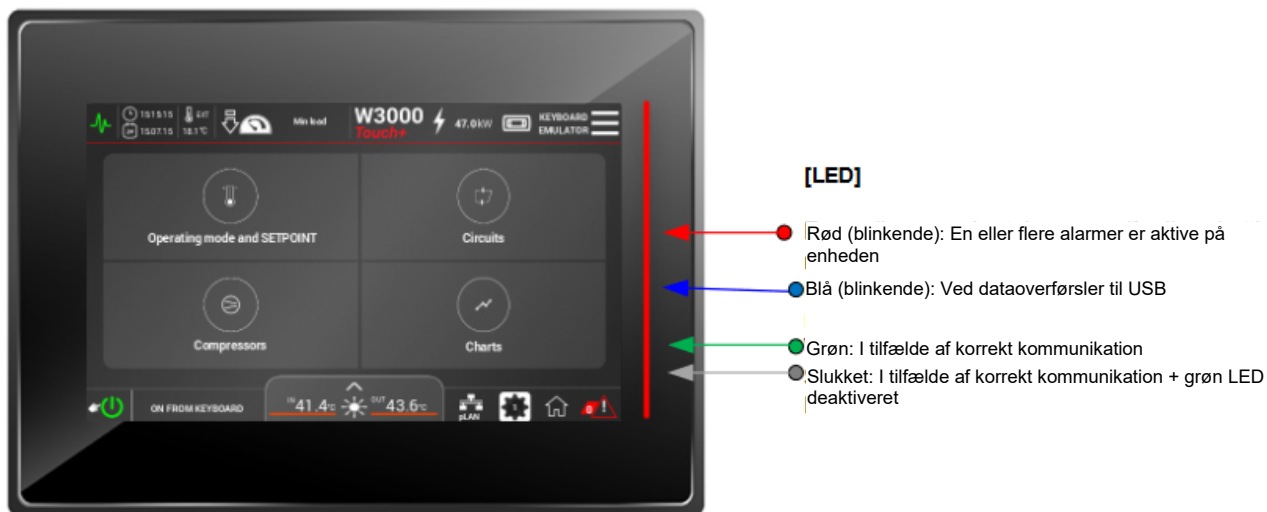
| Tast                                                                                                                                                                                                                                                            | Beskrivelse                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  +  +        | <b>[Tast PRG + ALARM + UP]:</b><br>Benyttes til at øge lysstyrken på displayet.                                                                                       |
|  +  +  | <b>[Tast PRG + ALARM + DOWN]:</b><br>Benyttes til at reducere lysstyrken på displayet                                                                                 |
|  +                                                                                        | <b>[Tast ESC + ALARM]:</b><br>Med et delt tastatur er det muligt at gennemgå visualisering af skærbillederne og parametrene mellem enheder, der er tilsluttet i pLAN. |
|  +  +  | <b>[Tast UP + DOWN + ENTER]:</b><br>Ved tryk i 5 sekunder, indstilles pLAN-adressen på brugerterminalen.                                                              |
|  +                                                                                        | <b>[Tast ALARM + UP]:</b><br>Med brugerterminal adresseret til 0 tillades det at konfigurere pLAN-adressen på kontrolkortet.                                          |

Disse tastkombinationer gælder også for W3000 large tastaturet (selv om symbolerne er anderledes).



### 2.1.3 Tastatur W3000Touch+

Version med 7" skærm:



**Figur 2-8:** Betydning af de forskellige dele i tastatur W3000Touch+ på 7".

Vedrørende yderligere oplysninger om dette tastatur henvises til den specifikke brugervejledning for den konkrete softwareversion i W3000+.

### 2.1.4 Adgang via appen

Gør følgende for at tænde og styre enheden:

- Installer først KIPLink på enheden, hvis den ikke allerede er installeret.
- Download herefter KIPLink-appen fra hjemmesiden [melcohit.com](http://melcohit.com) til din mobilenhed.

Appen kan installeres på mobile enheder med operativsystemet Android 5 eller herover / IOS 8 eller herover.

For at få adgang til applikationen skal du:

- Scan QR-koden på enheden.
- Følg instruktionerne på skærmen for at oprette forbindelse til enhedens KIPLink via Wi-Fi.
- Brug knapperne i appen til at betjene enheden.



#### INFORMATION:

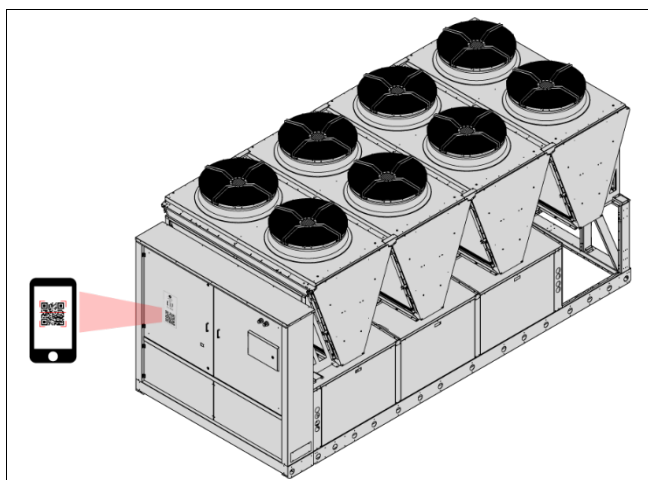
For at få adgang til enheden skal du logge ind ved første adgang.



#### INFORMATION:

Der er påsat en etiket til KIPLink på enhedens el-tavle.  
Etiketten er en krypteret QR-kode, der kun kan læses via appen.  
Etiketten viser, ud over QR-koden:

- Serienummeret på den enhed, hvor KIPLink er installeret.
- Hvis KIPLink er netværkets master i tilfælde af netværk med flere KIPLink-enheder.



#### INFORMATION:

Hvis QR-koden er beskadiget eller mangler, skal du kontakte kundeservice for at få en ny QR-kode.



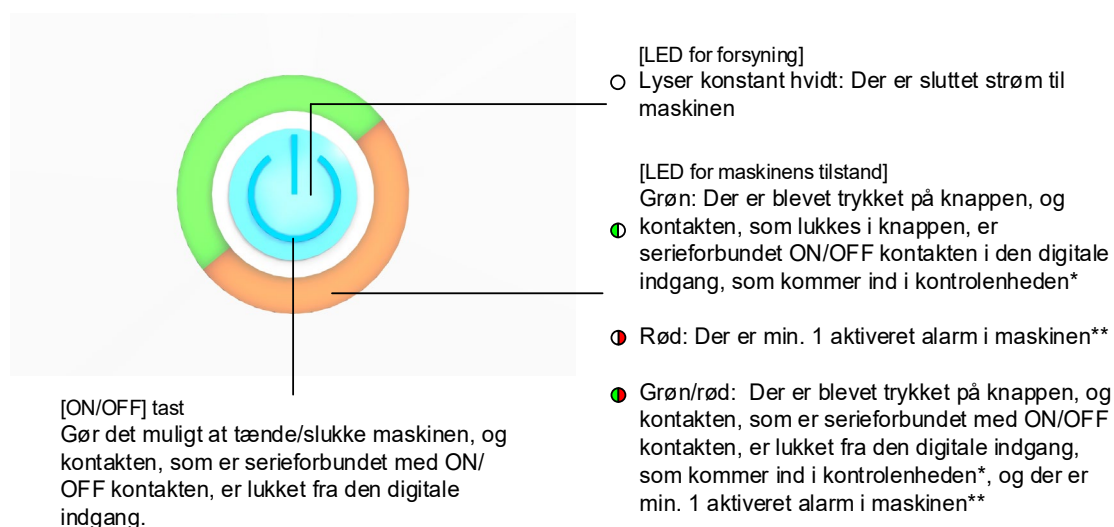
#### INFORMATION:

For mere information om brugen og funktionen af applikationen, bedes du se den tutorial, der er en del af applikationen.

Flere oplysninger om KIPLink anordningen findes i de specifikke vejledninger med følgende koder.

| Anordning KIPLink | Kode for Brugervejledning KIPLink                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| W3000+link        | C024456140-IT, C024456141-EN, C024456142-FR<br>C024456143-DE, C024456144-ES, C024456145-RU<br>C024456146-ML |

På enheder konfigureret med KIPLink uden brug af et fysisk tastatur, indsættes der en funktionsknap, vist på billedet nedenfor, som gør det muligt at tænde og slukke enheden samt at vise enhedens strømforsyning og alarmtilstand.



**Figur 2-9:** ON/OFF knap til maskiner med kun KIPLink brugerflade.



#### INFORMATION:

\* Kontakten, som lukkes i knappen, er serieforbundet med den digitale ON/OFF kontakt. Hvis den grønne lysdiode er tændt, men maskinen IKKE starter, betyder dette, at et andet element med betydning for tændingen slukker maskinen. Kontrollér, at alle elementer (tidsintervaller, overvågning, fjernstyret on/off, KIPLink, osv.) har givet ordren ON. For at finde frem til det element, som forhindrer tænding af maskinen, er det tilstrækkeligt at kontrollere "maskinens tilstand" på KIPLink startskærm-billedet eller på hovedskærm-billedet på enhver anden tastaturtype.



#### INFORMATION:

Den røde Led afhænger af den digitale udgang i kontrolenheden, som angiver "alarmtælleren". Ved signaleringer er ikke den røde LED tændt.

## 2.2 Generelle funktioner på grænsefladen

### 2.2.1 Valg af sprog

Det særlige ved den nye hardware er, at den omfatter en ekstra hukommelse, der indeholder alle de understøttede sprog. I forbindelse med programmering indlæses alle sprog i styreenheden. Slutbrugeren kan herefter nemt vælge det ønskede sprog for displayet.

|           |           |           |             |           |           |           |           |           |           |
|-----------|-----------|-----------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Italiensk | Dansk     | Tysk      | Græsk       | Engelsk   | Spansk    | Finsk     | Fransk    | Kroatisk  | Ungarsk   |
| <b>IT</b> | <b>DA</b> | <b>NL</b> | <b>EL</b>   | <b>EN</b> | <b>ES</b> | <b>FI</b> | <b>DA</b> | <b>HR</b> | <b>HU</b> |
| Hollandsk | Norsk     | Polsk     | Portugisisk | Rumænsk   | Russisk   | Svensk    | Tyrkisk   | Kinesisk  |           |
| <b>NL</b> | <b>NO</b> | <b>PL</b> | <b>PT</b>   | <b>RO</b> | <b>RU</b> | <b>SV</b> | <b>TR</b> | <b>ZH</b> |           |

*Tabel 5: Tabel med sprog og international sprogkode.*

Det er muligt at vælge et hvilket som helst af de tilgængelige sprog ved hjælp af følgende fremgangsmåde:

|    |                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                    |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 0) | Kontrollér, at enheden er indstillet til OFF.<br>Kontrollér, at teksten OFF vises på første linje i hovedskærbilledets menu (eller at tilstanden OFF fra tastatur, OFF fra digital indgang osv. er angivet).<br>Adgangen til nedenstående systemmenu medfører øjeblikkelig slukning af kompressorerne, hvis enheden er indstillet til ON. | 09:26 ON ALXXX<br>Tilstand: Køler<br>Status: ON tast.<br>Term. Req. Act.<br>Cool. 050 050 %<br>Hot 000 000 %<br>Pumpetid 000s<br>LIMIT ID:011 U:01 |
| 1) | Tryk samtidigt på tasterne <b>[ALARM]</b> og <b>[ENTER]</b> . Hold tasterne trykket nede, indtil dette skærbillede vises.                                                                                                                                                                                                                 | > SYSTEM INFORMATION<br>LOG DATA<br>OTHER INFORMATION<br>FLASH NAND FILES                                                                          |
| 2) | Flyt ved hjælp af tasterne <b>[UP]</b> eller <b>[DOWN]</b> markøren ">" hen til linjen "FLASH NAND FILES" og vælg ved at trykke på tasten <b>[ENTER]</b> .                                                                                                                                                                                | SYSTEM INFORMATION<br>LOG DATA<br>OTHER INFORMATION<br>> FLASH NAND FILES                                                                          |
| 3) | Når dette skærbillede vises, er der opnået adgang til menuen "FLASH NAND FILES". Tryk på tasten <b>[ESC]</b> for at gå ud af menuen uden at ændre sproget.                                                                                                                                                                                | [ ]<br>TA001_PGD1_IT.iup                                                                                                                           |
| 4) | Det er nu nødvendigt, at vælge filen til det ønskede sprog. Ved at trykke på tasten <b>[ENTER]</b> vælges sproget, og der vises et "X" mellem de firkantede parenteser. Ved at igen at trykke på <b>[ENTER]</b> fravælges sproget.                                                                                                        | [X]<br>TA001_PGD1_IT.iup                                                                                                                           |
| 5) | Flere filer vises med knapperne <b>[UP]</b> og <b>[DOWN]</b> .<br>Filer med endelsen ".iup" er knyttet til sproget.<br>Filen med endelsen ".bin" er knyttet til applikationen.<br>Filen med endelsen ".grp" er knyttet til grafikken.                                                                                                     | [ ]<br>TA.grp                                                                                                                                      |
| 6) | Vælg <b>udelukkende en fil af typen ".iup"</b> på baggrund af det ønskede sprog (se tabellen over sprog og international sprogkode).                                                                                                                                                                                                      | [X]<br>TA001_PGD1_IT.iup                                                                                                                           |
| 7) | Vælg filen med filtypenavnet ".bin".                                                                                                                                                                                                                                                                                                      | [X]<br>TA.bin                                                                                                                                      |
| 8) | Vælg filen med filtypenavnet ".grp".                                                                                                                                                                                                                                                                                                      | [X]<br>TA.grp                                                                                                                                      |
| 9) | Når en ".iup"-fil, ".bin"-fil, ".grp"-fil er blevet valgt, gå til skærmen overfor og trykke på <b>[ENTER]</b> .                                                                                                                                                                                                                           | Press Enter<br>to start copying                                                                                                                    |

|     |                                                                                                                                                                      |                                                  |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 9b) | Når der bliver spurgt, skal der trykkes på <b>[ENTER]</b> med angivelsen "NO". Dette skærm billede vises kun i versioner med store applikationer.                    | Erase Log data?<br>NO<br>press<br>ENTER to conf. |
| 10) | Der vises et skærm billede, der angiver, at kopieringen af filerne er i gang.                                                                                        | copy process<br>is running                       |
| 11) | Når installationen er gennemført, vises dette skærm billede.                                                                                                         | ok, copy completed.<br>wait for restart          |
| 12) | Meddelelser som "I/O BOARD FAULT" eller "NO LINK" kan vises under processen. Dette skyldes genstart af applikationen. Meddelelserne forsvinder efter nogle sekunder. | I/O BOARD FAULT                                  |
| 13) | Når handlingen er gennemført, vises skærm billederne på det valgte sprog. Det er muligt at kontrollere det valgte sprog under "enhedens menu".                       | W 3000 +<br>Cod. TA 22.00 IT                     |

Alle trin i proceduren skal gennemføres. Ved udeladelse af blot en af filerne vil der opstå nogle af følgende fejl:

|                                                                                                                                                                                            |                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Hvis der ikke vælges en ".iup" fil, vælges der ikke noget sprog. Resultatet er et tomt skærm billede! Gentag fremgangsmåden og vær opmærksom på at vælge en ".iup" fil.                    | Select one iup file                       |
| Hvis ".bin" filen ikke vælges, vælges applikationsfilen ikke. Dette skærm billede vises. Tryk på tasten [ESC] og gentag fremgangsmåden.                                                    | ERROR : press menu<br>select one blb file |
| Hvis ".grp" filen ikke vælges, vælges grafikfilen ikke. Sprog og applikation installeres, men billeder kan ikke anvendes. Gentag fremgangsmåden og vær opmærksom på at vælge ".grp" filen. | Select one blb file                       |
| Der er ikke blevet valgt nogen fil.                                                                                                                                                        | No files selected                         |
| Der er opstået en fejl i forbindelse med kopiering til NOR hukommelsen                                                                                                                     | Error copying files                       |
| Der er opstået en fejl i forbindelse med læsning af filen fra NAND hukommelsen                                                                                                             | Error reading file (11)                   |
| CRC ikke beregnet korrekt i forbindelse med kopiering til NOR hukommelsen                                                                                                                  | Error reading file (12)                   |
| Der er opstået en fejl i forbindelse med læsning af filen fra NAND hukommelsen                                                                                                             | Error reading file (13)                   |
| Der er opstået en fejl i forbindelse med skrivning til NOR hukommelsen                                                                                                                     | Writing error (14)                        |
| Filen er for stor til at være en korrekt DEV fil.                                                                                                                                          | DEV file not valid                        |
| Filen er ikke en korrekt DEV (titlen er ukendt).                                                                                                                                           | Code error 9                              |
| Alle øvrige situationer.                                                                                                                                                                   | Code error X                              |

## 2.2.2 Opbygning af menuerne

Nedenfor angives strukturerne for gennemgang af de forskellige menuer.

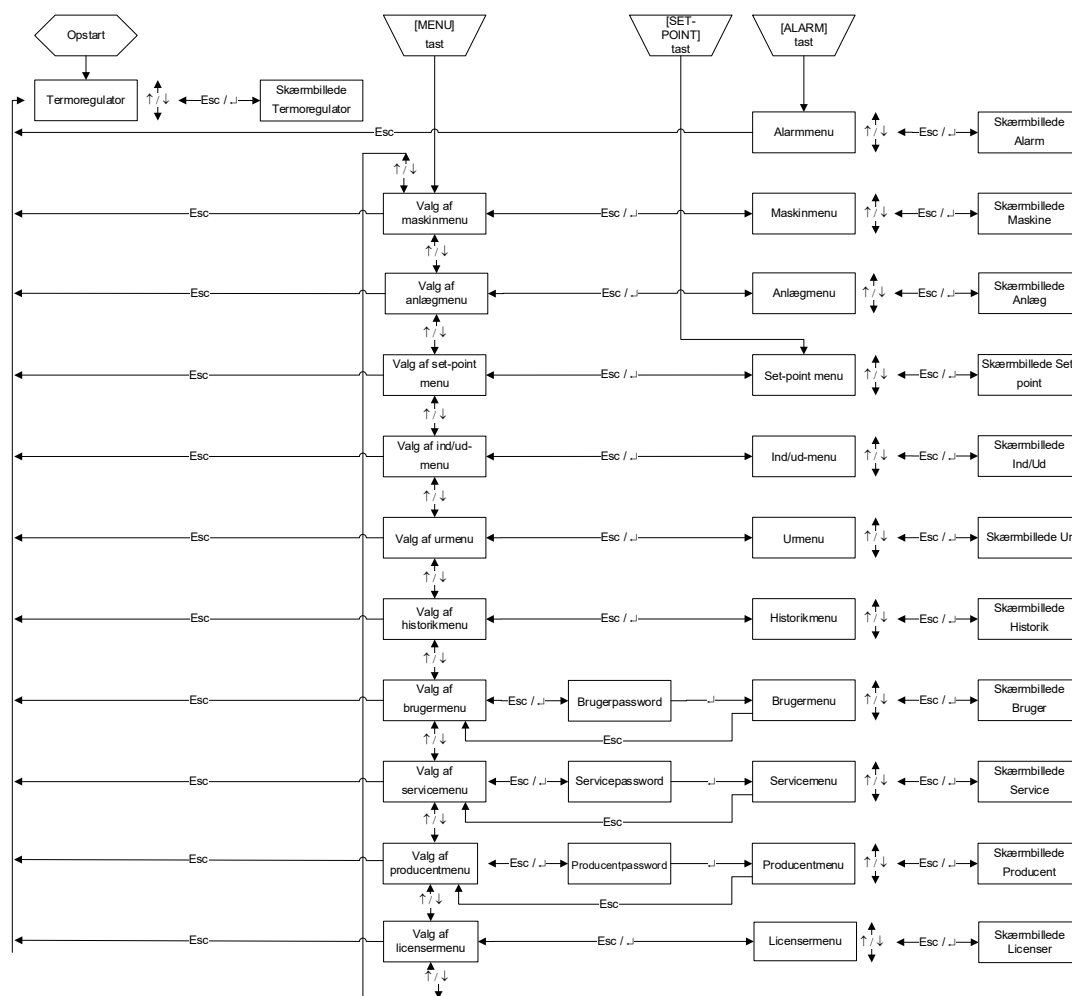


Figura 2-10: Navigation i menuern.

Her følger en kort beskrivelse af menuerne:

- Enhedens menuindeholder oplysninger såsom temperatur, tryk og tilstanden i kredsløbene.
- Under menuen "Anlæg" vises oplysningerne vedrørende styring af anlægget med Multi Manager (hvis relevant) eller styring af enheder i boliger.
- Menuen "Setpoint" benyttes til indstilling af setpoint-værdierne for de forskellige disponible funktionsmåder. Det er muligt at indstille forskellige setpoint-værdier afhængigt af de disponible funktionsmåder (køler, varmepumpe og genvinding). Det er muligt at indstille sekundære setpoint-værdier for funktionerne køler og varmepumpe (hvis digital indgang er installeret og funktionen Sekundær indstillingsværdi er aktiveret under "brugermenuen").
- Menuen "I/O" angiver tilstanden for de digitale indgange og de værdier, som er blevet aflæst i de analoge indgange.  
Endvidere angives tilstanden for de digitale udgange og spændingen for de analoge udgange.  
Hvis udvidelseskort er nødvendige (på baggrund af konfigurationsparametrene), vises endvidere ind- og udgangene for disse.

- Under menuen "Ur" og hvis kredskortet for ur er installeret, er det muligt at udføre følgende: Indstilling og visning af dato og klokkeslæt, indstilling af tidszoner.
- Under menuen "historik" (kun tilgængelig, hvis kredskortet for ur er installeret) er det muligt at få vist listen over tilstande, som er blevet registreret af enheden.
- Under menuen "Bruger" er det muligt at få vist og indstille brugerparametrene for enheden.
- Under menuen "Service" er det muligt for servicecenteret at se og indstille parametre.
- Under menuen "Producent" er det muligt at få vist og indstille parametrene vedrørende konfiguration af enheden.
- Under menuen "Licenser" er det muligt at få vist og administrere funktionerne under licens.

### 3 TABEL SKÆRMBILLEDER

Brug tasten [OP] eller [NED] til at skifte mellem skærm billeder under den samme menu.

Tryk på tasten [ENTER] for at få adgang til parameteren, og tryk på tasten [UP] eller [DOWN] for at ændre parameterværdien.

| Skærm billede for vejledningen                                                                                                                        | Beskrivelse skærm billede                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ID parameter |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 09:26 ON ALXXXX<br>Tilstand: Køler<br>Status: ON tast.<br>Term. Req. Act.<br>Cool. 050 050 %<br>Rec. 000 000 %<br>Pumpe tid 000s<br>LIMIT ID:011 U:01 | Hovedskærm billede for visning. Angiver driftstilstand og status.<br>Det er muligt at tænde eller slukke for enheden via kommandoen On/Off: Tryk på tasten [ENTER] for at gå til "ON/OFF", brug tasterne [UP] eller [DOWN]. til at vælge kommandoen, og bekræft ved igen at trykke på [ENTER].<br><b>På enheder med luftafkølet fordamper udsendes kommandoen on/off fra kontrolenheden på luftbehandlingsdelen.</b><br>Giver også mulighed for visning af eventuelle meddelelser:<br>"ALxxx" : en alarm er aktiv,<br>"Sxxx" : en signalering er aktiv,<br>"U:xx" : angiver enhedens konfigurationsadresse,<br>"ID:xxx" : angiver enhedens overvågningsadresse,<br>Der vises også en række symboler, som beskriver enhedens status.<br>Nogle felter vises muligvis ikke afhængigt af enhedens egenskaber.<br>Hvis linjen "status" viser "Standby" betyder det, at en række mekaniske komponenter i enheden kan startes, selv om enheden er i OFF. |              |
| STATUS GRUPPE<br>15:19 OFF ALXXXX<br>Tilstand : køler<br>Tilstand: ON tast.<br>Term. Req. Act.<br>Cool. 100 100 %<br>ID:00                            | Hovedskærm billede til visning af status for gruppen på enheden LAN Multi Manager.<br>Det er muligt at beordre ON/OFF på anlægget med kommandoen On/Off: tryk på tasten [ENTER], brug tasterne [UP] eller [DOWN] til at vælge kommandoen og bekræft ved igen at trykke på tasten [ENTER].<br>Giver også mulighed for visning af eventuelle meddelelser:<br>"ID:xxx" : Angiver enhedens adresse på netværket Multi Manager.<br>Nogle felter vises muligvis ikke afhængigt af enhedens egenskaber.<br>Hvis linjen "status" viser "Standby" betyder det, at en række mekaniske komponenter i enheden kan startes, selv om enheden er i OFF.                                                                                                                                                                                                                                                                                                          |              |
| STATUS Master-Client<br>15:19 ON<br>Tilstand: Cooling+DHW<br>Status: ON tast.<br>Act.<br>Plant 100 %<br>DHW 000 %                                     | Hovedskærm billedet til visning af status for enheden med underenhederne Master-Client.<br>Det er muligt at beordre ON/OFF på anlægget med kommandoen On/Off: tryk på tasten [ENTER], brug tasterne [UP] eller [DOWN] til at vælge kommandoen og bekræft ved igen at trykke på tasten [ENTER].<br>Nogle felter vises muligvis ikke afhængigt af enhedens egenskaber.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |
| Master-Client<br>Tilstand Act.<br>1:ON Plant 100 %<br>2:OFF --- %<br>3:ON Plant 100 %<br>4:Offline --- %                                              | Skærm billede, der viser status for enhederne i gruppen med deres aktive procentdel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |
| Temp. In. Out.<br>Evap. 12.5 07.0 °C<br>Rec. 35.6 40.5 °C<br>Cond. 38.0 42.5 °C<br>A.DHW 59.8 °C<br>A.PLANT 44.0 °C                                   | Visning af vandtemperatur ved enhedens ind- og udgang. (fordamper, genvindingsanordning, kondensator, DHW-reserve og Plant-reserve er kun synlige, hvis de er installeret).<br>På enheder med flere fordampere vises gennemsnitstemperaturen mellem de to udgangssonder på de enkelte fordampere, hvis den fælles udgangssonde er deaktiveret.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |



| Skærbillede for vejledningen                                                                                                                                             | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                           | ID parameter |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Temp. In. Out.<br>Evap. 12.5 07.0 °C<br>Evap1 07.2 °C<br>Evap2 06.9 °C                                                                                                   | (Hvis der er flere fordampere) Visning af temperaturen i indgang og udgang fra fordamperens eller kondensatoren (afhængigt af driftstilstand køler eller varmepumpe) og fordamperens temperaturer i udgang fra fordampere.                                                                                                                                                        |              |
| Temp. In. Out.<br>Cond. 24.3 22.4 °C<br>Cond.1 22.3 °C<br>Cond.2 22.4 °C                                                                                                 | (Hvis der er 2 fordampere) Visning af temperaturen i indgang og udgang fra fordamperens eller kondensatoren (afhængigt af driftstilstanden) og fordamperens temperaturer i udgang på de to kondensatorer.                                                                                                                                                                         |              |
| Temp. In. Out.<br>Evap. 45.0 40.0 °C<br>Evap.1 38.0 °C<br>Evap.2 42.0 °C<br>Cond. 70.0 75.0 °C<br><br>+2P MODULE                                                         | (hvis modul +2P er installeret) vises temperaturen ind- og udgang på fordamperen samt temperatur i udgang fra kondensatoren.                                                                                                                                                                                                                                                      |              |
| Temp.<br>Free-cooling 12,3 °C<br>Ekstern luft 15,4 °C<br>Tilbehør 19,6 °C<br>Anlægsreserve 12,5 °C<br>Tænd. genvinding 40,5 °C<br>Drycooler 10,0 °C<br>Komp.rum. 32,7 °C | (Til enheder med luftafkølet kondensator) Visning af temperaturer for Free-cooling (på køleenhed + Free-cooling enheder), ekstern lufttemperatur og temperatur i tilbehør (hvis sonderne er aktiverede). Visning af systemets lagrings- og genvindingstemperaturer (hvis sonderne er aktiverede) og drycooler-temperaturen (hvis aktiveret) og kompressorum (hvis sonden styres). |              |

| Skærbillede for vejledningen                                                 | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                   | ID parameter                  |
|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Bruger<br>Password: 0000                                                     | Skærbillede for adgang til brugermenu. For at få adgang er det nødvendigt at indtaste brugerens password.                                                                                                                                                                                                                                                 |                               |
| Bruger<br>← ↑ ↓                                                              | Skærbillede for opnået adgang til brugermenuen. Tryk på tasterne <b>[UP]</b> eller <b>[DOWN]</b> for at bladre mellem de øvrige skærbilleder. Tryk på tasten <b>[ESC]</b> for at vende tilbage til undermenuen.                                                                                                                                           |                               |
| Aktivering<br>tidsintervaller:<br>Deaktiverede                               | Benyttes til at aktivere/frakoble brugen af tidszonerne. Det er ikke muligt at aktivere tidszonerne, hvis det eksterne setpoint er aktiveret.                                                                                                                                                                                                             | USR0001                       |
| Konfiguration af<br>seriel linje:<br>Deaktiveret                             | Benyttes til at aktivere og vælge anordningerne, som er tilsluttet kortet for seriel grænseflade ("0":Frakoblet - "1":Overvågning - "2":Sequencer - "3":Manager 3000 - "4":ClimaPRO - "5":Overvågning med watchdog - "6":LAN Multi Manager - "7":Manager 3000+ - "8":W3000-NET - "9":Data Center Manager+).<br>NB: Softwaren Service skal ikke aktiveres. | USR0002                       |
| Aktivering af kontrol<br>Client-styring for<br>flere enheder:<br>Deaktiveret | Muliggør Master-Client-styring af flere enheder.                                                                                                                                                                                                                                                                                                          | USR0018                       |
| Akt. fra superv.:<br>On/Off: N<br>Driftstilstand: N                          | Benyttes til at vælge mellem tilstanden for tænding/slukning af enheden ved hjælp af et overvågningssystem. Benyttes endvidere til at ændre funktionsmåden (ændring af funktionsmåden forudsætter, at enheden er slukket).                                                                                                                                | USR0003<br>USR0004            |
| Gendannelse<br>lokale indstillinger<br>i stand-alone:<br>Deaktiveret         | Giver dig mulighed for at indstille, om enheden i tilstanden stand-alone vender tilbage til indstillinger via tastaturet, hvis der er indstillet overvågning med watch-dog.<br>Denne funktion er kun gyldig for setpoint køler, indstillet fra BMS, og for begrænsning af effekt, indstillet fra BMS.                                                     | USR0010                       |
| Seriel indstilling<br>Modbusprotokol<br>Hastighed 9600 baud<br>ID-nummer 011 | Benyttes til at fastsætte parametrene for forbindelse med overvågningssystemet: Protokoltype, kommunikationshastighed og enhedens identifikationsnummer.                                                                                                                                                                                                  | USR0005<br>USR0006<br>USR0007 |

| Skærbillede for vejledningen                                                                                      | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ID parameter                  |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Akt. fra dig. indg.:<br>On/Off: S<br>Driftstilstand N<br>Plant/DHW: N                                             | Gør det muligt at aktivere styringen af enheden ved hjælp af eksterne klarsignaler.<br>Det er muligt at aktivere kommandoen ON/OFF for at tænde eller slukke enheden ved hjælp af en digital indgang.<br>Det er muligt at ændre driftstilstand (på varmepumpeenheder, køleenheder med genvinding, køleenheder med Free-Cooling er et digitalt input tilstrækkeligt. På multifunktionsenheder eller varmepumpeenheder med genvinding kræves der tre digitale indgange).<br>Det er muligt at skifte mellem tilstanden anlæg og DHW. | USR0008<br>USR0009<br>USR0017 |
| Automatisk skift<br>Driftstilstand<br>Aktiveret<br><br>Set opvarmning:<br>16,0 °C<br>Diff. opvarmning:<br>02,0 °C | Aktiverer automatisk skift af driftstilstand på grundlag af den eksterne temperatur.<br>Det er muligt at vælge en indstilling for skift til opvarmning (varmepumpe) og en tilknyttet differens. Når setpoint + differens er overskredet, deaktiveres kompressorerne.                                                                                                                                                                                                                                                              | USR0012<br>USR0013<br>USR0015 |
| Automatisk skift<br>Driftstilstand<br><br>Set køling:<br>24,0 °C<br>Diff. køling:<br>02,0 °C                      | Det er muligt at indstille et setpoint for skift til køling (køler) og en tilknyttet differens.<br>Når setpoint - differens er under værdien, deaktiveres kompressorerne.                                                                                                                                                                                                                                                                                                                                                         | USR0014<br>USR0016            |
| Akt. fra KIPlink:<br>On/Off: N                                                                                    | Aktiverer kommandoen on/of-kommandoen for enheden ved hjælp af KIPlink.                                                                                                                                                                                                                                                                                                                                                                                                                                                           | USR0011                       |
| Genopretning af standard<br>skrivebeskyttet password<br>KIPlink lokal<br>Overvågning: N<br>Vent...                | Hvis feltet indstilles til "JA", vender det efter nogle sekunder tilbage til "NEJ". Således vender passwordet med profil OR (med skrivebeskyttelse) til login for funktionen Local Monitoring i KIPlink blive nulstillet til standardværdien: 1234                                                                                                                                                                                                                                                                                |                               |
| Genoprettelse default password read/write<br>Touchscreen: N                                                       | Giver mulighed for at genetablere standardværdien for read/write passwordet til enhedens touchscreen.                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
| Licensadministration<br><br>Func. Code: 0000<br><br>Password: 00000000                                            | Administrationen af funktioner med licens gør det muligt at aktivere eller deaktivere funktioner, der er beskyttet med password. Password er unikke og genereres af systemet på grundlag af enhedens serienummer og funktionskoden.                                                                                                                                                                                                                                                                                               |                               |
| Indtast anden password bruger<br><br>0000                                                                         | Benyttes til at erstatte standard password med et eget password.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |

| Skærbillede for<br>vejledningen                                                                                                            | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ID parameter |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| W 3000 +<br><br>Kode TA 22.00 IT EE<br>Man. C024456220<br>HW pCO5+ L NAND 50MB<br>Flash 2MB +7MB +4MB<br>Ram 2048KB<br>Boot 5.01 Bios 6.52 | <p>Dette skærbillede indeholder referenceoplysningerne for applikationen [kode TA TA 2200 IT og brugerens referencemanual [Man. C024456220-IT].</p> <p>Endvidere angives det, at kredskortet er beskyttet af digital signatur (dette angives ved hjælp af et symbol med en lukket hængelås). Der vises to hængelåse på enheder med 3 eller 4 kredsløb.</p> <p>På den anden del af skærbilledet angives oplysningerne vedrørende hardwaren. Dvs. størrelsen (M, L, XL), hukommelserne (NAND 50MB, Flash 2+7+4MB, Ram 2048KB) og versionerne for det installerede operativsystem (Boot og Bios).</p> |              |

| Skærbillede for vejledningen                                                                                                 | Beskrivelse skærbillede                                                                                                                                                                                                     | ID parameter |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p style="text-align: center;">↑</p> <p style="text-align: center;">←      ↓</p> <p style="text-align: center;">Licenser</p> | Skærbillede for opnået adgang til menuen Licenser. Tryk på tasterne <b>[UP]</b> eller <b>[DOWN]</b> for at bladre mellem de øvrige skærbilleder. Tryk på tasten <b>[ESC]</b> for at vende tilbage til undermenuen.          |              |
| <p>Status licenser</p> <p>Funktion: 1234</p> <p>Status: midlertidig</p> <p>Udløb: 31/12/2021</p>                             | Skærbillede med visning af status for licenserne. Funktionskoden er forbundet med aktiv, inaktiv eller midlertidig status. Hvis der er tale om en midlertidig tilladelse, er det muligt at se, hvornår tilladelsen udløber. |              |

| Skærbillede for vejledningen                                                                                                                                             | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ID parameter |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p style="text-align: center;">↑</p> <p style="text-align: center;">←      ↓</p> <p style="text-align: center;">Historik</p>                                             | Skærbillede for opnået adgang til menuen Historik begivenheder. Tryk på tasterne <b>[UP]</b> eller <b>[DOWN]</b> for at bladre mellem de øvrige skærbilleder. Tryk på tasten <b>[ESC]</b> for at vende tilbage til undermenuen.                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| <p>10:36:04      01/05/08</p> <p>N°001 S A0711 A - 032</p> <p>Alarm forsyning</p> <p>inverter 1</p> <p>Reset : Auto</p> <p>Position: Kompr.</p> <p>Blokering: Kompr.</p> | <p>Skærbillede til fremvisning af begivenhedshistorik (hvis kortet for ur er installeret). Følgende detaljer er angivet for hver registreret hændelse:</p> <ul style="list-style-type: none"> <li>• Dato og kl.</li> <li>• Aktiverings- eller deaktiveringshændelse (S = set, R = reset).</li> <li>• Alarm- eller advarselskode.</li> <li>• Hændelsens nummer.</li> <li>• Type nulstilling (automatisk eller manuel).</li> <li>• Beskrivelse af hændelsen.</li> <li>• Position påvirket af alarm og type blokering.</li> </ul> <p>Ved alarmer, der vedrører bestemte typer kompressoromformere, angives den specifikke alarmkode, der genereres af omformeren.</p> |              |

| Skærbillede for vejledningen                                                                                                                                                         | Beskrivelse skærbillede                                                                                                                                                                                                                                                             | ID parameter                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <div> <div>↑</div> <div>Ur</div> <div>←</div> <div>↓</div> </div>                                                                                                                    | Skærbillede for opnået adgang til urmenuen. Tryk på tasterne <b>[UP]</b> eller <b>[DOWN]</b> for at bladre mellem de øvrige skærbilleder. Tryk på tasten <b>[ESC]</b> for at vende tilbage til undermenuen.                                                                         |                                                                                                                                  |
| Urkort<br>ikke installeret                                                                                                                                                           | Skærbilledet angiver, at kortet for ur ikke er installeret eller er beskadiget.                                                                                                                                                                                                     |                                                                                                                                  |
| Konfiguration<br>ur:<br>Dato            Klokkeslæt<br>01/05/08    10:40                                                                                                              | Indstilling af aktuel dato og klokkeslæt.                                                                                                                                                                                                                                           |                                                                                                                                  |
| Tidszoner<br>ikke aktiverede.<br><br>Se brugermenuen                                                                                                                                 | Angiver, at tidsintervallerne er indstillet korrekt men ikke er aktiverede. Se brugermenuen vedrørende aktivering.                                                                                                                                                                  |                                                                                                                                  |
| Programmering af<br>daglige intervaller:<br>avanceret                                                                                                                                | Avanceret programmering af tidszoner giver mulighed for at styre fire forskellige typer tidszoner fra dag til dag, type A og type B, som har tilpassede tidsplaner, der er uafhængige af hinanden. Standard programmeringen gør det kun muligt at benytte type A tidsintervallerne. | BND0001                                                                                                                          |
| Ugeskema<br>mandag    type A<br>tirsdag    type B<br>onsdag    type B<br>torsdag    type B<br>fredag    type B<br>lørdag    type C<br>søndag    deaktiverede                         | Indstilling af ugeskema.                                                                                                                                                                                                                                                            | BND0002<br>BND0003<br>BND0004<br>BND0005<br>BND0006<br>BND0007<br>BND0008                                                        |
| Interval 1A Slukket<br>Klokken 00:00 / 06:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 2A regulering.<br>Klokken 06:00 / 20:00<br>Sp E 07,0 °C I 42,0 °C<br>Sp R 42,0 °C | Indstilling af interval A, første og anden daglige interval.                                                                                                                                                                                                                        | BND0009<br>BND0010<br>BND0011<br>BND0012<br>BND0013<br>BND0014<br>BND0015<br>BND0016<br>BND0017<br>BND0018<br>BND0019<br>BND0020 |

| Skærbillede for vejledningen                                                                                                                                                            | Beskrivelse skærbillede                                         | ID parameter                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interval 3A slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 4A slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C        | Indstilling af interval A, tredje og fjerde daglige interval.   | BND0021<br>BND0022<br>BND0023<br>BND0024<br>BND0025<br>BND0026<br>BND0027<br>BND0022<br>BND0023<br>BND0028<br>BND0029<br>BND0030<br>BND0031<br>BND0032 |
| Interval 5A slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 6A slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C        | Indstilling af interval A, femte og sjette daglige interval.    | BND0033<br>BND0034<br>BND0035<br>BND0036<br>BND0037<br>BND0038<br>BND0039<br>BND0034<br>BND0035<br>BND0040<br>BND0041<br>BND0042<br>BND0043<br>BND0044 |
| Interval 7A slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 8A slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C        | Indstilling af interval A, syvende og ottende daglige interval. | BND0045<br>BND0046<br>BND0047<br>BND0048<br>BND0049<br>BND0050<br>BND0051<br>BND0046<br>BND0047<br>BND0052<br>BND0053<br>BND0054<br>BND0055<br>BND0056 |
| Interval 9A slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 10A slukket<br>Klokken 20:00 / 23:59<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C       | Indstilling af interval A, niende og tiende daglige interval.   | BND0057<br>BND0058<br>BND0059<br>BND0060<br>BND0061<br>BND0062<br>BND0063<br>BND0058<br>BND0059<br>BND0064<br>BND0065<br>BND0066                       |
| Interval 1B Slukket<br>Klokken 00:00 / 07:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 2B<br>regulering.<br>Klokken 07:00 / 12:00<br>Sp E 07,0 °C I 42,0 °C<br>Sp R 42,0 °C | Indstilling af interval B, første og anden daglige interval.    | BND0067<br>BND0068<br>BND0069<br>BND0070<br>BND0071<br>BND0072<br>BND0073<br>BND0068<br>BND0069<br>BND0074<br>BND0075<br>BND0076<br>BND0077<br>BND0078 |

| Skærbillede for vejledningen                                                                                                                                                            | Beskrivelse skærbillede                                         | ID parameter                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interval 3B Slukket<br>Klokken 12:00 / 14:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 4B<br>regulering.<br>Klokken 14:00 / 20:00<br>Sp E 07,0 °C I 42,0 °C<br>Sp R 42,0 °C | Indstilling af interval B, tredje og fjerde daglige interval.   | BND0079<br>BND0080<br>BND0081<br>BND0082<br>BND0083<br>BND0084<br>BND0085<br>BND0080<br>BND0081<br>BND0086<br>BND0087<br>BND0088<br>BND0089<br>BND0090 |
| Interval 5B slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 6B slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C        | Indstilling af interval B, femte og sjette daglige interval.    | BND0091<br>BND0092<br>BND0093<br>BND0094<br>BND0095<br>BND0096<br>BND0097<br>BND0092<br>BND0093<br>BND0098<br>BND0099<br>BND0100<br>BND0101<br>BND0102 |
| Interval 7B slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 8B slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C        | Indstilling af interval B, syvende og ottende daglige interval. | BND0103<br>BND0104<br>BND0105<br>BND0106<br>BND0107<br>BND0108<br>BND0109<br>BND0104<br>BND0105<br>BND0110<br>BND0111<br>BND0112<br>BND0113<br>BND0114 |
| Interval 9B slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 10B slukket<br>Klokken 20:00 / 23:59<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C       | Indstilling af interval B, niende og tiende daglige interval.   | BND0115<br>BND0116<br>BND0117<br>BND0118<br>BND0119<br>BND0120<br>BND0121<br>BND0116<br>BND0117<br>BND0122<br>BND0123<br>BND0124                       |
| Interval 1C Slukket<br>Klokken 00:00 / 07:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 2C<br>regulering.<br>Klokken 07:00 / 12:00<br>Sp E 07,0 °C I 42,0 °C<br>Sp R 42,0 °C | Indstilling af interval C, første og anden daglige interval.    | BND0125<br>BND0126<br>BND0127<br>BND0128<br>BND0129<br>BND0130<br>BND0131<br>BND0126<br>BND0127<br>BND0132<br>BND0133<br>BND0134<br>BND0135<br>BND0136 |



| Skærbillede for vejledningen                                                                                                                                                         | Beskrivelse skærbillede                                         | ID parameter                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interval 3C slukket<br>Klokken 12:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 4C slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C     | Indstilling af interval C, tredje og fjerde daglige interval.   | BND0137<br>BND0138<br>BND0139<br>BND0140<br>BND0141<br>BND0142<br>BND0143<br>BND0138<br>BND0139<br>BND0144<br>BND0145<br>BND0146<br>BND0147<br>BND0148 |
| Interval 5C slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 6C slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C     | Indstilling af interval C, femte og sjette daglige interval.    | BND0149<br>BND0150<br>BND0151<br>BND0152<br>BND0153<br>BND0154<br>BND0155<br>BND0150<br>BND0151<br>BND0156<br>BND0157<br>BND0158<br>BND0159<br>BND0160 |
| Interval 7C slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 8C slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C     | Indstilling af interval C, syvende og ottende daglige interval. | BND0161<br>BND0162<br>BND0163<br>BND0164<br>BND0165<br>BND0166<br>BND0167<br>BND0162<br>BND0163<br>BND0168<br>BND0169<br>BND0170<br>BND0171<br>BND0172 |
| Interval 9C slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 10A slukket<br>Klokken 20:00 / 23:59<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C    | Indstilling af interval C, niende og tiende daglige interval.   | BND0173<br>BND0174<br>BND0175<br>BND0176<br>BND0177<br>BND0178<br>BND0179<br>BND0174<br>BND0175<br>BND0180<br>BND0181<br>BND0182                       |
| Interval 1D Slukket<br>Klokken 00:00 / 07:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 2D regulering.<br>Klokken 07:00 / 12:00<br>Sp E 07,0 °C I 42,0 °C<br>Sp R 42,0 °C | Indstilling af interval D, første og anden daglige interval.    | BND0183<br>BND0184<br>BND0185<br>BND0186<br>BND0187<br>BND0188<br>BND0189<br>BND0184<br>BND0185<br>BND0190<br>BND0191<br>BND0192<br>BND0193<br>BND0194 |

| Skærbillede for vejledningen                                                                                                                                                      | Beskrivelse skærbillede                                         | ID parameter                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interval 3D slukket<br>Klokken 12:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 4D slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C  | Indstilling af interval D, tredje og fjerde daglige interval.   | BND0195<br>BND0196<br>BND0197<br>BND0198<br>BND0199<br>BND0200<br>BND0201<br>BND0196<br>BND0197<br>BND0202<br>BND0203<br>BND0204<br>BND0205<br>BND0206 |
| Interval 5D slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 6D slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C  | Indstilling af interval D, femte og sjette daglige interval.    | BND0207<br>BND0208<br>BND0209<br>BND0210<br>BND0211<br>BND0212<br>BND0213<br>BND0208<br>BND0209<br>BND0214<br>BND0215<br>BND0216<br>BND0217<br>BND0218 |
| Interval 7D slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 8D slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C  | Indstilling af interval D, syvende og ottende daglige interval. | BND0219<br>BND0220<br>BND0221<br>BND0222<br>BND0223<br>BND0224<br>BND0225<br>BND0220<br>BND0221<br>BND0226<br>BND0227<br>BND0228<br>BND0229<br>BND0230 |
| Interval 9D slukket<br>Klokken 20:00 / 20:00<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C<br>Interval 10B slukket<br>Klokken 20:00 / 23:59<br>Sp E 09,0 °C I 40,0 °C<br>Sp R 40,0 °C | Indstilling af interval D, niende og tiende daglige interval.   | BND0231<br>BND0232<br>BND0233<br>BND0234<br>BND0235<br>BND0236<br>BND0237<br>BND0232<br>BND0233<br>BND0238<br>BND0239<br>BND0240                       |

| Skærbillede for vejledningen                                                                                                                         | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                                      | ID parameter |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p style="text-align: right;">↑</p> <p style="text-align: center;">In/Out</p> <p style="text-align: left;">←      ↓</p>                              | Skærbillede for opnået adgang til menuen In/Out. Tryk på tasterne <b>[UP]</b> eller <b>[DOWN]</b> for at bladre mellem de øvrige skærbilleder. Tryk på tasten <b>[ESC]</b> for at vende tilbage til undermenuen.                                                                                                                                                                             |              |
| Dig. In. 12345 67890<br>master CCCCC CCCCC<br>CCCCC CCC                                                                                              | Viser status for de digitale ind- og udgange og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben<br>Antallet af ind- og udgange, der vises, afhænger af enhedstypen.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                                                           |              |
| Dig. Out. 12345 67890<br>master CCCCC CCCCC<br>CCCCC CCCCC<br>CCCCC CCCC                                                                             |                                                                                                                                                                                                                                                                                                                                                                                              |              |
| An. In. master<br>N°        Værdi<br>1        07.3 bar<br>2        12.3 °C<br>3        12.3 °C<br>4        12.3 °C<br>5        12.3 °C               | Visning af analoge indgange 1, 2, 3, 4, 5.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                                                                                                                                                                                                  |              |
| An. In. master<br>N°        Værdi<br>6        15.2 °C<br>7        27.6 °C<br>8        04.0 °C<br>9        15.3 °C<br>10       C                      | Visning af analoge indgange 6,7,8,9 og 10.<br>C: Kontakt lukket<br>A: Kontakt åben<br>(Hvis de analoge indgange er konfigureret som digitale)<br>Antallet af analoge indgange, der vises, afhænger af enhedstypen.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                          |              |
| An. In. master<br>Nr.        Værdi<br>11        02.1 bar<br>12        15,1 °C                                                                        | Visning af analoge indgange 11,12.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                                                                                                                                                                                                          |              |
| An. Out. master<br>N°        Værdi<br>1        00,0 V<br>2        00,0 V<br>3        00,0 V<br>4        00,0 V<br>5        00,0 V<br>6        00,0 V | Spænding til analoge udgange.<br>Det fremviste antal analoge udgange afhænger af typen af enheden.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                                                                                                                                          |              |
| Nødvendige master<br>Exp.1: J Udv.2: N<br>Exp.3: J Udv.4: N<br>Exp.5: N<br>On-line master<br>Exp.1: J Udv.2: N<br>Exp.3: J Udv.4: N<br>Exp.5: N      | Skærbillede der bruges til at angive den adresse, som udvidelseskortene skal have. Adressen ændres afhængigt af de indstillede parametre.<br>I den anden del af skærbilledet vises tilslutningen med udvidelseskortene. Bogstavet N angiver, at der ikke er nogen forbindelse for udvidelseskortet med den angivne adresse.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb. |              |
| Dig.indg. 12345 67890<br>expl CCCC<br>master                                                                                                         | Viser status for de digitale ind- og udgange på udvidelseskort 1 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                                                                                           |              |
| Dig.Out. 12345 67890<br>expl ACAA<br>master                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                              |              |

| Skærbillede for vejledningen                                                                                                                                                                 | Beskrivelse skærbillede                                                                                                                                                                                                                                   | ID parameter |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| An. In. master exp1<br>N°            Værdi<br>1            35.6 °C<br>2            40.5 °C<br>3            37.2 °C<br>4            37.2 °C                                                   | Visning af analoge indgange 1, 2, 3 og 4 på udvidelseskort 1 (hvis monteret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                            |              |
| An. Out. master exp1<br>N°            Værdi<br>1            00,0 V<br>2            00,0 V<br>3            00,0 V                                                                             | Spænding til analoge udgange på udvidelseskort 1.<br>Det fremviste antal analoge udgange afhænger af typen af enheden.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                   |              |
| Dig.indg.    12345<br>67890<br>exp2        CCCC<br>master<br><br>Dig.Out.    12345 67890<br>exp2        ACAA<br>master                                                                       | Viser status for de digitale ind- og udgange på udvidelseskort 2 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                        |              |
| An. In. master exp2<br>N°            Værdi<br>1            04.2 bar<br>2            03.9 bar<br>3            35.6 °C<br>4            40.5 °C<br>5            22.3 °C<br>6            24.2 °C | Visning af analoge indgange 1, 2, 3, 4 5 og 6 på udvidelseskort 2 (hvis monteret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                       |              |
| An. In. master exp2<br>N°            Værdi<br>7            22.4 °C<br>8            - °C                                                                                                      | Visning af analoge indgange 7 og 8 på udvidelseskort 2 (hvis monteret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                                  |              |
| An. Out. master exp2<br>N°            Værdi<br>1            00,0 V<br>2            00,0 V<br>3            00,0 V<br>4            00,0 V                                                      | Spænding til analoge udgange på udvidelseskort 2.<br>Det fremviste antal analoge udgange afhænger af typen af enheden.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                   |              |
| Dig.indg.    12345 67890<br>exp3        CCCC<br>master<br><br>Dig.Out.    12345 67890<br>exp3        ACAA<br>master                                                                          | Viser status for de digitale ind- og udgange på udvidelseskort 3 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                        |              |
| An. In. master exp3<br>N°            Værdi<br>1            06.0 °C<br>2            00.0 °C<br>3            00.0 °C<br>4            00.0 °C<br>5            A<br>6            A               | Fremvisning af analog indgang 1, 2, 3 og 4 i udvidelseskort 3 (hvis installeret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.<br><br>C: Kontakt lukket<br>A: Kontakt åben<br>(Hvis de analoge indgange er konfigureret som digitale) |              |

| Skærbillede for vejledningen                                                                                                                                                        | Beskrivelse skærbillede                                                                                                                                                                                                                                   | ID parameter |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| An. Out. master exp3<br>N°            Værdi<br>1            05,0 V<br>2            06,1 V<br>3            04,5 V                                                                    | Spænding til analoge udgange 1, 2 og 3 på udvidelseskort 3 (hvis installeret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                           |              |
| Dig.indg. 12345 67890<br>exp4        CCCC<br>master<br><br>Dig.Out. 12345 67890<br>exp4        ACAA<br>master                                                                       | Viser status for de digitale ind- og udgange på udvidelseskort 4 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                        |              |
| An. In. master exp4<br>Nr.            Værdi<br>1            058,2 °C<br>2            067,3 °C<br>3            04,2 bar<br>4            03,9 bar<br>5            C<br>6            A | Fremvisning af analog indgang 1, 2, 3 og 4 i udvidelseskort 4 (hvis installeret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.<br><br>C: Kontakt lukket<br>A: Kontakt åben<br>(Hvis de analoge indgange er konfigureret som digitale) |              |
| An. Out. master exp4<br>N°            Værdi<br>1            05,0 V<br>2            06,1 V<br>3            04,5 V                                                                    | Spænding til analoge udgange 1, 2 og 3 på udvidelseskort 4 (hvis installeret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                           |              |
| Dig.indg. 12345 67890<br>exp5        CCCC<br>master<br><br>Dig.Out. 12345 67890<br>exp5        ACAA<br>master                                                                       | Viser status for de digitale ind- og udgange på udvidelseskort 5 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                        |              |
| An. In. master exp5<br>N°            Værdi<br>1            00.0 °C<br>2            00.0 °C<br>3            00.0 °C<br>4            00.0 °C                                          | Visning af analoge indgange 1, 2, 3 og 4 på udvidelseskort 5 (hvis monteret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                                                            |              |
| An. In. master exp5<br>N°            Værdi<br>7            055.3 kPa<br>8            -<br>9            12.0 mA<br>10          14.0 mA                                               | Fremvisning af analog indgang 7, 8, 9 og 10 i udvidelseskort 5 (hvis installeret).<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.<br>(vises kun med udvidelseskort 5 type M).                                                           |              |
| An. Out. master exp5<br>N°            Værdi<br>1            00,0 V<br>2            00,0 V<br>3            00,0 V                                                                    | Spænding til analoge udgange på udvidelseskort 5.<br>Det fremviste antal analoge udgange afhænger af typen af enheden.<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb.                                                                   |              |

| Skærbillede for vejledningen                                                                                                                 | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                     | ID parameter |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Dig. In. 12345 67890<br>slave CCCCC CCCCC<br>CCCCC CCC<br><br>Dig. Out. 12345 67890<br>slave CCCCC CCCCC<br>CCCCC CCCCC<br>CCCCC CCCC        | Viser status for de digitale ind- og udgange og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben<br>Antallet af ind- og udgange, der vises, afhænger af enhedstypen.                                                                                                                                           |              |
| An. In. slave<br>N° Værdi<br>1 07.3 bar<br>2 12.3 °C<br>3 12.3 °C<br>4 12.3 °C<br>5 12.3 °C                                                  | Visning af analoge indgange 1, 2, 3, 4 og 5 på slave (for enhed med 3 eller 4 kredsløb).                                                                                                                                                                                                                                    |              |
| An. In. slave<br>N° Værdi<br>6 07.3 bar<br>7 27.6 °C<br>8 04.0 °C<br>9 -<br>10 -                                                             | Visning af analoge indgange 6,7,8,9 og 10 på slave (for enhed med 3 eller 4 kredsløb).<br>C: Kontakt lukket<br>A: Kontakt åben<br>(Hvis de analoge indgange er konfigureret som digitale)<br>Antallet af analoge indgange, der vises, afhænger af enhedstypen.                                                              |              |
| An. Out. slave<br>N° Værdi<br>1 00,0 V<br>2 00,0 V<br>3 00,0 V<br>4 00,0 V<br>5 00,0 V<br>6 00,0 V                                           | Spænding til analoge udgange på slave (for enheder med 3 eller 4 kredsløb).<br>Det fremviste antal analoge udgange afhænger af typen af enheden.                                                                                                                                                                            |              |
| Nødvendige slave<br>Exp.1: N Udv.2: N<br>Exp.3: N Udv.4: N<br>Exp.5: N<br>Online slave<br>Exp.1: N Udv.2: N<br>Exp.3: N Udv.4: N<br>Exp.5: N | Skærbillede der bruges til at angive den adresse, som udvidelseskortene skal have. Adressen ændres afhængigt af de indstillede parametre.<br>I den anden del af skærbilledet vises tilslutningen med udvidelseskortene. Bogstavet N angiver, at der ikke er nogen forbindelse for udvidelseskortet med den angivne adresse. |              |
| Dig.indg. 12345 67890<br>expl CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>expl ACAA<br>slave                                                | Viser status for de digitale ind- og udgange på udvidelseskort 1 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben                                                                                                                                                                           |              |
| An. In. slave expl<br>N° Værdi<br>1 35.6 °C<br>2 40.5 °C<br>3 37.2 °C<br>4 37.2 °C                                                           | Visning af analoge indgange 1, 2, 3 og 4 på udvidelseskort 1 på slave (hvis monteret på enhed med 3 eller 4 kredsløb).                                                                                                                                                                                                      |              |
| An. Out. slave expl<br>N° Værdi<br>1 00,0 V                                                                                                  | Spænding til analoge udgange på udvidelseskort 1 på slave (for enheder med 3 eller 4 kredsløb).<br>Det fremviste antal analoge udgange afhænger af typen af enheden.                                                                                                                                                        |              |

| Skærbillede for vejledningen                                                                                           | Beskrivelse skærbillede                                                                                                                                                                                            | ID parameter |
|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Dig.indg. 12345 67890<br>exp2 CCCCC CCCCC<br>master CCCC<br><br>Dig.Out. 12345 67890<br>exp2 CCCCC CCCCC<br>master CCC | Viser status for de digitale ind- og udgange på udvidelseskort 2 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben<br>Master er kun specificeret på enheder med 3 eller 4 kredsløb. |              |
| An. In. slave exp2<br>N° Værdi<br>1 04.2 bar<br>2 03.9 bar<br>3 35.6 °C<br>4 40.5 °C<br>5 22.3 °C<br>6 24.2 °C         | Visning af analoge indgange 1, 2, 3, 4, 5 og 6 på udvidelseskort 2 på slave (hvis monteret på enhed med 3 eller 4 kredsløb).                                                                                       |              |
| An. In. slave exp2<br>N° Værdi<br>7 22.4 °C<br>8 - °C                                                                  | Visning af analoge indgange 7 og 8 på udvidelseskort 2 (hvis monteret).                                                                                                                                            |              |
| An. Out. slave exp2<br>N° Værdi<br>1 00,0 V<br>2 00,0 V<br>3 00,0 V<br>4 00,0 V                                        | Spænding til analoge udgange på udvidelseskort 2 på slave (for enheder med 3 eller 4 kredsløb).<br>Det fremviste antal analoge udgange afhænger af typen af enheden.                                               |              |
| Dig.indg. 12345 67890<br>exp3 CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>exp3 ACAA<br>slave                          | Viser status for de digitale ind- og udgange på udvidelseskort 3 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben                                                                  |              |
| An. In. slave exp3<br>N° Værdi<br>1 06.0 °C<br>2 00.0 °C<br>3 00.0 °C<br>4 00.0 °C                                     | Visning af analoge indgange 1, 2, 3 og 4 på udvidelseskort 3 på slave (hvis monteret på enhed med 3 eller 4 kredsløb).                                                                                             |              |
| An. Out. slave exp3<br>N° Værdi<br>1 00,0 V                                                                            | Spænding til analog udgang 1 på udvidelseskort 3 (hvis installeret).                                                                                                                                               |              |
| Dig.indg. 12345 67890<br>exp4 CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>exp4 ACAA<br>slave                          | Viser status for de digitale ind- og udgange på udvidelseskort 4 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben                                                                  |              |

| Skærbillede for vejledningen                                                                                                              | Beskrivelse skærbillede                                                                                                                           | ID parameter |
|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| An. In. slave exp4<br>N°            Værdi<br>1            A<br>2            A<br>3            A<br>4            A                         | Visning af analoge indgange 1, 2, 3 og 4 på udvidelseskort 4 på slave (hvis monteret på enhed med 3 eller 4 kredsløb).                            |              |
| Dig.indg. 12345 67890<br>exp5        CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>exp5        ACAA<br>slave                               | Viser status for de digitale ind- og udgange på udvidelseskort 5 (hvis monteret) og angiver deres status.<br>C: Kontakt lukket<br>A: Kontakt åben |              |
| An. In. slave exp5<br>N°            Værdi<br>1            00.0 °C<br>2            00.0 °C<br>3            00.0 °C<br>4            00.0 °C | Visning af analoge indgange 1, 2, 3 og 4 på udvidelseskort 5 på slave (hvis monteret på enhed med 3 eller 4 kredsløb).                            |              |
| An. Out. slave exp5<br>N°            Værdi<br>1            00,0 V                                                                         | Spænding til analog udgang 1 på udvidelseskort 5 (hvis installeret).                                                                              |              |



| Skærbillede for vejledningen                                                                                                          | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ID parameter                             |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p style="text-align: center;">↑</p> <p style="text-align: center;">Setpoint</p> <p style="text-align: center;">←      ↓</p>          | Skærbillede for opnået adgang til menuen setpoint. Tryk på tasterne [UP] eller [DOWN] for at bladre mellem de øvrige skærbilleder. Tryk på tasten [ESC] for at vende tilbage til undermenuen.                                                                                                                                                                                                                                                                                                                                                                                              |                                          |
| Type enhed:<br>køler<br>Driftstilstand:<br>auto<br>Regulering aktiv:<br>Quick Mind<br>ved udgang                                      | Skærbillede hvor maskintypen vises og hvor der kan foretages indstilling af driftstilstanden. Viser også den aktiverede indstillingstype. Hvis der vises et R til højre for driftstilstanden, er driftstilstanden fjernstyret via de digitale indgange. Symbolforklaring: Se vejledningen.                                                                                                                                                                                                                                                                                                 | SET0001                                  |
| PLANT<br>Tilstand: VINTER<br>Påfyldning reserve:<br>HeatPump<br>DHW<br>Tilstand: OFF<br>Påfyldning reserve:<br>Varmepumpe+kedel erst. | Giver mulighed for at indstille typen af regulering for anlægget (OFF / VINTER / SOMMER) og typen af påfyldning anlægsreserve, hvis den findes (Heatpump, HeatP+Kedel erst., HeatP+Integreret kedel, Kun kedel).<br>Benyttes til at kontrollere temperaturen i DHW-reserven (OFF/ON) (hvis installeret). Det er også muligt at indstille typen af påfyldning af DHW-reserven (HeatPump, HeatPump+Kedel erst., Kun kedel), dvs. det kun er muligt at indstille DHW-reserven til setpoint for DHW med enhed med varmepumpe eller med varmepumpe og kedel som erstatning eller kun med kedel. | SET0002<br>SET0003<br>SET0004<br>SET0005 |
| Status anlæg:<br><br>OFF<br><br>Tilstand DHW:<br><br>OFF                                                                              | Gør det muligt at få vist status for systemet og DHW-drift (hvis aktiveret).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                          |
| Aktivt setpoint:<br>Primært 07,0 °C<br><br>Genvinding/DHW 42,5 °C<br>Modul +2P 75,0 °C<br>Tænding anl. 45,0 °C                        | Skærbilledet viser det aktuelle primære setpoint for genvinding, DHW (hvis til stede) og +2P-modul (hvis til stede) og plant-reserve (hvis til stede). Hvis der vises et R til højre for værdien, er det aktive setpoint den sekundære værdi. Symbolforklaring: Se vejledningen.                                                                                                                                                                                                                                                                                                           |                                          |
| Indstillet setpoint:<br>Køler 07,0 °C<br>Varmepumpe 42,5 °C<br>Genvinding/DHW 42,5 °C<br>Overboost 80,0 °C                            | Indstilling af setpoint for køler, varmepumpe og genvinding (DHW, hvis installeret). Hvis der er monteret DHW-reserve, er det også muligt at indstille setpoint for overboost (hvis aktiveret).                                                                                                                                                                                                                                                                                                                                                                                            | SET0006<br>SET0007<br>SET0008<br>SET0009 |
| Neutral zone aktiv:<br>Primær<br>høj 01,6 °C<br>lav 05,5 °C<br><br>Genvinding<br>høj 02,0 °C<br>lav 05,5 °C                           | Giver mulighed for at visualisere den neutrale zones begrænsninger for den primære termoregulator og for termoregulatoren for genvinding.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                          |
| Gennemtvung DHW<br>Nej                                                                                                                | Skærbillede til manuel forcering af enheden for at opfylde forbruget af DHW.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                          |

| Skærbillede for vejledningen                                                                                                                 | Beskrivelse skærbillede                                                                                                                                                                                                                                                                   | ID parameter                  |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Dobbelt setpoint:<br>Køler 07,0 °C<br>Varmepumpe 45,0 °C<br>Genv./DHW 45,0 °C                                                                | Skærbillede til indstilling af det andet setpoint (hvis funktionen for dobbelt setpoint er aktiveret).                                                                                                                                                                                    | SET0010<br>SET0011<br>SET0012 |
| Setpoint modul +2P<br>75,0 °C<br><br>Aktivering +2P ON                                                                                       | Skærbillede til indstilling af setpoint for modul +2P og aktivering af selve modulet.                                                                                                                                                                                                     | SET0013<br>SET0014            |
| Setpoint aktivt<br>gruppe: 07,0 °C                                                                                                           | Skærbillede til visning af gruppens aktuelle primære setpoint.                                                                                                                                                                                                                            |                               |
| Gruppens parametre<br>Indstillet setpoint:<br>Chiller 7,0 °C<br>Varmepumpe 43,5 °C                                                           | Skærbillede til indstilling af gruppens setpoint.                                                                                                                                                                                                                                         | SET0015<br>SET0023            |
| Gruppens parametre:<br>Reguleringsbånd:<br>Køler: 05,0 °C<br>Varmepumpe: 05,0 °C<br>DHW 05,0 °C                                              | Skærbillede til indstilling af reguleringsintervallet for enheden (DHW til stede, hvis Master-Client er aktiveret).                                                                                                                                                                       | SET0016<br>SET0024<br>SET0045 |
| Gruppens parametre<br>Dobbelt setpoint:<br>Chiller 5,0 °C<br>Varmepumpe 45,0 °C                                                              | Skærbillede til indstilling af det dobbelte setpoint (kun synlig hvis funktionen for dobbelt setpoint er aktiveret).                                                                                                                                                                      | SET0017<br>SET0025            |
| Driftstilstand<br>gruppe:<br>køler                                                                                                           | Skærbillede til indstilling af gruppens driftstilstand.                                                                                                                                                                                                                                   | SET0021                       |
| Begrænsning strøm<br>Aktivt setpoint:<br>0100 A<br>Indstillet setpoint:<br>0100 A<br>Grænser setpoint<br>minimum: 0060 A<br>maksimum: 0100 A | Skærbillede til visualisering af det aktive setpoint og til visualisering af setpoint indstillet fra tastaturet eller fra BMS for funktionen "Begrænsning af strøm".<br>Gør det endvidere muligt at vise grænserne for absorberet strøm knyttet til den analoge indgang (hvis aktiveret). | SET0022<br>SET0026<br>SET0027 |

| <b>Skærm billede for vejledningen</b>                                                                                                                | <b>Beskrivelse skærm billede</b>                                                                                                                                                                             | <b>ID parameter</b>                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Demand Limit<br><br>Aktiv procentdel:<br><br>Køler           050 %<br>Varmepumpe     050 %<br>genvinding      050 %                                  | Skærm billede til visning af den procentvise begrænsning af aktiv effekt. Viser i tilfælde af enheder med Demand Limit aktiveret via analog indgang.                                                         |                                          |
| Offset SG Ready Boost mellem:<br><br>Køler:   -1,0 °C<br><br>Varmepumpe:   2,0 °C<br><br>Rec/DHW:   1,0 °C                                           | Giver mulighed for at bestemme de offset, der skal anvendes på de indstillede setpoint for de forskellige driftstilstande på enheden, når pattern 2 (mellem) er aktiveret med funktionen Smart Grid Ready.   | SET0028<br>SET0030<br>SET0032            |
| Offset SG Ready Boost max:<br><br>Køler:   -1,5 °C<br><br>Varmepumpe:   2,0 °C<br><br>Rec/DHW:   2,0 °C                                              | Giver mulighed for at bestemme de offset, der skal anvendes på de indstillede setpoint for de forskellige driftstilstande på enheden, når pattern 3 (maksimum) er aktiveret med funktionen Smart Grid Ready. | SET0029<br>SET0031<br>SET0033            |
| Aktivering klimakurver opvarmning:<br>Ja                                                                                                             | Muliggør aktivering af klimakurver i opvarmning, der indvirker på setpoint for zonerne.                                                                                                                      | SET0034                                  |
| Klimakurve HT<br>Set rum:   25,0 °C<br>Koefficient:   1,0<br>Offset:       0,0 °C<br>Offset ved 20°C: 0,0°C<br><br>Proc. påvirkning rumtemp.:   25 % | Gør det muligt at vise setpoint for rumtemperatur i zone HT og indstille de specifikke parametre for klimakurven i zone HT.                                                                                  | SET0035<br>SET0036<br>SET0037<br>SET0038 |
| Klimakurve LT<br>Set rum:   20,0 °C<br>Koefficient:   1,0<br>Offset:       0,0 °C<br>Offset ved 20°C: 0,0°C<br><br>Proc. påvirkning rumtemp.:   25   | Gør det muligt at vise setpoint for rumtemperatur i zone LT og indstille de specifikke parametre for klimakurven i zone LT.                                                                                  | SET0039<br>SET0040<br>SET0041<br>SET0042 |
| Set omgivelser zoner<br><br>Set aktiv HT: 25,0 °C<br>Diff. On HT:   0,5 °C<br><br>Set aktiv LT: 18,0 °C<br>Diff. On LT:   0,5 °C                     | Gør det muligt at vise de aktive setpoints og indstille de relevante differenser for zonerne HT og LT.                                                                                                       | SET0043<br>SET0044                       |
| Aktivt setpoint vand zone LT:<br><br>018,0 °C                                                                                                        | Viser det aktive setpoint for vand i zonen LT.                                                                                                                                                               |                                          |

| Skærbillede for vejledningen | Beskrivelse skærbillede                  | ID parameter |
|------------------------------|------------------------------------------|--------------|
| Aktivering Boost: N          | Muliggør aktivering af funktionen Boost. |              |

| Skærbillede for vejledningen                                                                                                                                  | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                                              | ID parameter |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <div>↑</div> <div>←</div> <div>↓</div> <div>Enhed</div>                                                                                                       | Skærbillede for opnået adgang til menuen maskine. Tryk på tasterne <b>[UP]</b> eller <b>[DOWN]</b> for at bladere mellem de øvrige skærbilleder. Tryk på tasten <b>[ESC]</b> for at vende tilbage til undermenuen.                                                                                                                                                                                   |              |
| Temp. In. Out.<br>Evap. 12.5 07.0 °C<br>Rec. 35.6 40.5 °C<br>Cond. 38.0 42.5 °C<br><br>A.Plant 38.2 °C<br>A.DHW 59.8 °C                                       | Visning af vandtemperatur ved enhedens ind- og udgang. (fordamper, genvindingsanordning, kondensator, plant-reserve og DHW-reserve er kun synlige, hvis de er installeret).<br>På enheder med flere fordampere vises gennemsnitstemperaturen mellem de to udgangssonder på de enkelte fordampere, hvis den fælles udgangssonde er deaktiveret.                                                       |              |
| Temp. In. Out.<br>Evap. 12.5 07.0 °C<br>Evap1 07.2 °C<br>Evap2 06.9 °C                                                                                        | (hvis der er flere fordampere) Visning af temperaturen i indgang og udgang fra fordamperens eller kondensatoren (afhængigt af driftstilstanden køler eller varmepumpe) og fordamperens temperaturer i udgang fra fordampere.                                                                                                                                                                         |              |
| Temp. In. Out.<br>Cond. 24.3 22.4 °C<br>Cond.1 22.3 °C<br>Cond.2 22.4 °C                                                                                      | (hvis der er 2 fordampere) Visning af temperaturen i indgang og udgang fra fordamperens eller kondensatoren (afhængigt af driftstilstanden køler eller varmepumpe) og fordamperens temperaturer i udgang på de to kondensatorer.                                                                                                                                                                     |              |
| Temp.<br>Freecooling 12,3 °C<br>Ekst. luft 15,4 °C<br>Tilvalg 19,6 °C<br>Tænd. anlæg 12,5 °C<br>Tænd. genv. 40,5 °C<br>Drycooler 08,6 °C<br>Komp.rum. 35,7 °C | (til enheder med luftafkølet kondensator) Visning af temperaturer for free-cooling (på køleenheder+free-cooling), ekstern lufttemperatur og temperatur i tilbehør (hvis sonderne er aktiverede).<br>Visning af temperatur i anlæggets reserve og genvinding (hvis sonderne er aktiveret).<br>Viser temperaturen på drycooleren (hvis relevant) og kompressorummet (hvis den relevante sonde styres). |              |
| Kreds hp lp st<br>1 07,3 04,2 Off<br>2 07,3 03,9 Off<br>3 07,3 04,2 Off<br>4 07,3 03,9 Off<br>bar bar                                                         | Visning af værdier for højt og lavt tryk (hvis transducerne er installeret) og kodning af funktionsmåden for kredsløbene 1., 2., 3. og 4.                                                                                                                                                                                                                                                            |              |
| Komp hp lp<br>1 07.3 04.2 bar<br>2 07.3 03.9 bar<br><br>Status kredsløb<br>1: Ch                                                                              | Visning af værdierne højt og lavt tryk (hvis transducerne er til stede) i tilfælde af fordeling af transducere på kompressorniveau i stedet for på kredsløbsniveau.<br>Kodificering af kredsløbets funktionsmåde.                                                                                                                                                                                    |              |
| Kreds tc tl<br>under<br>1 07,3 00,0 00,0<br>2 07,3 00,0 00,0<br>3 07,3 00,0 00,0<br>4 07,3 00,0 00,0<br>°C °C °C                                              | (på køleenheder med genvinding) Visning af trykværdier konverteret til temperatur, væsketemperatur og beregning af underkøling af kredsløb 1, 2, 3 og 4.                                                                                                                                                                                                                                             |              |

| Skærbillede for vejledningen                                                                                                       | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ID parameter |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Timersynkr. afrimning<br>Interval 1200 - 03600 s<br><br>Free Defrost 0370 s                                                        | Viser, for timeren for tuning defrost, variationsområdet for forsinkelsestiden for frostbeskyttelse beregnet som en funktion af den eksterne temperatur.<br>Viser endvidere den maksimale varighed for free defrost beregnet på baggrund af den eksterne temperatur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |
| Kreds Tid<br>1 02700<br>2 02700<br>3 02700<br>4 02700<br>s<br>Timersynkr. afrimning                                                | Visning af tidsrummet for forsinkelse af frostbeskyttelse beregnet på baggrund af algoritmen, timer tuning defrost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |
| Kreds Tid Maks<br>1 0188 0125<br>2 0125 0270<br>3 0188 0125<br>4 0125 0270<br>s s<br>Free Defrost                                  | Visning af tidsrummet for aktivering af free defrost og maks. tidsrummet for proceduren på baggrund af det registrerede tidsrum for forsinkelse.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |
| Kreds defr T.ret<br>T.var<br>1 N 0904 0000<br>2 N 0000 0028<br>3 N 0904 0000<br>4 N 0000 0028<br>s s                               | Visning af status for frostbeskyttelse, forsinkelsestiden inden start på frostbeskyttelse og varigheden af selve frostbeskyttelsen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |
| Temperatur udstødning kompressorer<br>C1:105,9 C2:058,2<br>C3:098,4 C4:067,3<br>C5:105,3 C6:104,9<br>C7:098,4 C8:068,2<br>°C °C    | Visning af udløbstemperaturen fra kompressorerne (hvis sonderne er installeret).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |
| Transd. differens<br><br>fordamper: 060,1 kPa<br>genvinding: 055,3 kPa<br>kondensator:050,4 kPa                                    | Fremvisning af værdier for differenstryk (hvis giverne er installerede) i fordampers, genvindingsanordningens og kondensatorens vandsystem.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |
| Regulering ventilation:<br>Kreds11: 060 %<br>Kreds2: 043 %<br>Kreds3: 056 %<br>Kreds4: 092 %<br>Kreds1-2: 060 %<br>Kreds3-4: 092 % | Visning af procentsatserne for ventilation (eller åbning af kondensationsventilen på enheder med vandkondensation) for hvert kredsløb.<br>Dette procentvise behov har ikke sammenhæng med den udsendte spænding i V for ikke-lineære anordninger (ventilatorer eller ventiler). Hvis udgangen kontrollerer AC ventilatoren eller ventilerne vil den viste værdi være resultatet af behovet for regulatoren af kondensprocessen. Dette behov lineariseres (konverteret) før det sendes til ventilatoren eller ventilen, for at opnå at 60% af forespørgslen svarer til 60% af det tilladte maksimum (ventilatorkapacitet eller ventilåbning).<br>I tilfælde af EC-ventilatorer svarer udgangen derimod fuldstændigt til værdien på regulatorens behov. Hvis der aflæses 60% er der 6Vdc i udgang. Årsagen er at signalets linearisering udføres af selve ventilatorens inverter.<br>Der vises Circ1-2: I tilfælde af enheder med separate hermetiske kondenskompressorer, og en værdi der svarer til den største af procentsatserne for kredsløb 1 og 2 (tilsvarende for enheder med 4-kredsløb for Circ3-4). |              |

| Skærbillede for vejledningen                                                                                       | Beskrivelse skærbillede                                                                                                                                                                                                          | ID parameter |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Analoge udgange:<br>Indst.kondens. 1:000 %<br>Reg.kondens. 2:000 %<br>Reg.kondens. 3:000 %<br>Reg.kondens. 4:000 % | Visning af procentsatserne for kondensation for HW pCOEM. Angiver procentdelen af efterspørgslen på de enheder, der er forbundet til dem (for ikke-lineære enheder gælder overensstemmelsen med den leverede spænding i V ikke). |              |
| Analoge udgange: 5<br><br>Hastighed<br>anlægspumpe: 000 %<br><br>Justering<br>anlægsventil: 000 %                  | Visning af analoge udgange på udvidelseskort 5.                                                                                                                                                                                  |              |
| Analoge udgange: 1<br><br>Pumpehastighed<br>genvinding: 000 %<br><br>Justering<br>genvindingsventil: 000%          | Visning af analoge udgange på udvidelseskort 1.                                                                                                                                                                                  |              |
| Analoge udgange: 2<br><br>Pumpehastighed<br>genvinding: 000 %<br><br>Justering<br>genvindingsventil: 000%          | Visning af analoge udgange på udvidelseskort 2.                                                                                                                                                                                  |              |
| Analoge udgange: 3<br>Freecooling :000 %                                                                           | Visning af analoge udgange på udvidelseskort 3.                                                                                                                                                                                  |              |
| Analoge udgange: 3<br>Freecooling :000 %                                                                           | Visning af analoge udgange på udvidelseskort 3 på slave.                                                                                                                                                                         |              |
| Tæller<br><br>Pumpe 1 001010<br>Pumpe 2 000982<br>Pumpe rec 000450<br>Pumpe kond 000625                            | Viser driftstimerne for cirkulationspumperne (visningen er afhængig af aktivering af pumpen).                                                                                                                                    |              |
| P3 - fordamper<br>Pumpe 1<br>Tilstand: OFF<br>Timer: 000000<br><br>Pumpe 2<br>Tilstand: OFF<br>Timer: 000000       | Viser oplysningerne om pumperne på fordamperens side med tilknytning til det eventuelle modul P3 (hvis aktiveret).                                                                                                               |              |

| Skærbillede for vejledningen                                                                                                | Beskrivelse skærbillede                                                                                                                                                                                                | ID parameter |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| P3 -<br>genvindingsaggregat<br>Pumpe 1<br>Tilstand: OFF<br>Timer: 000000<br><br>Pumpe 2<br>Tilstand: OFF<br>Timer: 000000   | Visualiserer oplysningerne om pumperne på siden med genvindingsanordningen (eller kondensatoren) med tilknytning til det eventuelle P3 modul (hvis aktiveret).                                                         |              |
| Timetæller<br>kompressorer<br>Gennesn. timer<br>000000<br>C1 000000 C2 000000<br>C3 000000 C4 000000<br>C5 000000 C6 000000 | Visning af det gennemsnitlige timeantal for kompressorerne. Viser driftstimerne for kompressorerne.                                                                                                                    |              |
| Work<br>Act << 082%<br><br>RPM 32450<br>CR 2.8<br>lp 03.9bar<br>udløbstemperatur 78,5°C                                     | Giver mulighed for at få vist funktionsstatus for Turbocor kompressorerne, den aktive procentdel, omdrejningstallet og den leverede procentdel. Desuden kan man få vist andre data, såsom udløbstemperatur og sugetryk |              |
| Work<br>Act << 080%<br><br>RPM 29500<br>CR 2.8<br>lp 03.9bar<br>udløbstemperatur 78,5°C                                     | Giver mulighed for at få vist funktionsstatus for Turbocor kompressorerne, den aktive procentdel, omdrejningstallet og den leverede procentdel. Desuden kan man få vist andre data, såsom udløbstemperatur og sugetryk |              |
| Work<br>Act << 082%<br><br>RPM 32450<br>CR 2.8<br>lp 03.9bar<br>udløbstemperatur 78,5°C                                     | Giver mulighed for at få vist funktionsstatus for Turbocor kompressorerne, den aktive procentdel, omdrejningstallet og den leverede procentdel. Desuden kan man få vist andre data, såsom udløbstemperatur og sugetryk |              |
| Work<br>Act << 080%<br><br>RPM 29500<br>CR 2.8<br>lp 03.9bar<br>udløbstemperatur 78,5°C                                     | Giver mulighed for at få vist funktionsstatus for Turbocor kompressorerne, den aktive procentdel, omdrejningstallet og den leverede procentdel. Desuden kan man få vist andre data, såsom udløbstemperatur og sugetryk |              |
| Work<br>Act << 081%<br><br>RPM 32120<br>CR 2.8<br>lp 03.9bar<br>udløbstemperatur 78,5°C                                     | Giver mulighed for at få vist funktionsstatus for Turbocor kompressorerne, den aktive procentdel, omdrejningstallet og den leverede procentdel. Desuden kan man få vist andre data, såsom udløbstemperatur og sugetryk |              |
| Work<br>Act << 078%<br><br>RPM 34550<br>CR 2.3<br>lp 03.1bar<br>udløbstemp. 76,5 °C                                         | Giver mulighed for at få vist funktionsstatus for Turbocor kompressorerne, den aktive procentdel, omdrejningstallet og den leverede procentdel. Desuden kan man få vist andre data, såsom udløbstemperatur og sugetryk |              |



| Skærbillede for vejledningen                                                                                                             | Beskrivelse skærbillede                                                                                                                                                                                                | ID parameter |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Work<br>Act << 081%<br><br>RPM 31450<br>CR 2.8<br>lp 03.2bar<br>udløbstemperatur 78,5 °C                                                 | Giver mulighed for at få vist funktionsstatus for Turbocor kompressorerne, den aktive procentdel, omdrejningstallet og den leverede procentdel. Desuden kan man få vist andre data, såsom udløbstemperatur og sugetryk |              |
| Work<br>Act << 080%<br><br>RPM 14500<br>CR 2.6<br>lp 03.7bar<br>udløbstemp. 78,2 °C                                                      | Giver mulighed for at få vist funktionsstatus for Turbocor kompressorerne, den aktive procentdel, omdrejningstallet og den leverede procentdel. Desuden kan man få vist andre data, såsom udløbstemperatur og sugetryk |              |
| subc 03.8 03.6 °C<br>st Reg Reg<br>trin 1824 1630                                                                                        | Visning af værdien for underafkøling i kredsløbene, tilstanden i driverne i de elektroniske termostatventiler samt antallet af trin for åbning af ventilerne.                                                          |              |
| Kreds SH % st<br>1 05,9 80 Ok<br>2 06,1 70 Ok<br>3 06,0 60 Ok<br>4 05,7 85 Ok<br>°C<br>Temp. sugn.: 000,0 °C                             | Muliggør visning af værdien for overophedning i kredsløbene, tilstanden i driverne i de elektroniske termostatventiler, antallet af trin i procent for ventilåbning og sugetemperaturen ved integreret driver.         |              |
| Kredsløb 1 EEV-detajler<br>Ventil SH åben tilstand<br>1 02.0 0032 OK<br>2 05.7 0012 Alarm<br>3 01.1 0040 OK<br>4 01.2 0041 OK<br>°C %    | Viser for kreds 1: værdi overophedning, status og antal åbningstrin i procent for termostatventiler.                                                                                                                   |              |
| Kredsløb 2 EEV-detajler<br>Ventil SH åben tilstand<br>1 03.0 0075 OK<br>2 02.9 0071 OK<br>3 02.9 0082 OK<br>4 03.1 0091 OK<br>°C %       | Viser for kreds 2: værdi overophedning, status og antal åbningstrin i procent for termostatventiler.                                                                                                                   |              |
| Kredsløb 3 EEV-detajler<br>Ventil SH åben tilstand<br>1 11.0 0100 Alarm<br>2 03.0 0080 Alarm<br>3 03.0 0087 OK<br>4 02.2 0081 OK<br>°C % | Viser for kreds 3: værdi overophedning, status og antal åbningstrin i procent for termostatventiler.                                                                                                                   |              |
| Kredsløb 4 EEV-detajler<br>Ventil SH åben tilstand<br>1 01.0 0050 OK<br>2 01.7 0051 OK<br>3 03.3 0100 Alarm<br>4 02.1 0053 Alarm<br>°C % | Viser for kreds 4: værdi overophedning, status og antal åbningstrin i procent for termostatventiler.                                                                                                                   |              |

| Skærbillede for vejledningen                                | Beskrivelse skærbillede                                                                                                                        | ID parameter |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Inverter 1: Online<br>Kommando 1200 rpm<br>Omdrej. 1200 rpm | Viser om inverter 1 er online med styreenheden. Endvidere angives styringen og den effektive omdrejningshastighed i kompressoren med inverter. |              |
| Inverter 2: Online<br>Kommando 1400 rpm<br>Omdrej. 1400 rpm | Viser om inverter 2 er online med styreenheden. Endvidere angives styringen og den effektive omdrejningshastighed i kompressoren med inverter. |              |
| Inverter 3: Online<br>Kommando 1200 rpm<br>Omdrej. 1200 rpm | Viser om inverter 3 er online med styreenheden. Endvidere angives styringen og den effektive omdrejningshastighed i kompressoren med inverter. |              |
| Inverter 4: Online<br>Kommando 1400 rpm<br>Omdrej. 1400 rpm | Viser om inverter 4 er online med styreenheden. Endvidere angives styringen og den effektive omdrejningshastighed i kompressoren med inverter. |              |
| Kompr. 1: Online<br>Kommando 060 %<br>Proc. aktiv 060%      | Viser om inverter 1 er online med styreenheden. Endvidere angives styringen og den aktive procentdel i skruekompressoren CSW105.               |              |
| Kompr. 2: Online<br>Kommando 080 %<br>Proc. aktiv 080%      | Viser om inverter 2 er online med styreenheden. Endvidere angives styringen og den aktive procentdel i skruekompressoren CSW105.               |              |
| Kompr. 3: Online<br>Kommando 055 %<br>Proc. aktiv 055%      | Viser om inverter 3 er online med styreenheden. Endvidere angives styringen og den aktive procentdel i skruekompressoren CSW105.               |              |
| Kompr. 4: Online<br>Kommando 070 %<br>Proc. aktiv 070%      | Viser om inverter 4 er online med styreenheden. Endvidere angives styringen og den aktive procentdel i skruekompressoren CSW105.               |              |

| Skærbillede for vejledningen                                                                                             | Beskrivelse skærbillede                                                                                                                                                                                                            | ID parameter |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Comp.1 Work<br>IGV 063.0%<br><br>Frequency 50.0Hz<br>CR 2,2<br>Olietemp. 47,0°C<br>Udløbtemp 52,0°C                      | Giver mulighed for at få vist Hanbell centrifugekompressorernes funktion, IGV procentdelen og funktionsfrekvensen. Desuden kan man få vist andre data, så som udstødningstemperaturen, olietemperaturen og komprimeringsforholdet. |              |
| Energimåler<br>Spænding (V)<br>L1-L2 400<br>L2-L3 401<br>L3-L1 403<br>Nul 1 233<br>Nul 2 231<br>Nul 3 230                | Giver mulighed for at visualisere de af energimåleren aflæste størrelser.                                                                                                                                                          |              |
| Energimåler<br>Strøm (A)<br>L1 0030,0<br>L2 0035,0<br>L3 0028,0                                                          | Giver mulighed for at visualisere de af energimåleren aflæste størrelser.                                                                                                                                                          |              |
| Energimåler<br>Aktiv effekt (kW)<br>L1 0017,2<br>L2 0021,4<br>L3 0019,0<br>Total 0057,6                                  | Giver mulighed for at visualisere de af energimåleren aflæste størrelser.                                                                                                                                                          |              |
| Energimåler<br>Reaktiv effekt (kVar)<br>L1 0014,2<br>L2 0028,4<br>L3 0012,0<br>Total 0054,6                              | Giver mulighed for at visualisere de af energimåleren aflæste størrelser.                                                                                                                                                          |              |
| Energimåler<br>Tilsyneladende effekt (kVA)<br>L1 0024,2<br>L2 0018,4<br>L3 0021,1<br>Total 0063,7                        | Giver mulighed for at visualisere de af energimåleren aflæste størrelser.                                                                                                                                                          |              |
| Energimåler<br><br>Energi 0000009kWh<br><br>Tid 0000002h                                                                 | Giver mulighed for at visualisere de af energimåleren aflæste størrelser.                                                                                                                                                          |              |
| Effektmåler<br>termisk<br><br>Kapacitet 0015,6 m3/t<br>T1 012,3 °C<br>T2 007,2 °C<br>Delta T 005,1 °C<br>Effekt 00092 kW | Giver mulighed for at visualisere de målte data og varmeeffekten beregnet af varmeeffektmåleren.                                                                                                                                   |              |

| Skærbillede for vejledningen                                                                                                                     | Beskrivelse skærbillede                                                                                                                                                                                                                                                       | ID parameter                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Øjeblikkelig effektivitet<br>4,50                                                                                                                | Effektivitet beregnet som forholdet mellem køle-/varmeoutput og effektforbrug. Den er tilgængelig under følgende forhold: <ul style="list-style-type: none"> <li>Begge målere (varmemåler og energimåler) er installeret og i funktion.</li> <li>Enheden er tændt.</li> </ul> |                                                                                                                                  |
| Effektmåler<br>Termisk genvinding<br><br>Strømningshastighed<br>0015,0 m3/h<br>T1 032,4 °C<br>T2 039,0 °C<br>Delta T 006,6 °C<br>Effekt 00078 kW | Giver mulighed for at visualisere de målte data og varmeeffekten beregnet af varmeeffektmåleren på grenen for genvinding.                                                                                                                                                     |                                                                                                                                  |
| Øjeblikkelig effektivitet genvinding<br>03.65                                                                                                    | Giver mulighed for at se den aktuelle effektivitet for grenen for genvinding.                                                                                                                                                                                                 |                                                                                                                                  |
| Linjekommunikator<br>Elektrisk<br>Strømforsyning 1:<br>Fraværende<br>Frakoblet<br>Strømforsyning 2:<br>Fraværende<br>Frakoblet                   | Gør det muligt at få vist status for power line-kontakten.                                                                                                                                                                                                                    |                                                                                                                                  |
| Aktivisering kredsløb<br>Kreds1: S Kreds2: S<br>Kreds3: N Kreds4: N<br><br>kompressorer<br>C1:S C2:S C3:S C4:S<br>C5:S C6:S C7:N C8:N            | Benyttes til at aktivere/frakoble kredsløbene og kompressorerne.                                                                                                                                                                                                              | UNT0001<br>UNT0002<br>UNT0003<br>UNT0004<br>UNT0005<br>UNT0006<br>UNT0007<br>UNT0008<br>UNT0009<br>UNT0010<br>UNT0011<br>UNT0012 |
| KIPLink<br>Status: online<br>Wi-fi-nedværk SSID:<br>KIPLink_032078434<br><br>IP-adresse:<br>192.168.030.001                                      | Skærbillede til visning af status og væsentligste oplysninger om KIPLink modul.                                                                                                                                                                                               |                                                                                                                                  |
| KIPLink<br>Modultype:<br>Master-EthOFF-WifiON<br>Aktiv kanal: Wi-fi<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000.000.000.000    | Skærbillede til visning af status og væsentligste oplysninger om KIPLink modul.                                                                                                                                                                                               |                                                                                                                                  |
| KIPLink<br>Kanal ETHERNET<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000.000.000.000                                              | Skærbillede til visning af oplysninger om Ethernet KIPLink netværk.                                                                                                                                                                                                           |                                                                                                                                  |

| Skærbillede for vejledningen                                                                                                                                   | Beskrivelse skærbillede                                                                                                                                                                                                                         | ID parameter |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| KIPlink<br>Kanal wi-fi<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000.000.000.000                                                               | Skærbillede til visning af oplysninger om KIPlink Wifi netværk.                                                                                                                                                                                 |              |
| Netværk med flere<br>KIPlink<br>Navn på wi-fi-<br>masternetværk<br>KIPlink_032078434<br><br>Netværkets IP-master:<br>192.168.030.001<br><br>Id i netværket: 01 | Skærbillede til visning af væsentligste oplysninger om master modul i KIPlink netværk.                                                                                                                                                          |              |
| Sensor til gaslækage<br>Online<br><br>Dage til<br>Kalibrering: 0400 g<br><br>Levetid: 1800 g                                                                   | Her vises oplysninger om sensoren til detektion af kølemiddelgaslækage: <ul style="list-style-type: none"> <li>• De resterende dage før den næste vedligeholdelse.</li> <li>• Den garanterede resterende driftslevetid for sensoren.</li> </ul> |              |
| Køleeffekt:<br>000000.0 kW<br><br>Absorberet<br>strømforbrug:<br>000000.0 kW<br><br>EER: 00,00                                                                 | Viser køle- og varmekapaciteten og den absorberede effekt. desuden vises også effektivitetsværdien (EER/COP/COP DHW).                                                                                                                           |              |
| Produceret energi<br>aktuel dag<br>Ch: 000000.0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000.0 kWh<br><br>Total: 000000.0 kWh                                        | Viser den producerede energi for den aktuelle dag.                                                                                                                                                                                              |              |
| Absorberet energi<br>aktuel dato<br>Ch: 000000.0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000.0 kWh<br><br>Total: 000000.0 kWh                                       | Viser den absorberede energi for den aktuelle dag.                                                                                                                                                                                              |              |
| Produceret energi<br>foregående dag<br>Ch: 000000.0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000.0 kWh<br><br>Total: 000000.0 kWh                                    | Se den producerede energi for den foregående dag.                                                                                                                                                                                               |              |
| Absorberet energi<br>foregående dag<br>Ch: 000000.0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000.0 kWh<br><br>Total: 000000.0 kWh                                    | Viser den absorberede energi for den foregående dag.                                                                                                                                                                                            |              |

| Skærbillede for vejledningen                                                                                                                       | Beskrivelse skærbillede                                                       | ID parameter |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------|
| Energieffektivitet integreret dag aktuel   foregående<br> <br>Ch: 00.00   00.00<br>Hp: 00.00   00.00<br>DHW: 00.00   00.00<br>Total: 00.00   00.00 | Se integreret energieffektivitet for den aktuelle dag og den foregående dag.  |              |
| Produceret energi løbende måned<br>Ch: 000000.0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000.0 kWh<br><br>Total: 000000.0 kWh                            | Se den producerede energi for den aktuelle måned.                             |              |
| Absorberet energi løbende måned<br>Ch: 000000.0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000.0 kWh<br><br>Total: 000000.0 kWh                            | Viser den absorberede energi for den aktuelle måned.                          |              |
| Produceret energi foregående måned<br>Ch: 000000.0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000.0 kWh<br><br>Total: 000000.0 kWh                         | Se den producerede energi for den foregående måned.                           |              |
| Absorberet energi foregående måned<br>Ch: 000000.0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000.0 kWh<br><br>Total: 000000.0 kWh                         | Se den absorberede energi for den forrige måned.                              |              |
| Energieffektivitet integreret dag aktuel   foregående<br> <br>Ch: 00.00   00.00<br>Hp: 00.00   00.00<br>DHW: 00.00   00.00<br>Total: 00.00   00.00 | Se integreret energieffektivitet for den aktuelle måned og den forrige måned. |              |
| Produceret energi løbende år<br>Ch: 000000000.0 kWh<br>Hp: 000000000,0 kWh<br>DHW: 000000000.0 kWh<br><br>Total: 000000000.0 kWh                   | Se den producerede energi for nuværende år.                                   |              |
| Absorberet energi løbende år<br>Ch: 000000000.0 kWh<br>Hp: 000000000,0 kWh<br>DHW: 000000000.0 kWh<br><br>Total: 000000000.0 kWh                   | Viser den absorberede energi for det nuværende år.                            |              |

| Skærbillede for vejledningen                                                                                                                                                   | Beskrivelse skærbillede                                                                                                                    | ID parameter |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Produceret energi<br>foregående år<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Total: 000000000.0 kWh                                         | Se den producerede energi for det forrige år.                                                                                              |              |
| Absorberet energi<br>foregående år<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Total: 000000000.0 kWh                                         | Se den absorberede energi for det forrige år.                                                                                              |              |
| Produceret energi<br>år -2<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Total: 000000000.0 kWh                                                 | Se den energi, der blev produceret for 2 år siden.                                                                                         |              |
| Absorberet energi<br>år -2<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Total: 000000000.0 kWh                                                 | Se den energi, der blev absorberet for 2 år siden.                                                                                         |              |
| Energieffektivitet<br>integreret<br>år aktuelt  <br>foregående  -2<br> <br>Ch: 00.00 00.00 00.00<br>Hp: 00.00 00.00 00.00<br>DHW: 00.00 00.00 00.00<br>Total:00.00 00.00 00.00 | Se integreret energieffektivitet for det nuværende år, forrige år og for 2 år siden.                                                       |              |
| Køleeffekt:<br>000 000,0 kW<br>Varmeeffekt:<br>000.0 kW<br>Absorberet<br>strømforbrug:<br>000000.0 kW<br><br>TER: 00-00                                                        | Viser køle- og varmekapaciteten og den absorberede effekt. desuden vises også effektivitetsværdien (TER). Synlig for enhed med genvinding. |              |
| Produceret energi<br>aktuel dag<br>Køler:<br>000000.0 kWh<br>Termisk:<br>000000.0 kWh<br>Total:<br>000000.0 kWh                                                                | Viser den producerede energi for den aktuelle dag. Synlig for enheder med genvinding.                                                      |              |
| Forbrugt energi<br>i dag<br><br>000000,0 kWh                                                                                                                                   | Viser den absorberede energi for den aktuelle dag. Synlig for enhed med genvinding.                                                        |              |

| Skærbillede for vejledningen                                                                                 | Beskrivelse skærbillede                                                                                        | ID parameter |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------|
| Produceret energi<br>foregående dag<br>Køling: 000000.0 kWh<br>Termisk: 000000.0 kWh<br>Total: 000000.0 kWh  | Se den producerede energi for den foregående dag. Synlig for enhed med genvinding.                             |              |
| Forbrugt energi<br>forrige dag<br>000000,0 kWh                                                               | Viser den absorberede energi for den foregående dag. Synlig for enhed med genvinding.                          |              |
| Energieffektivitet<br>integreret<br>dag aktuel   foregående<br> <br>TER: 00.00   00.00                       | Se integreret energieffektivitet for den aktuelle dag og den foregående dag. Synlig for enhed med genvinding.  |              |
| Produceret energi<br>løbende måned<br>Køler: 000000.0 kWh<br>Termisk: 000000.0 kWh<br>Total: 000000.0 kWh    | Se den producerede energi for den aktuelle måned. Synlig for enhed med genvinding.                             |              |
| Forbrugt energi<br>denne måned<br>000000,0 kWh                                                               | Viser den absorberede energi for den aktuelle måned. Synlig for enhed med genvinding.                          |              |
| Produceret energi<br>foregående måned<br>Køler: 000000.0 kWh<br>Termisk: 000000.0 kWh<br>Total: 000000.0 kWh | Se den producerede energi for den foregående måned. Synlig for enhed med genvinding.                           |              |
| Forbrugt energi<br>forrige måned<br>000000,0 kWh                                                             | Se den absorberede energi for den forrige måned. Synlig for enhed med genvinding.                              |              |
| Energieffektivitet<br>integreret<br>dag aktuel   foregående<br> <br>TER: 00.00   00.00                       | Se integreret energieffektivitet for den aktuelle måned og den forrige måned. Synlig for enhed med genvinding. |              |



| Skærbillede for vejledningen                                                                                                        | Beskrivelse skærbillede                                                                                                                                                                    | ID parameter |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Produceret energi<br>løbende år<br>Køler:<br>000000000.0 kWh<br>Termisk:<br>000000000.0 kWh<br>Total:<br>000000000.0 kWh            | Se den producerede energi for nuværende år. Synlig for enhed med genvinding.                                                                                                               |              |
| Forbrugt energi<br>i indeværende år<br><br>000000000,0 kWh                                                                          | Viser den absorberede energi for det nuværende år. Synlig for enhed med genvinding.                                                                                                        |              |
| Produceret energi<br>foregående år<br>Køler:<br>000000000.0 kWh<br>Termisk:<br>000000000.0 kWh<br>Total:<br>000000000.0 kWh         | Se den producerede energi for det forrige år. Synlig for enhed med genvinding.                                                                                                             |              |
| Energiforbrug<br>forrige år<br><br>000000000,0 kWh                                                                                  | Se den absorberede energi for det forrige år. Synlig for enhed med genvinding.                                                                                                             |              |
| Produceret energi<br>år -2<br>Køler:<br>000000000.0 kWh<br>Termisk:<br>000000000.0 kWh<br>Total:<br>000000000.0 kWh                 | Se den energi, der blev produceret for 2 år siden. Synlig for enhed med genvinding.                                                                                                        |              |
| Forbrugt energi<br>år -2<br><br>000000000,0 kWh                                                                                     | Se den energi, der blev absorberet for 2 år siden. Synlig for enhed med genvinding.                                                                                                        |              |
| Energieffektivitet<br>integreret<br>år aktuelt  <br>foregående  -2<br><br> <br>TER: 00.00 00.00 00.00                               | Se den integrerede energieffektivitet for: <ul style="list-style-type: none"> <li>• Nuværende år</li> <li>• Forrige år</li> <li>• Efter 2 år</li> </ul> Synlig for enheder med genvinding. |              |
| Indgange varmevekslere<br><br>Varmevæksler 1: 02.0°C<br>Varmevæksler 2: 01.6°C<br>Varmevæksler 3: 01.5°C<br>Varmevæksler 4: 03,9 °C | Gør det muligt at vise indgangene til de vigtigste varmevekslere, der er installeret på brugersiden.                                                                                       |              |

| Skærbillede for vejledningen                                                                                                                                                                                 | Beskrivelse skærbillede                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ID parameter |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Indgange fordelere<br><br>Fordeler 1: 01.0°C<br>Fordeler 2: 02.6°C<br>Fordeler 3: 02.5°C<br>Fordeler 4: ---                                                                                                  | Giver dig mulighed for at se indgangene på de installerede varmevekslere/fordelere                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |
| Indgange genvindingsanordninger<br><br>Genvindingsanordning 1: 04.0°C<br>Genvindingsanordning 2: 03.6°C<br>Genvindingsanordning 3: ---<br>Genvindingsanordning 4: ---                                        | Giver dig mulighed for at se indgangene på de installerede genvindingsanordninger.                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |
| Serienr. enhed:<br>032078434                                                                                                                                                                                 | Skærbillede til visning af enhedens serienummer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |
| W 3000 +<br><br>Kode TA 22.00 IT <br><br>HW pCO5+ L NAND 50MB<br>Flash 2MB +7MB +4MB<br>Ram 2048KB<br>Boot 5.01 Bios 6.52 | Dette skærbillede indeholder referenceoplysningerne for applikationen [Kode TA 22.00 IT]<br>Endvidere angives det, at kredskortet er beskyttet af digital signatur (dette angives ved hjælp af et symbol med en lukket hængelås). Der vises to hængelåse på enheder med 3 eller 4 kredsløb.<br>På den anden del af skærbilledet angives oplysningerne vedrørende hardwaren. Dvs. størrelsen (M, L, XL), hukommelserne (NAND 50MB, Flash 2+7+4MB, Ram 2048KB) og versionerne for det installerede operativsystem (Boot og Bios). |              |

| Skærbillede for vejledningen                                                                                      | Beskrivelse skærbillede                                                                                                                                                                                       | ID parameter                                                                         |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p style="text-align: right;">↑</p> <p>Anlæg</p> <p style="text-align: left;">←      ↓</p>                        | Skærbillede for opnået adgang til systemmenu. Tryk på tasterne <b>[UP]</b> eller <b>[DOWN]</b> for at bladre mellem de øvrige skærbilleder. Tryk på tasten <b>[ESC]</b> for at vende tilbage til undermenuen. |                                                                                      |
| Temp. In. Out.<br>anlæg 10.3 6.5 °C<br><br>Udeluft 27.4 °C                                                        | Skærbillede til visualisering af temperaturen i anlæggets væskering og luften udenfor anlægget (gennemsnit for enhedens sonder eller én af anlæggets sonder).                                                 |                                                                                      |
| Demand limit fra indg.<br>analog: 040 %                                                                           | Skærbillede til visualisering af værdien på den demand limit, som den analoge indgang har hentet.                                                                                                             |                                                                                      |
| Aktivering eksterne<br>enheder<br><br>1:S 2:N 3:S 4:S<br><br>5:N 6:N 7:N 8:N                                      | Aktiverer og/eller deaktiverer de konfigurerede eksterne enheder.                                                                                                                                             | GRO0001<br>GRO0002<br>GRO0003<br>GRO0004<br>GRO0005<br>GRO0006<br>GRO0007<br>GRO0008 |
| Status eksterne<br>enheder<br><br>1:On 5:Alarm<br>2:On 6:On<br>3:On 7:Offline<br>4:Off 8:Offline                  | Skærbillede til visualisering af status for de eksterne enheder.                                                                                                                                              |                                                                                      |
| Driftstilstand<br>eksterne<br>enheder<br>1:køler 5:køler<br>2:køler 6:køler<br>3:køler 7:køler<br>4:køler 8:køler | Skærbillede til visualisering af driftstilstand for de eksterne enheder.                                                                                                                                      |                                                                                      |
| Proc. aktiv enhed<br><br>1:030% 5:060%<br>2:050% 6:060%<br>3:100% 7:000%<br>4:100% 8:000%                         | Visualisering af aktiv procentangivelse for eksterne enheder.                                                                                                                                                 |                                                                                      |
| Status interne grupper<br><br>1:ON 6:OFFLINE<br>2:-- 7:OFFLINE<br>3:ON 8:ON<br>4:-- 9:--<br>5:OFF 10:OFFLINE      | Skærbillede til visualisering af status for de interne grupper.                                                                                                                                               |                                                                                      |

| Skærm billede for vejledningen                                                                                                                                                               | Beskrivelse skærm billede                                                                                                                                        | ID parameter |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Status interne grupper<br><br>11:ON            16:OFF<br>12:--            17:OFFLINE<br>13:ON            18:ON<br>14:--            19:--<br>15:OFF          20:--                            | Skærm billede til visualisering af status for de interne grupper.                                                                                                |              |
| Adaptivt setpoint<br>interne grupper<br>01: 03,0 °C 06: ---- °C<br>02: ---- °C 07: ---- °C<br>03: 00,6 °C 08: 00,2 °C<br>04: ---- °C 09: ---- °C<br>05: ---- °C 10: ---- °C                  | Skærm billede til visualisering af anmodning om adaptivt setpoint, modtaget fra grupperne af interne enheder.                                                    |              |
| Adaptivt setpoint<br>interne grupper<br>11: 01,0 °C 16: ---- °C<br>12: 00,6 °C 17: ---- °C<br>13: ---- °C 18: 00,9 °C<br>14: ---- °C 19: 00,2 °C<br>15: ---- °C 20: ---- °C                  | Skærm billede til visualisering af anmodning om adaptivt setpoint, modtaget fra grupperne af interne enheder.                                                    |              |
| Anmodning var setpoint<br>interne grupper<br>01:ok            06:-----<br>02:optimer.07:ok<br>03:-----      08:reset<br>04:reducér      09:ok<br>05:-----      10:-----                      | Skærm billede til visualisering af anmodning om dynamisk setpoint i HPC tilstand, modtaget fra grupperne på interne enheder.                                     |              |
| Anmodning var setpoint<br>interne grupper<br>11:-----      16:ok<br>12:ok            17:reset<br>13:-----      18:-----<br>14:-----      19:-----<br>15:reducér      20:ok                   | Skærm billede til visualisering af anmodning om dynamisk setpoint i HPC tilstand, modtaget fra grupperne på interne enheder.                                     |              |
| Dynamisk setpoint:<br>02,3 °C                                                                                                                                                                | Skærm billede med værdien for det dynamiske setpoint, som sendes til de eksterne enheder som en værdi, der skal lægges til det indstillede setpoint.             |              |
| ID masterenhed<br>i gruppen:            02<br><br>ID enhed KIPlink<br>master:                03                                                                                              | Skærm billede som viser ID for enheden med KIPlink master internt i KIPlan og for den eksterne master-enhed i netværket LAN Multi Manager.                       |              |
| Rumtemperatur<br>Zone HT:            20,0 °C<br>Zone LT:            18,0 °C<br><br>Relativ rumfugtighed<br>Zone HT:            060 %<br>Zone LT:            045 %<br>Affugter:            On | Kun synlig med touch rumtermostat.<br>Muliggør visning af rumtemperatur og luftfugtighed for zonerne HT og LT og, hvis konfigureret, affugterens tændingsstatus. |              |

| Skærbillede for vejledningen                                                                 | Beskrivelse skærbillede                                                                                                                                                                                                                                        | ID parameter |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Status zone<br>HT: Anmodning aktiv<br>LT: Ikke til stede<br>Recirk. DHW On                   | Muliggør visning af status for anmodningen fra touch rumtermostaten, afhængigt af den zone, hvor den er aktiveret.<br>Endvidere er aktiveringsstatus for cirkulation af DHW også synlig, hvis konfigureret.                                                    |              |
| Blandet kredsløb LT<br>Vandtemp.: 035,0 °C<br>Status pumpe: On<br>Proc. åbning ventil: 045 % | Muliggør visning af vandtemperaturen i det blandede kredsløb, pumpestatus og åbningsprocenten for ventilen.                                                                                                                                                    |              |
| LAN Multi Manager<br>Kode TG 03.00 IT<br>HW pCO5+ S<br>Boot 5.01 Bios 6.52                   | Dette skærbillede indeholder referenceoplysningerne for applikationen [Kode TG 03.00 IT].<br>I anden del af skærbilledet angives oplysningerne vedrørende hardwaren, præcis størrelsen ( S ) og versionerne af det installerede operativsystem (boot og bios). |              |

## 4 ALARMER

Ved at trykke én gang på tasten **[ALARM]** åbnes "alarmmenuen", hvor alarmmeddelelsen vises med den respektive kode, dato og klokkeslæt for alarmen, alarmmeddelelse, type nulstilling (automatisk eller manuel), sted, der er berørt af alarmen, og låsetype. Ved alarmer, der vedrører bestemte typer kompressoromformere, angives den specifikke alarmkode, der genereres af omformeren.

De netop nævnte oplysninger er angivet i et skærbillede, der er vist som et eksempel nedenfor:

```
10:36:04    01/05/23
           A0721-0032
Alarm forsyning
inverter 1

Nulstilling   : Auto
Position: Kompr.
Blok         : Kompr.
```

Hvis der er flere alarmer, skal der rulles gennem menuen med tasten **[UP ]** eller **[DOWN]**.

Menuen forlades ved at trykke på en hvilken som helst anden tast.

**For at nulstille alarmen** skal der trykke på tasten **[ALARM]** en gang til og holde den nede, indtil meddelelsen "Ingen alarm aktiv" vises. Hvis meddelelsen ikke vises, er alarmbetingelserne fortsat til stede.

### 4.1 Begivenhedshistorik på display

Funktionen logger og viser alarmhændelser med angivelse af dato og klokkeslæt for hændelsen, hændelsesnummer, aktiverings- eller deaktiveringshændelse, alarm- eller advarselskode, hændelsesbeskrivelse, type nulstilling (automatisk eller manuel), sted, der er berørt af alarmen, og type af blokering. Ved alarmer, der vedrører bestemte typer kompressoromformere, angives den specifikke alarmkode, der genereres af omformeren. De netop nævnte oplysninger er angivet i et skærbillede, der er vist som et eksempel nedenfor. Kredskortet ur skal være til stede, for at begivenhedshistorikken kan fremvises korrekt.

```
10:36:04    01/05/23
N°001 S  A0711 A - 0032
Alarm forsyning
inverter 1

Reset       : Auto
Position: Kompr.
Blokering: Kompr.
```

De samme oplysninger om begivenhedshistorikken, der hentes fra kontrollen af W3000+, gengives også i tastaturet W3000+ touch i det relevante skærbillede.

## 4.2 Tabel over alarmer W3000+

### Signaturforklaring spalte "Genopretning":

|                |                                                                                                                                                                                                                                                              |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>M</b>       | Alarm med manuel genoprettelse (alarmen skal genoprettes fra tastaturet, når betingelsen for alarmen er ophørt). Der foretages nulstilling af "alarmtælleren".                                                                                               |
| <b>A</b>       | Alarm med automatisk genoprettelse (alarmen genoprettes automatisk, når betingelsen for alarmen er ophørt). Der foretages nulstilling af "alarmtælleren".                                                                                                    |
| <b>A/M</b>     | Alarm med automatisk genoprettelse for de første "n" indgreb, herefter manuel genoprettelse. Der foretages nulstilling af "alarmtælleren" (*: specifik for PSD-kompressormodellen. Se den relevante tabel over alarmmeddelelser for yderligere oplysninger). |
| <b>S</b>       | Angivelse på display (der forekommer ikke nulstilling af alarmtælleren)                                                                                                                                                                                      |
| <b>S-A</b>     | Signalering (som ikke blokerer enheden) eller alarm med automatisk genopretning. Den ene eller den anden funktionsmåde kan vælges ved hjælp af parameteren                                                                                                   |
| <b>S-M</b>     | Signalering (som ikke blokerer enheden) eller alarm med manuel genopretning. Den ene eller den anden funktionsmåde kan vælges ved hjælp af parameteren.                                                                                                      |
| <b>S-M</b>     | Signalering (som ikke blokerer enheden) med manuel genopretning.                                                                                                                                                                                             |
| <b>M - A/M</b> | Alarm med manuel genoprettelse (for hermetiske, stempel- og skruekompressorer), automatisk genoprettelse for de første "n" indgreb, herefter manuel genoprettelse (for Turbocor kompressorer).                                                               |
| <b>B</b>       | Blokering, som ikke kan genoprettes fra displayet. Der foretages nulstilling af "alarmtælleren". Det er nødvendigt at frakoble og tilslutte strømmen til kompressoren i alarmtilstand for at fjerne alarmen.                                                 |

### Signaturforklaring spalte "Handling":

|            |                                                                                                                                                                                                          |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-</b>   | Ingen blokering.                                                                                                                                                                                         |
| <b>U</b>   | Blokering af enheden.                                                                                                                                                                                    |
| <b>-/U</b> | Ingen blokering eller blokering af enheden. Resultatet afhænger af parameteren, der er indstillet til genoprettelse.                                                                                     |
| <b>U*</b>  | Blokering af enheden i forcerede funktionsmåder. I den automatiske funktionstilstand blokeres enheden ikke, men den indstiller sig i de disponible funktionsmåder.                                       |
| <b>CI</b>  | Blokering af kredsløbet, der er berørt af begivenheden.                                                                                                                                                  |
| <b>CO</b>  | Blokering af kompressoren, der er involveret i hændelsen.                                                                                                                                                |
| <b>FC*</b> | Blokering af funktionen free-cooling. Enheden går til de disponible funktionsmåder.                                                                                                                      |
| <b>*</b>   | Afhængigt af sensoren i alarmen kan der være ingen blokering, eller kompressorer, kredsløb eller hele enheden kan være blokeret.                                                                         |
| <b>PR</b>  | For-alarm: Ingen blokering af enheden, signalering (kan aktiveres fra parameter) af, at den overvågede størrelse har overskredet en grænse (indstillet fra parameter) tæt på den egentlige alarmtærskel. |
| <b>GR</b>  | Alarmer der påvirker driften på anlægget.                                                                                                                                                                |

| Kode | Beskrivelse                          | Detaljer                                                                                                                                                                                                                                            | Genoprettelse | Handling | Tærskel |
|------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|---------|
| 002  | Fasesekvens/Spænding uden for område | Forkert tilslutning af faserne. Blokerer enheden fuldstændigt (hvis indgangen, som registrerer den, er installeret).                                                                                                                                | A             | U        |         |
| 003  | Manglende vandflow til fordamper     | Manglende flow til fordamperen. Alarmen genoprettes automatisk 3 gange i løbet af en time, hvis genoprettelsen finder sted inden udløbet af maks. tidsrummet for funktion med pumper med lav vandmængde. I modsat fald sker genoprettelsen manuelt. | A/M           | U        |         |
| 005  | Lav temperatur i indgang             | Kun aktiv i funktionen "varmepumpe". Angiver lav vandtemperatur ved indgang til varmeveksleren.                                                                                                                                                     | S-A           | -/U      | STG0085 |
| 006  | Høj temperatur i indgang             | Kun aktiv i funktionen "køler". Angiver høj vandtemperatur ved indgangen til fordamperen.                                                                                                                                                           | S-A           | -/U      | STG0084 |
| 007  | Blokering af alternativ kilde anlæg  | Angiver blokering af funktionen fra den alternative kilde, der benyttes til fyldning af anlægsreserven.                                                                                                                                             | S             | -        |         |
| 008  | Blokering af alternativ kilde DHW    | Angiver blokering af funktionen fra den alternative kilde, der benyttes til fyldning af DHW-reserven.                                                                                                                                               | S             | -        |         |
| 010  | Frostbeskyttelse fordamper           | Lav vandtemperatur ved udgang fra fordamperen. Endvidere specificeres det, hvilken fordamper (hvis der er tale om mere end en) der er omfattet af alarmen.                                                                                          | M             | CI       | STG0073 |

| Kode | Beskrivelse                                    | Detaljer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Genopret-<br>telse | Handling | Tærskel            |
|------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|--------------------|
|      |                                                | Alarmen vises også, hvis frostbeskyttelse udløses mere end 5 gange i løbet af 8 driftstimer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |          |                    |
| 014  | Manglende anlægstryk                           | Vises kun, hvis indgangen er installeret (se menu I/O). Angiver afbrydelse af enheden ved hjælp af en ekstern trykafbryder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | S/M                | -/U      |                    |
| 017  | Lav ekstern lufttemperatur                     | Angiver at den eksterne lufttemperatur er lavere end den indstillede tærskel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | S-A                | -        | STG0071            |
| 021  | Lav vandmængde på anlægget                     | Temperaturen i indgang til fordamperen (kondensator med varmepumpe) ændrer sig for hurtigt som følge af den lave vandmængde på anlægget.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | S                  | -        |                    |
| 022  | Lavt vandflow anlægget                         | Angiver, at temperaturforskellen mellem indgang og udgang ved den varmeveksler, der er tilsluttet anlægget, er for høj, eller at vandflowet i anlægget er for lav.<br>Nærmere bestemt genereres alarmen, hvis temperaturforskellen er større end en bestemt indstilling (PMP0065 eller PMP0083) i en tid, der mindst er lig med PMP0066 eller PMP0084.<br>Alarmen nulstilles automatisk for det antal gange, der er defineret i par. SFT0014 inden for samme time, hvis nulstillingen sker inden for den maksimale tid, der er angivet i par. STG0081, ellers manuelt. Under afrimning eller drypning med tændte kompressorer er styringen øjeblikkelig og venter ikke på, at tiden STG0081 udløber.<br>På varmepumper med omstilling på siden med vand aktiveres alarmen, og indstillingssonderne (fordamper på køler, kondensator på varmepumpe) kontrolleres. | A/M                | U*       | PMP0065<br>PMP0083 |
| 023  | Højt vandflow i anlægget                       | Angiver et for højt vandflow til fordamperen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | M                  | U*       | PMP0058            |
| 041  | Lav temperatur i indgang kondensator           | Kun aktiv i funktionen "varmepumpe" og genvinding. Angiver lav vandtemperatur ved indgang til kondensatoren.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | S-A                | -/U      | STG0112            |
| 042  | Høj temperatur i udgang kondensator            | Kun aktiv i funktionen "køler". Angiver høj vandtemperatur ved udgang fra kondensator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | S-A                | -/U      | STG0111            |
| 043  | Lavt vandflow i kondensatoren                  | Angiver, at temperaturforskellen mellem kondensatorens indgang og udgang er for høj, eller at vandflowet i kondensatoren er for lav. Alarmen nulstilles automatisk for det antal gange, der er defineret i par. SFT0014 i samme time, hvis nulstillingen sker inden for den maksimale tid, der er angivet i par. SFT0020, ellers manuelt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | A/M                | U        | PMP0063            |
| 044  | Højt vandflow i kondensatoren                  | Angiver for højt vandflow i kondensatoren.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | M                  | U        | PMP0062            |
| 045  | Manglende vandflow til kondensator             | Som for "Manglende vandflow til fordamper" (kun enheder vand/vand med omstilling på side med freon).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | A/M                | U        |                    |
| 046  | Manglende vandflow til genvindingsanordning    | Angiver manglende vandflow til genvindingsanordningen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | A/M                | U*       |                    |
| 051  | Vedligeholdelse pumpe 1                        | Overskridelse af vedligeholdelsesinterval vedrørende pumpe (på enheder med blot en pumpe er pumpe 1 fordamperens pumpe).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | S                  | -        | STG0001            |
| 052  | Vedligeholdelse pumpe 2                        | (på enheder med mere end en pumpe) Overskridelse af vedligeholdelsesinterval vedrørende pumpe 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | S                  | -        | STG0004            |
| 057  | Vedligeholdelse pumpe genvindingsanordning/DHW | (for enheder med pumpe til genvindingsanordning) Overskridelse af vedligeholdelsesinterval vedrørende genvindingsanordningens pumpe.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | S                  | -        | STG0007            |
| 058  | Vedligeholdelse pumpe kondensator              | (for enheder med pumpe til kondensator) Overskridelse af vedligeholdelsesinterval vedrørende kondensatorens pumpe.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | S                  | -        | STG0010            |
| 060  | Vedligeholdelse strømforsyningskondensatorer   | (kun for enheder med Turbocor kompressorer) Overskridelse af                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | S                  | -        | STG0053            |



| Kode | Beskrivelse                                             | Detaljer                                                                                                                                                                                                                                                                                                                                                                                                                                           | Genoprettelse | Handling | Tærskel |
|------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|---------|
|      |                                                         | vedligeholdelsesinterval vedrørende forsyningskondensatorer.                                                                                                                                                                                                                                                                                                                                                                                       |               |          |         |
| 061  | Offline driver til underafkøling / første stadiet nr. 1 | Driveren til styring af underafkølingen i 1. kredsløb / ventil i første stadiet på kompressor 1 er frakoblet (angår kun enheder med Turbocor kompressorer).                                                                                                                                                                                                                                                                                        | A             | CI       |         |
| 062  | Offline driver til underafkøling / første stadiet nr. 2 | "som ovenfor, for kredsløb nr. 2" / ventil i første stadiet på kompressor 2.                                                                                                                                                                                                                                                                                                                                                                       | A             | CI       |         |
| 063  | Offline driver til underafkøling / første stadiet nr. 3 | "som ovenfor, for kredsløb nr. 1" / ventil i første stadiet på kompressor 3.                                                                                                                                                                                                                                                                                                                                                                       | A             | CI       |         |
| 064  | Offline driver til underafkøling / første stadiet nr. 4 | "som ovenfor, for kredsløb nr. 2" / ventil i første stadiet på kompressor 4.                                                                                                                                                                                                                                                                                                                                                                       | A             | CI       |         |
| 065  | Lav vandmængde i kredsløb for genvinding                | Temperaturen ved indgangen til genvindingsanordningen ændrer sig for hurtigt som følge af den lave vandmængde i kredsløbet til genvinding.                                                                                                                                                                                                                                                                                                         | S             | -        |         |
| 066  | Lavt vandflow i kredsløb for genvinding                 | Angiver, at temperaturforskellen mellem genvindingsanordningens indgang og udgang er for høj, eller at vandflowet i genvindingsanordningen er for lav. Alarmen genoprettes automatisk 3 gange i løbet af en time, hvis genoprettelsen finder sted inden udløbet af det indstillede maks. tidsrum. I modsat fald sker genoprettelsen manuelt. Under frostbeskyttelse eller afdrypning med tændte kompressorer overgås der øjeblikkeligt til manuel. | A/M           | U*       | PMP0061 |
| 067  | Alarm antilegionær                                      | Antilegionærfunktionen har overskredet den maksimale indstillede tid (DHW0022) for det maksimalt tilladte antal cyklusser (DHW0021).                                                                                                                                                                                                                                                                                                               | S             | -        | DHW0021 |
| 068  | Fejl fra kontrol køledel                                | Alarm fra den primære styreenhed på enheder med modul +2P.<br>Hvis man vil se alarmen i detaljer og nulstille den, skal der skiftes til grænsefladen for den primære styreenhed ved hjælp af tastekombinationen <b>[ESC+UP]</b> .                                                                                                                                                                                                                  | S             | -        |         |
| 069  | Fejl fra kontrol luftdel                                | Angiver alarm fra styreenheden i luftdelen på enhederne rooftop.<br>Hvis man vil se alarmen i detaljer og nulstille den, skal der skiftes til grænsefladen for den primære styreenhed ved hjælp af tastekombinationen <b>[ESC+UP]</b> .                                                                                                                                                                                                            | S             | -        |         |
| 070  | Fejl fra kontrol modul +2P                              | Angiver en alarm fra styreenheden på modulet +2P.<br>Hvis man vil se alarmen i detaljer og nulstille den, skal der skiftes til grænsefladen for styreenhed +2P ved hjælp af tastekombinationen <b>[ESC+UP]</b> .                                                                                                                                                                                                                                   | S             | -        |         |
| 072  | Højt vandflow i genvindingskredsløbet                   | Angiver at vandflowet til genvindingsanordningen er for høj.                                                                                                                                                                                                                                                                                                                                                                                       | M             | U*       | PMP0060 |
| 075  | Frostbeskyttelse kondensator                            | Lav vandtemperatur ved udgang fra kondensatoren. Bortset fra W3000+ base er det også specificeret, hvilken kondensator (hvis der er mere end én), der påvirkes af alarmtilstanden.<br>Alarmen vises også, hvis frostbeskyttelse udløses mere end 5 gange i løbet af 8 arbejdstimer (enheder vand/vand med omstilling på side med freon).                                                                                                           | M             | U*       | STG0077 |
| 076  | Frostbeskyttelse genvindingsanordning                   | Lav vandtemperatur ved udgang fra genvindingsanordningen.                                                                                                                                                                                                                                                                                                                                                                                          | A             | U*       | STG0079 |
| 079  | Frakobling af styringsmodul anlæg VPF                   | Frakobling af modulet, der er beregnet til indstilling af vandflowet i det primære kredsløb                                                                                                                                                                                                                                                                                                                                                        | A             | -        |         |
| 080  | Fejl modul styring anlæg VPF                            | Fejl på modulet, der er beregnet til indstilling af vandflowet i det primære kredsløb.<br>Kontroller funktionsforstyrrelsen på modulets brugerflade.                                                                                                                                                                                                                                                                                               | A             | -        |         |

| Kode | Beskrivelse                                    | Detaljer                                                                                                                                                                                         | Genoprettelse | Handling | Tærskel |
|------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|---------|
| 081  | Termisk beskyttelse pumpe 1                    | Angiver overophedning af pumpe 1. (på enheder med kun én pumpe er pumpe 1 = fordamperens pumpe).                                                                                                 | M             | U*       |         |
| 082  | Termisk beskyttelse pumpe 2                    | (enheder med mere end en pumpe) angiver overophedning af pumpe 2.                                                                                                                                | M             | U*       |         |
| 085  | Termisk beskyttelse pumpe kondensator          | Angiver overophedning af kondensatorens pumpe (kun for vandkølede enheder).                                                                                                                      | M             | U        |         |
| 086  | Termisk beskyttelse pumpe genvindingsanordning | Angiver overophedning af genvindingsanordningens pumpe.                                                                                                                                          | M             | U*       |         |
| 087  | Termisk beskyttelse glykolpumpe                | Angiver overophedning af glykolpumpe (enheder med free-cooling).                                                                                                                                 | A             | FC*      |         |
| 090  | Frakobling slave                               | Angiver frakobling af slavekortet (kun for enheder med 3 eller 4 kredsløb). Frakobling af modul +2P, hvis enheden er udstyret med det.                                                           | A             | U        |         |
| 091  | Frakobling udvidelseskort 1                    | Angiver at udvidelseskort 1 på Master er frakoblet, master vises i enheden med 3 eller 4 kredsløb.                                                                                               | A             | U        |         |
| 092  | Frakobling udvidelseskort 2                    | "som ovenfor, for udvidelseskort nr. 2"                                                                                                                                                          | A             | U        |         |
| 093  | Frakobling udvidelseskort 3                    | "som ovenfor, for udvidelseskort nr. 3"                                                                                                                                                          | A             | U        |         |
| 094  | Frakobling udvidelseskort 4                    | "som ovenfor, for udvidelseskort nr. 4"                                                                                                                                                          | A             | U        |         |
| 095  | Frakobling udvidelseskort 5                    | "som ovenfor, for udvidelseskort nr. 5"                                                                                                                                                          | A             | U        |         |
| 100  | Frakobling energimåler                         | Angiver at energimåleren ikke er tilsluttet.                                                                                                                                                     | S             | -        |         |
| 101  | Frakobling udvidelseskort 1 slave              | Angiver frakobling af slavens udvidelseskort 1.                                                                                                                                                  | A             | U        |         |
| 102  | Frakobling udvidelseskort 2 slave              | "som ovenfor, for udvidelseskort nr. 2"                                                                                                                                                          | A             | U        |         |
| 103  | Frakobling udvidelseskort 3 slave              | "som ovenfor, for udvidelseskort nr. 3"                                                                                                                                                          | A             | U        |         |
| 104  | Frakobling udvidelseskort 4 slave              | "som ovenfor, for udvidelseskort nr. 4"                                                                                                                                                          | A             | U        |         |
| 105  | Frakobling udvidelseskort 5 slave              | "som ovenfor, for udvidelseskort nr. 5"                                                                                                                                                          | A             | U        |         |
| 106  | Frakobling modul P3                            | Angiver at modul P3 til administration af over 2 pumper er frakoblet.                                                                                                                            | A             | -        |         |
| 111  | Olie kompressor 1                              | Angiver manglende olie i kompressor 1 som følge af lavt olieniveau eller lavt olietryk i kompressoren.                                                                                           | A/M           | CO       |         |
| 112  | Olie kompressor 2                              | "som ovenfor, for kompressor nr. 2".                                                                                                                                                             | A/M           | CO       |         |
| 113  | Olie kompressor 3                              | "som ovenfor, for kompressor nr. 3".                                                                                                                                                             | A/M           | CO       |         |
| 114  | Olie kompressor 4                              | "som ovenfor, for kompressor nr. 4".                                                                                                                                                             | A/M           | CO       |         |
| 121  | Høj udløbstemperatur kompressor 1              | Angiver at udløbstemperaturen fra kompressor 1 er højere end den fastsatte tærskel.                                                                                                              | A/M           | CO       | SFT0009 |
| 122  | Høj udløbstemperatur kompressor 2              | "som ovenfor, for kompressor nr. 2".                                                                                                                                                             | A/M           | CO       |         |
| 123  | Høj udløbstemperatur kompressor 3              | "som ovenfor, for kompressor nr. 3".                                                                                                                                                             | A/M           | CO       |         |
| 124  | Høj udløbstemperatur kompressor 4              | "som ovenfor, for kompressor nr. 4".                                                                                                                                                             | A/M           | CO       |         |
| 125  | Høj udløbstemperatur kompressor 5              | "som ovenfor, for kompressor nr. 5".                                                                                                                                                             | A/M           | CO       |         |
| 126  | Høj udløbstemperatur kompressor 6              | "som ovenfor, for kompressor nr. 6".                                                                                                                                                             | A/M           | CO       |         |
| 127  | Høj udløbstemperatur kompressor 7              | "som ovenfor, for kompressor nr. 7".                                                                                                                                                             | A/M           | CO       |         |
| 128  | Høj udløbstemperatur kompressor 8              | "som ovenfor, for kompressor nr. 8".                                                                                                                                                             | A/M           | CO       |         |
| 131  | Funktionsfejl kompressor 1                     | Angiver overophedning af el-motoren eller funktionsforstyrrelse i kompressor 1. For enheder med Turbocor centrifugalkompressor kan der signaleres overophedning af varmelegemet på kompressoren. | M - A/M       | CO       |         |
| 132  | Funktionsfejl kompressor 2                     | "som ovenfor, for kompressor pumpe low lift nr. 2".                                                                                                                                              | M - A/M       | CO       |         |
| 133  | Funktionsfejl kompressor 3                     | "som ovenfor, for kompressor pumpe low lift nr. 3".                                                                                                                                              | M - A/M       | CO       |         |
| 134  | Funktionsfejl kompressor 4                     | "som ovenfor, for kompressor pumpe low lift nr. 4".                                                                                                                                              | M - A/M       | CO       |         |
| 135  | Funktionsfejl kompressor 5                     | "som ovenfor, for kompressor pumpe low lift nr. 5".                                                                                                                                              | M - A/M       | CO       |         |
| 136  | Funktionsfejl kompressor 6                     | "som ovenfor, for kompressor pumpe low lift nr. 6".                                                                                                                                              | M - A/M       | CO       |         |
| 137  | Funktionsfejl kompressor 7                     | "som ovenfor, for kompressor pumpe low lift nr. 7".                                                                                                                                              | M - A/M       | CO       |         |
| 138  | Funktionsfejl kompressor 8                     | "som ovenfor, for kompressor pumpe low lift nr. 8".                                                                                                                                              | M - A/M       | CO       |         |
| 141  | Offline kompressor 1                           | Angiver manglende kommunikation med kompressor 1 (kun for enheder med centrifugalkompressorer).                                                                                                  | A             | CO       |         |
| 142  | Offline kompressor 2                           | "som ovenfor, for kompressor nr. 2".                                                                                                                                                             | A             | CO       |         |
| 143  | Offline kompressor 3                           | "som ovenfor, for kompressor nr. 3".                                                                                                                                                             | A             | CO       |         |
| 144  | Offline kompressor 4                           | "som ovenfor, for kompressor nr. 4".                                                                                                                                                             | A             | CO       |         |
| 151  | Vedligeholdelse kompressor 1                   | Overskridelse af vedligeholdelsesinterval vedrørende kompressor nr. 1.                                                                                                                           | S             | -        | STG0013 |
| 152  | Vedligeholdelse kompressor 2                   | "som ovenfor, for kompressor nr. 2".                                                                                                                                                             | S             | -        | STG0018 |

| Kode | Beskrivelse                      | Detaljer                                                                                                                                                                                     | Genopret-<br>telse                | Handling | Tærskel             |
|------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------|---------------------|
| 153  | Vedligeholdelse kompressor 3     | "som ovenfor, for kompressor nr. 3".                                                                                                                                                         | S                                 | -        | STG0023             |
| 154  | Vedligeholdelse kompressor 4     | "som ovenfor, for kompressor nr. 4".                                                                                                                                                         | S                                 | -        | STG0028             |
| 155  | Vedligeholdelse kompressor 5     | "som ovenfor, for kompressor nr. 5".                                                                                                                                                         | S                                 | -        | STG0033             |
| 156  | Vedligeholdelse kompressor 6     | "som ovenfor, for kompressor nr. 6".                                                                                                                                                         | S                                 | -        | STG0038             |
| 157  | Vedligeholdelse kompressor 7     | "som ovenfor, for kompressor nr. 7".                                                                                                                                                         | S                                 | -        | STG0043             |
| 158  | Vedligeholdelse kompressor 8     | "som ovenfor, for kompressor nr. 8".                                                                                                                                                         | S                                 | -        | STG0048             |
| 161  | Forsyning til motor kompressor 1 | Alarm for motor på kompressor 1 (kun for enheder med Turbocor kompressorer).                                                                                                                 | A/B                               | CO       |                     |
| 162  | Forsyning til motor kompressor 2 | "som ovenfor, for kompressor nr. 2".                                                                                                                                                         | A/B                               | CO       |                     |
| 163  | Forsyning til motor kompressor 3 | "som ovenfor, for kompressor nr. 3".                                                                                                                                                         | A/B                               | CO       |                     |
| 164  | Forsyning til motor kompressor 4 | "som ovenfor, for kompressor nr. 4".                                                                                                                                                         | A/B                               | CO       |                     |
| 165  | Forsyning til motor kompressor 5 | "som ovenfor, for kompressor nr. 5".                                                                                                                                                         | A/B                               | CO       |                     |
| 166  | Forsyning til motor kompressor 6 | "som ovenfor, for kompressor nr. 6".                                                                                                                                                         | A/B                               | CO       |                     |
| 167  | Forsyning til motor kompressor 7 | "som ovenfor, for kompressor nr. 7".                                                                                                                                                         | A/B                               | CO       |                     |
| 168  | Forsyning til motor kompressor 8 | "som ovenfor, for kompressor nr. 8".                                                                                                                                                         | A/B                               | CO       |                     |
| 171  | Timeout start kompressor 1       | For Turbocor kompressorer: kompressor 1 ikke igangsat indenfor den bestemte grænse for Timeout.<br><br>For skruekompressorer: Muligt opstartsfor-<br>søg i fravær af freon kompressor nr. 1. | Turbocor:<br>A/M<br><br>skruer: A | CO       | 180s<br><br>SFT0003 |
| 172  | Timeout start kompressor 2       | "som ovenfor, for kompressor nr. 2".                                                                                                                                                         | Turbocor:<br>A/M<br><br>skruer: A | CO       | 180s<br><br>SFT0003 |
| 173  | Timeout start kompressor 3       | "som ovenfor, for kompressor nr. 3".                                                                                                                                                         | Turbocor:<br>A/M<br><br>skruer: A | CO       |                     |
| 174  | Timeout start kompressor 4       | "som ovenfor, for kompressor nr. 4".                                                                                                                                                         | Turbocor:<br>A/M<br><br>skruer: A | CO       |                     |
| 175  | Timeout start kompressor 5       | "som ovenfor, for kompressor nr. 5".                                                                                                                                                         | Turbocor:<br>A/M                  | CO       |                     |
| 176  | Timeout start kompressor 6       | "som ovenfor, for kompressor nr. 6".                                                                                                                                                         | Turbocor:<br>A/M                  | CO       |                     |
| 177  | Timeout start kompressor 7       | "som ovenfor, for kompressor nr. 7".                                                                                                                                                         | Turbocor:<br>A/M                  | CO       |                     |
| 178  | Timeout start kompressor 8       | "som ovenfor, for kompressor nr. 8".                                                                                                                                                         | Turbocor:<br>A/M                  | CO       |                     |
| 191  | Energispareaggregat kompressor 1 | Angiver højt kølemiddelniveau i energispareaggregatet på kompressor nr. 1.                                                                                                                   | A                                 | CO       |                     |
| 192  | Energispareaggregat kompressor 2 | "som ovenfor, for kompressor nr. 2".                                                                                                                                                         | A                                 | CO       |                     |
| 193  | Energispareaggregat kompressor 3 | "som ovenfor, for kompressor nr. 3".                                                                                                                                                         | A                                 | CO       |                     |
| 194  | Energispareaggregat kompressor 4 | "som ovenfor, for kompressor nr. 4".                                                                                                                                                         | A                                 | CO       |                     |
| 201  | Fejl kredsløb 1                  | Funktionsforstyrrelse ved indstilling af ventilationen på. kølekredsløb nr. 1.<br><b>Ret henvendelse til det nærmeste servicecenter.</b>                                                     | S                                 | -        |                     |
| 202  | Fejl kredsløb 2                  | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                           | S                                 | -        |                     |
| 203  | Fejl kredsløb 3                  | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                           | S                                 | -        |                     |
| 204  | Fejl kredsløb 4                  | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                           | S                                 | -        |                     |
| 211  | Højt tryk kredsløb 1             | Angiver højt tryk i 1. kølekredsløb                                                                                                                                                          | A/M                               | CI       |                     |
| 212  | Højt tryk kredsløb 2             | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                           | A/M                               | CI       |                     |
| 213  | Højt tryk kredsløb 3             | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                           | A/M                               | CI       |                     |
| 214  | Højt tryk kredsløb 4             | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                           | A/M                               | CI       |                     |
| 221  | fejl ventilatorer kredsløb 1     | Angiver en fejlfunktion på kondensationsventilatoren i det 1. kredsløb, hvilket medfører afbrydelse af systemet.                                                                             | M                                 | CI       |                     |
| 222  | fejl ventilatorer kredsløb 2     | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                           | M                                 | CI       |                     |
| 223  | fejl ventilatorer kredsløb 3     | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                           | M                                 | CI       |                     |
| 224  | fejl ventilatorer kredsløb 4     | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                           | M                                 | CI       |                     |
| 231  | Lavt tryk kredsløb 1             | Angiver lavt tryk, der registreres af transducere/trykafbryderen i kredsløb nr. 1.                                                                                                           | A/M                               | CI       | SFT0002<br>SFT0003  |
| 232  | Lavt tryk kredsløb 2             | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                           | A/M                               | CI       |                     |
| 233  | Lavt tryk kredsløb 3             | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                           | A/M                               | CI       |                     |
| 234  | Lavt tryk kredsløb 4             | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                           | A/M                               | CI       |                     |

| Kode | Beskrivelse                                     | Detaljer                                                                                                                                                                                    | Genopret-<br>telse                       | Handling | Tærskel                       |
|------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------|-------------------------------|
| 241  | Højt tryk fra transducer 1                      | Angiver højt tryk registreret af transduceren på 1. kølekredsløb.                                                                                                                           | A/M                                      | CI       | STG0057                       |
| 242  | Højt tryk fra transducer 2                      | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                          | A/M                                      | CI       |                               |
| 243  | Højt tryk fra transducer 3                      | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                          | A/M                                      | CI       |                               |
| 244  | Højt tryk fra transducer 4                      | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                          | A/M                                      | CI       |                               |
| 251  | Timeout start kredsløb 1                        | Muligt startforsøg ved mangel på freon i det 1. kredsløb.                                                                                                                                   | A                                        | CI       | SFT0003                       |
| 252  | Timeout start kredsløb 2                        | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                          | A                                        | CI       |                               |
| 253  | Timeout start kredsløb 3                        | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                          | A                                        | CI       |                               |
| 254  | Timeout start kredsløb 4                        | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                          | A                                        | CI       |                               |
| 261  | Mangel på freon kredsløb 1                      | Det er muligt, at kredsløb nr. 1 er tomt for freon, da alarmen "Timeout start" fortsætter i mindst 8 timer.                                                                                 | A                                        | CI       |                               |
| 262  | Mangel på freon kredsløb 2                      | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                          | A                                        | CI       |                               |
| 263  | Mangel på freon kredsløb 3                      | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                          | A                                        | CI       |                               |
| 264  | Mangel på freon kredsløb 4                      | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                          | A                                        | CI       |                               |
| 271  | Gruppe med ribber kredsløb 1                    | Angiver tilstopning af kondensationsgruppen i 1. kredsløb under frostbeskyttelse.                                                                                                           | S-M                                      | CI       | DFR0011                       |
| 272  | Gruppe med ribber kredsløb 2                    | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                          | S-M                                      | CI       |                               |
| 273  | Gruppe med ribber kredsløb 3                    | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                          | S-M                                      | CI       |                               |
| 274  | Gruppe med ribber kredsløb 4                    | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                          | S-M                                      | CI       |                               |
| 281  | Utilstrækkeligt fordampningstryk kredsløb nr. 1 | 1. kredsløb sandsynligvis tømt for freon, idet det fungerer ved et fordampningstryk, som er lavere end den indstillede tærskel.                                                             | M                                        | CI       | STG0068<br>STG0167<br>STG0168 |
| 282  | Utilstrækkeligt fordampningstryk kredsløb nr. 2 | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                          | M                                        | CI       |                               |
| 283  | Utilstrækkeligt fordampningstryk kredsløb nr. 3 | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                          | M                                        | CI       |                               |
| 284  | Utilstrækkeligt fordampningstryk kredsløb nr. 4 | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                          | M                                        | CI       |                               |
| 291  | For lavt freonindhold kredsløb 1                | Freonindholdet i det 1. kredsløb er for lavt, idet enheden har arbejdet under approach tærsklen.                                                                                            | A/M                                      | CI       | SFT0022                       |
| 292  | For lavt freonindhold kredsløb 2                | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                          | A/M                                      | CI       |                               |
| 293  | For lavt freonindhold kredsløb 3                | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                          | A/M                                      | CI       |                               |
| 294  | For lavt freonindhold kredsløb 4                | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                          | A/M                                      | CI       |                               |
| 301  | Temperatur inverter kompressor 1                | Overophedning af inverter i kompressor 1 (angår kun enheder med Turbocor kompressorer).                                                                                                     | A/M/B                                    | CO       |                               |
| 302  | Temperatur inverter kompressor 2                | "som ovenfor, for kompressor nr. 2".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 303  | Temperatur inverter kompressor 3                | "som ovenfor, for kompressor nr. 3".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 304  | Temperatur inverter kompressor 4                | "som ovenfor, for kompressor nr. 4".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 305  | Temperatur inverter kompressor 5                | "som ovenfor, for kompressor nr. 5".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 306  | Temperatur inverter kompressor 6                | "som ovenfor, for kompressor nr. 6".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 307  | Temperatur inverter kompressor 7                | "som ovenfor, for kompressor nr. 7".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 308  | Temperatur inverter kompressor 8                | "som ovenfor, for kompressor nr. 8".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 311  | Udløbstemperatur fra kompressor 1               | Overophedning af afløb på kompressor 1 (kun for enheder med Turbocor kompressorer).                                                                                                         | A/M/B                                    | CO       |                               |
| 312  | Udløbstemperatur fra kompressor 2               | "som ovenfor, for kompressor nr. 2".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 313  | Udløbstemperatur fra kompressor 3               | "som ovenfor, for kompressor nr. 3".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 314  | Udløbstemperatur fra kompressor 4               | "som ovenfor, for kompressor nr. 4".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 315  | Udløbstemperatur fra kompressor 5               | "som ovenfor, for kompressor nr. 5".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 316  | Udløbstemperatur fra kompressor 6               | "som ovenfor, for kompressor nr. 6".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 317  | Udløbstemperatur fra kompressor 7               | "som ovenfor, for kompressor nr. 7".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 318  | Udløbstemperatur fra kompressor 8               | "som ovenfor, for kompressor nr. 8".                                                                                                                                                        | A/M/B                                    | CO       |                               |
| 321  | Lavt tryk kompressor 1                          | For Turbocor-kompressorer: Sugetryk under minimumsgrænsen for kompressor nr. 1<br><br>For skruekompressorer: Angiver et lavt tryk i kompressor n°1, registreret af transducer/trykafbryder. | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |                               |
| 322  | Lavt tryk kompressor 2                          | "som ovenfor, for kompressor nr. 2".                                                                                                                                                        | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |                               |
| 323  | Lavt tryk kompressor 3                          | "som ovenfor, for kompressor nr. 3".                                                                                                                                                        | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |                               |

| Kode | Beskrivelse                   | Detaljer                                                                                                                                                                  | Genopret-<br>telse                       | Handling | Tærskel |
|------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------|---------|
| 324  | Lavt tryk kompressor 4        | "som ovenfor, for kompressor nr. 4".                                                                                                                                      | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 325  | Lavt tryk kompressor 5        | "som ovenfor, for kompressor nr. 5".                                                                                                                                      | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 326  | Lavt tryk kompressor 6        | "som ovenfor, for kompressor nr. 6".                                                                                                                                      | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 327  | Lavt tryk kompressor 7        | "som ovenfor, for kompressor nr. 7".                                                                                                                                      | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 328  | Lavt tryk kompressor 8        | "som ovenfor, for kompressor nr. 8".                                                                                                                                      | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 331  | Højt tryk kompressor 1        | For Turbocor-kompressorer:<br>Kompressionstryk over den maksimale<br>grænse for kompressor nr. 1<br><br>For skruekompressorer: Angiver et højt tryk i<br>kompressor nr. 1 | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 332  | Højt tryk kompressor 2        | "som ovenfor, for kompressor nr. 2".                                                                                                                                      | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 333  | Højt tryk kompressor 3        | "som ovenfor, for kompressor nr. 3".                                                                                                                                      | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 334  | Højt tryk kompressor 4        | "som ovenfor, for kompressor nr. 4".                                                                                                                                      | Turbocor:<br>A/M/B<br><br>Skruer:<br>A/M | CO       |         |
| 335  | Højt tryk kompressor 5        | "som ovenfor, for kompressor nr. 5".                                                                                                                                      | Turbocor:<br>A/M/B                       | CO       |         |
| 336  | Højt tryk kompressor 6        | "som ovenfor, for kompressor nr. 6".                                                                                                                                      | Turbocor:<br>A/M/B                       | CO       |         |
| 337  | Højt tryk kompressor 7        | "som ovenfor, for kompressor nr. 7".                                                                                                                                      | Turbocor:<br>A/M/B                       | CO       |         |
| 338  | Højt tryk kompressor 8        | "som ovenfor, for kompressor nr. 8".                                                                                                                                      | Turbocor:<br>A/M/B                       | CO       |         |
| 341  | Strømforsyning kompressor 1   | Strømforbruget i kompressor 1 er højere end<br>maks. grænsen (kun for enheder med<br>Turbocor kompressorer).                                                              | A/M/B                                    | CO       |         |
| 342  | Strømforsyning kompressor 2   | "som ovenfor, for kompressor nr. 2".                                                                                                                                      | A/M/B                                    | CO       |         |
| 343  | Strømforsyning kompressor 3   | "som ovenfor, for kompressor nr. 3".                                                                                                                                      | A/M/B                                    | CO       |         |
| 344  | Strømforsyning kompressor 4   | "som ovenfor, for kompressor nr. 4".                                                                                                                                      | A/M/B                                    | CO       |         |
| 345  | Strømforsyning kompressor 5   | "som ovenfor, for kompressor nr. 4".                                                                                                                                      | A/M/B                                    | CO       |         |
| 346  | Strømforsyning kompressor 6   | "som ovenfor, for kompressor nr. 4".                                                                                                                                      | A/M/B                                    | CO       |         |
| 347  | Strømforsyning kompressor 7   | "som ovenfor, for kompressor nr. 4".                                                                                                                                      | A/M/B                                    | CO       |         |
| 348  | Strømforsyning kompressor 8   | "som ovenfor, for kompressor nr. 4".                                                                                                                                      | A/M/B                                    | CO       |         |
| 351  | Temperatur rotor kompressor 1 | Temperaturen på rotoren på kompressor nr. 1<br>er højere end den maksimale grænse (kun for<br>enheder med Turbocor kompressorer).                                         | A/M/B                                    | CO       |         |
| 352  | Temperatur rotor kompressor 2 | "som ovenfor, for kompressor nr. 2".                                                                                                                                      | A/M/B                                    | CO       |         |
| 353  | Temperatur rotor kompressor 3 | "som ovenfor, for kompressor nr. 3".                                                                                                                                      | A/M/B                                    | CO       |         |

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|------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------|----------|---------|
| 354  | Temperatur rotor kompressor 4     | "som ovenfor, for kompressor nr. 4".                                                                                      | A/M/B              | CO       |         |
| 355  | Temperatur rotor kompressor 5     | "som ovenfor, for kompressor nr. 5".                                                                                      | A/M/B              | CO       |         |
| 356  | Temperatur rotor kompressor 6     | "som ovenfor, for kompressor nr. 6".                                                                                      | A/M/B              | CO       |         |
| 357  | Temperatur rotor kompressor 7     | "som ovenfor, for kompressor nr. 7".                                                                                      | A/M/B              | CO       |         |
| 358  | Temperatur rotor kompressor 8     | "som ovenfor, for kompressor nr. 8".                                                                                      | A/M/B              | CO       |         |
| 361  | Komprimeringsforhold kompressor 1 | Komprimeringsforholdet i kompressor nr. 1 er højere end den maksimale grænse (kun for enheder med Turbocor kompressorer). | A/M/B              | CO       |         |
| 362  | Komprimeringsforhold kompressor 2 | "som ovenfor, for kompressor nr. 2".                                                                                      | A/M/B              | CO       |         |
| 363  | Komprimeringsforhold kompressor 3 | "som ovenfor, for kompressor nr. 3".                                                                                      | A/M/B              | CO       |         |
| 364  | Komprimeringsforhold kompressor 4 | "som ovenfor, for kompressor nr. 4".                                                                                      | A/M/B              | CO       |         |
| 365  | Komprimeringsforhold kompressor 5 | "som ovenfor, for kompressor nr. 5".                                                                                      | A/M/B              | CO       |         |
| 366  | Komprimeringsforhold kompressor 6 | "som ovenfor, for kompressor nr. 6".                                                                                      | A/M/B              | CO       |         |
| 367  | Komprimeringsforhold kompressor 7 | "som ovenfor, for kompressor nr. 7".                                                                                      | A/M/B              | CO       |         |
| 368  | Komprimeringsforhold kompressor 8 | "som ovenfor, for kompressor nr. 8".                                                                                      | A/M/B              | CO       |         |
| 371  | Lejer kompressor 1                | Funktionsforstyrrelse i lejer i kompressor 1 (kun for enheder med Turbocor kompressorer).                                 | A/M/B              | CO       |         |
| 372  | Lejer kompressor 2                | "som ovenfor, for kompressor nr. 2".                                                                                      | A/M/B              | CO       |         |
| 373  | Lejer kompressor 3                | "som ovenfor, for kompressor nr. 3".                                                                                      | A/M/B              | CO       |         |
| 374  | Lejer kompressor 4                | "som ovenfor, for kompressor nr. 4".                                                                                      | A/M/B              | CO       |         |
| 375  | Lejer kompressor 5                | "som ovenfor, for kompressor nr. 5".                                                                                      | A/M/B              | CO       |         |
| 376  | Lejer kompressor 6                | "som ovenfor, for kompressor nr. 6".                                                                                      | A/M/B              | CO       |         |
| 377  | Lejer kompressor 7                | "som ovenfor, for kompressor nr. 7".                                                                                      | A/M/B              | CO       |         |
| 378  | Lejer kompressor 8                | "som ovenfor, for kompressor nr. 8".                                                                                      | A/M/B              | CO       |         |
| 381  | SCR temperatur kompressor 1       | Temperaturen for SCR på kompressor nr. 1 er højere end den maksimale grænse (kun for enheder med Turbocor kompressorer).  | A/M/B              | CO       |         |
| 382  | SCR temperatur kompressor 2       | "som ovenfor, for kompressor nr. 2".                                                                                      | A/M/B              | CO       |         |
| 383  | SCR temperatur kompressor 3       | "som ovenfor, for kompressor nr. 3".                                                                                      | A/M/B              | CO       |         |
| 384  | SCR temperatur kompressor 4       | "som ovenfor, for kompressor nr. 4".                                                                                      | A/M/B              | CO       |         |
| 385  | SCR temperatur kompressor 5       | "som ovenfor, for kompressor nr. 5".                                                                                      | A/M/B              | CO       |         |
| 386  | SCR temperatur kompressor 6       | "som ovenfor, for kompressor nr. 6".                                                                                      | A/M/B              | CO       |         |
| 387  | SCR temperatur kompressor 7       | "som ovenfor, for kompressor nr. 7".                                                                                      | A/M/B              | CO       |         |
| 388  | SCR temperatur kompressor 8       | "som ovenfor, for kompressor nr. 8".                                                                                      | A/M/B              | CO       |         |
| 391  | Blokering af rotor kompressor 1   | Kompressor nr. 1 er blokeret (kun for enheder med Turbocor kompressorer).                                                 | A/M/B              | CO       |         |
| 392  | Blokering af rotor kompressor 2   | "som ovenfor, for kompressor nr. 2".                                                                                      | A/M/B              | CO       |         |
| 393  | Blokering af rotor kompressor 3   | "som ovenfor, for kompressor nr. 3".                                                                                      | A/M/B              | CO       |         |
| 394  | Blokering af rotor kompressor 4   | "som ovenfor, for kompressor nr. 4".                                                                                      | A/M/B              | CO       |         |
| 395  | Blokering af rotor kompressor 5   | "som ovenfor, for kompressor nr. 5".                                                                                      | A/M/B              | CO       |         |
| 396  | Blokering af rotor kompressor 6   | "som ovenfor, for kompressor nr. 6".                                                                                      | A/M/B              | CO       |         |
| 397  | Blokering af rotor kompressor 7   | "som ovenfor, for kompressor nr. 7".                                                                                      | A/M/B              | CO       |         |
| 398  | Blokering af rotor kompressor 8   | "som ovenfor, for kompressor nr. 8".                                                                                      | A/M/B              | CO       |         |
| 400  | Fejl sonde 10                     | Fejl sonde 10. Værdierne, som aflæses af sonde 10, overskrider grænserne.                                                 | A                  | *        |         |
| 401  | Fejl sonde 1                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 402  | Fejl sonde 2                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 403  | Fejl sonde 3                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 404  | Fejl sonde 4                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 405  | Fejl sonde 5                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 406  | Fejl sonde 6                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 407  | Fejl sonde 7                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 408  | Fejl sonde 8                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 409  | Fejl sonde 9                      | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 410  | Exp 1 Fejl sonde 10               | Fejl sonde 10, udvidelseskort 1.                                                                                          | A                  | *        |         |
| 411  | Exp 1 Fejl sonde 1                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 412  | Exp 1 Fejl sonde 2                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 413  | Exp 1 Fejl sonde 3                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 414  | Exp 1 Fejl sonde 4                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 415  | Exp 1 Fejl sonde 5                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 416  | Exp 1 Fejl sonde 6                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 417  | Exp 1 Fejl sonde 7                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 418  | Exp 1 Fejl sonde 8                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 419  | Exp 1 Fejl sonde 9                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 420  | Exp 2 Fejl sonde 10               | "analog, som ovenfor".                                                                                                    | A                  | *        |         |
| 421  | Exp 2 Fejl sonde 1                | "analog, som ovenfor".                                                                                                    | A                  | *        |         |



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| 422  | Exp 2 Fejl sonde 2        | "analog, som ovenfor".                                         | A                  | *        |         |
| 423  | Exp 2 Fejl sonde 3        | "analog, som ovenfor".                                         | A                  | *        |         |
| 424  | Exp 2 Fejl sonde 4        | "analog, som ovenfor".                                         | A                  | *        |         |
| 425  | Exp 2 Fejl sonde 5        | "analog, som ovenfor".                                         | A                  | *        |         |
| 426  | Exp 2 Fejl sonde 6        | "analog, som ovenfor".                                         | A                  | *        |         |
| 427  | Exp 2 Fejl sonde 7        | "analog, som ovenfor".                                         | A                  | *        |         |
| 428  | Exp 2 Fejl sonde 8        | "analog, som ovenfor".                                         | A                  | *        |         |
| 429  | Exp 2 Fejl sonde 9        | "analog, som ovenfor".                                         | A                  | *        |         |
| 430  | Exp 3 Fejl sonde 10       | "analog, som ovenfor".                                         | A                  | *        |         |
| 431  | Exp 3 Fejl sonde 1        | "analog, som ovenfor".                                         | A                  | *        |         |
| 432  | Exp 3 Fejl sonde 2        | "analog, som ovenfor".                                         | A                  | *        |         |
| 433  | Exp 3 Fejl sonde 3        | "analog, som ovenfor".                                         | A                  | *        |         |
| 434  | Exp 3 Fejl sonde 4        | "analog, som ovenfor".                                         | A                  | *        |         |
| 435  | Exp 3 Fejl sonde 5        | "analog, som ovenfor".                                         | A                  | *        |         |
| 436  | Exp 3 Fejl sonde 6        | "analog, som ovenfor".                                         | A                  | *        |         |
| 437  | Exp 3 Fejl sonde 7        | "analog, som ovenfor".                                         | A                  | *        |         |
| 438  | Exp 3 Fejl sonde 8        | "analog, som ovenfor".                                         | A                  | *        |         |
| 439  | Exp 3 Fejl sonde 9        | "analog, som ovenfor".                                         | A                  | *        |         |
| 440  | Exp 4 Fejl sonde 10       | "analog, som ovenfor".                                         | A                  | *        |         |
| 441  | Exp 4 Fejl sonde 1        | "analog, som ovenfor".                                         | A                  | *        |         |
| 442  | Exp 4 Fejl sonde 2        | "analog, som ovenfor".                                         | A                  | *        |         |
| 443  | Exp 4 Fejl sonde 3        | "analog, som ovenfor".                                         | A                  | *        |         |
| 444  | Exp 4 Fejl sonde 4        | "analog, som ovenfor".                                         | A                  | *        |         |
| 445  | Exp 4 Fejl sonde 5        | "analog, som ovenfor".                                         | A                  | *        |         |
| 446  | Exp 4 Fejl sonde 6        | "analog, som ovenfor".                                         | A                  | *        |         |
| 447  | Exp 4 Fejl sonde 7        | "analog, som ovenfor".                                         | A                  | *        |         |
| 448  | Exp 4 Fejl sonde 8        | "analog, som ovenfor".                                         | A                  | *        |         |
| 449  | Exp 4 Fejl sonde 9        | "analog, som ovenfor".                                         | A                  | *        |         |
| 450  | Exp 5 Fejl sonde 10       | "analog, som ovenfor".                                         | A                  | *        |         |
| 451  | Exp 5 Fejl sonde 1        | "analog, som ovenfor".                                         | A                  | *        |         |
| 452  | Exp 5 Fejl sonde 2        | "analog, som ovenfor".                                         | A                  | *        |         |
| 453  | Exp 5 Fejl sonde 3        | "analog, som ovenfor".                                         | A                  | *        |         |
| 454  | Exp 5 Fejl sonde 4        | "analog, som ovenfor".                                         | A                  | *        |         |
| 455  | Exp 5 Fejl sonde 5        | "analog, som ovenfor".                                         | A                  | *        |         |
| 456  | Exp 5 Fejl sonde 6        | "analog, som ovenfor".                                         | A                  | *        |         |
| 457  | Exp 5 Fejl sonde 7        | "analog, som ovenfor".                                         | A                  | *        |         |
| 458  | Exp 5 Fejl sonde 8        | "analog, som ovenfor".                                         | A                  | *        |         |
| 459  | Exp 5 Fejl sonde 9        | "analog, som ovenfor".                                         | A                  | *        |         |
| 460  | Fejl sonde 11             | Fejl sonde 11                                                  | A                  | *        |         |
| 461  | Fejl sonde 12             | Fejl sonde 12                                                  | A                  | *        |         |
| 500  | Slave Fejl sonde 10       | Fejl sonde 10 i slave kun for enheder med mere end 2 kredsløb. | A                  | *        |         |
| 501  | Slave Fejl sonde 1        | "analog, som ovenfor".                                         | A                  | *        |         |
| 502  | Slave Fejl sonde 2        | "analog, som ovenfor".                                         | A                  | *        |         |
| 503  | Slave Fejl sonde 3        | "analog, som ovenfor".                                         | A                  | *        |         |
| 504  | Slave Fejl sonde 4        | "analog, som ovenfor".                                         | A                  | *        |         |
| 505  | Slave Fejl sonde 5        | "analog, som ovenfor".                                         | A                  | *        |         |
| 506  | Slave Fejl sonde 6        | "analog, som ovenfor".                                         | A                  | *        |         |
| 507  | Slave Fejl sonde 7        | "analog, som ovenfor".                                         | A                  | *        |         |
| 508  | Slave Fejl sonde 8        | "analog, som ovenfor".                                         | A                  | *        |         |
| 509  | Slave Fejl sonde 9        | "analog, som ovenfor".                                         | A                  | *        |         |
| 510  | Exp 1 Slave fejl sonde 10 | Fejl sonde 10, udvidelseskort 1, forbundet med slave.          | A                  | *        |         |
| 511  | Exp 1 Slave fejl sonde 1  | "analog, som ovenfor".                                         | A                  | *        |         |
| 512  | Exp 1 Slave fejl sonde 2  | "analog, som ovenfor".                                         | A                  | *        |         |
| 513  | Exp 1 Slave fejl sonde 3  | "analog, som ovenfor".                                         | A                  | *        |         |
| 514  | Exp 1 Slave fejl sonde 4  | "analog, som ovenfor".                                         | A                  | *        |         |
| 515  | Exp 1 Slave fejl sonde 5  | "analog, som ovenfor".                                         | A                  | *        |         |
| 516  | Exp 1 Slave fejl sonde 6  | "analog, som ovenfor".                                         | A                  | *        |         |
| 517  | Exp 1 Slave fejl sonde 7  | "analog, som ovenfor".                                         | A                  | *        |         |
| 518  | Exp 1 Slave fejl sonde 8  | "analog, som ovenfor".                                         | A                  | *        |         |
| 519  | Exp 1 Slave fejl sonde 9  | "analog, som ovenfor".                                         | A                  | *        |         |
| 520  | Exp 2 Slave fejl sonde 10 | "analog, som ovenfor".                                         | A                  | *        |         |
| 521  | Exp 2 Slave fejl sonde 1  | "analog, som ovenfor".                                         | A                  | *        |         |
| 522  | Exp 2 Slave fejl sonde 2  | "analog, som ovenfor".                                         | A                  | *        |         |
| 523  | Exp 2 Slave fejl sonde 3  | "analog, som ovenfor".                                         | A                  | *        |         |
| 524  | Exp 2 Slave fejl sonde 4  | "analog, som ovenfor".                                         | A                  | *        |         |

| Kode | Beskrivelse                            | Detaljer                                                                                                                                                                             | Genopret-<br>telse | Handling | Tærskel |
|------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|---------|
| 525  | Exp 2 Slave fejl sonde 5               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 526  | Exp 2 Slave fejl sonde 6               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 527  | Exp 2 Slave fejl sonde 7               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 528  | Exp 2 Slave fejl sonde 8               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 529  | Exp 2 Slave fejl sonde 9               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 530  | Exp 3 Slave fejl sonde 10              | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 531  | Exp 3 Slave fejl sonde 1               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 532  | Exp 3 Slave fejl sonde 2               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 533  | Exp 3 Slave fejl sonde 3               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 534  | Exp 3 Slave fejl sonde 4               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 535  | Exp 3 Slave fejl sonde 5               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 536  | Exp 3 Slave fejl sonde 6               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 537  | Exp 3 Slave fejl sonde 7               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 538  | Exp 3 Slave fejl sonde 8               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 539  | Exp 3 Slave fejl sonde 9               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 540  | Exp 4 Slave fejl sonde 10              | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 541  | Exp 4 Slave fejl sonde 1               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 542  | Exp 4 Slave fejl sonde 2               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 543  | Exp 4 Slave fejl sonde 3               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 544  | Exp 4 Slave fejl sonde 4               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 545  | Exp 4 Slave fejl sonde 5               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 546  | Exp 4 Slave fejl sonde 6               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 547  | Exp 4 Slave fejl sonde 7               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 548  | Exp 4 Slave fejl sonde 8               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 549  | Exp 4 Slave fejl sonde 9               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 550  | Exp 5 Slave fejl sonde 10              | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 551  | Exp 5 Slave fejl sonde 1               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 552  | Exp 5 Slave fejl sonde 2               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 553  | Exp 5 Slave fejl sonde 3               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 554  | Exp 5 Slave fejl sonde 4               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 555  | Exp 5 Slave fejl sonde 5               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 556  | Exp 5 Slave fejl sonde 6               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 557  | Exp 5 Slave fejl sonde 7               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 558  | Exp 5 Slave fejl sonde 8               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 559  | Exp 5 Slave fejl sonde 9               | "analog, som ovenfor".                                                                                                                                                               | A                  | *        |         |
| 580  | Fejl temperaturføler zone HT           | Angiver en fejl i temperatursonden for HT-zonen.                                                                                                                                     | A                  | GR       |         |
| 581  | Fejl temperaturføler zone LT           | Angiver en fejl i temperatursonden for LT-zonen.                                                                                                                                     | A                  | GR       |         |
| 582  | Fejl fugtighedsføler zone HT           | Angiver en fejl i den relative fugtighedssone i HT-zonen.                                                                                                                            | A                  | GR       |         |
| 583  | Fejl fugtighedsføler zone LT           | Angiver en fejl i den relative fugtighedssone i LT-zonen.                                                                                                                            | A                  | GR       |         |
| 590  | Maksimal temperatur i blandet kredsløb | Angiver, at vandtemperaturen i det blandede kredsløb (LT) har overskredet den maksimale indstillede værdi.                                                                           | A                  | GR       | STG0185 |
| 602  | Seriell afbrydelse BMS2                | Angiver tab af kommunikation med den enhed, der er tilsluttet den serielle port på BMS2.                                                                                             | S                  | -        |         |
| 611  | For-alarm Frostbeskyttelse fordamper 1 | For-alarm, der indikerer lav vandtemperatur ved udgangen på fordamperen. Endvidere specificeres det, hvilken fordamper (hvis der er tale om mere end en) der er omfattet af alarmen. | S                  | PR       |         |
| 612  | For-alarm Frostbeskyttelse fordamper 2 | "som ovenfor, for fordamper nr. 2".                                                                                                                                                  | S                  | PR       |         |
| 613  | For-alarm Frostbeskyttelse fordamper 3 | "som ovenfor, for fordamper nr. 3".                                                                                                                                                  | S                  | PR       |         |
| 614  | For-alarm Frostbeskyttelse fordamper 4 | "som ovenfor, for fordamper nr. 4".                                                                                                                                                  | S                  | PR       |         |
| 631  | For-alarm Lavt tryk kredsløb 1         | For-alarm som signalerer, at transducere har registreret et højt tryk i kredsløb nr. 1.                                                                                              | S                  | PR       |         |
| 632  | For-alarm Lavt tryk kredsløb 2         | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                   | S                  | PR       |         |
| 633  | For-alarm Lavt tryk kredsløb 3         | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                   | S                  | PR       |         |
| 634  | For-alarm Lavt tryk kredsløb 4         | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                   | S                  | PR       |         |
| 641  | For-alarm Højt tryk kredsløb 1         | For-alarm som signalerer, at transducere har registreret et lavt tryk i kredsløb nr. 1.                                                                                              | S                  | PR       |         |
| 642  | For-alarm Højt tryk kredsløb 2         | "som ovenfor, for kredsløb nr. 2".                                                                                                                                                   | S                  | PR       |         |
| 643  | For-alarm Højt tryk kredsløb 3         | "som ovenfor, for kredsløb nr. 3".                                                                                                                                                   | S                  | PR       |         |
| 644  | For-alarm Højt tryk kredsløb 4         | "som ovenfor, for kredsløb nr. 4".                                                                                                                                                   | S                  | PR       |         |



| Kode | Beskrivelse                                                                      | Detaljer                                                                                                                            | Genopret-<br>telse | Handling | Tærskel |
|------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|---------|
| 651  | Kontrol indhylling: Lav overophedning ved fremløb til kompressorer på kredsløb 1 | Angiver at kompressorerne i kredsløb 1 kører med en for lav værdi for overopvarmning (afhængigt af det aktive kompressionsforhold). | M                  | CI       |         |
| 652  | Kontrol indhylling: Lav overophedning ved fremløb til kompressorer på kredsløb 2 | "som ovenfor, for kredsløb nr. 2".                                                                                                  | M                  | CI       |         |
| 653  | Kontrol indhylling: Lav overophedning ved fremløb til kompressorer på kredsløb 3 | "som ovenfor, for kredsløb nr. 3".                                                                                                  | M                  | CI       |         |
| 654  | Kontrol indhylling: Lav overophedning ved fremløb til kompressorer på kredsløb 4 | "som ovenfor, for kredsløb nr. 4".                                                                                                  | M                  | CI       |         |
| 661  | Kontrol indhylling: Høj overophedning ved fremløb til kompressorer på kredsløb 1 | Kompressorerne i 1. kredsløb fungerer med en for høj værdi for overophedning (afhængigt af det aktiverede komprimeringsforhold).    | M                  | CI       |         |
| 662  | Kontrol indhylling: Høj overophedning ved fremløb til kompressorer på kredsløb 2 | "som ovenfor, for kredsløb nr. 2".                                                                                                  | M                  | CI       |         |
| 663  | Kontrol indhylling: Høj overophedning ved fremløb til kompressorer på kredsløb 3 | "som ovenfor, for kredsløb nr. 3".                                                                                                  | M                  | CI       |         |
| 664  | Kontrol indhylling: Høj overophedning ved fremløb til kompressorer på kredsløb 4 | "som ovenfor, for kredsløb nr. 4".                                                                                                  | M                  | CI       |         |
| 671  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressorer på kredsløb 1   | Angiver at kompressorerne på kølekredsløb nr. 1 kører over den tilladte grænse.                                                     | M                  | CI       |         |
| 672  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressorer på kredsløb 2   | "som ovenfor, for kredsløb nr. 2".                                                                                                  | M                  | CI       |         |
| 673  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressorer på kredsløb 3   | "som ovenfor, for kredsløb nr. 3".                                                                                                  | M                  | CI       |         |
| 674  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressorer på kredsløb 4   | "som ovenfor, for kredsløb nr. 4".                                                                                                  | M                  | CI       |         |
| 681  | Alarm indhylling kompressor 1                                                    | Angiver at kompressor nr. 1 kører over den tilladte grænse.                                                                         | A/M                | CO       |         |
| 682  | Alarm indhylling kompressor 2                                                    | "som ovenfor, for kompressor nr. 2".                                                                                                | A/M                | CO       |         |
| 683  | Alarm indhylling kompressor 3                                                    | "som ovenfor, for kompressor nr. 3".                                                                                                | A/M                | CO       |         |
| 684  | Alarm indhylling kompressor 4                                                    | "som ovenfor, for kompressor nr. 4".                                                                                                | A/M                | CO       |         |
| 701  | Offline inverter 1                                                               | Angiver manglende kommunikation med inverter på kompressor 1 (kun for enheder med kompressorer med inverter).                       | A                  | CO       |         |
| 702  | Offline inverter 2                                                               | "som ovenfor, for kompressor nr. 2".                                                                                                | A                  | CO       |         |
| 703  | Offline inverter 3                                                               | "som ovenfor, for kompressor nr. 3".                                                                                                | A                  | CO       |         |
| 704  | Offline inverter 4                                                               | "som ovenfor, for kompressor nr. 4".                                                                                                | A                  | CO       |         |
| 711  | Alarm for forsyning til inverter 1 (**)                                          | Manglende kommunikation med inverteren i kompressor 1 (kun for enheder med kompressorer med inverter).                              | A/M*               | CO       |         |
| 712  | Alarm for forsyning til inverter 2 (**)                                          | "som ovenfor, for kompressor nr. 2".                                                                                                | A/M*               | CO       |         |
| 713  | Alarm for forsyning til inverter 3 (**)                                          | "som ovenfor, for kompressor nr. 3".                                                                                                | A/M*               | CO       |         |
| 714  | Alarm for forsyning til inverter 4 (**)                                          | "som ovenfor, for kompressor nr. 4".                                                                                                | A/M*               | CO       |         |
| 721  | Alarm for forsyning til motor for inverter 1 (**)                                | Funktionsforstyrrelse i forsyning til inverter i kompressor 1 (kun for enheder med kompressorer med inverter).                      | A/M*               | CO       |         |
| 722  | Alarm for forsyning til motor for inverter 2 (**)                                | "som ovenfor, for kompressor nr. 2".                                                                                                | A/M*               | CO       |         |
| 723  | Alarm for forsyning til motor for inverter 3 (**)                                | "som ovenfor, for kompressor nr. 3".                                                                                                | A/M*               | CO       |         |
| 724  | Alarm for forsyning til motor for inverter 4 (**)                                | "som ovenfor, for kompressor nr. 4".                                                                                                | A/M*               | CO       |         |
| 731  | Alarm for strømforsyning til inverter 1 (**)                                     | Overbelastning af variator i inverter i kompressor 1 (kun for enheder med kompressorer med inverter).                               | M                  | CO       |         |
| 732  | Alarm for strømforsyning til inverter 2 (**)                                     | "som ovenfor, for kompressor nr. 2".                                                                                                | M                  | CO       |         |
| 733  | Alarm for strømforsyning til inverter 3 (**)                                     | "som ovenfor, for kompressor nr. 3".                                                                                                | M                  | CO       |         |
| 734  | Alarm for strømforsyning til inverter 4 (**)                                     | "som ovenfor, for kompressor nr. 4".                                                                                                | M                  | CO       |         |
| 741  | Alarm for termisk beskyttelse i ensretter i inverter 1 (**)                      | Overbelastning af udretter på inverter i kompressor 1 (kun for enheder med kompressorer med inverter).                              | M                  | CO       |         |
| 742  | Alarm for termisk beskyttelse i ensretter i inverter 2 (**)                      | "som ovenfor, for kompressor nr. 2".                                                                                                | M                  | CO       |         |
| 743  | Alarm for termisk beskyttelse i ensretter i inverter 3 (**)                      | "som ovenfor, for kompressor nr. 3".                                                                                                | M                  | CO       |         |
| 744  | Alarm for termisk beskyttelse i ensretter i inverter 4 (**)                      | "som ovenfor, for kompressor nr. 4".                                                                                                | M                  | CO       |         |
| 751  | Alarm for termisk beskyttelse i motor i inverter 1 (**)                          | Overbelastning af motor på kompressor 1 (kun for enheder med kompressorer med inverter).                                            | M                  | CO       |         |

| Kode | Beskrivelse                                                | Detaljer                                                                                                                | Genopret-<br>telse | Handling | Tærskel |
|------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------|----------|---------|
| 752  | Alarm for termisk beskyttelse i motor i inverter 2 (**)    | "som ovenfor, for kompressor nr. 2".                                                                                    | M                  | CO       |         |
| 753  | Alarm for termisk beskyttelse i motor i inverter 3 (**)    | "som ovenfor, for kompressor nr. 3".                                                                                    | M                  | CO       |         |
| 754  | Alarm for termisk beskyttelse i motor i inverter 4 (**)    | "som ovenfor, for kompressor nr. 4".                                                                                    | M                  | CO       |         |
| 761  | Alarm for termisk beskyttelse i variator i inverter 1 (**) | Termisk beskyttelse på variator på inverter på kompressor 1 (kun for enheder med kompressorer med inverter).            | M                  | CO       |         |
| 762  | Alarm for termisk beskyttelse i variator i inverter 2 (**) | "som ovenfor, for kompressor nr. 2".                                                                                    | M                  | CO       |         |
| 763  | Alarm for termisk beskyttelse i variator i inverter 3 (**) | "som ovenfor, for kompressor nr. 3".                                                                                    | M                  | CO       |         |
| 764  | Alarm for termisk beskyttelse i variator i inverter 4 (**) | "som ovenfor, for kompressor nr. 4".                                                                                    | M                  | CO       |         |
| 771  | Alarm for IGBT til inverter 1 (**)                         | IGBT-fejl på inverter på kompressor nr. 1 (kun for enheder med kompressorer med inverter).                              | M                  | CO       |         |
| 772  | Alarm for IGBT til inverter 2 (**)                         | "som ovenfor, for kompressor nr. 2".                                                                                    | M                  | CO       |         |
| 773  | Alarm for IGBT til inverter 3 (**)                         | "som ovenfor, for kompressor nr. 3".                                                                                    | M                  | CO       |         |
| 774  | Alarm for IGBT til inverter 4 (**)                         | "som ovenfor, for kompressor nr. 4".                                                                                    | M                  | CO       |         |
| 781  | Alarm for statormodstand i inverter 1 (**)                 | Fejl på statormodstand på inverter på kompressor nr. 1 (kun for enheder med kompressorer med inverter).                 | M                  | CO       |         |
| 782  | Alarm for statormodstand i inverter 2 (**)                 | "som ovenfor, for kompressor nr. 2".                                                                                    | M                  | CO       |         |
| 783  | Alarm for statormodstand i inverter 3 (**)                 | "som ovenfor, for kompressor nr. 3".                                                                                    | M                  | CO       |         |
| 784  | Alarm for statormodstand i inverter 4 (**)                 | "som ovenfor, for kompressor nr. 4".                                                                                    | M                  | CO       |         |
| 791  | Alarm for høj hastighed i inverter 1 (**)                  | Fejl på overhastighed på inverter på kompressor nr. 1 (kun for enheder med kompressorer med inverter).                  | M                  | CO       |         |
| 792  | Alarm for høj hastighed i inverter 2 (**)                  | "som ovenfor, for kompressor nr. 2".                                                                                    | M                  | CO       |         |
| 793  | Alarm for høj hastighed i inverter 3 (**)                  | "som ovenfor, for kompressor nr. 3".                                                                                    | M                  | CO       |         |
| 794  | Alarm for høj hastighed i inverter 4 (**)                  | "som ovenfor, for kompressor nr. 4".                                                                                    | M                  | CO       |         |
| 801  | Alarm for feltbus i inverter 1 (**)                        | Fejl på feltbus på inverteren på kompressor nr. 1 (kun for enheder med kompressorer med inverter).                      | A/M*               | CO       |         |
| 802  | Alarm for feltbus i inverter 2 (**)                        | "som ovenfor, for kompressor nr. 2".                                                                                    | A/M*               | CO       |         |
| 803  | Alarm for feltbus i inverter 3 (**)                        | "som ovenfor, for kompressor nr. 3".                                                                                    | A/M*               | CO       |         |
| 804  | Alarm for feltbus i inverter 4 (**)                        | "som ovenfor, for kompressor nr. 4".                                                                                    | A/M*               | CO       |         |
| 811  | Alarm for kommunikation med inverter 1 (**)                | Funktionsforstyrrelse i feltbus på inverter i kompressor 1 (kun for enheder med kompressorer med inverter).             | A/M*               | CO       |         |
| 812  | Alarm for kommunikation med inverter 2 (**)                | "som ovenfor, for kompressor nr. 2".                                                                                    | A/M*               | CO       |         |
| 813  | Alarm for kommunikation med inverter 3 (**)                | "som ovenfor, for kompressor nr. 3".                                                                                    | A/M*               | CO       |         |
| 814  | Alarm for kommunikation med inverter 4 (**)                | "som ovenfor, for kompressor nr. 4".                                                                                    | A/M*               | CO       |         |
| 821  | Alarm for sikkerhedsindgang til inverter 1 (**)            | Funktionsforstyrrelse sikkerhedsindgang på inverter i kompressor nr. 1 (kun for enheder med kompressorer med inverter). | A/M*               | CO       |         |
| 822  | Alarm for sikkerhedsindgang til inverter 2 (**)            | "som ovenfor, for kompressor nr. 2".                                                                                    | A/M*               | CO       |         |
| 823  | Alarm for sikkerhedsindgang til inverter 3 (**)            | "som ovenfor, for kompressor nr. 3".                                                                                    | A/M*               | CO       |         |
| 824  | Alarm for sikkerhedsindgang til inverter 4 (**)            | "som ovenfor, for kompressor nr. 4".                                                                                    | A/M*               | CO       |         |
| 831  | Alarm for autokalibrering af inverter 1 (**)               | Selvkalibreringsfejl på inverter i kompressor nr. 1 (kun for enheder med kompressorer med inverter).                    | M                  | CO       |         |
| 832  | Alarm for autokalibrering af inverter 2 (**)               | "som ovenfor, for kompressor nr. 2".                                                                                    | M                  | CO       |         |
| 833  | Alarm for autokalibrering af inverter 3 (**)               | "som ovenfor, for kompressor nr. 3".                                                                                    | M                  | CO       |         |
| 834  | Alarm for autokalibrering af inverter 4 (**)               | "som ovenfor, for kompressor nr. 4".                                                                                    | M                  | CO       |         |
| 841  | Alarm for kontrarotation i inverter 1 (**)                 | Modrotationsfejl på inverter i kompressor nr. 1 (kun for enheder med kompressorer med inverter).                        | M                  | CO       |         |
| 842  | Alarm for kontrarotation i inverter 2 (**)                 | "som ovenfor, for kompressor nr. 2".                                                                                    | M                  | CO       |         |
| 843  | Alarm for kontrarotation i inverter 3 (**)                 | "som ovenfor, for kompressor nr. 3".                                                                                    | M                  | CO       |         |
| 844  | Alarm for kontrarotation i inverter 4 (**)                 | "som ovenfor, for kompressor nr. 4".                                                                                    | M                  | CO       |         |
| 851  | Generel alarm for inverter 1 (**)                          | Generisk alarm på inverter i kompressor nr. 1 (kun for enheder med kompressorer med inverter).                          | A/M*               | CO       |         |
| 852  | Generel alarm for inverter 2 (**)                          | "som ovenfor, for kompressor nr. 2".                                                                                    | A/M*               | CO       |         |
| 853  | Generel alarm for inverter 3 (**)                          | "som ovenfor, for kompressor nr. 3".                                                                                    | A/M*               | CO       |         |
| 854  | Generel alarm for inverter 4 (**)                          | "som ovenfor, for kompressor nr. 4".                                                                                    | A/M*               | CO       |         |

| Kode | Beskrivelse                                                         | Detaljer                                                                                                             | Genopret<br>telse | Handling | Tærskel |
|------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------|----------|---------|
| 871  | Højt tryk transducer kompressor 1                                   | Angiver højt tryk for kompressor nr. 1                                                                               | A/M               | CO       | STG0057 |
| 872  | Højt tryk transducer kompressor 2                                   | "som ovenfor, for kompressor nr. 2".                                                                                 | A/M               | CO       |         |
| 873  | Højt tryk transducer kompressor 3                                   | "som ovenfor, for kompressor nr. 3".                                                                                 | A/M               | CO       |         |
| 874  | Højt tryk transducer kompressor 4                                   | "som ovenfor, for kompressor nr. 4".                                                                                 | A/M               | CO       |         |
| 875  | Højt tryk transducer kompressor 5                                   | "som ovenfor, for kompressor nr. 5".                                                                                 | A/M               | CO       |         |
| 876  | Højt tryk transducer kompressor 6                                   | "som ovenfor, for kompressor nr. 6".                                                                                 | A/M               | CO       |         |
| 877  | Højt tryk transducer kompressor 7                                   | "som ovenfor, for kompressor nr. 7".                                                                                 | A/M               | CO       |         |
| 878  | Højt tryk transducer kompressor 8                                   | "som ovenfor, for kompressor nr. 8".                                                                                 | A/M               | CO       |         |
| 881  | Manglende freon kompressor 1                                        | Det er muligt, at kompressor nr. 1 er tom for freon, da alarmen "Timeout start" fortsætter i mindst 8 timer.         | A                 | CO       |         |
| 882  | Manglende freon kompressor 2                                        | "som ovenfor, for kompressor nr. 2".                                                                                 | A                 | CO       |         |
| 883  | Manglende freon kompressor 3                                        | "som ovenfor, for kompressor nr. 3".                                                                                 | A                 | CO       |         |
| 884  | Manglende freon kompressor 4                                        | "som ovenfor, for kompressor nr. 4".                                                                                 | A                 | CO       |         |
| 885  | Manglende freon kompressor 5                                        | "som ovenfor, for kompressor nr. 5".                                                                                 | A                 | CO       |         |
| 886  | Manglende freon kompressor 6                                        | "som ovenfor, for kompressor nr. 6".                                                                                 | A                 | CO       |         |
| 887  | Manglende freon kompressor 7                                        | "som ovenfor, for kompressor nr. 7".                                                                                 | A                 | CO       |         |
| 888  | Manglende freon kompressor 8                                        | "som ovenfor, for kompressor nr. 8".                                                                                 | A                 | CO       |         |
| 891  | For-alarm Lavt tryk kompressor 1                                    | For-alarm som signalerer, at transduceren har registreret et højt tryk på kompressor nr. 1.                          | S                 | PR       |         |
| 892  | For-alarm Lavt tryk kompressor 2                                    | "som ovenfor, for kompressor nr. 2".                                                                                 | S                 | PR       |         |
| 893  | For-alarm Lavt tryk kompressor 3                                    | "som ovenfor, for kompressor nr. 3".                                                                                 | S                 | PR       |         |
| 894  | For-alarm Lavt tryk kompressor 4                                    | "som ovenfor, for kompressor nr. 4".                                                                                 | S                 | PR       |         |
| 895  | For-alarm Lavt tryk kompressor 5                                    | "som ovenfor, for kompressor nr. 5".                                                                                 | S                 | PR       |         |
| 896  | For-alarm Lavt tryk kompressor 6                                    | "som ovenfor, for kompressor nr. 6".                                                                                 | S                 | PR       |         |
| 897  | For-alarm Lavt tryk kompressor 7                                    | "som ovenfor, for kompressor nr. 7".                                                                                 | S                 | PR       |         |
| 898  | For-alarm Lavt tryk kompressor 8                                    | "som ovenfor, for kompressor nr. 8".                                                                                 | S                 | PR       |         |
| 901  | For-alarm Højt tryk kompressor 1                                    | For-alarm som signalerer, at transduceren har registreret et lavt tryk på kompressor nr. 1.                          | S                 | PR       |         |
| 902  | For-alarm Højt tryk kompressor 2                                    | "som ovenfor, for kompressor nr. 2".                                                                                 | S                 | PR       |         |
| 903  | For-alarm Højt tryk kompressor 3                                    | "som ovenfor, for kompressor nr. 3".                                                                                 | S                 | PR       |         |
| 904  | For-alarm Højt tryk kompressor 4                                    | "som ovenfor, for kompressor nr. 4".                                                                                 | S                 | PR       |         |
| 905  | For-alarm Højt tryk kompressor 5                                    | "som ovenfor, for kompressor nr. 5".                                                                                 | S                 | PR       |         |
| 906  | For-alarm Højt tryk kompressor 6                                    | "som ovenfor, for kompressor nr. 6".                                                                                 | S                 | PR       |         |
| 907  | For-alarm Højt tryk kompressor 7                                    | "som ovenfor, for kompressor nr. 7".                                                                                 | S                 | PR       |         |
| 908  | For-alarm Højt tryk kompressor 8                                    | "som ovenfor, for kompressor nr. 8".                                                                                 | S                 | PR       |         |
| 911  | Kontrol af indhylling: Lav overophedning i fremløb til kompressor 1 | Angiver at kompressor 1 kører med en for lav værdi for overopvarmning (afhængigt af det aktive kompressionsforhold). | M                 | CO       |         |
| 912  | Kontrol indhylling: Lav overophedning i fremløb kompressor 2        | "som ovenfor, for kompressor nr. 2".                                                                                 | M                 | CO       |         |
| 913  | Kontrol indhylling: Lav overophedning i fremløb kompressor 3        | "som ovenfor, for kompressor nr. 3".                                                                                 | M                 | CO       |         |
| 914  | Kontrol indhylling: Lav overophedning i fremløb kompressor 4        | "som ovenfor, for kompressor nr. 4".                                                                                 | M                 | CO       |         |
| 915  | Kontrol indhylling: Lav overophedning i fremløb kompressor 5        | "som ovenfor, for kompressor nr. 5".                                                                                 | M                 | CO       |         |
| 916  | Kontrol indhylling: Lav overophedning i fremløb kompressor 6        | "som ovenfor, for kompressor nr. 6".                                                                                 | M                 | CO       |         |
| 917  | Kontrol indhylling: Lav overophedning i fremløb kompressor 7        | "som ovenfor, for kompressor nr. 7".                                                                                 | M                 | CO       |         |
| 918  | Kontrol indhylling: Lav overophedning i fremløb kompressor 8        | "som ovenfor, for kompressor nr. 8".                                                                                 | M                 | CO       |         |
| 921  | Kontrol indhylling: Høj overophedning i fremløb kompressor 1        | Angiver at kompressor 1 kører med en for høj værdi for overopvarmning (afhængigt af det aktive kompressionsforhold). | M                 | CO       |         |
| 922  | Kontrol indhylling: Høj overophedning i fremløb kompressor 2        | "som ovenfor, for kompressor nr. 2".                                                                                 | M                 | CO       |         |
| 923  | Kontrol indhylling: Høj overophedning i fremløb kompressor 3        | "som ovenfor, for kompressor nr. 3".                                                                                 | M                 | CO       |         |
| 924  | Kontrol indhylling: Høj overophedning i fremløb kompressor 4        | "som ovenfor, for kompressor nr. 4".                                                                                 | M                 | CO       |         |
| 925  | Kontrol indhylling: Høj overophedning i fremløb kompressor 5        | "som ovenfor, for kompressor nr. 5".                                                                                 | M                 | CO       |         |
| 926  | Kontrol indhylling: Høj overophedning i fremløb kompressor 6        | "som ovenfor, for kompressor nr. 6".                                                                                 | M                 | CO       |         |
| 927  | Kontrol indhylling: Høj overophedning i fremløb kompressor 7        | "som ovenfor, for kompressor nr. 7".                                                                                 | M                 | CO       |         |

| Kode | Beskrivelse                                                      | Detaljer                                                                                                                                                                                     | Genopret-<br>telse | Handling | Tærskel |
|------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|---------|
| 928  | Kontrol indhylling: Høj overophedning i fremløb kompressor 8     | "som ovenfor, for kompressor nr. 8".                                                                                                                                                         | M                  | CO       |         |
| 931  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressor 1 | Angiver at kompressor 1 kører over den tilladte grænse.                                                                                                                                      | M                  | CO       |         |
| 932  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressor 2 | "som ovenfor, for kompressor nr. 2".                                                                                                                                                         | M                  | CO       |         |
| 933  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressor 3 | "som ovenfor, for kompressor nr. 3".                                                                                                                                                         | M                  | CO       |         |
| 934  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressor 4 | "som ovenfor, for kompressor nr. 4".                                                                                                                                                         | M                  | CO       |         |
| 935  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressor 5 | "som ovenfor, for kompressor nr. 5".                                                                                                                                                         | M                  | CO       |         |
| 936  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressor 6 | "som ovenfor, for kompressor nr. 6".                                                                                                                                                         | M                  | CO       |         |
| 937  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressor 7 | "som ovenfor, for kompressor nr. 7".                                                                                                                                                         | M                  | CO       |         |
| 938  | Kontrol indhylling: Minimumsgrænse for højt tryk på kompressor 8 | "som ovenfor, for kompressor nr. 8".                                                                                                                                                         | M                  | CO       |         |
| 941  | Min. kompressionsforhold ved start af kompressor 1               | Angiver at kompressor 1 kører med lavt kompressionsforhold.                                                                                                                                  | M                  | CO       | ENV0096 |
| 942  | Min. kompressionsforhold ved start af kompressor 2               | "som ovenfor, for kompressor nr. 2".                                                                                                                                                         | M                  | CO       |         |
| 943  | Min. kompressionsforhold ved start af kompressor 3               | "som ovenfor, for kompressor nr. 3".                                                                                                                                                         | M                  | CO       |         |
| 944  | Min. kompressionsforhold ved start af kompressor 4               | "som ovenfor, for kompressor nr. 4".                                                                                                                                                         | M                  | CO       |         |
| 945  | Min. kompressionsforhold ved start af kompressor 5               | "som ovenfor, for kompressor nr. 5".                                                                                                                                                         | M                  | CO       |         |
| 946  | Min. kompressionsforhold ved start af kompressor 6               | "som ovenfor, for kompressor nr. 6".                                                                                                                                                         | M                  | CO       |         |
| 947  | Min. kompressionsforhold ved start af kompressor 7               | "som ovenfor, for kompressor nr. 7".                                                                                                                                                         | M                  | CO       |         |
| 948  | Min. kompressionsforhold ved start af kompressor 8               | "som ovenfor, for kompressor nr. 8".                                                                                                                                                         | M                  | CO       |         |
| 951  | Frakobling HGBP-ventil på kompressor 1                           | Angiver frakobling af driveren på bypass-ventilen på kompressor 1                                                                                                                            | S                  | CO       |         |
| 952  | Frakobling HGBP-ventil på kompressor 2                           | "som ovenfor, for kompressor nr. 2".                                                                                                                                                         | S                  | CO       |         |
| 953  | Frakobling HGBP-ventil på kompressor 3                           | "som ovenfor, for kompressor nr. 3".                                                                                                                                                         | S                  | CO       |         |
| 954  | Frakobling HGBP-ventil på kompressor 4                           | "som ovenfor, for kompressor nr. 4".                                                                                                                                                         | S                  | CO       |         |
| 960  | Frakobling af termisk måler                                      | Angiver frakobling af den termiske energianalysator.                                                                                                                                         | S                  | -        |         |
| 961  | Offline driver første stadie nr. 5                               | Angiver frakobling af driveren til styring af ventilen første trin på kompressor 5 (kun for enheder med Turbocor-kompressorer).                                                              | A                  | CI       |         |
| 962  | Offline driver første stadie nr. 6                               | "som ovenfor, for kompressor 6".                                                                                                                                                             | A                  | CI       |         |
| 963  | Offline driver første stadie nr. 7                               | "som ovenfor, for kompressor 7".                                                                                                                                                             | A                  | CI       |         |
| 964  | Offline driver første stadie nr. 8                               | "som ovenfor, for kompressor 8".                                                                                                                                                             | A                  | CI       |         |
| 965  | Frakobling ATS                                                   | Angiver frakobling af ATS-kontakten                                                                                                                                                          | A                  | -        |         |
| 966  | Frakobling touch zone HT                                         | Angiver frakobling af touchtermostaten i HT-zonen.                                                                                                                                           | S                  | GR       |         |
| 967  | Frakobling touch zone LT                                         | Angiver frakobling af touchtermostaten i LT-zonen.                                                                                                                                           | S                  | GR       |         |
| 968  | Forebyggelse af kompressorstop                                   | Signalerer tvungen nedlukning af inverterkompressoren og dens kredsløb for at forhindre stop på grund af for stort strømforbrug.                                                             | M                  | CI       |         |
| 969  | Høj ekstern lufttemperatur                                       | Signalerer, at enheden arbejder ved en for høj udetemperatur. Kontrollen udføres, selv når kompressorerne er slukkede.                                                                       | S-M                | U        | STG0200 |
| 970  | Lavt indhold af genvindingsvand.                                 | Signalerer en mangel på vandindhold i kredsløbet for genvindingsvand. Denne mangel forårsager pludselige skift i kredsløbets driftstilstand, hvilket kan beskadige kølekredsløbets ventiler. | S-M                | U        |         |
| 971  | Vedligeholdelse af gassensor                                     | Meddelelsen vises, hvis enheden til gasdetektering er offline, eller hvis der skal udføres vedligeholdelse af sensoren.                                                                      | M                  | -        |         |

| Kode | Beskrivelse                                          | Detaljer                                                                                                                                                                                                                                                                   | Genopret-<br>telse | Handling | Tærskel |
|------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|---------|
| 972  | Fejl low-lift pumpe 1                                | For enheder med centrifugalkompressorer rapporterer Turbocor en fejl på low-lift pumpe nr. 1.                                                                                                                                                                              | A/M                | -        |         |
| 973  | Fejl low-lift pumpe 2                                | For enheder med centrifugalkompressorer rapporterer Turbocor en fejl på low-lift pumpe nr. 2.                                                                                                                                                                              | A/M                | -        |         |
| 974  | Alarm drycooler lav temperatur                       | Signalet vises for enheder udstyret med en drycooler, hvis temperaturen i installationsmiljøet for drycooleren er lavere end det indstillede setpoint.                                                                                                                     | A                  | U        |         |
| 975  | Fejl drycooler                                       | Signalet vises for enheder udstyret med en drycooler, hvis den termiske beskyttelse af ventilatorerne eller den dedikerede pumpe (hvis den findes) skulle gribe ind.                                                                                                       | M                  | U        |         |
| 979  | Frakobling af termisk måler genvinding               | Angiver frakobling af den termiske energianalysator for genvinding.                                                                                                                                                                                                        | S                  | -        |         |
| 981  | Kort cyklus kompressor 1                             | Meldingen om manuel genstart vises, når kompressoren er tændt i kortere tid end CMP0004. Meldingen bliver til en alarm med manuel nulstilling, hvis kompressoren slukkes i kort cyklus et antal gange, der overstiger parameteren CMP0151, inden for et tidsrum på 4 timer | S-M                | CO       |         |
| 5001 | Fejl ved skift af driftstilstand                     | Alarm, der angiver en anomali, når man tvinger en ændring af enhedens driftstilstand med ændring af driftstilstanden på anlægget.<br>Alarmen udløses, hvis tvang ikke lykkes inden for den maksimale tid, der er indstillet med parameteren.                               | M                  | GR       | GRP0126 |
| 5005 | Gennemsnitlig fejl temperaturfølere vand i indgang   | Fejl på gennemsnittet af de temperaturværdier i indgang, der aflæses af sonderne på alle enheder i gruppen.                                                                                                                                                                | A                  | GR       |         |
| 5006 | Gennemsnitlig fejl på temperaturen for vand i udgang | Fejl på gennemsnittet af de temperaturværdier i udgang, der aflæses af sonderne på alle enheder i gruppen.                                                                                                                                                                 | A                  | GR       |         |
| 5050 | Gennemsnitlig fejl ekstern temperaturføler           | Fejl på gennemsnittet af de temperaturværdier for den eksterne luft udgang, der aflæses af sonderne på alle enheder i gruppen.                                                                                                                                             | A                  | GR       |         |
| 5080 | Termisk enhed pumpe anlæg                            | Angiver overophedning af pumpen på anlægget.                                                                                                                                                                                                                               | M                  | GR       |         |
| 5100 | Frakobling af modul til styring af VPF for gruppen   | Frakobling af modulet, der er beregnet til indstilling af vandflowet i anlægget. Kontrollér funktionsforstyrrelsen på modulets brugerflade.                                                                                                                                | A                  | GR       |         |
| 5101 | Fejl styringsmodul VPF for gruppen                   | Fejl på modulet, der er beregnet til indstilling af vandflowet i anlægget. Kontrollér funktionsforstyrrelsen på modulets brugerflade.                                                                                                                                      | A                  | GR       |         |
| 5120 | Afbrydelse af dynamisk setpoint                      | Afbrydelse af dynamisk styring af setpoint for gruppen. Kontrollér at der ikke er frakoblinger på netværket KIPLan.                                                                                                                                                        | A                  | GR       |         |
| 5201 | Fejl sonde 1 gruppe                                  | Fejl sonde 1 på styreenheden for gruppen. Værdierne, som aflæses af sonde 1, overskrider grænserne.                                                                                                                                                                        | A                  | GR       |         |
| 5202 | Fejl sonde 2 gruppe                                  | "analog, som ovenfor".                                                                                                                                                                                                                                                     | A                  | GR       |         |
| 5203 | Fejl sonde 3 gruppe                                  | "analog, som ovenfor".                                                                                                                                                                                                                                                     | A                  | GR       |         |
| 5204 | Fejl sonde 4 gruppe                                  | "analog, som ovenfor".                                                                                                                                                                                                                                                     | A                  | GR       |         |
| 5205 | Fejl sonde 5 gruppe                                  | "analog, som ovenfor".                                                                                                                                                                                                                                                     | A                  | GR       |         |
| 5206 | Fejl sonde 6 gruppe                                  | "analog, som ovenfor".                                                                                                                                                                                                                                                     | A                  | GR       |         |
| 5207 | Fejl sonde 7 gruppe                                  | "analog, som ovenfor".                                                                                                                                                                                                                                                     | A                  | GR       |         |
| 5208 | Fejl sonde 8 gruppe                                  | "analog, som ovenfor".                                                                                                                                                                                                                                                     | A                  | GR       |         |
| 5209 | Fejl sonde 9 gruppe                                  | "analog, som ovenfor".                                                                                                                                                                                                                                                     | A                  | GR       |         |

| Kode | Beskrivelse            | Detaljer                                                                                                       | Genopret<br>telse | Handling | Tærskel |
|------|------------------------|----------------------------------------------------------------------------------------------------------------|-------------------|----------|---------|
| 5210 | Fejl sonde 10 gruppe   | "analog, som ovenfor".                                                                                         | A                 | GR       |         |
| 5301 | Offline enhed 1        | Frakobling af enheden fra LAN Multi Manager 1. Kontroller enhedens serielle forbindelse.                       | A                 | GR       |         |
| 5302 | Offline enhed 2        | "analog, som ovenfor for enhed 2".                                                                             | A                 | GR       |         |
| 5303 | Offline enhed 3        | "analog, som ovenfor for enhed 3".                                                                             | A                 | GR       |         |
| 5304 | Offline enhed 4        | "analog, som ovenfor for enhed 4".                                                                             | A                 | GR       |         |
| 5305 | Offline enhed 5        | "analog, som ovenfor for enhed 5".                                                                             | A                 | GR       |         |
| 5306 | Offline enhed 6        | "analog, som ovenfor for enhed 6".                                                                             | A                 | GR       |         |
| 5307 | Offline enhed 7        | "analog, som ovenfor for enhed 7".                                                                             | A                 | GR       |         |
| 5308 | Offline enhed 8        | "analog, som ovenfor for enhed 8".                                                                             | A                 | GR       |         |
| 5350 | Offline KIPLink master | Frakobling KIPLink til dataudveksling mellem eksterne og interne enheder. Kontroller de serielle forbindelser. | A                 | GR       |         |
| 5401 | Fejl enhed 1           | Der er alarmer på gruppens sonder, der kan spores til enhed 1                                                  | A                 | GR       |         |
| 5402 | Fejl enhed 2           | "analog, som ovenfor for enhed 2".                                                                             | A                 | GR       |         |
| 5403 | Fejl enhed 3           | "analog, som ovenfor for enhed 3".                                                                             | A                 | GR       |         |
| 5404 | Fejl enhed 4           | "analog, som ovenfor for enhed 4".                                                                             | A                 | GR       |         |
| 5405 | Fejl enhed 5           | "analog, som ovenfor for enhed 5".                                                                             | A                 | GR       |         |
| 5406 | Fejl enhed 6           | "analog, som ovenfor for enhed 6".                                                                             | A                 | GR       |         |
| 5407 | Fejl enhed 7           | "analog, som ovenfor for enhed 7".                                                                             | A                 | GR       |         |
| 5408 | Fejl enhed 8           | "analog, som ovenfor for enhed 8".                                                                             | A                 | GR       |         |

(\*\*): Ved specifikke alarmhændelser for nogle kompressorinvertere findes en dedikeret kodning, der beskriver den hændelse, der stammer fra den inverter, der genererede alarmer i W3000+-styringen. En komplet liste over specifikke koder for inverteralarmer kan ses i de følgende tabeller.

### 4.3 Tabel over alarmer for ekspansionssonde VSCM

Herunder findes en oversigt over sondealarmer og deres betydning i forhold til den anvendte korttype og, hvis relevant, i forhold til enhedstypen.

| AL  | pCO base / pCO Compact                                  |         | pCO5+                                                 |    |
|-----|---------------------------------------------------------|---------|-------------------------------------------------------|----|
| 421 | Højtrykstransducer kredsløb 1 / niveausensor kredsløb 1 | B1      | Lavtrykstransducer kredsløb 1                         | U1 |
| 422 | Højtrykstransducer kredsløb 2 / niveausensor kredsløb 2 | B2      | Lavtrykstransducer kredsløb 2                         | U2 |
| 423 | Væsketemperatur kredsløb 1                              | B3      | Væsketemperatur kredsløb 1 / Sensor niveau kredsløb 1 | U3 |
| 424 | Væsketemperatur kredsløb 2                              | B4      | Væsketemperatur kredsløb 2 / Sensor niveau kredsløb 2 | U4 |
| 425 | Lavtrykstransducer kredsløb 1                           | S1 EVO1 |                                                       |    |
| 426 | Lavtrykstransducer kredsløb 2                           | S1 EVO2 |                                                       |    |

| AL  | uPC                                                     |         | uPC MECH/MEHP-iS                                                                 |          |
|-----|---------------------------------------------------------|---------|----------------------------------------------------------------------------------|----------|
| 421 | Højtrykstransducer kredsløb 1 / niveausensor kredsløb 1 | B5      | Lavtrykstransducer kredsløb 1                                                    | B5       |
| 422 | Højtrykstransducer kredsløb 2 / niveausensor kredsløb 2 | B10     |                                                                                  |          |
| 423 | Væsketemperatur kredsløb 1                              | B3      | Væsketemperatur kredsløb 1 (i varmepumpe)<br>Sugetemperatur kredsløb 1 (i køler) | B3<br>B6 |
| 424 | Væsketemperatur kredsløb 2                              | B4      |                                                                                  |          |
| 425 | Lavtrykstransducer kredsløb 1                           | S1 EVO1 |                                                                                  |          |
| 426 | Lavtrykstransducer kredsløb 2                           | S1 EVO2 |                                                                                  |          |



#### 4.4 Alarmtabel for kompressorerne Turbocor

Nedenfor følger en detaljeret tabel over alarmerne vedrørende Turbocor kompressorerne. Alarmerne overføres fra kompressoren til W3000+ ved hjælp af seriel tilslutning.

Under den respektive alarmkode for kontrolenheden W3000 + angives også, hvilke andre kompressoralarmer der kan forekomme under en og samme alarmkode.

| Alarm W3000+ |                                   |                | Alarm TURBOCOR |                                                                                                                 |
|--------------|-----------------------------------|----------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| AL           | Beskrivelse                       | Modbus adresse | Alarmbit       | Årsag til fejl                                                                                                  |
| 141          | Kompressor frakoblet              |                |                | Frakobling af turbocor                                                                                          |
| 161          | Forsyning til motor i kompressor  | 40106          | 0x0002         | DC bus high voltage detect                                                                                      |
|              |                                   |                | 0x0010         | IGBT inverter error signal active                                                                               |
|              |                                   |                | 0x0100         | Output voltage on the motor generate no current. IGBT inverter command signals disconnected or drive coil error |
|              |                                   |                | 0x0800         | Motor back EMF is low. Shaft might be demagnetized.                                                             |
|              |                                   |                | 0x2000         | Compressor is running in generator mode.                                                                        |
|              |                                   |                | 0x4000         | SCR phase loss.                                                                                                 |
|              |                                   | 40026          | 0x1000         | Winding Temperature                                                                                             |
|              |                                   |                | 0x2000         | Super Heat                                                                                                      |
|              |                                   |                | 0x4000         | Earth Leakage                                                                                                   |
|              |                                   |                | 0x8000         | Soft Start Temperature                                                                                          |
| 301          | Temperatur i inverter; kompressor | 40026          | 0x0001         | Inverter temperature                                                                                            |
| 311          | Udløbstemperatur fra kompressor   |                | 0x0002         | Discharge temperature                                                                                           |
| 321          | Lavt tryk i kompressor            |                | 0x0004         | Suction pressure                                                                                                |
| 331          | Højt tryk i kompressor            |                | 0x0008         | Discharge pressure                                                                                              |
| 341          | Strømforsyning; kompressor        |                | 0x0010         | 3 phase current trip                                                                                            |
| 351          | Temperatur i rotor; kompressor    |                | 0x0020         | Shaft cavity temperature                                                                                        |
| 361          | Komprimeringsforhold i kompressor |                | 0x0080         | Total compression ratio fault                                                                                   |
| 371          | Lejer i kompressor                |                | 0x0100         | Bearing motor fault                                                                                             |
| 381          | SCR temperatur; kompressor        |                | 0x0400         | SCR temp fault                                                                                                  |
| 391          | Blokering af rotor i kompressor   | 40106          | 0x0020         | Mulig blokering af rotoren                                                                                      |



## 4.5 Alarmtabel for kompressorerne CSCV

Nedenfor følger en detaljeret tabel over alarmerne vedrørende CSCV kompressorerne. Alarmerne overføres fra kompressoren til W3000+ ved hjælp af seriel tilslutning.

Under den respektive alarmkode for kontrolenheden W3000 + angives også, hvilke andre kompressoralarmer der kan forekomme under en og samme alarmkode. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærbillede for alarmer og alarmhistorik.

| Alarm W3000+ |                                          | Alarmer vedrørende CSCV kompressor |                                  |                                             |
|--------------|------------------------------------------|------------------------------------|----------------------------------|---------------------------------------------|
| AL           | Beskrivelse                              | Nr.                                | Panel                            | Årsag til fejl                              |
| 701          | Offline inverter                         |                                    |                                  | Frakobling inverter                         |
| 711          | Alarm forsyning                          | 1200                               | Mains failure                    | Tab af netforsyning (vekselstrøm)           |
|              |                                          | 5002                               | Over Voltage                     | Overspænding                                |
|              |                                          | 5003                               | Under Voltage                    | Underspænding                               |
| 721          | Alarm strømforsyning motor               | 4000                               | Motor Overload                   | Overbelastning motor                        |
| 731          | Alarm strøm strømforsyning inverter      | 5001                               | Over Current                     | Overstrøm i udgang                          |
| 751          | Alarm for termisk beskyttelse i motor    | 4301                               | Motor Thermal Overload           | Udløsning af den termiske sonde i motoren   |
| 761          | Alarm for termisk beskyttelse i variator | 5300                               | Over Temperature: Power Module   | Overophedning: Power Module                 |
|              |                                          | 5301                               | Over Temperature: Cold Plate     | Overophedning: Cold Plate                   |
|              |                                          | 5302                               | Over Temperature: Power I. Board | Overophedning: Power I. Board               |
|              |                                          | 6303                               | Over Temperature: Control Board  | Overophedning: Control Board                |
| 771          | Alarm IGBT                               | 5000                               | Inverter Output                  | Fejl i inverter                             |
|              |                                          | 5004                               | FC Overload                      | Overbelastning inverter                     |
|              |                                          | 5801                               | HW Fault: Power MCU              | Fejl i hardware: Power MCU                  |
|              |                                          | 5802                               | HW Fault: Inrush Fault           | Fejl i hardware: Inrush Fault               |
|              |                                          | 5803                               | HW Fault: Inrush Supply Fault    | Fejl i hardware: Inrush Supply Fault        |
|              |                                          | 5810                               | HW Fault: Gate Drive U           | Fejl i hardware: Gate Drive U               |
|              |                                          | 5811                               | HW Fault: Gate Drive V           | Fejl i hardware: Gate Drive V               |
|              |                                          | 5812                               | HW Fault: Gate Drive W           | Fejl i hardware: Gate Drive W               |
|              |                                          | 5820                               | HW Fault: Fan1 Speed Low         | Fejl i hardware: Fan1 Speed Low             |
|              |                                          | 5821                               | HW Fault: Fan2 Speed Low         | Fejl i hardware: Fan2 Speed Low             |
|              |                                          | 5851                               | HW Fault: 24 V                   | Fejl i hardware: 24 V                       |
|              |                                          | 5852                               | HW Fault: 15V                    | Fejl i hardware: 15V                        |
|              |                                          | 5853                               | HW Fault: N15V                   | Fejl i hardware: N15V                       |
|              |                                          | 5854                               | HW Fault: PIB 3.3V               | Fejl i hardware: PIB 3.3V                   |
|              |                                          | 6801                               | HW Fault: Control MCU            | Fejl i hardware: Control MCU                |
|              |                                          | 6810                               | HW Fault: CB 3.3V                | Fejl i hardware: CB 3.3V                    |
|              |                                          | 6811                               | HW Fault: User 5V                | Fejl i hardware: User 5V                    |
|              |                                          | 6812                               | HW Fault: User/Pres 5V           | Fejl i hardware: User/Pres 5V               |
|              |                                          | 6850                               | HW Fault: Power MCU Comm         | Fejl i hardware: Power MCU Comm             |
| 811          | Alarm kommunikation                      | 1100                               | Serial Control Timeout           | Tab af kommunikation med seriel tilslutning |
| 821          | Alarm for sikkerhedsindgang til inverter | 2500                               | Safe Torque Off                  | Sikkert par inaktiveret                     |
|              |                                          | 6814                               | HW: STO Diagnostics              | HW: Diagnostikker STO                       |
|              |                                          | 6901                               | SW: STO Diagnostics              | SW: Diagnostikker STO                       |
| 851          | Generel alarm                            | 3001                               | Envelope Fault: SST Low, SDT Low | Forkert indhyllingskurve: SST Low, SDT Low  |
|              |                                          | 3002                               | Envelope Fault: SST Low, SDT OK  | Forkert indhyllingskurve: SST Low, SDT OK   |

| Alarm W3000+ |  | Alarmer vedrørende CSCV kompressor |                                                       |                                                      |
|--------------|--|------------------------------------|-------------------------------------------------------|------------------------------------------------------|
|              |  | 3003                               | Envelope Fault: SST Low, SDT High                     | Forkert indhyllingskurve: SST Low, SDT High          |
|              |  | 3004                               | Envelope Fault: SST OK, SDT High                      | Forkert indhyllingskurve: SST OK, SDT High           |
|              |  | 3005                               | Envelope Fault: SST High, SDT High                    | Forkert indhyllingskurve: SST High, SDT High         |
|              |  | 3006                               | Envelope Fault: SST High, SDT OK                      | Forkert indhyllingskurve: SST High, SDT OK           |
|              |  | 3007                               | Envelope Fault: SST High, SDT Low                     | Forkert indhyllingskurve: SST High, SDT Low          |
|              |  | 3008                               | Envelope Fault: SST OK, SDT Low                       | Forkert indhyllingskurve: SST OK, SDT Low            |
|              |  | 3010                               | Envelope Fault: Startup Timeout                       | Forkert indhyllingskurve: Startup Timeout            |
|              |  | 3011                               | Envelope Fault: Configuration Failure                 | Forkert indhyllingskurve: Configuration Failure      |
|              |  | 3300                               | High Oil Temperature                                  | For høj olietemperatur                               |
|              |  | 3400                               | Suction pressure low                                  | Lavt indsugningstryk i kompressor                    |
|              |  | 3411                               | Discharge Pressure High                               | Højt udledningstryk fra kompressor                   |
|              |  | 5600                               | HW Configuration Fault: Power Not Supported           | Forkert hardwarekonfiguration: Power Not Supported   |
|              |  | 5601                               | HW config: Gate Drive Missing                         | Fejl i hardware: Gate Drive mangle                   |
|              |  | 6601                               | HW Configuration Fault: Control Not Supported         | Forkert hardwarekonfiguration: Control Not Supported |
|              |  | 6602                               | HW Configuration Fault: No XB                         | Forkert hardwarekonfiguration: No XB                 |
|              |  | 5700                               | Configuration Data Fault: Power Data                  | Fejl i konfigurationsdata: Power Data                |
|              |  | 5701                               | Configuration Data Fault: Prod Data                   | Fejl i konfigurationsdata: Prod Data                 |
|              |  | 6700                               | Configuration Data Fault: No File                     | Fejl i konfigurationsdata: No File                   |
|              |  | 6701                               | Configuration Data Fault: CRC error                   | Fejl i konfigurationsdata: CRC error                 |
|              |  | 6702                               | Configuration Data Fault: Wrong version               | Fejl i konfigurationsdata: Wrong version             |
|              |  | 6703                               | Configuration Data Fault: Read Only                   | Fejl i konfigurationsdata: Read Only                 |
|              |  | 6900                               | Datalog error                                         | Datalogger fejl                                      |
|              |  | 5710                               | Parameter Configuration Fault: Motor Data             | Fejl i konfigurationsparametre: Motor Data           |
|              |  | 7300                               | Temperature Sensor Fault: Power Module                | Fejl i temperatursonde: Power Module                 |
|              |  | 7301                               | Temperature Sensor Fault: Cold Plate                  | Fejl i temperatursonde: Cold Plate                   |
|              |  | 7302                               | Temperature Sensor Fault: Power I. Board              | Fejl i temperatursonde: Power I. Board               |
|              |  | 7303                               | Temperature Sensor Fault: Control Board               | Fejl i temperatursonde: Control Board                |
|              |  | 7304                               | Temperature Sensor Fault: Motor Thermistor            | Fejl i temperatursonde: Motor Thermistor             |
|              |  | 7305                               | Temperature Sensor Fault: Oil Temperature             | Fejl i temperatursonde: Oil Temperature              |
|              |  | 7403                               | Pressure Sensor Fault: Suction Pressure Signal Low    | Fejl i tryksonde: lavt signal for indsugningstryk    |
|              |  | 7404                               | Pressure Sensor Fault: Suction Pressure Signal High   | Fejl i tryksonde: højt signal for indsugningstryk    |
|              |  | 7405                               | Pressure Sensor Fault: Discharge Pressure Signal Low  | Fejl i tryksonde: lavt signal for udløbstryk         |
|              |  | 7406                               | Pressure Sensor Fault: Discharge Pressure Signal High | Fejl i tryksonde: højt signal for udløbstryk         |

## 4.6 Alarmtabel vedrørende CSW105 kompressorer

Nedenfor følger en detaljeret tabel over alarmerne vedrørende CSW105 kompressorerne. Alarmerne overføres fra kompressoren til W3000+ ved hjælp af seriel tilslutning.

Under den respektive alarmkode for kontrolenheden W3000 + angives også, hvilke andre kompressoralarmer der kan forekomme under en og samme alarmkode. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærm-billede for alarmer og alarmhistorik.

| Alarm W3000+ |                                       | Alarmer vedrørende CSW105 kompressor |                                                      |                                                                   |
|--------------|---------------------------------------|--------------------------------------|------------------------------------------------------|-------------------------------------------------------------------|
| AL           | Beskrivelse                           | Nr.                                  | Panel                                                | Årsag til fejl                                                    |
| 701          | Offline inverter                      |                                      |                                                      | Frakobling inverter                                               |
| 711          | Alarm forsyning                       | 1200                                 | Mains failure                                        | Tab af netforsyning (vekselstrøm)                                 |
| 721          | Alarm strømforsyning motor            | 3900                                 | Locked rotor                                         | Rotor blokeret                                                    |
|              |                                       | 4201                                 | Motor phase loss                                     | Fasetab strømforsyning                                            |
|              |                                       | 4202                                 | Fasesekvens motor                                    | Fejl fasesekvens                                                  |
|              |                                       | 4220                                 | Motorfrekvens lav                                    | Lav motorfrekvens                                                 |
|              |                                       | 4221                                 | Motor frequency high                                 | Høj motorfrekvens                                                 |
|              |                                       | 8200                                 | Low output current                                   | Lav udgangsstrøm                                                  |
|              |                                       | 8201                                 | High output current                                  | Høj udgangsstrøm                                                  |
| 751          | Alarm for termisk beskyttelse i motor | 4301                                 | Motor temperature high                               | Høj motortemperatur                                               |
|              |                                       | 4302                                 | Motor temperature cooldown                           | Motorkøling                                                       |
| 811          | Alarm kommunikation                   | 1100                                 | Serial Control Timeout                               | Tab af kommunikation med seriel tilslutning                       |
| 851          | Generel alarm                         | 1000                                 | Too many identical resets in 24 hours                | For mange identiske nulstillinger på 24 timer                     |
|              |                                       | 1001                                 | Too many timed resets in 1 hour                      | For mange nulstillinger i timen                                   |
|              |                                       | 2700                                 | Setup fault                                          | Opsætningsfejl                                                    |
|              |                                       | 3001                                 | Envelope: SST low, SDT low                           | Indhylling: Lav SST, lav SDT                                      |
|              |                                       | 3002                                 | Envelope: SST low                                    | Indhylling: Lav SST                                               |
|              |                                       | 3003                                 | Envelope: SST low, SDT high                          | Indhylling: Lav SST, høj SDT                                      |
|              |                                       | 3004                                 | Envelope: SDT high                                   | Indhylling: Høj SDT                                               |
|              |                                       | 3005                                 | Envelope: SST high, SDT high                         | Indhylling: Høj SST, Høj SDT                                      |
|              |                                       | 3006                                 | Envelope: SST high                                   | Indhylling: Høj SST                                               |
|              |                                       | 3007                                 | Envelope: SST high, SDT low                          | Indhylling: Høj SST, Lav SDT                                      |
|              |                                       | 3008                                 | Envelope: SDT low                                    | Indhylling: Lav SDT                                               |
|              |                                       | 3010                                 | Envelope: startup timeout                            | Envelope: startup timeout                                         |
|              |                                       | 3011                                 | Envelope: Configuration Failure                      | Indhylling: Konfigurationsfejl                                    |
|              |                                       | 3022                                 | Too many compressor starts                           | For mange gange opstart kompressor                                |
|              |                                       | 3024                                 | Minimum compressor stop time not respected           | Minimum kompressor nedetid ikke overholdt                         |
|              |                                       | 3025                                 | Minimum compressor run time not respected            | Minimum kompressor aktivitetstid ikke overholdt                   |
|              |                                       | 3026                                 | Minimum compressor start to start time not respected | Minimumstiden mellem efterfølgende kompressorstart ikke overholdt |
|              |                                       | 3027                                 | Compressor start without being fully unloaded        | Kompressor startet uden total udledning                           |
|              |                                       | 3302                                 | Discharge temperature high                           | Høj udløbstemperatur                                              |
|              |                                       | 3400                                 | Suction pressure low                                 | Lavt sugetryk                                                     |
|              |                                       | 3411                                 | Discharge Pressure High                              | Højt udledningstryk                                               |
|              |                                       | 3431                                 | High pressure switch                                 | Indgreb trykafbryder                                              |
|              |                                       | 3501                                 | Oil flow                                             | Flowmåler olie                                                    |
|              |                                       | 3502                                 | Oil pressure low                                     | Lavt olietryk                                                     |

| Alarm W3000+ |      | Alarmer vedrørende CSW105 kompressor |                                        |                                           |
|--------------|------|--------------------------------------|----------------------------------------|-------------------------------------------|
|              |      | 3503                                 | Oil stop valve                         | Stopventil olie                           |
|              |      | 3520                                 | Oil injection has no effect            | Ineffektiv olieindsprøjtning              |
|              |      | 5851                                 | HW: 24 V                               | HW: 24 V                                  |
|              |      | 6700                                 | Konfigurationsdata: Ingen fil          | Konfigurationsdata: Ingen fil             |
|              |      | 6701                                 | Konfigurationsdata: CRC error          | Konfigurationsdata: CRC error             |
|              |      | 6702                                 | Config data: wrong version             | Konfigurationsdata: Forkert version       |
|              |      | 6703                                 | Confid data: read only                 | Konfigurationsdata: Skrivebeskyttet       |
|              |      | 6810                                 | HW: 3,3 V                              | HW: 3,3 V                                 |
|              |      | 6811                                 | HW: user 5 V                           | HW: 5 V bruger                            |
|              |      | 6813                                 | HW: 24 V                               | HW: 24 V                                  |
|              |      | 6900                                 | Datalog error                          | Fejl datalog                              |
|              |      | 7304                                 | Sensor: motor thermistor               | Føler: Motor termistor                    |
|              |      | 7308                                 | Sensor: Discharge temperature          | Sensor: udledningstemperatur              |
|              |      | 7320                                 | Sensor: aux temperature                | Sensor: Hjælpetemperatur                  |
|              |      | 7401                                 | Sensor: suction pressure               | Sensor: Sugetryk                          |
|              |      | 7402                                 | Sensor: discharge pressure             | Sensor: Uddledningstryk                   |
|              |      | 7403                                 | Sensor: Suction Pressure Signal Low    | Sensor: Signal for lavt sugetryk          |
|              |      | 7404                                 | Sensor: Suction Pressure Signal High   | Sensor: Signal for højt sugetryk          |
|              |      | 7405                                 | Sensor: Discharge Pressure Signal Low  | Sensor: Signal for lavt udledningstryk    |
|              |      | 7406                                 | Sensor: Discharge Pressure Signal High | Sensor: Signal for højt udledningstryk    |
|              |      | 7510                                 | Sensor: oil protection                 | Sensor: Oliebeskyttelse                   |
|              |      | 7511                                 | Sensor: oil protection 2               | Sensor: Oliebeskyttelse 2                 |
|              |      | 7580                                 | Slider: no sensor detected             | Slider: Ingen sensor registreret          |
|              |      | 7581                                 | Slider: less than 2 magnets detected   | Slider: Mindre end 2 magneter registreret |
|              |      | 7582                                 | Slider: sample data invalid            | Slider: Forkert eksempeldata              |
|              |      | 7583                                 | Slider: more than 2 magnets detected   | Slider: Mere end 2 magneter registreret   |
|              |      | 7584                                 | Slider: position invalid               | Slider: forkert position                  |
|              |      | 8202                                 | Output current: oil heater low         | Udgangsstrøm: Olieopvarmning (lav)        |
|              |      | 8203                                 | Output current: oil heater high        | Udgangsstrøm: Olieopvarmning (høj)        |
|              |      | 8204                                 | Output current: additional fan low     | Udgangsstrøm: Ekstra blæser (lav)         |
|              |      | 8205                                 | Output current: head fan high          | Udgangsstrøm: Ekstra blæser (høj)         |
|              |      | 8206                                 | Output current: CR-1 low               | Strøm leveret: CR-1 (lav)                 |
|              |      | 8207                                 | Output current: CR-1 high              | Strøm leveret: CR-1 (høj)                 |
|              |      | 8208                                 | Output current: CR-2 low               | Strøm leveret: CR-2 (lav)                 |
|              |      | 8209                                 | Output current: CR-2 high              | Strøm leveret: CR-2 (høj)                 |
|              |      | 8210                                 | Output current: CR-3 low               | Strøm leveret: CR-3 (lav)                 |
|              |      | 8211                                 | Output current: CR-3 high              | Strøm leveret: CR-3 (høj)                 |
|              |      | 8212                                 | Output current: unloader low           | Udgangsstrøm: Lukker (lav)                |
|              |      | 8213                                 | Output current: unloader high          | Udgangsstrøm: Lukker (høj)                |
|              |      | 8214                                 | Output current: oil inj low            | Udgangsstrøm: Olieindsprøjtning (lav)     |
|              | 8215 | Output current: oil inj high         | Udgangsstrøm: Olieindsprøjtning (høj)  |                                           |
|              | 8216 | Output current: liquid inj low       | Udgangsstrøm: Væskeinjektion (lav)     |                                           |
|              | 8217 | Output current: liquid inj high      | Udgangsstrøm: Væskeinjektion (høj)     |                                           |
|              | 8218 | Output current: HW trip              | Strømforsyning: HW fejl                |                                           |

| Alarm W3000+ |  | Alarmer vedrørende CSW105 kompressor |                                 |                                  |
|--------------|--|--------------------------------------|---------------------------------|----------------------------------|
|              |  | 8580                                 | Slider: Vi position control     | Slider: Vi positionskontrol      |
|              |  | 8581                                 | Slider: CR position control     | Slider: CR positionskontrol      |
|              |  | 8582                                 | Slider: Gap between Vi and CR   | Slider: Afstand mellem Vi og CR  |
|              |  | 8583                                 | Slider: Gap between Zero and Vi | Slider: Afstand mellem nul og Vi |

#### 4.7 Alarmtabel vedrørende kompressorer med M35A inverter

Nedenfor følger detaljerede oplysninger over alarmerne vedrørende kompressorerne med M35A inverter. Alarmerne overføres fra inverteren til W3000 + ved hjælp af seriel tilslutning.

Under den respektive alarmkode for kontrolenheden W3000 + angives også, hvilke andre alarmer der kan forekomme under en og samme alarmkode. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærbillede for alarmer og alarmhistorik.

| Alarm W3000+ |                                       | Alarmer vedrørende kompressor med M35A inverter |                                                    |                                                     |
|--------------|---------------------------------------|-------------------------------------------------|----------------------------------------------------|-----------------------------------------------------|
| AL           | Beskrivelse                           | Nr.                                             | Beskrivelse                                        | Årsag til fejl                                      |
| 701          | Offline inverter                      |                                                 |                                                    | Frakobling inverter                                 |
| 711          | Alarm forsyning                       | 5                                               | DC Bus under voltage (LU)                          | Overspænding i mellemliggende kredsløb DC link      |
|              |                                       | 6                                               | DC Bus over voltage (OU)                           | Underspænding i mellemliggende kredsløb DC link     |
|              |                                       | 10                                              | Over current at acceleration state (Software trip) | Overstrøm i inverter i forbindelse med acceleration |
|              |                                       | 12                                              | Over current at steady state (Software trip)       | Overstrøm i inverter i forbindelse med fastholdelse |
|              |                                       | 13                                              | Over current at deceleration state (Software trip) | Overstrøm i inverter i forbindelse med deceleration |
| 721          | Alarm strømforsyning motor            | 2                                               | Over current at acceleration state (Hardware trip) | Overstrøm i motor i forbindelse med acceleration    |
|              |                                       | 3                                               | Over current at steady state (Hardware trip)       | Overstrøm i motor i forbindelse med fastholdelse    |
|              |                                       | 4                                               | Over current at deceleration state (Hardware trip) | Overstrøm i motor i forbindelse med deceleration    |
| 731          | Alarm strøm strømforsyning inverter   | 11                                              | Overload trip (OL)                                 | Overskridelse af nominel strøm til inverter         |
| 751          | Alarm for termisk beskyttelse i motor | 7                                               | Compressor Overheat (Software trip)                | Overophedning af motor                              |
| 811          | Alarm kommunikation                   | 14                                              | Compressor connected loss                          | Tab af kommunikation med seriel tilslutning         |
|              |                                       | 15                                              | Communication time out error                       | Overskridelse af ventetid for kommunikation         |
| 851          | Generel alarm                         | 1                                               | Fin Overheat                                       | Overophedning af afløder i inverter                 |
|              |                                       | 16                                              | Power module over temperature                      | Overophedning i inverterens kontrolkort             |
|              |                                       | 20                                              | Driver error                                       | Generisk fejl i drev                                |
|              |                                       | 30                                              | Emergency switch active (HW)                       | Aktivering af nødstop (hardware)                    |
|              |                                       | 31                                              | Emergency switch active (SW)                       | Aktivering af nødstop (software)                    |
|              |                                       | 40                                              | Abnormal condition                                 | Ikke optimale driftsbetingelser                     |
|              |                                       | 128                                             | Internal memory error                              | Intern fejl i inverterens hukommelse                |
|              |                                       | 129                                             | Internal memory error                              | Intern fejl i inverterens hukommelse                |

## 4.8 Alarmtabel vedrørende kompressorer med Danfoss inverter

Nedenfor følger detaljerede oplysninger over alarmerne vedrørende kompressorerne med Danfoss inverter. Alarmerne overføres fra inverteren til W3000 + ved hjælp af seriel tilslutning.

Under den respektive alarmkode for kontrolenheden W3000 + angives også, hvilke andre alarmer der kan forekomme under en og samme alarmkode. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærm billede for alarmer og alarmhistorik.

| Alarm W3000+ |                                       | Alarmer vedrørende kompressor med Danfoss inverter |                                   |                                                                                                              |
|--------------|---------------------------------------|----------------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------|
| AL           | Beskrivelse                           | Nr.                                                | Beskrivelse                       | Årsag til fejl                                                                                               |
| 701          | Offline inverter                      |                                                    |                                   | Frakobling inverter                                                                                          |
| 711          | Alarm forsyning                       | 4                                                  | Mains phase loss                  | Mangel på en fase fra strømforsyningen eller for høj spændingsubalance mellem faserne                        |
|              |                                       | 7                                                  | DC over voltage                   | Overspænding i mellemliggende kredsløb DC link                                                               |
|              |                                       | 8                                                  | DC under voltage                  | Underspænding i mellemliggende kredsløb DC link                                                              |
|              |                                       | 36                                                 | Mains failure                     | Manglende forsyningsspænding                                                                                 |
| 721          | Alarm strømforsyning motor            | 13                                                 | Over Current                      | Overstrøm i udgang                                                                                           |
|              |                                       | 14                                                 | Earth Fault                       | Tab fra inverterens udgangsfaser mod jord (i kablet mellem inverteren og motoren eller i selve motoren)      |
|              |                                       | 16                                                 | Short Circuit                     | Kortslutning i motor eller i forbindelsesterminaler til motor                                                |
|              |                                       | 30                                                 | Motor phase U is missing          | Manglende fase U mellem inverter og motor                                                                    |
|              |                                       | 31                                                 | Motor phase V is missing          | Manglende fase V mellem inverter og motor                                                                    |
|              |                                       | 32                                                 | Motor phase W is missing          | Manglende fase W mellem inverter og motor                                                                    |
|              |                                       | 33                                                 | Inrush fault                      | For mange opstarter inden for en kort periode                                                                |
| 731          | Alarm strøm strømforsyning inverter   | 9                                                  | Inverter overloaded               | Overskridelse af nominal strøm til inverter                                                                  |
| 751          | Alarm for termisk beskyttelse i motor | 10                                                 | Motor ETR over temperature        | Overophedning af motor (Electronic Thermal Protection)                                                       |
|              |                                       | 11                                                 | Motor thermistor over temperature | Overophedning af motor (termistor) eller mulig frakobling af termistor                                       |
| 811          | Alarm kommunikation                   | 17                                                 | Control Word Timeout              | Tab af kommunikation med seriel tilslutning                                                                  |
|              |                                       | 34                                                 | Fieldbus communication fault      | Fieldbus kommunikationskort fungerer ikke                                                                    |
| 851          | Generel alarm                         | 2                                                  | Live zero error                   | Signalet til terminalerne 53 eller 54 er lavere end 50 % af den indstillede min. grænse for disse terminaler |
|              |                                       | 12                                                 | Torque limit                      | Det udsendte moment er større end den indstillede maks. grænse                                               |
|              |                                       | 23                                                 | Internal fans fault               | Ventilatorer i inverter defekte eller ikke installeret                                                       |
|              |                                       | 24                                                 | External fan fault                | Ventilatorer i inverter defekte eller ikke installeret                                                       |
|              |                                       | 25                                                 | Brake resistor short-circuited    | Bremsemodstand kortsluttet                                                                                   |
|              |                                       | 26                                                 | Brake resistor power limit        | Effekttabet fra bremsemodstanden er større end den indstillede maks. grænse                                  |
|              |                                       | 27                                                 | Brake chopper fault               | Fejl i transistor for bremsemodstand                                                                         |
|              |                                       | 28                                                 | Brake check failed                | Fejl i bremsemodstand                                                                                        |
|              |                                       | 29                                                 | Drive over temperature            | Overophedning i inverter (95 °C ± 5 °C)                                                                      |
|              |                                       | 38                                                 | Internal fault                    | Intern fejl i inverter                                                                                       |
|              |                                       | 47                                                 | 24 V supply low                   | Fejl i inverterens kontrollkort                                                                              |
|              |                                       | 48                                                 | 1.8 V supply low                  | Fejl i inverterens kontrollkort                                                                              |
|              |                                       | 50+58                                              | AMA not ok                        | AMA fejl (Automatic Motor Adaptation)                                                                        |
|              |                                       | 65                                                 | Control Card Over Temperature     | Overophedning i inverterens kontrollkort                                                                     |
|              |                                       | 67                                                 | Option Configuration has Changed  | Tilføjelse/fjernelse af ekstra moduler                                                                       |

| Alarm W3000+ |  | Alarmer vedrørende kompressor med Danfoss inverter |                                    |                                                                  |
|--------------|--|----------------------------------------------------|------------------------------------|------------------------------------------------------------------|
|              |  | 68                                                 | Safe Stop                          | Safe Stop funktionen er aktiveret                                |
|              |  | 80                                                 | Drive Initialised to Default Value | Inverteren er blevet initialiseret manuelt til default-værdierne |
|              |  | 95                                                 | Broken Belt                        | Moment lavere end den indstillede min. grænse                    |
|              |  | 250                                                | New Spare Part                     | Udskiftning af komponent i inverter                              |
|              |  | 251                                                | New Type Code                      | Inverteren har en ny Type Code                                   |



## 4.9 Alarmtabel vedrørende kompressorer med Mitsubishi FR-F800 inverter

Nedenfor følger detaljerede oplysninger over alarmerne vedrørende kompressorerne med Mitsubishi inverter. Alarmerne overføres fra inverteren til W3000 + ved hjælp af seriel tilslutning.

Under den respektive alarmkode for kontrolenheden W3000 + angives også, hvilke andre alarmer der kan forekomme under en og samme alarmkode. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærm billede for alarmer og alarmhistorik.

| Alarm W3000+ |                                       | Kompressoralarmer med Mitsubishi FR-F800 inverter |     |                                                            |                                                                         |
|--------------|---------------------------------------|---------------------------------------------------|-----|------------------------------------------------------------|-------------------------------------------------------------------------|
| AL           | Beskrivelse                           | Inverter display koder                            | Nr. | Beskrivelse                                                | Årsag til fejl                                                          |
| 701          | Offline inverter                      |                                                   |     |                                                            | Frakobling inverter                                                     |
| 711          | Alarm forsyning                       | E.OV1                                             | 32  | Regenerative overvoltage trip during acceleration          | Overspænding i mellemliggende kredsløb DC i acceleration                |
|              |                                       | E.OV2                                             | 33  | Regenerative overvoltage trip during constant speed        | Overspænding i mellemliggende kredsløb DC ved konstant hastighed        |
|              |                                       | E.OV3                                             | 34  | Regenerative overvoltage trip during deceleration or stop  | Overspænding i mellemliggende kredsløb DC i deceleration                |
|              |                                       | E.IPF                                             | 80  | Instantaneous power failure                                | Manglende forsyningsspænding                                            |
|              |                                       | E.UVT                                             | 81  | Undervoltage                                               | Underspænding for forsyning af inverter                                 |
|              |                                       | E.ILF                                             | 82  | Input phase loss                                           | Manglende fase fra netforsyningen                                       |
|              |                                       | E.GF                                              | 128 | Output side earth (ground) fault overcurrent               | Overstrøm i dispersion mod jord                                         |
|              |                                       | E.LF                                              | 129 | Output phase loss                                          | Manglende fase mellem inverter og motor                                 |
|              |                                       | E.IOH                                             | 197 | Inrush current limit circuit fault                         | Overophedning af aktiveringskredsløbets modstand                        |
| 721          | Alarm strømforsyning motor            | E.OC1                                             | 16  | Overcurrent trip during acceleration                       | Overstrøm i udgang i acceleration                                       |
|              |                                       | E.OC2                                             | 17  | Overcurrent trip during constant speed                     | Overstrøm i udgang ved konstant hastighed                               |
|              |                                       | E.OC3                                             | 18  | Overcurrent trip during deceleration or stop               | Overstrøm i udgang i deceleration                                       |
|              |                                       | E.THM                                             | 49  | Motor overload trip (electronic thermal relay function)    | Overophedning af motor (Electronic Thermal Protection)                  |
|              |                                       | E.CDO                                             | 196 | Abnormal output current detection                          | Overstrøm i udgang                                                      |
| 731          | Alarm strøm strømforsyning inverter   | E.THT                                             | 48  | Inverter overload trip (electronic thermal relay function) | Overskridelse af nominel strøm til inverter                             |
| 751          | Alarm for termisk beskyttelse i motor | E.OHT                                             | 144 | External thermal relay operation                           | Overophedning af motor registreret af termistor udenfor eller i motoren |
| 791          | Alarm for høj hastighed               | E.LUP                                             | 98  | Upper limit fault detection                                | Overbelastning motor                                                    |
| 811          | Alarm kommunikation                   | E.OPT                                             | 160 | Option fault                                               | Alarm definerbar fra parametre                                          |
|              |                                       | E.OP1                                             | 161 | Communication option fault                                 | Tab af kommunikation med seriel tilslutning                             |
|              |                                       | E.PUE                                             | 177 | PU disconnection                                           | Manglende kommunikation mellem inverter og effektenhed                  |
|              |                                       | E.SER                                             | 198 | Communication fault (inverter)                             | Tab af kommunikation med seriel tilslutning                             |
|              |                                       | E.EHR                                             | 231 | Ethernet communication fault                               | Tab af kommunikation med Ethernet forbindelse                           |
| 821          | Alarm sikkerhedsindgang inverter 1    | E.SAF                                             | 201 | Safety circuit error                                       | Fejl i sikkerhedskredsløb                                               |
| 851          | Generel alarm                         | E.FIN                                             | 64  | Heatsink overheat                                          | Overophedning af afleder i inverter                                     |
|              |                                       | E.OLT                                             | 96  | Stall prevention stop                                      | Stop på grund af stall-forebyggelsesfunktion                            |

| Alarm W3000+ |  | Kompressoralarmer med Mitsubishi FR-F800 inverter |     |                                                                                       |                                                                              |
|--------------|--|---------------------------------------------------|-----|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
|              |  | E.SOT                                             | 97  | Loss of synchronism detection                                                         | Tab af synkronisme mellem inverter og motor                                  |
|              |  | E.LDN                                             | 99  | Lower limit fault detection                                                           | Underbelastning af motor                                                     |
|              |  | E.BE                                              | 112 | Internal circuit fault                                                                | Intern fejl i inverter                                                       |
|              |  | E.PTC                                             | 145 | PTC thermistor operation                                                              | Stop pga. PTC termistor overtemperatur                                       |
|              |  | E.16                                              | 164 | User definition error by the PLC function                                             | Alarmer defineret af PLC funktionerne                                        |
|              |  | E.17                                              | 165 |                                                                                       |                                                                              |
|              |  | E.18                                              | 166 |                                                                                       |                                                                              |
|              |  | E.19                                              | 167 |                                                                                       |                                                                              |
|              |  | E.20                                              | 168 |                                                                                       |                                                                              |
|              |  | E.PE                                              | 176 | Parameter storage device fault                                                        | Anomali i lagring af parametre (styrekort)                                   |
|              |  | E.RET                                             | 178 | Retry count excess                                                                    | Overskridning af maksimalt antal automatiske alarm-genetablinger             |
|              |  | E.PE2                                             | 179 | Parameter storage device fault                                                        | Anomali i lagring af parametre (hovedkort)                                   |
|              |  | E.CPU                                             | 192 | CPU fault                                                                             | Anomali CPU inverter                                                         |
|              |  | E.CTE                                             | 193 | Operation panel power supply short circuit/RS-485 terminal power supply short circuit | Kortslutning på styrepanel / kortslutning på kommunikationsterminaler RS-485 |
|              |  | E.P24                                             | 194 | 24 V DC power fault                                                                   | Kortslutning på strømforsyning 24 V DC                                       |
|              |  | E.AIE                                             | 199 | Analog input fault                                                                    | Unormal strøm eller spænding i indgang på terminal 2                         |
|              |  | E.USB                                             | 200 | USB communication fault                                                               | Tab af kommunikation med USB forbindelse                                     |
|              |  | E.PBT                                             | 202 | Internal circuit fault                                                                | Intern fejl i inverter                                                       |
|              |  | E.OS                                              | 208 | Overspeed occurrence                                                                  | For høj motorhastighed                                                       |
|              |  | E.LCI                                             | 228 | 4 mA input fault                                                                      | Strømniveau i analog indgang på under 2 mA                                   |
|              |  | E.PCH                                             | 229 | Pre-charge fault                                                                      | Anomali, for-opladning                                                       |
|              |  | E.PID                                             | 230 | PID signal fault                                                                      | Anomali, PID kontrol                                                         |
|              |  | E. 1                                              | 241 | Option fault                                                                          | Anomali, ekstrakortenes forbindelse                                          |
|              |  | E. 2                                              | 242 |                                                                                       |                                                                              |
|              |  | E. 3                                              | 243 |                                                                                       |                                                                              |
|              |  | E. 5                                              | 245 | CPU fault                                                                             | Anomali CPU inverter                                                         |
|              |  | E.6                                               | 246 |                                                                                       |                                                                              |
|              |  | E. 7                                              | 247 |                                                                                       |                                                                              |
|              |  | E.13                                              | 253 | Internal circuit fault                                                                | Intern fejl i inverter                                                       |

#### 4.10 Tabel over alarmer for kompressorer med STEP-inverter

Nedenfor følger detaljerede oplysninger over alarmerne ved kompressorerne med STEP-inverter. Alarmerne overføres fra inverteren til W3000+ ved hjælp af serie tilslutning.

Under den respektive alarmkode for kontrolenheden W3000 + angives også, hvilke andre alarmer der kan forekomme under en og samme alarmkode. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærbillede for alarmer og alarmhistorik.

| Alarm W3000+ |                            | Alarmer kompressor med STEP-inverter |                                    |                                                                                        |
|--------------|----------------------------|--------------------------------------|------------------------------------|----------------------------------------------------------------------------------------|
| AL           | Beskrivelse                | Nr.                                  | Beskrivelse                        | Årsag til fejl                                                                         |
| 701          | Offline inverter           |                                      |                                    | Frakobling inverter                                                                    |
| 711          | Alarm forsyning            | 8                                    | Bus over voltage protection        | Abnormal input voltage                                                                 |
|              |                            |                                      |                                    | Re-rapid starting during motor in high speed rotating                                  |
|              |                            |                                      |                                    | Too high load rotational inertia                                                       |
|              |                            |                                      |                                    | Too short deceleration time                                                            |
|              |                            |                                      |                                    | Too high braking resistance or no resistor                                             |
|              |                            |                                      |                                    | Abnormal input power                                                                   |
|              |                            |                                      |                                    | Too large load rotational inertia                                                      |
|              |                            |                                      |                                    | Too high braking resistance or no resistor                                             |
|              |                            | 9                                    | Bus undervoltage                   | Power voltage lower than minimum equipment working voltage                             |
|              |                            |                                      |                                    | Instantaneous power off                                                                |
|              |                            |                                      |                                    | Too high fluctuation of input power voltage                                            |
|              |                            |                                      |                                    | Loose power connection block                                                           |
|              |                            |                                      |                                    | Internal switch power abnormal                                                         |
|              |                            |                                      |                                    | A large starting current load existing in the same power supply system                 |
|              |                            | 23                                   | Input over-voltage                 | Too high input voltage                                                                 |
|              |                            |                                      |                                    | Problem by detection loop of switch voltage                                            |
|              |                            | 29                                   | Loss input phase                   | Abnormal voltage at input side                                                         |
|              |                            |                                      |                                    | Loss input voltage phase                                                               |
|              |                            |                                      |                                    | Input terminal block loose                                                             |
|              |                            | 44                                   | The input power supply is abnormal | The input power supply changes a lot                                                   |
|              |                            |                                      |                                    | Input contactor abnormally connected                                                   |
|              |                            |                                      |                                    | Temporary electricity                                                                  |
| 721          | Alarm strømforsyning motor | 10                                   | Loss of output phase               | Abnormal wiring at inverter output, missing or breaking connection                     |
|              |                            |                                      |                                    | Loose output terminal block                                                            |
|              |                            |                                      |                                    | Insufficient motor power, less than 1/20 of maximum applicable inverter motor capacity |
|              |                            |                                      |                                    | Unbalanced three phase output                                                          |
|              |                            | 11                                   | Motor over current at low speed    | Low network voltage                                                                    |
|              |                            |                                      |                                    | Improper motor parameter setting                                                       |
|              |                            |                                      |                                    | Rapid start during motor running                                                       |
|              |                            |                                      |                                    | The acceleration time for load inertia (GD2) is too short.                             |
|              |                            |                                      |                                    | Low network voltage                                                                    |
|              |                            |                                      |                                    | Too large load rotational inertia                                                      |
|              |                            |                                      |                                    | Improper motor parameter setting                                                       |
|              |                            |                                      |                                    | Too short deceleration time                                                            |

| Alarm W3000+ |                                     | Alarmer kompressor med STEP-inverter |                                           |                                                                                                     |
|--------------|-------------------------------------|--------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------|
|              |                                     |                                      |                                           | The deceleration time for load inertia (GD2) is too short                                           |
|              |                                     |                                      |                                           | Abrupt load change in running                                                                       |
|              |                                     |                                      |                                           | Improper motor parameter setting                                                                    |
|              |                                     | 16                                   | Wrong motor phase                         | Motor reversed connected                                                                            |
|              |                                     | 21                                   | abc over current                          | Motor single phase shorted to earth                                                                 |
|              |                                     |                                      |                                           | Encoder fault                                                                                       |
|              |                                     |                                      |                                           | Test loop of drive board fault                                                                      |
|              |                                     | 27                                   | Output over current                       | Too long time operation under overload status. The larger the load, the shorter the time is.        |
|              |                                     |                                      |                                           | Motor blocked                                                                                       |
|              |                                     |                                      |                                           | Motor coil short                                                                                    |
|              |                                     |                                      |                                           | Output short                                                                                        |
|              |                                     | 31                                   | Over current at motor high speed          | Power grid voltage too low                                                                          |
|              |                                     |                                      |                                           | Abrupt load in operation                                                                            |
|              |                                     |                                      |                                           | Incorrect motor parameter                                                                           |
|              |                                     |                                      |                                           | Wrong encoder parameter or interference                                                             |
|              |                                     | 32                                   | Grounding protection                      | Wrong wiring                                                                                        |
|              |                                     |                                      |                                           | Abnormal motor                                                                                      |
|              |                                     | 35                                   | Unbalance output                          | Large drain current to earth at inverter output side                                                |
|              |                                     |                                      |                                           | Abnormal wiring at inverter output side, missing or broking connection                              |
|              |                                     | 39                                   | Too high instantaneous current            | Motor three phase unbalance                                                                         |
|              |                                     |                                      |                                           | Three phase instantaneous current over and alarm while Ia, Ib and Ic not in operation               |
|              |                                     | 42                                   | IGBT short circuit protection             | The cause is the same as Fualt 1.                                                                   |
|              |                                     | 45                                   | I2t instantaneous over current protection | Same as fault 21,27                                                                                 |
|              |                                     | 46                                   | I2t valid over current protection         |                                                                                                     |
|              |                                     | 51                                   | Abnormal running output current           | Improper parameter setting Disconnection between the inverter and the motor Inverter hardware fault |
| 731          | Alarm strøm strømforsyning inverter | 1                                    | Module over-current protection            | Too high voltage at DC terminal                                                                     |
|              |                                     |                                      |                                           | Possible short connection to peripheral circuit                                                     |
|              |                                     |                                      |                                           | Losing output phase                                                                                 |
|              |                                     |                                      |                                           | Encoder fault                                                                                       |
|              |                                     |                                      |                                           | Hardware poor contact or damage                                                                     |
|              |                                     |                                      |                                           | Internal component loose                                                                            |
| 811          | Alarm kommunikation                 | 43                                   | Communication fault                       | The power circuit components overheat due to the cooling fan or cooling system problem.             |
|              |                                     |                                      |                                           | Communication disconnected No communication data received within the fixed time                     |
| 851          | Generel alarm                       | 2                                    | 2 ADC fault                               | Current sensor damaged                                                                              |
|              |                                     |                                      |                                           | Problem of current sampling loop                                                                    |
|              |                                     | 3                                    | Heatsink overheat                         | Ambient temperature too high                                                                        |
|              |                                     |                                      |                                           | The cooling fan damaged or foreign object entered into the cooling system.                          |
|              |                                     |                                      |                                           | Cooling fan is abnormal                                                                             |
|              |                                     | 4                                    | Braking unit failure                      | Temperature detect circuit fault                                                                    |
|              |                                     |                                      |                                           | Braking unit damaged                                                                                |

| Alarm W3000+ |  | Alarmer kompressor med STEP-inverter |                                                                         |
|--------------|--|--------------------------------------|-------------------------------------------------------------------------|
|              |  |                                      | External braking resistor circuit short                                 |
|              |  | 5                                    | Blown fuse failure                                                      |
|              |  | 6                                    | Too low input voltage                                                   |
|              |  |                                      | Motor stop rotating or abrupt loading change                            |
|              |  |                                      | Encoder failure                                                         |
|              |  |                                      | Missing output phase                                                    |
|              |  | 7                                    | Too short acceleration time                                             |
|              |  |                                      | Too high load                                                           |
|              |  |                                      | Too low current limit                                                   |
|              |  | 13                                   | Current detected at stopping                                            |
|              |  | 22                                   | Current keep on flowing while motor stops                               |
|              |  |                                      | Inactive output relay                                                   |
|              |  |                                      | Relay triggered, brake not released                                     |
|              |  |                                      | No signal detected by feedback component                                |
|              |  | 30                                   | Wrong encoder parameter set or interference                             |
|              |  |                                      | Abrupt load change                                                      |
|              |  |                                      | Wrong parameter for over speed protection                               |
|              |  | 33                                   | Capacitor aged                                                          |
|              |  | 34                                   | Inverter capacitor aged                                                 |
|              |  | 36                                   | External fault                                                          |
|              |  | 36                                   | External fault signal input                                             |
|              |  | 37                                   | Wrong parameter setting                                                 |
|              |  | 37                                   | Wrong parameter setting                                                 |
|              |  | 38                                   | Current sensor fault                                                    |
|              |  | 38                                   | Drive board hardware fault                                              |
|              |  | 40                                   | Brake resistor short                                                    |
|              |  | 40                                   | Connection of external brake resistor short                             |
|              |  | 41                                   | KMY detection fault                                                     |
|              |  | 41                                   | KMY detect contactor signal and KMY control signal don't match          |
|              |  | 41                                   | Brake switch detect contactor signal and its control signal don't match |

#### 4.11 Tabel over alarmer for kompressorer med PSD-inverter

Tabellen viser PSD-omformernes alarmkoder og -status (overføres via seriel forbindelse til styreenheden W3000+) og den tilsvarende alarmkode for styreenheden W3000+. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærbillede for alarmer og alarmhistorik.

Ved alarmer, der genoprettes automatisk (se afsnittet Alarmtabel W3000+), er det maksimale antal indgreb begrænset til 3 pr. minut.

Controlleren W3000+ vil forsøge at nulstille alarmer automatisk hvert andet minut op til maksimalt 10 forsøg, hvorefter alarmer vil blive nulstillet manuelt.

I tilfælde af sikkerhedsalarmer (værdier større end 100 eller 200 under kolonnen N°/Bit i tabellen) er det nødvendigt at vente 240 sekunder, før alarmer kan nulstilles.

Kodningen af alarmer, der stammer fra omformeren, er vist i følgende tabel:

1-28: alarmbasiskode

100-115: Status sikkerhedsalarm 1 (hvert tal svarer til de relevante bits i det første register i sekventiel rækkefølge.

Eksempel: 100 = bit 0)

200-215: Status sikkerhedsalarm 2 (hvert tal svarer til de relevante bits i det andet register i sekventiel rækkefølge.

Eksempel: 201 = bit 1)

| Alarm W3000+ |                            | Alarmer kompressor med PSD-inverter |         |                                              |
|--------------|----------------------------|-------------------------------------|---------|----------------------------------------------|
| AL           | Beskrivelse                | Variabel                            | Nr./bit | Beskrivelse                                  |
| 701          | Offline inverter           |                                     |         | Frakobling inverter                          |
| 711          | Alarm forsyning            | Alarmkode                           | 1       | Overstrøm                                    |
|              |                            |                                     | 3       | Overspænding                                 |
|              |                            |                                     | 4       | Underspænding                                |
|              |                            |                                     | 7       | Overstrøm HW                                 |
|              |                            |                                     | 21      | Overspænding strømforsyning                  |
|              |                            |                                     | 22      | Underspænding strømforsyning eller fasesvigt |
|              |                            |                                     | 25      | Fejl på jord                                 |
|              |                            |                                     | 28      | Overbelastning drev                          |
|              |                            | Alarmstatus 1                       | 100     | Fejl i strømmåling U,V,W                     |
|              |                            |                                     | 101     | Strøm U,V,W ubalancerede                     |
|              |                            |                                     | 102     | Overstrøm eller fejl i jord                  |
|              |                            |                                     | 105     | Ingen strømforsyning                         |
|              |                            |                                     | 114     | Underspænding strømforsyning                 |
|              |                            |                                     | 115     | Fejl i måling af forsyningsspænding          |
| 721          | Alarm strømforsyning motor | Alarmkode                           | 2       | Overbelastning motor                         |
|              |                            |                                     | 17      | Manglende fase motor                         |
|              |                            |                                     | 19      | Motor i stå                                  |
|              |                            | Alarmstatus 1                       | 106     | Fejl i motorstyringen                        |
|              |                            |                                     | 109     | Kompressor gået i stå                        |
| 801          | Alarm feltbus inverter 1   | Alarmkode                           | 12      | Ondulation DC bus                            |
|              |                            | Alarmstatus 1                       | 10      | Overstrøm DC-bus                             |
|              |                            |                                     | 11      | Fejl i strømmåling DC-bus                    |
|              |                            |                                     | 12      | Spænding DC-bus uden for grænsen             |
|              |                            |                                     | 13      | Fejl i måling af spænding DC-bus             |

| Alarm W3000+ |                                             | Alarmer kompressor med PSD-inverter |     |                                    |
|--------------|---------------------------------------------|-------------------------------------|-----|------------------------------------|
|              |                                             | Alarmstat<br>us 2                   | 200 | Overbelastning DC-bus              |
|              |                                             |                                     | 201 | Fejl i måling af belastning DC-bus |
| 811          | Alarm kommunikation                         | Alarmkod<br>e                       | 13  | Fejl seriekommunikation            |
|              |                                             | Alarmstat<br>us 1                   | 108 | Fejl seriekommunikation            |
| 821          | Alarm sikkerhedsindgang<br>inverter 1 (STO) | Alarmstat<br>us 1                   | 103 | Indgang STO åben                   |
|              |                                             |                                     | 104 | Fejl internt kredsløb STO          |
| 851          | Generel alarm                               | Alarmkod<br>e                       | 5   | Overtemperatur drev                |
|              |                                             |                                     | 6   | Undertemperatur drev               |
|              |                                             |                                     | 10  | Fejl CPU                           |
|              |                                             |                                     | 11  | Standardparametre                  |
|              |                                             |                                     | 14  | Intern termistor defekt            |
|              |                                             |                                     | 20  | Fejl PFC-modul                     |
|              |                                             |                                     | 26  | Fejl synkronisering 1 CPU          |
|              |                                             |                                     | 27  | Fejl synkronisering 2 CPU          |
|              |                                             | Alarmstat<br>us 2                   | 202 | Overtemperatur drev                |
|              |                                             |                                     | 203 | Undertemperatur drev               |
|              |                                             |                                     | 204 | Intern termistor defekt            |
|              |                                             |                                     | 205 | Fejl synkronisering                |
|              |                                             |                                     | 206 | Ugyldige sikkerhedsparametre       |
|              |                                             |                                     | 208 | Fejl styrekredsløb                 |

## 4.12 Alarmtabel vedrørende kompressorer med Mitsubishi ABB ACH 580 inverter

Nedenfor følger detaljerede oplysninger over alarmerne ved kompressorerne med ABB-inverter. Alarmerne overføres fra inverteren til W3000+ ved hjælp af serie tilslutning.

Under den respektive alarmkode for kontrolenheden W3000 + angives også, hvilke andre alarmer der kan forekomme under en og samme alarmkode. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærm billede for alarmer og alarmhistorik.

| Alarm W3000+ |                                     | Alarmer i kompressorer med Mitsubishi ABB ACH 580-inverter |                                          |                                                                                                                                                                                                              |
|--------------|-------------------------------------|------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AL           | Beskrivelse                         | Nr.                                                        | Beskrivelse                              | Årsag til fejl                                                                                                                                                                                               |
| 701          | Offline inverter                    |                                                            |                                          | Frakoblet inverter.                                                                                                                                                                                          |
| 711          | Alarm forsyning                     | 2330                                                       | Jordfejl                                 | Omformerer har registreret en ubalance i belastningen, som normalt skyldes en jordfejl i motoren eller motorkablet.                                                                                          |
|              |                                     | 3130                                                       | Tab af indgangsfase                      | DC-spændingen i mellemkredsløbet svinger på grund af en fasefejl på indgangsstrømledningen eller en sprunget sikring.                                                                                        |
|              |                                     | 3210                                                       | DC-link overspænding                     | For høj jævnspænding i mellemkredsløbet.                                                                                                                                                                     |
|              |                                     | 3220                                                       | For lav underspænding i mellemkredsløbet | DC-spændingen i mellemkredsløbet er utilstrækkelig på grund af: manglende forsyningsfase, sprunget sikring eller i ensretterbroen.                                                                           |
| 721          | Alarm strømforsyning motor          | 2340                                                       | Kortslutning                             | Kortslutning i motorkablet/motorkablerne til eller i motoren.                                                                                                                                                |
|              |                                     | 3181                                                       | Defekt ledning eller jordledning         | Forkert tilslutning af indgangsstrøm og motorkabel (dvs. at indgangsstrømkablet er tilsluttet frekvensomformerens motortilslutning).                                                                         |
|              |                                     | 3381                                                       | Tab af udgangsfase                       | Fejl i motorkredsløbet på grund af manglende motortilslutning (ikke alle tre faser er tilsluttet).                                                                                                           |
|              |                                     | 8002                                                       | ULC overbelastningsfejl                  | Brugerbelastningskurve: signalet har været over overbelastningskurven i for lang.                                                                                                                            |
| 731          | Alarm strøm strømforsyning inverter | 2310                                                       | Overstrøm                                | Udgangsstrømmen har overskredet den interne fejlgrænse. Ud over en faktisk overstrømsituation kan denne fejl også skyldes en jordfejl eller tab af en forsyningsfase.                                        |
| 771          | Alarm IGBT                          | 2381                                                       | Overbelastning af IGBT                   | For høj temperatur i IGBT-forbindelsen. Denne fejl beskytter IGBT'erne og kan udløses af en kortslutning i motorkablet.                                                                                      |
|              |                                     | 4210                                                       | Overtemperatur IGBT                      | For høj skønnet temperatur på konverterens IGBT'er.                                                                                                                                                          |
|              |                                     | 4201                                                       | Temperatur IGBT                          | For høj skønnet temperatur på konverterens IGBT'er.                                                                                                                                                          |
|              |                                     | 4380                                                       | For stor temperaturforskel               | For stor temperaturforskel mellem IGBT'er i forskellige faser.                                                                                                                                               |
|              |                                     | 7191                                                       | Kortslutning af chopper                  | Kortslutning i bremsechopperens IGBT'er.                                                                                                                                                                     |
|              |                                     | 7192                                                       | For høj temperatur i IGBT-chopper        | Temperaturen på bremsechopper IGBT'er har overskredet den interne fejlgrænse.                                                                                                                                |
| 781          | Alarm statormodstand inverter       | 7181                                                       | Bremsemodstand                           | Bremsemodstand defekt eller ikke tilsluttet.                                                                                                                                                                 |
|              |                                     | 7183                                                       | For høj temperatur på bremsemodstanden   | Temperaturen på bremsemodstanden har overskredet den fejlgrænse, der er defineret i parameter 43.11 <i>Fejlgrænse for bremsemodstand</i> .                                                                   |
|              |                                     | 7184                                                       | Ledningsføring til bremsemodstand        | Kortslutning af bremsemodstanden eller fejl i styringen af bremsechopperen.                                                                                                                                  |
| 791          | Alarm for høj hastighed             | 7310                                                       | Overhastighed                            | Motorens rotation overskrider den maksimalt tilladte hastighed på grund af forkert indstilling af min./maks.-hastighed, utilstrækkeligt bremsemoment eller belastningsændringer ved brug af momentreference. |
| 801          | Feltbusalarm for inverter           | 6681                                                       | Tab af EFB-kommunikation                 | Afbrydelse af kommunikation med integreret feltbus (EFB).                                                                                                                                                    |



| Alarm W3000+ |                                                   | Alarmer i kompressorer med Mitsubishi ABB ACH 580-inverter |                                             |                                                                                                                                                  |
|--------------|---------------------------------------------------|------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| 811          | Alarm kommunikation                               | 5681                                                       | PU-kommunikation                            | Kommunikationsfejl registreret mellem omformerens styreenhed og strømforsyningsenheden.                                                          |
|              |                                                   | 5682                                                       | PU-tab                                      | Tab af forbindelse mellem omformerens styreenhed og strømforsyningsenheden.                                                                      |
|              |                                                   | 6682                                                       | EFB-konfigurationsfil                       | Den integrerede feltbus (EFB)-konfigurationsfil kan ikke læses.                                                                                  |
|              |                                                   | 6683                                                       | Ugyldige EFB-parametre                      | Parameterindstillingerne for den integrerede feltbus (EFB) er inkonsekvente eller inkompatible med den valgte protokol.                          |
|              |                                                   | 6684                                                       | EFB-belastningssvigt                        | Firmwaren til den integrerede feltbusprotokol (EFB) kan ikke indlæses.                                                                           |
|              |                                                   | 6685                                                       | Fejl 2 EFB                                  | Inkompatibilitet mellem firmwareversioner af EFB-protokollen og frekvensomformerens.                                                             |
|              |                                                   | 6686                                                       | Fejl 3 EFB                                  | Fejl reserveret til EFB-protokolapplikation.                                                                                                     |
|              |                                                   | 6882                                                       | Overløb 32-bit tekstfane                    | Fejl reserveret til EFB-protokolapplikation.                                                                                                     |
|              |                                                   | 6885                                                       | Overløb tekstfil                            | Intern fejl.                                                                                                                                     |
|              |                                                   | 7510                                                       | Kommunikation FBA A                         | Intern fejl.                                                                                                                                     |
| 821          | Alarm for inverterens sikkerhedsindgang (STO)     | 5090                                                       | STO-hardwarefejl                            | Tab af cyklisk kommunikation mellem konverter og feltbusadaptermodul A eller mellem PLC og feltbusadaptermodul A.                                |
|              |                                                   | 5091                                                       | Safe Torque Off                             | STO-hardwarediagnostik har fundet en hardwarefejl.                                                                                               |
|              |                                                   | 81                                                         | Safe Torque Off 1                           | Funktionen Safe Torque Off er aktiv, dvs. tab af signal(er) fra det sikkerhedskredsløb, der er tilsluttet STO-stikket, under start eller kørsel. |
|              |                                                   | 82                                                         | Safe Torque Off 2                           | Safe Torque Off-funktion aktiv, dvs. STO-kredsløb 1 er defekt.                                                                                   |
| 851          | Generel alarm (specifik kode vises ikke i W3000+) | 1080                                                       | Timeout for sikkerhedskopiering/gendannelse | Safe Torque Off-funktion aktiv, dvs. STO-kredsløb 2 er defekt.                                                                                   |
|              |                                                   | 1081                                                       | Fejl-ID                                     | Panelet eller pc-værktøjet kommunikerede ikke med konverteren under udførelse eller gendannelse af sikkerhedskopien.                             |
|              |                                                   | 4110                                                       | Temperaturstyrekort                         | Konvertersoftwaren kunne ikke læse konverter-ID'et.                                                                                              |
|              |                                                   | 4290                                                       | Køling                                      | For høj temperatur på styrekortet.                                                                                                               |
|              |                                                   | 4310                                                       | For høj temperatur                          | For høj temperatur på konvertermodulet.                                                                                                          |
|              |                                                   | 4981                                                       | Udendørstemperatur 1                        | Strømforsyningsmodulets temperatur er for høj.                                                                                                   |
|              |                                                   | 4982                                                       | Udendørstemperatur 2                        | Den målte temperatur 1 har overskredet fejlgrænsen.                                                                                              |
|              |                                                   | 5081                                                       | Fejl i hjælpeblæser                         | Den målte temperatur 2 har overskredet fejlgrænsen.                                                                                              |
|              |                                                   | 5092                                                       | PU-logikfejl                                | En ekstra køleblæser (tilsluttet ventilatorstikkene på kontrolenheden) er blokeret eller er frakoblet.                                           |
|              |                                                   | 5093                                                       | ID stemmer ikke overens                     | Strømforsyningsenhedens hukommelse er blevet slettet.                                                                                            |
|              |                                                   | 5094                                                       | Måling af kredsløbstemperatur               | Konverterens hardware stemmer ikke overens med oplysningerne i hukommelsen. Det kan f.eks. ske efter en firmwareopdatering.                      |
|              |                                                   | 50A0                                                       | Ventilatorhjul                              | Problem med at måle den interne omformertemperatur.                                                                                              |
|              |                                                   | 5690                                                       | Intern kommunikation strømforsyning         | Køleblæser blokeret eller frakoblet.                                                                                                             |
|              |                                                   | 5691                                                       | ADC-målekredsløb                            | Intern kommunikationsfejl.                                                                                                                       |

| Alarm W3000+ |  | Alarmer i kompressorer med Mitsubishi ABB ACH 580-inverter |                           |                                                                                                                                                                                                                                                                       |
|--------------|--|------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |  | 5692                                                       | Intet strømforsyningskort | Fejl i strømforsyningsenheden.                                                                                                                                                                                                                                        |
|              |  | 5693                                                       | DFF-målekredsløb          | Fejl i målekredsløbet.                                                                                                                                                                                                                                                |
|              |  | 5696                                                       | Feedback PU-status        | Tilbage melding for udgangsfasestatus svarer ikke til styresignalerne.                                                                                                                                                                                                |
|              |  | 5697                                                       | Feedback opladning        | Manglende feedbacksignal for opladning.                                                                                                                                                                                                                               |
|              |  | 6181                                                       | Inkompatibel FPGA-version | Firmware og FPGA-versioner er inkompatible.                                                                                                                                                                                                                           |
|              |  | 6306                                                       | FBA-kortlægningsfil A     | Fejl ved læsning af feltbusadapter A's kortlægningsfil.                                                                                                                                                                                                               |
|              |  | 6481                                                       | Overbelastning af opgaver | Intern fejl.                                                                                                                                                                                                                                                          |
|              |  | 6487                                                       | Overløbsstak              | Intern fejl.                                                                                                                                                                                                                                                          |
|              |  | 64A1                                                       | Intern filoverførsel      | Fejl ved læsning af fil.                                                                                                                                                                                                                                              |
|              |  | 64B2                                                       | Brugerindstillet fejl     | Indlæsningen af brugerparametersættet mislykkedes, fordi: <ul style="list-style-type: none"><li>• Den ønskede indstilling findes ikke</li><li>• Indstillingen er ikke kompatibel med styreprogrammet</li><li>• Konverteren blev slukket under indlæsningen.</li></ul> |
|              |  | 64E1                                                       | Overbelastning af kernen  | Fejl i operativsystemet.                                                                                                                                                                                                                                              |
|              |  | 6581                                                       | Parametersystem           | Indlæsning eller lagring af parametre mislykkedes.                                                                                                                                                                                                                    |
|              |  | 65A1                                                       | FBA-parameterkonflikt A   | Konverteren har ikke den funktionalitet, som PLC'en kræver, eller den krævede funktionalitet er ikke blevet aktiveret.                                                                                                                                                |
|              |  | 7081                                                       | Tab af betjeningspanel    | Betjeningspanelet eller pc-værktøjet, der er valgt som den aktive kontrolstation for konverteren, er holdt op med at kommunikere.                                                                                                                                     |
|              |  | 7121                                                       | Motorstop                 | Motoren kører i stallområdet, f.eks. på grund af for stor belastning eller utilstrækkelig motoreffekt.                                                                                                                                                                |
|              |  | 73B0                                                       | Nødrampen svigtede        | Nødstoppet blev ikke gennemført inden for den fastsatte tid.                                                                                                                                                                                                          |
|              |  | 8001                                                       | ULC underbelastningsfejl  | Brugerbelastningskurve: Signalet har været under underbelastningskurven i for lang tid.                                                                                                                                                                               |
|              |  | 80A0                                                       | AI-overvågningsfejl       | Et analogt signal har overskredet de specificerede grænser for den analoge indgang.                                                                                                                                                                                   |
|              |  | 80B0                                                       | Signalovervågning         | Fejl genereret af signalovervågningsfunktion 1.                                                                                                                                                                                                                       |
|              |  | 80B1                                                       | Signalovervågning         | Fejl genereret af signalovervågningsfunktion 2.                                                                                                                                                                                                                       |
|              |  | 80B2                                                       | Signalovervågning         | Fejl genereret af signalovervågningsfunktion 3.                                                                                                                                                                                                                       |
|              |  | 80B3                                                       | Signalovervågning         | Fejl genereret af signalovervågningsfunktion 4.                                                                                                                                                                                                                       |
|              |  | 80B4                                                       | Signalovervågning         | Fejl genereret af signalovervågningsfunktion 5.                                                                                                                                                                                                                       |
|              |  | 80B5                                                       | Signalovervågning         | Fejl genereret af signalovervågningsfunktion 6.                                                                                                                                                                                                                       |
|              |  | 9081                                                       | Ekstern fejl 1            | Fejl i ekstern enhed 1.                                                                                                                                                                                                                                               |
|              |  | 9082                                                       | Ekstern fejl 2            | Fejl i ekstern enhed 2.                                                                                                                                                                                                                                               |
|              |  | 9083                                                       | Ekstern fejl 3            | Fejl i ekstern enhed 3.                                                                                                                                                                                                                                               |
|              |  | 9084                                                       | Ekstern fejl 4            | Fejl i ekstern enhed 4.                                                                                                                                                                                                                                               |
|              |  | 9085                                                       | Ekstern fejl 5            | Fejl i ekstern enhed 5.                                                                                                                                                                                                                                               |

| Alarm W3000+ |  | Alarmer i kompressorer med Mitsubishi ABB ACH 580-inverter |                        |                                                                                 |
|--------------|--|------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------|
|              |  | FF61                                                       | ID kørsel              | Motoridentifikationsrutinen blev ikke gennemført korrekt.                       |
|              |  | FF81                                                       | Tvungen udløsning FB A | En fejludløsningskommando blev modtaget via feltbusadapter A.                   |
|              |  | FF8E                                                       | Tvungen udløsning EFB  | En fejludløsningskommando blev modtaget via den integrerede feltbusgrænseflade. |

### 4.13 Tabel over alarmer for kompressorer med Sanhua-inverter

Tabellen viser detaljer om alarmer for kompressorer med Sanhua-invertere (transmitteret fra inverteren til controlleren W3000+ via seriel forbindelse) og den tilsvarende inverteralarmkode for controlleren W3000+. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærm billede for alarmer og alarmhistorik.

Kodningen af alarmer, der stammer fra omformeren, er vist i følgende tabel:

100-115: Register alarmer 1 (hvert tal svarer til de relevante bits i det første register i sekventiel rækkefølge. Eksempel: 100 = bit 0)

200-215: Register alarmer 2 (hvert tal svarer til de relevante bits i det andet register i sekventiel rækkefølge. Eksempel: 201 = bit 1)

| Alarm W3000+ |                                               | Alarmer kompressor med Sanhua-inverter |         |                                           |
|--------------|-----------------------------------------------|----------------------------------------|---------|-------------------------------------------|
| AL           | Beskrivelse                                   | Variabel                               | Nr./bit | Beskrivelse                               |
| 701          | Offline inverter                              |                                        |         | Frakobling inverter                       |
| 711          | Alarm forsyning                               | Register 1                             | 100     | Overstrømsbeskyttelse af kompressor       |
|              |                                               |                                        | 105     | Beskyttelse mod tab af udgangsfase        |
|              |                                               |                                        | 114     | Fejl ved ændring af kredsløb              |
|              |                                               | Register 2                             | 200     | AC-overstrømsbeskyttelse                  |
|              |                                               |                                        | 202     | Overstrømsbeskyttelse af PFC-hardware     |
|              |                                               |                                        | 204     | Beskyttelse mod tab af AC-fase software   |
|              |                                               |                                        | 212     | Beskyttelse mod AC-understrøm             |
|              | 213                                           | Beskyttelse mod AC-overstrøm           |         |                                           |
| 731          | Alarm for forsyning til variator i inverter 1 | Register 1                             | 103     | Overstrømsbeskyttelse af IPM-hardware     |
|              |                                               |                                        | 112     | Beskyttelse mod DC-understrøm             |
|              |                                               |                                        | 113     | Beskyttelse mod DC-overstrøm software     |
|              |                                               | Register 2                             | 203     | Beskyttelse mod DC-overstrøm hardware     |
| 741          | Termisk alarm ensretter inverter 1            | Register 2                             | 210     | Beskyttelse mod overtemperatur PFC        |
|              |                                               |                                        | 211     | Defekt temperatursensor PFC               |
| 761          | Termisk alarm variator inverter 1             | Register 1                             | 110     | Beskyttelse mod overtemperatur IPM        |
|              |                                               |                                        | 111     | Anomali temperatursensor IPM              |
| 811          | Alarm kommunikation inverter 1                | Register 1                             | 115     | Tab af kommunikation vært                 |
|              |                                               | Register 2                             | 209     | DLT-beskyttelse                           |
|              |                                               |                                        | 214     | Fejl anomali data EEPROM                  |
| 851          | Generisk alarm inverter 1                     | Register 1                             | 104     | Fejl offset AD anomali                    |
|              |                                               |                                        | 106     | Fejl opstart kompressor                   |
|              |                                               |                                        | 107     | Fejl i justering af kompressorhastigheden |
|              |                                               | Register 2                             | 205     | Software til AC-faseubalance              |
|              |                                               |                                        | 208     | HPS-beskyttelse                           |
|              |                                               |                                        | 215     | Fejl selvtest MCU                         |

#### 4.14 Tabel over alarmer for kompressorer med Emerson-inverter

Tabellen viser detaljer om alarmer for kompressorer med Emerson-invertere (transmitteret fra inverteren til controlleren W3000+ via seriel forbindelse) og den tilsvarende inverteralarmkode for controlleren W3000+. Inverterens alarmkoder vises sammen med W3000+'s alarmkodefelt i styreenhedens skærbillede for alarmer og alarmhistorik.

| Alarm W3000+ |                            |                        | Alarmer vedrørende kompressor med Emerson-inverter |                                                 |
|--------------|----------------------------|------------------------|----------------------------------------------------|-------------------------------------------------|
| AL           | Beskrivelse                | Inverter display koder | Nr.                                                | Beskrivelse                                     |
| 701          | Offline inverter           |                        |                                                    | Frakobling inverter                             |
| 711          | Alarm forsyning            | 63                     | 101                                                | Overstrøm ved AC-indgang                        |
|              |                            | 6                      | 102                                                | Overspænding DC-bus                             |
|              |                            | 7                      | 103                                                | Underspænding DC-bus                            |
|              |                            | 8                      | 104                                                | Overspænding ved AC-indgang                     |
|              |                            | 9                      | 105                                                | Underspænding ved AC-indgang                    |
|              |                            | 60                     | 106                                                | Manglende fase / ubalancerede faser AC-indgang  |
|              |                            | 29                     | 204                                                | Timeout foldback strøm ved AC-indgang           |
|              |                            | 25                     | 313                                                | Fejl i aflæsning af AC-spænding                 |
| 721          | Alarm strømforsyning motor | -                      | 100                                                | Overstrøm i fase kompressor                     |
|              |                            | -                      | 109                                                | Manglende fase kompressor                       |
|              |                            | -                      | 200                                                | Underspænding forgrening DC                     |
|              |                            | -                      | 202                                                | Timeout på foldback for kompressorens fasestrøm |
|              |                            | 59                     | 300                                                | Kompressorens fasestrøm er ubalanceret          |
|              |                            | 50                     | 308                                                | Overstrøm fase U-kompressor                     |
|              |                            | 51                     | 309                                                | Overstrøm fase V-kompressor                     |
|              |                            | 52                     | 310                                                | Overstrøm fase W-kompressor                     |
|              |                            | 49                     | 311                                                | Overstrøm HW-kompressor                         |
|              |                            | 26                     | 314                                                | Fejl i aflæsning af DC-spænding                 |
|              |                            | 53                     | 315                                                | Overbelastning af kompressor                    |
| 791          | Alarm for høj hastighed    | 24                     | 303                                                | Overhastighed                                   |
| 811          | Alarm kommunikation        | -                      | 206                                                | Timeout autokonfiguration kommunikation         |
|              |                            | 14                     | 207                                                | Tab af kommunikation Modbus                     |
| 851          | Generel alarm              | -                      | 107                                                | Afmætning inverter                              |
|              |                            | 58                     | 108                                                | Fejl i trykafbryder                             |
|              |                            | 23                     | 110                                                | Tab af motorstyring                             |
|              |                            | 10                     | 111                                                | Overtemperatur drev                             |
|              |                            | 57                     | 113                                                | Fejl ved kompressorstart                        |
|              |                            | 28                     | 203                                                | Timeout på temperaturkontrol foldback           |
|              |                            | -                      | 205                                                | Timeout DLT-temperatur                          |
|              |                            | 13                     | 208                                                | Overtemperatur DLT                              |
|              |                            | -                      | 211                                                | Overtemperatur i kompressorens strømmodul       |
|              |                            | -                      | 302                                                | Fejl i mikroelektronik                          |
|              |                            | 15                     | 304                                                | Fejl EEPROM                                     |
|              |                            | 16                     | 306                                                | Fejl konfiguration kompressor                   |
|              |                            | -                      | 402                                                | DLT-sensorfejl                                  |
|              |                            | -                      | 405                                                | Fejl i effektmodulets temperatursensor          |

| Alarm W3000+ |  |   | Alarmer vedrørende kompressor med Emerson-inverter |                      |
|--------------|--|---|----------------------------------------------------|----------------------|
|              |  | - | 411                                                | Fejl ventilatorer    |
|              |  | - | 415                                                | Blokering grænsefejl |

## 5 KATRAKTERISTIKA FOR FJERNOVERVÅGNING OG -STYRING

**Emne.** De erhvervede maskiner kan være udstyret med enheder, som udelukkende tillader Mitsubishi Electric Hydraulics & IT Cooling Systems S.p.A. (herefter "MEHITS"), via en bærbar forbindelse eller et fastnetsystem, at (i) overvåge, (ii) kontrollere, (iii) hente, behandle og analysere maskinernes funktionsdata i fjernforbindelse.

**Funktion og System.** Funktionen kan formidles i tilstanden Machine-to-Machine (M2M) eller i Cloud-tilstand. Hver funktionalitet kræver installation og brug af et specifikt hardware- og/eller softwareprodukt (**System**).

**Tilslutning.** Brug af de forskellige Tjenester kræver en forbindelse til Internetbaserede tjenester (**Tilslutning**), som ikke leveres sammen med Tjenesten og systemet og som Kunden skal stille til rådighed.

Hvad angår Tilslutning og på trods af, at MEHITS har iværksat alle sikkerhedsforanstaltninger for at udelukke IT-angreb, kan total udelukkelse ikke garanteres. Køber fratager herefter MEHITS ethvert ansvar for eventuelle angreb og forpligter sig til at iværksætte egnede sikkerhedsforanstaltninger (firewall samt andre beskyttende instrumenter), som kan forebygge eventuelt uønskede tredjepartsforbindelser til Systemet og, om nødvendigt, til at sikre et passende sikkerhedsniveau for data, som Systemet overfører eller kan overføre (sikker forbindelse).

Tjenesten kan påvirkes (uden ansvar for MEHITS) af mangelfuld Internetforbindelse, af manglende overholdelse af minimumskrav/specifikationer, af købers manglende mulighed for at sikre en forbindelse til et mobilt netværk eller til fastnettet, som yderligere uddybet i det efterfølgende.

**Samtykke.** Fjernstyret forbindelse oprettes kun efter at kunden har givet skriftligt samtykke hertil.

## 6 SKROTNING OG BORTSKAFFELSE



### BORTSKAFFELSE AF EMBALLAGE

Emballagens dele (pap, plast osv.) kan sidestilles med almindeligt husholdningsaffald og kan bortskaffes ved almindelig affaldssortering.

Det anbefales at undersøge de gældende specifikke standarder på stedet, hvor installationen finder sted.

MÅ IKKE EFTERLADES I MILJØET!



### BORTSKAFFELSE AF PRODUKT

Vores produkter er fremstillet med forskellige materialer. Hoveddelen af disse (plast og eventuelle strømkabler) kan sidestilles med almindeligt husholdningsaffald. Det kan bortskaffes ved almindelig affaldssortering og indlevering på genbrugsstationer.



Andre komponenter (elektroniske kredskort) kan derimod indeholde forurenende stoffer.

De skal derfor fjernes og indleveres til virksomheder med tilladelse til indsamling og bortskaffelse af denne type affald.

Det anbefales at undersøge de gældende specifikke standarder på stedet, hvor bortskaffelsen finder sted.



MÅ IKKE EFTERLADES I MILJØET!





**Vooraleer handelingen op de machine uit te voeren,  
moet u deze handleiding aandachtig doorlezen en  
ervoor zorgen dat u alle aanwijzingen en informatie in het  
document hebt begrepen**

**Bewaar dit document tijdens de hele  
levensduur van de machine op een bekende en  
makkelijk bereikbare plaats.**

Deze handleiding is opgesteld door MEHITS S.p.A.: reproductie, ook gedeeltelijk, van deze handleiding is verboden. Het origineel is opgeslagen in het archief bij MEHITS S.p.A.

Elk gebruik van de handleiding voor andere doeleinden dan persoonlijk raadplegen moet op voorhand door MEHITS S.p.A. worden goedgekeurd.

Om ernaar te streven de kwaliteit van haar producten te verbeteren, behoudt MEHITS S.p.A. zich het recht voor om zonder voorafgaande kennisgeving de gegevens en de inhoud van deze handleiding te wijzigen.

De informatie die in dit document staat kan zonder enige verplichting tot kennisgeving vooraf worden gewijzigd.

Verveelvoudiging en/of openbaarmaking, ook gedeeltelijk, van dit document, is verboden zonder uitdrukkelijke schriftelijke toestemming van MEHITS SpA.

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**WAARSCHUWING:**

De software van de controller W3000+ is beveiligd met een digitale handtekening. Dit houdt in dat de software die geïnstalleerd is alleen functioneert met besturingskaarten die door MEHITS S.p.A. geleverd zijn en niet kan functioneren met besturingskaarten die bij andere verkopers aangeschaft zijn. Bovendien zijn de plastic elementen en de zeefdrukken van de geïnstalleerde hardware exclusief voor MEHITS S.p.A.

**SYMBOLEN:**

Om tekstgedeelten die van essentieel belang zijn te benadrukken, worden een aantal symbolen gebruikt waarvan de betekenis hierna wordt toegelicht.

**WAARSCHUWING:**

Aanwijzingen met betrekking tot situaties die zich kunnen voordoen/handelingen die verricht worden, die als deze veronachtzaamd/niet goed aangepakt worden, kunnen het functioneren van de software, de diverse elektronische en andere onderdelen van de unit ernstig in gevaar brengen.

**VERPLICHTING:**

Geeft aan dat er geschikte handelwijzen gevolgd moeten worden/speciale handelingen verricht moeten worden om de bescherming van de toegangen die uitsluitend voor bevoegde medewerkers bestemd zijn en/of die de goede werking van de unit garanderen niet in gevaar te brengen.

**INFORMATIE:**

Geeft technische/functionele informatie aan die bijzonder belangrijk is en die men niet over het hoofd mag zien.

**WAARSCHUWING:**

Dit wordt gebruikt om te wijzen op praktijken die niet met lichamelijke letsels verband houden.

# 1 Inleiding

## 1.1 Gebruiksvoorschriften

De in dit document beschreven toepassingssoftware is ontworpen voor gebruik in units voor de productie van systeemwater met verschillende temperatuurinstelpunten (zelfs gelijktijdig) voor de gebieden Comfort, Process en IT Cooling.

De toepassingssoftware wordt gebruikt op een W3000+ besturingssysteem met een speciale gebruikersterminal met grafische interface.

Raadpleeg de volgende hoofdstukken voor een gedetailleerde lijst met beschikbare gebruikersinterfaces en compatibele hardware.



### INFORMATIE:

De software van de controller W3000+ is beveiligd met een digitale handtekening.

Dit betekent dat de software die geïnstalleerd is alleen functioneert met besturingskaarten die door MEHITS geleverd zijn en niet kan functioneren met besturingskaarten die bij andere verkopers aangeschaft zijn.

## 1.2 Algemene functies

Hieronder vindt u een niet-uitputtende lijst van de functies die door de toepassing worden uitgevoerd:

- Regeling van de watertemperatuur in het systeem volgens de instelpunten (setpoint) ingesteld via de gebruikersterminal.
- Beheer van verschillende soorten units zoals chillers, warmtepompen, polyvalente units en warmtepompen met totale terugwinning.
- Compatibiliteit met verschillende compressortechnologieën zoals hermetisch, schroef- en centrifugaal.
- Volledige weergave van de bedrijfsstatus van het apparaat.
- Mogelijkheid om de regelparameters in te stellen. Het is mogelijk om zowel de fundamentele wachtwoorden in te stellen met behulp van het wachtwoord van het type “**User**” (gebruiker), als de meer geavanceerde wachtwoorden met behulp van de wachtwoorden “**Service**” (assistentie) en “**Factory**” (Fabrikant).
- Beheer en rapportage van storingen (alarmen), gebeurtenissen en onderhoud. Er kunnen maximaal 200 gebeurtenissen worden opgeslagen.
- Mogelijkheid tot besturing en beheer via seriële poorten.
- Mogelijkheid om tot 4 met elkaar verbonden units te bedienen in een lokaal LAN-netwerk via het Master-Client-systeem.

### 1.3 Beheer functies met licentie

Het beheer van de vrijgave van de functies met licentie stelt u in staat om de met wachtwoord beveiligde functies te activeren en te deactiveren. De wachtwoorden zijn uniek en worden door het systeem gegenereerd op basis van het serienummer van de unit en de functiecode.

De gekochte licenties kunnen geactiveerd worden via het Gebruikersmenu door de code van de te activeren functie en het bijbehorende wachtwoord in het scherm Beheer licenties in te voeren.

Door een licentie te activeren wordt een functie niet automatisch geactiveerd, maar door het deactiveren ervan wordt de betreffende functie gedeactiveerd.

Het is ook mogelijk om de met wachtwoord beveiligde functies eenmalig voor een tijdelijke periode van **drie maanden** kosteloos te activeren.

Als de tijdelijke licentie nooit is geactiveerd, kan deze geactiveerd worden door de functiecode **9999** en het wachtwoord **00001234** in te voeren.

Tijdens de proefperiode blijft het mogelijk om de functies te licentiëren. De status van de licentie van de betreffende functie verandert van tijdelijk in actief.

De status van de licenties is zichtbaar via het Menu Licenties waarin het ook mogelijk is om het einde van de proefperiode te bekijken.

```
Licentiebeheer
Func. Code:      1234
Wachtwoord:
12345678
Functie          geactiveerd
```

```
Licentiebeheer
Func. Code:      9999
Wachtwoord:
00001234
Start            tijdlicenties
```

```
Status          Licenties
Functie:   6461
Status:    actief
```

```
Status          Licenties
Functie:   1234
Status:    tijdelijk
Vervaldatum: 31/12/2021
```

De beschikbare functies met licentie staan vermeld in onderstaande tabel:

| Functiecode | Functienaam                |
|-------------|----------------------------|
| 6461        | HPC voor LAN Multi Manager |



#### INFORMATIE:

Het wijzigen van de datum en tijd van de unit tijdens de proefperiode leidt tot annulering ervan met als gevolg deactivering van de niet-gelicenseerde functies.

Als u een onjuist wachtwoord invoert met betrekking tot een functie onder licentie wordt deze gedeactiveerd.

## 1.4 Instelling van de soorten regelingen

Al naargelang het type compressor is het mogelijk om uit verschillende soorten regelingen te kiezen.

| Compressor                                                                                                          | Type unit                    | Beschikbare regeling                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hermetische compressor                                                                                              | Warmtepomp water-/waterunits | <ul style="list-style-type: none"> <li>Quick Mind op de uitgangssonde (*).</li> <li>Quick Mind op de ingangssonde.</li> <li>Trapsgewijs proportioneel op de ingangssonde.</li> <li>Trapsgewijs proportioneel op de ingangssonde + integrerend op de ingangssonde.</li> </ul>         |
|                                                                                                                     | Water/water chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Motorverdampingsunits        |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Water/lucht warmtepomp       |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Water/lucht chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Chiller met terugwinning     |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Chiller met Free-Cooling     |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Polyvalente units            |                                                                                                                                                                                                                                                                                      |
| Hermetische compressor met inverter op alle circuits                                                                | Warmtepomp met terugwinning  | <ul style="list-style-type: none"> <li>Flexibel trapsgewijs proportioneel op de ingangssonde + PID op de uitgangssonde.</li> <li>Neutrale zone op de uitgangssonde + PID op de uitgangssonde (*).</li> <li>Sequentieel op de uitgangssonde + PID op de uitgangssonde (*).</li> </ul> |
|                                                                                                                     | Water/lucht chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Water/lucht warmtepomp       |                                                                                                                                                                                                                                                                                      |
| Hermetische compressor met inverter op één circuit + Hermetische compressor met vaste snelheid op hetzelfde circuit | Polyvalent                   | <ul style="list-style-type: none"> <li>Sequentieel op de uitgangssonde + PID op de uitgangssonde (*).</li> </ul>                                                                                                                                                                     |
|                                                                                                                     | Water/lucht chiller          |                                                                                                                                                                                                                                                                                      |
| Alternatieve compressor                                                                                             | Water/lucht warmtepomp       | <ul style="list-style-type: none"> <li>Sequentieel op de uitgangssonde + PID op de uitgangssonde (*).</li> </ul>                                                                                                                                                                     |
|                                                                                                                     | Chiller met Free-Cooling     |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Polyvalente units            |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Warmtepomp met terugwinning  |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Chiller met terugwinning     |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Warmtepomp water-/waterunits |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Water/water chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Motorverdampingsunits        |                                                                                                                                                                                                                                                                                      |
| Schroef-compressor                                                                                                  | Water/lucht warmtepomp       | <ul style="list-style-type: none"> <li>Trapsgewijs proportioneel op de ingangssonde.</li> <li>Trapsgewijs proportioneel op de ingangssonde + integrerend op de ingangssonde.</li> </ul>                                                                                              |
|                                                                                                                     | Water/lucht chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Chiller met terugwinning     |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Chiller met Free-Cooling     |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Polyvalente units            |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Warmtepomp met terugwinning  |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Water/water chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Motorverdampingsunits        |                                                                                                                                                                                                                                                                                      |
| Schroefcompressor met inverter op alle circuits                                                                     | Water/lucht warmtepomp       | <ul style="list-style-type: none"> <li>Modulerend op de uitgangssonde + PID op de uitgangssonde (*).</li> <li>Trapsgewijs proportioneel op de ingangssonde.</li> <li>Trapsgewijs proportioneel op de ingangssonde + integrerend op de ingangssonde.</li> </ul>                       |
|                                                                                                                     | Water/lucht chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Chiller met terugwinning     |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Chiller met Free-Cooling     |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Polyvalente units            |                                                                                                                                                                                                                                                                                      |
| Schroefcompressor met inverter op één circuit + Schroefcompressor met vaste snelheid op andere circuits             | Warmtepomp met terugwinning  | <ul style="list-style-type: none"> <li>Flexibel trapsgewijs proportioneel op de ingangssonde + PID op de uitgangssonde.</li> <li>Neutrale zone op de uitgangssonde + PID op de uitgangssonde (*).</li> <li>Sequentieel op de uitgangssonde + PID op de uitgangssonde (*).</li> </ul> |
|                                                                                                                     | Water/water chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Water/lucht chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Chiller met terugwinning     |                                                                                                                                                                                                                                                                                      |
| Centrifugaal-compressor                                                                                             | Polyvalente units            | <ul style="list-style-type: none"> <li>Sequentieel op de uitgangssonde + PID op de uitgangssonde (*).</li> </ul>                                                                                                                                                                     |
|                                                                                                                     | Warmtepomp met terugwinning  |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Water/water chiller          |                                                                                                                                                                                                                                                                                      |
|                                                                                                                     | Water/lucht chiller          |                                                                                                                                                                                                                                                                                      |

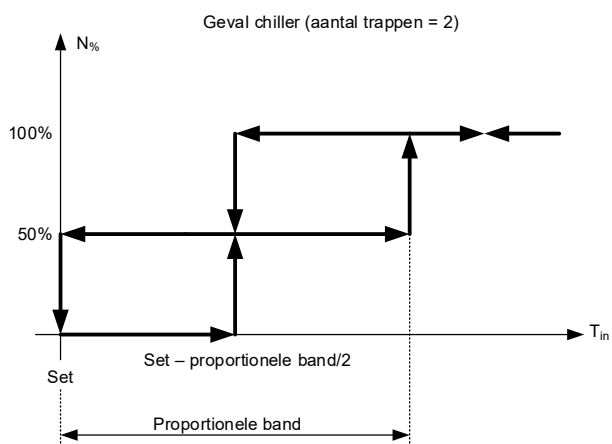
**Tabel 1:** soorten temperatuurregeling die ingesteld kunnen worden, afhankelijk van het type compressor.

(\*) benodigde regeling bij units met snelheidsregeling van de pomp.

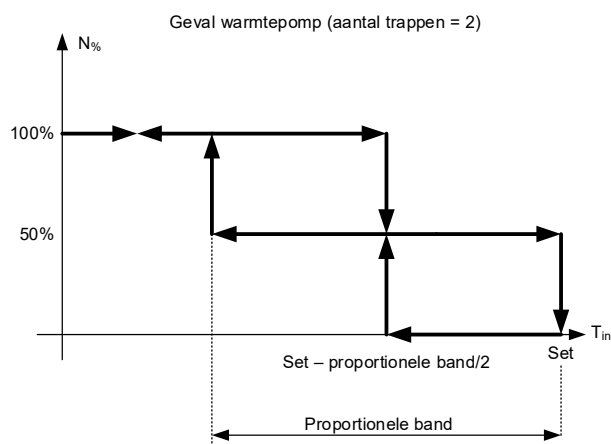
De diverse temperatuurregelwijzen worden in de volgende paragrafen uiteengezet.

### 1.4.1 Trapsgewijze proportionele regeling op de ingangssonde

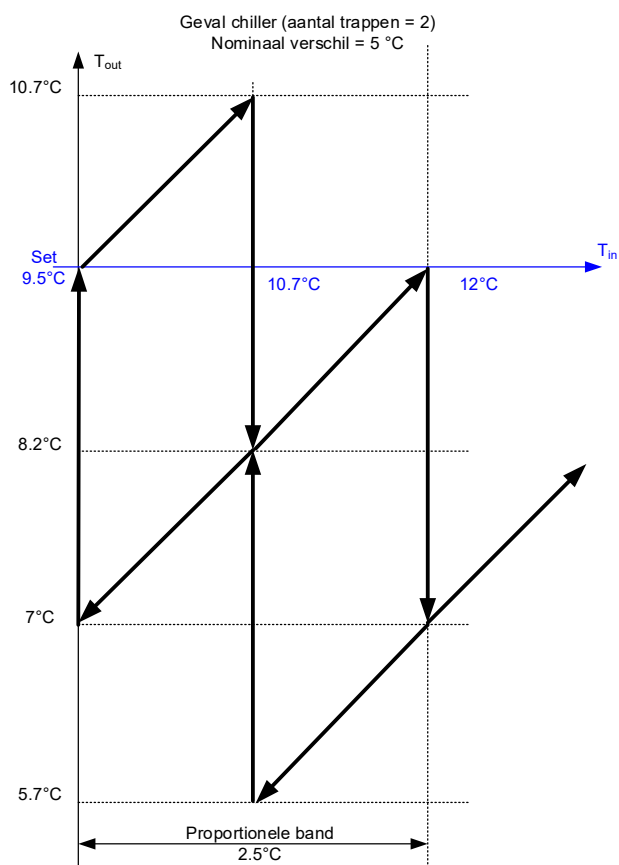
Laten we nu enkele voorbeelden van de "trapsgewijze" proportionele regeling op de ingangstemperatuursonde gaan bekijken.



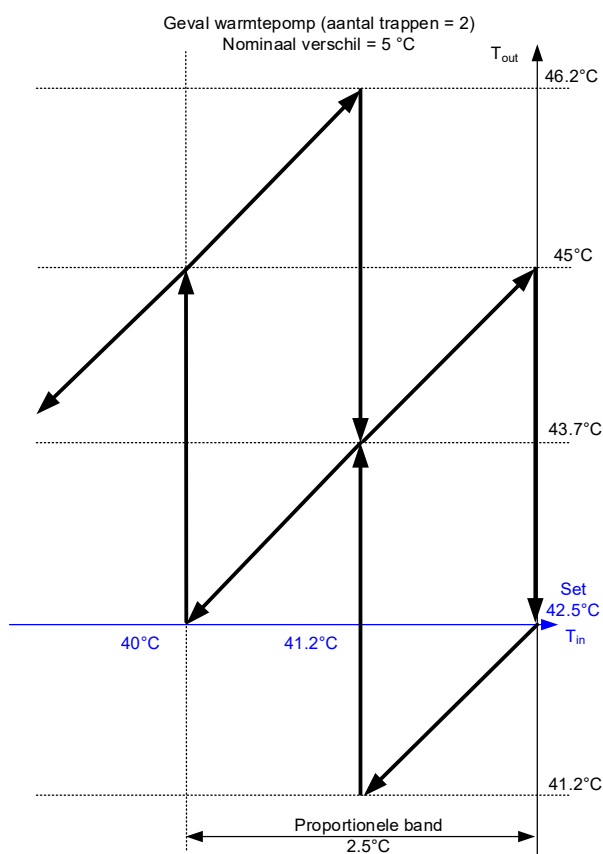
**Figuur 1-1:**  $T_{in}$  is de ingangsvariabele,  $N\%$  is het aantal actieve trappen uitgedrukt in % (geval chiller).



**Figuur 1-2:**  $T_{in}$  is de ingangsvariabele,  $N\%$  is het aantal actieve trappen uitgedrukt in % (geval warmtepomp).



**Figuur 1-3:** Verhouding tussen  $T_{in}$  en  $T_{out}$ , met 2 trappen (geval chiller).



**Figuur 1-4:** Verhouding tussen  $T_{in}$  en  $T_{out}$ , met 2 trappen (geval warmtepomp).

In de volgende tabellen worden enkele typische waarden weergegeven voor de grootheden die van belang zijn. Wij merken daarbij op dat de theoretische minimum en maximum waarden voor de uitgangstemperatuur betrekking hebben op de werking met de nominale capaciteit (dus met een temperatuurverschil bij de verdamper van 5,0°C en hierbij moet er in de installatie een dusdanige hoeveelheid water voorhanden zijn dat er een liter/kW-verhouding van tenminste 7 gewaarborgd wordt).

| Aantal trappen | Setpoint (°C) | Proportionele band (°C) | Theoretische min. uitgangstemp. (°C) | Theoretische max. uitgangstemp. (°C) |
|----------------|---------------|-------------------------|--------------------------------------|--------------------------------------|
| 1              | 9,5           | 2,5                     | 4,5                                  | 12,0                                 |
| 2              | 9,5           | 2,5                     | 5,7                                  | 10,8                                 |
| 4              | 7,0           | 5,0                     | 5,7                                  | 8,3                                  |
| 5              | 7,0           | 5,0                     | 6,0                                  | 8,0                                  |
| 6              | 7,0           | 5,0                     | 6,2                                  | 7,8                                  |
| 8              | 7,0           | 5,0                     | 6,4                                  | 7,6                                  |

**Tabel 2:** waarden voor setpoint en proportionele band normaal in gebruik op basis van het aantal trappen (geval chiller).

| Aantal trappen | Setpoint (°C) | Proportionele band (°C) | Theoretische min. uitgangstemp. (°C) | Theoretische max. uitgangstemp. (°C) |
|----------------|---------------|-------------------------|--------------------------------------|--------------------------------------|
| 1              | 42,5          | 2,5                     | 40,0                                 | 47,5                                 |
| 2              | 42,5          | 2,5                     | 41,2                                 | 46,3                                 |
| 4              | 45,0          | 5,0                     | 43,7                                 | 46,3                                 |
| 5              | 45,0          | 5,0                     | 44,0                                 | 46,0                                 |
| 6              | 45,0          | 5,0                     | 44,2                                 | 45,8                                 |
| 8              | 45,0          | 5,0                     | 44,4                                 | 45,6                                 |

**Tabel 3:** waarden voor setpoint en proportionele band normaal in gebruik op basis van het aantal trappen (geval warmtepomp).



### 1.4.2 Trapsgewijze proportionele regeling op de ingang + integrerende regeling op de ingangssonde

Dit type regeling wordt verkregen door optelling van twee componenten: de proportionele en de integrerende component. De proportionele component brengt de procentuele vraag voor het activeren/inactiveren van de stappen voort zowel uiteengezet in de vorige paragraaf "Trapsgewijze proportionele regeling op de ingangssonde".

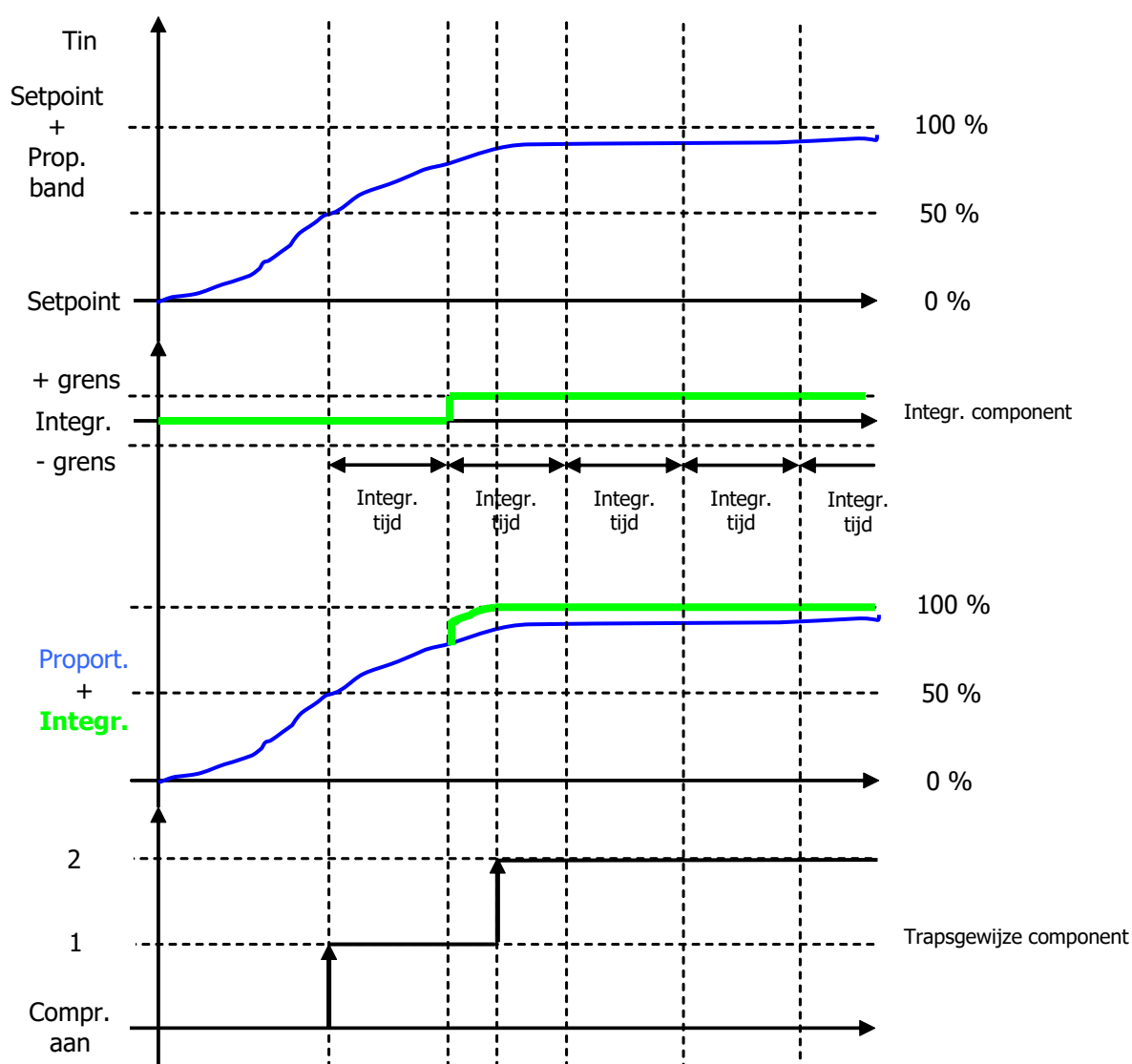
De integrerende component telt op regelmatige tussenpozen (integratietijd) de integratiefout berekend volgens onderstaande formule bij de proportionele component op:

$$\text{Integratiefout} = \frac{\text{Ingangstemperatuur} - \text{Setpoint}}{\text{Proportionele band}} \times 100 \quad [\%]$$

De integrerende component wordt in ieder geval beperkt (integratiegrens) om instabiliteit van de regeling te voorkomen.

Als de ingangstemperatuur met een grotere hoeveelheid of gelijk aan 5% in een seconde varieert wordt de integrerende component niet berekend omdat er in dat geval plotselinge veranderingen zijn.

De integratietijd wordt geteld vanaf het moment waarop de vraag van de temperatuurregelaar stabiel is.

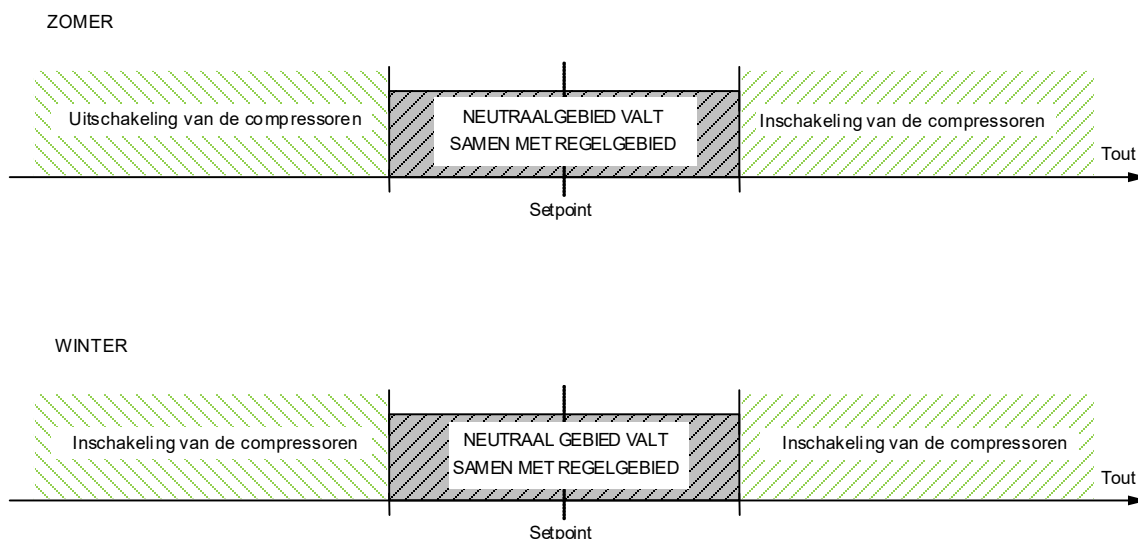


Afbeelding 1-5: voorbeeld van regeling in chiller met 2 trappen.

### 1.4.3 Quick Mind regeling

De gebruiker hoeft uitsluitend het gewenste setpoint in te stellen aangezien alle andere parameters door de Quick Mind algoritme aan de installatie aangepast worden.

QUICK MIND is een zelfaangepassend algoritme voor de regeling van de temperatuur van het door een verwarmings-/koelunit behandelde water. De regelingsmodus wordt aangegeven op de onderstaande afbeelding, in geval van regeling op de uitgangssonde:



**Afbeelding 1-6:** model QUICK MIND-regeling (geval chiller en geval warmtepomp).

De setpoint bevindt zich binnen een neutrale zone. Ligt de temperatuur binnen deze zone, dan wordt het aantal ingeschakelde compressoren niet veranderd.

Als de temperatuur door schommelingen in de belasting van de installatie buiten deze neutrale zone gaat dan worden de compressoren in- of uitgeschakeld om de temperatuurwaarden weer in deze neutrale zone terug te brengen.

De grootte van de neutrale zone hangt af van de dynamische kenmerken van de installatie en met name van de hoeveelheid water in de installatie en de belasting. Het zelfaangepassende algoritme is in staat om de dynamiek van de installatie te "meten" en de neutrale minimum zone zodanig te berekenen dat de inschakeltijden van de compressoren en het max. toegestane aantal starts per uur aangehouden worden.

De regeling kan zowel op basis van de retourtemperatuur uit de installatie als op basis van de toevoertemperatuur naar de installatie berekend worden.

Verder zijn er speciale functies aanwezig door middel waarvan het aantal inschakelingen van de compressoren kan worden beperkt in geval van zeer lage belasting of van start van de unit bij temperaturen die veel van het setpoint verschillen.

| 2 compressoren – met max. toegestane aantal starts per uur 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter / kW                                                    | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                 | 3,2  | 3,3 | 3,4 | 3,5 | 3,6 | 3,8 | 4,1 | 4,5 | 5,3 |

| 4 compressoren – met max. toegestane aantal starts per uur 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter / kW                                                    | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                 | 1,6  | 1,6 | 1,7 | 1,7 | 1,8 | 1,9 | 2,0 | 2,2 | 2,6 |

| 5 compressoren – met max. toegestane aantal starts per uur 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter / kW                                                    | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                 | 1,3  | 1,3 | 1,3 | 1,4 | 1,5 | 1,5 | 1,6 | 1,9 | 2,1 |

| 6 compressoren – met max. toegestane aantal starts per uur 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter / kW                                                    | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                 | 1,1  | 1,1 | 1,1 | 1,2 | 1,2 | 1,3 | 1,4 | 1,5 | 1,8 |

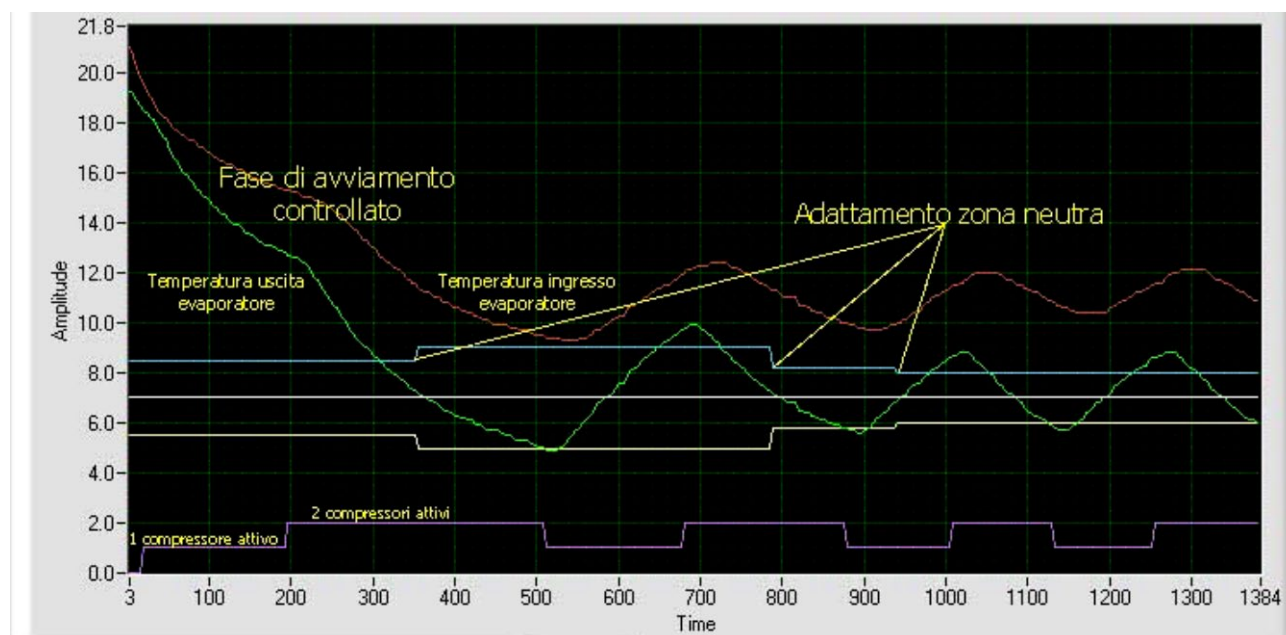
  

| 8 compressoren – met max. toegestane aantal starts per uur 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Liter / kW                                                    | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                 | 0,8  | 0,8 | 0,8 | 0,9 | 0,9 | 0,9 | 1,0 | 1,1 | 1,3 |

**Tabel 4:** maximale theoretische afwijkingen van de toevoertemperatuur bij constante deelbelasting (afhankelijk van de waterinhoud van het systeem), met regeling Quick Mind op de uitgang.

Wij laten een voorbeeld zien met werkelijke waarden die tijdens de werking met de Quick Mind regeling op de uitgang vastgesteld zijn.

We verwijzen naar de onderstaande afbeelding:



**Afbeelding 1-7:** voorbeeld van werkelijke gegevens met quick-mind regeling op de uitgang (op de abcis de tijd in [s], op de ordinaat Tout in [°C]).

Het betreft een voorbeeld van start met een begintemperatuur die veel hoger is dan het setpoint (7°C). Ongeveer 10 seconden na het begin van de vaststelling van de gegevens wordt er een compressor ingeschakeld. De inschakeling van de tweede compressor vindt niet meteen plaats: het algoritme dat de startfase bestuurt controleert of één compressor voldoende is om ervoor te zorgen dat de toevoertemperatuur het setpoint nadert en om onnodige inschakelingen te vermijden. Aangezien de toevoertemperatuur na ongeveer 200 seconden nog op 12 °C is wordt ook de tweede compressor ingeschakeld, omdat de tijd voor het bereiken van de gewenste temperatuur anders te lang zou worden.

Is deze gecontroleerde startfase beëindigd, dan daalt de toevoertemperatuur totdat het in de neutrale zone komt. Het algoritme ( $t=350$  s) begint de grootte van de neutrale zone aan te passen zodat de veiligheidstijden van de compressoren gewaarborgd worden. Zoals te zien is wordt de neutrale zone geleidelijk verminderd ( $t=780$  s,  $950$  s) totdat de zo laag mogelijke waarde waarop de veiligheidstijden nog aangehouden kunnen worden bereikt wordt. Bovendien is te zien dat de in- en uitschakeling van de compressoren altijd pas plaatsvindt als de uitgangstemperatuur de bovenste of onderste grens van de neutrale zone bereikt. In het voorbeeld schommelt de uitgangstemperatuur op de bedrijfstoestand ongeveer 3,5 °C.

#### 1.4.4 Modulerende regeling op de uitgangssonde + PID op de uitgangssonde voor schroefcompressoren

Deze regeling komt tot stand door middel van de bijdrage van twee regelaars die op gecoördineerde wijze werken:

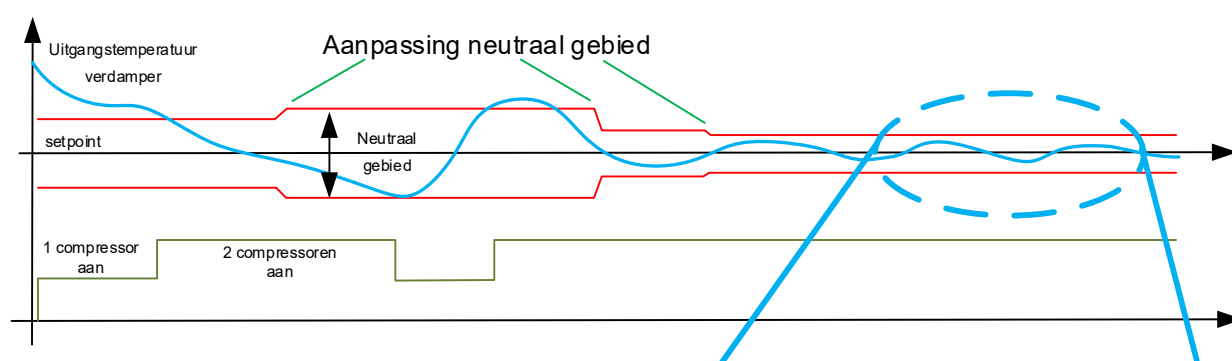
- Neutrale zone** (trapsgewijze regelaar) op de uitgangssonde;
- PID** (modulatie) op de uitgangssonde.

De setpoint is dezelfde voor beide regelaars.

a) Het gaat hierbij om een trapsgewijze regelaar met neutrale zone, waarvan de controlevariabele de uitgangstemperatuur van de unit **Tout** en de gecontroleerde variabele het aantal trappen dat geactiveerd moet worden is (compressoren). De setpoint bevindt zich binnen een neutrale zone. Ligt de temperatuur binnen deze zone, dan wordt het aantal ingeschakelde compressoren niet veranderd.

Als de temperatuur door schommelingen in de belasting van de installatie buiten deze neutrale zone gaat, dan worden de compressoren in- of uitgeschakeld om de temperatuurwaarden weer in deze neutrale zone terug te brengen (zie onderstaande afbeelding).

De grootte van de neutrale zone hangt af van de dynamische kenmerken van de installatie. Het zelfaangepassende algoritme is in staat om de dynamiek van de installatie te "meten" en de neutrale minimum zone zodanig te berekenen dat de inschakeltijden van de compressoren en het max. toegestane aantal starts per uur aangehouden worden.



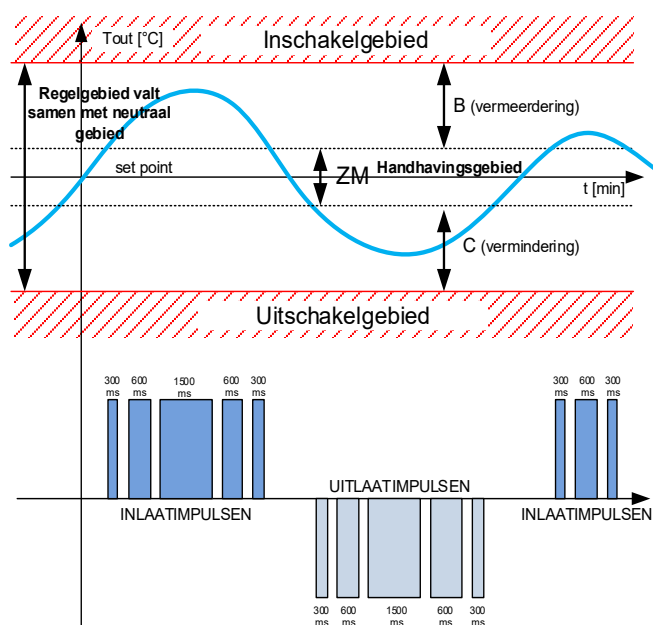
Afbeelding 1-8: modulerende regeling op de uitgangssonde.

b) We verwijzen naar de afbeelding hiernaast:

Het setpoint bevindt zich binnen een handavingszone (ZM). Ligt de temperatuur binnen deze zone dan wordt het aantal ingeschakelde compressoren of hun belastingspercentage (stand van de moduleerschuif) niet veranderd.

Als de uitgangstemperatuur door schommelingen in de belasting van de installatie hogere waarden heeft dan de zone B dan worden de compressoren ingeschakeld om de temperatuurwaarden weer in de regelzone terug te brengen.

Binnen de zone B wordt, als het derivaat van de uitgangstemperatuur hoger dan of gelijk aan 0 is, het vermogen van de compressoren vermeerderd zodat de temperatuur weer binnen de handavingszone (HZ) gebracht wordt. De omvang van de vermeerdering wordt berekend door een PID regelaar op basis van de uitgangstemperatuur. Als de uitgangstemperatuur door schommelingen in de belasting van de installatie lagere waarden heeft dan de zone C dan worden de compressoren uitgeschakeld om de temperatuurwaarden weer in de regelzone terug te brengen.



Afbeelding 1-9: modulerende regeling voor schroefcompressoren.

Binnen de zone C wordt, als het derivaat van de uitgangstemperatuur lager dan of gelijk aan 0 is, het vermogen van de compressoren vermindert zodat de temperatuur weer binnen de handavingszone (HZ) gebracht wordt. De omvang van de vermindering wordt berekend door een PID regelaar op basis van de uitgangstemperatuur.

De grootte van de regelzone hangt af van de dynamische kenmerken van de installatie en met name van de hoeveelheid water in de installatie en de belasting. Het zelfaangepassende algoritme is in staat om de dynamiek van de installatie te

“meten” en de neutrale minimum zone zodanig te berekenen dat de inschakeltijden van de compressoren en het max. toegestane aantal starts per uur aangehouden worden.  
Bij de start van de compressoren die volgen op de eerste worden de ingeschakelde compressoren op het minimum geforceerd en worden de vermeerderingen/verminderingen van het vermogen op alle compressoren toegepast.

#### 1.4.5 Flexibele trapsgewijze proportionele regeling op de ingang + PID op de uitgangssonde

Deze regeling komt tot stand door middel van de bijdrage van twee regelaars die op gecoördineerde wijze werken:

- Trapsgewijs proportioneel** (trapsgewijze regelaar) op de ingangssonde;
- PID** (modulatie) op de uitgangssonde.

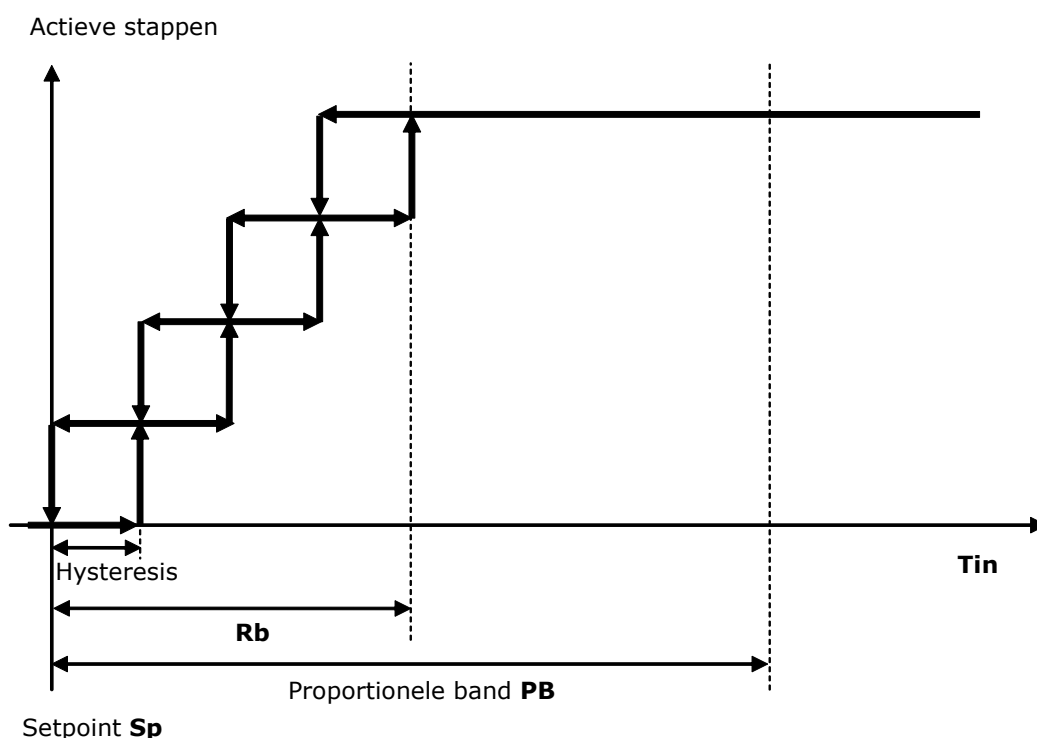
De setpoint is dezelfde voor beide regelaars.

a) Het gaat om een trapsgewijze regelaar van het proportionele type, waarvan de controlevariabele de ingangstemperatuur van de unit **Tin** en de gecontroleerde variabele het aantal trappen dat geactiveerd moet worden is (compressoren).

Vergeleken met de traditionele trapsgewijze regelaar zijn er 2 extra parameters.

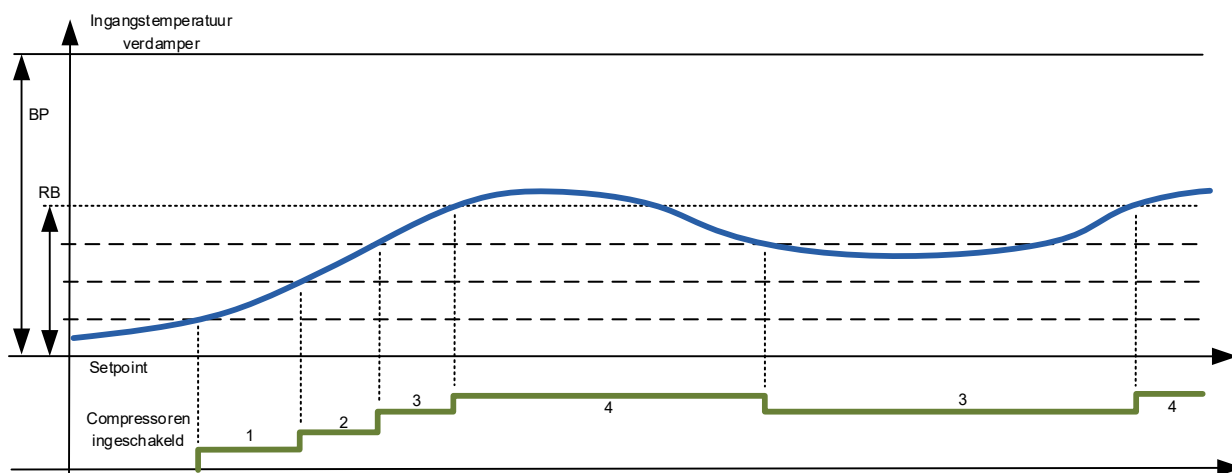
**Rb**: Dit is een percentage van de proportionele band **PB** en hiermee is het mogelijk om de trappen in dit gedeelte van de proportionele band samen te persen.

Voorbeeld 4-staps werking tijdens koeling en **Rb < PB**



**Afbeelding 1-10:** trapsgewijze proportionele regelaar met offset = 0 en  $Rb = 50\%$ .

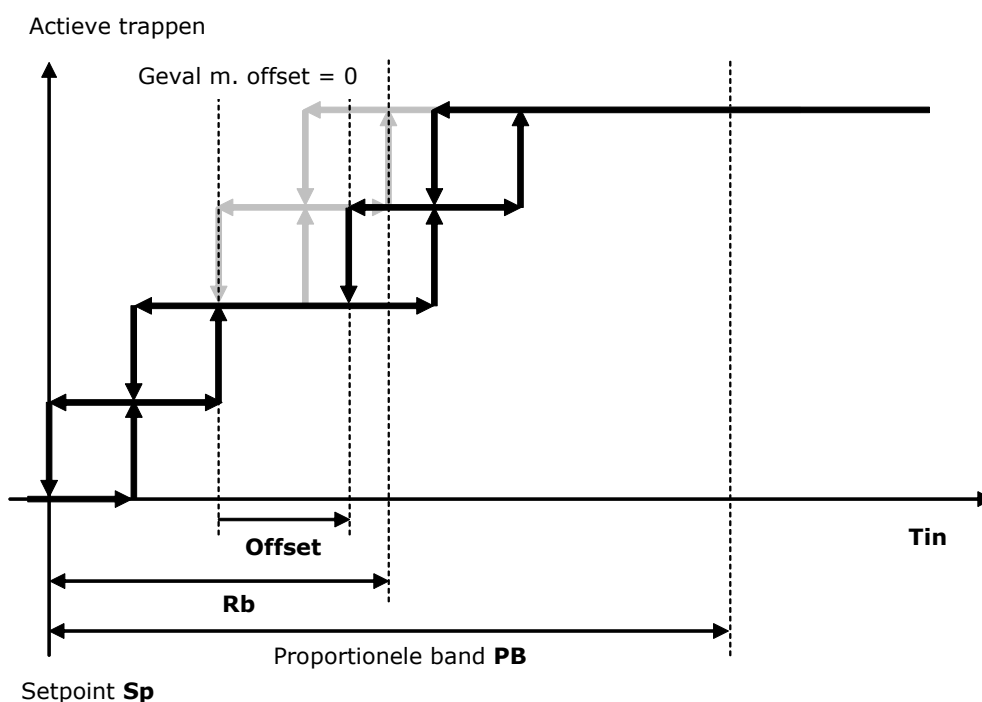
De hysteresis van elke trap is de proportionele referentieband **Rb** gedeeld door het aantal te beheren trappen.



**Afbeelding 1-11:**proportionele regeling met flexibele trappen op het ingangssonde met offset = 0 en  $R_b = 50\%$ .

De **Offset** verplaatst de activering/inactivering van de tweede helft van de trappen op een hogere waarde vergeleken met het offsetgeval = 0 en is gebaseerd op de proportionele band PB.

Voorbeeld 4-traps werking tijdens koeling en Offset > 0

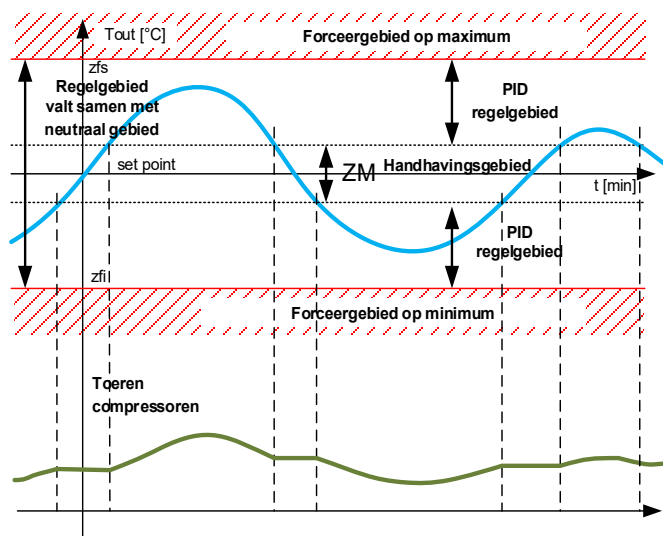


**Afbeelding 1-12:**trapsgewijze proportionele regelaar met offset = 0 en  $R_b = 50\%$ .

b) De **PID** (Proportionele Integrerende Derivatieve regelaar), waarvan de controlevariabele de uitgangstemperatuur is, wordt geactiveerd vanaf het moment dat de eerste compressor start en wordt geïnactiveerd als deze laatste uitschakelt. De gecontroleerde variabele is het aantal toeren van de compressoren (stroomopname bij units met centrifugaalcompressoren), door ze van het minimum tot het maximum dat ingesteld kan worden te variëren, waardoor op die manier een continue regeling van de uitgangstemperatuur van de unit tot stand gebracht wordt. Verder kunnen de volgende parameters ingesteld worden:  $k_p$  (coëfficiënt van de proportionele component) en  $t_i$  (integratietijd). De derivatieve tijd is van de fabriek uit op een vaste waarde ingesteld.

Als de uitgangstemperatuur zich op een waarde binnen de *handhavingszone* bevindt, wordt er geen enkele wijziging aan de waarde van de toeren van de compressoren uitgevoerd.

Als de uitgangstemperatuur zich op een waarde binnen de *PID regelzone* bevindt wordt de waarde van de toeren van de compressoren gewijzigd om de temperatuur op een waarde binnen de *handhavingszone* te brengen. De parameters *zfi*, *handhavingszone* en *zfs* zijn van de fabriek uit op een vaste waarde ingesteld.



Afbeelding 1-13: werkingsschema PID-regelaar op uitgang.

#### 1.4.6 Neutrale zoneregeling op de uitgangssonde + PID op de uitgangssonde

Deze regeling komt tot stand door middel van de bijdrage van twee regelaars die op gecoördineerde wijze werken:

- Neutrale zone** (trapsgewijze regelaar) op de uitgangssonde;
- PID** (modulatie) op de uitgangssonde.

De setpoint is dezelfde voor beide regelaars.

a) Het gaat hierbij om een trapsgewijze regelaar met neutrale zone, waarvan de controlevariabele de uitgangstemperatuur van de unit **Tout** en de gecontroleerde variabele het aantal trappen dat geactiveerd moet worden is (compressoren). De setpoint bevindt zich binnen een neutrale zone. Ligt de temperatuur binnen deze zone, dan wordt het aantal ingeschakelde compressoren niet veranderd.

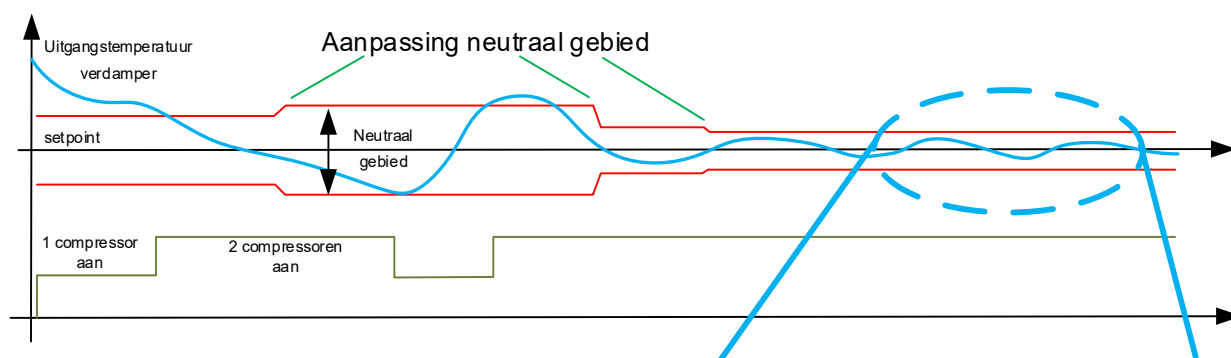
Als de temperatuur door schommelingen in de belasting van de installatie buiten deze neutrale zone gaat, dan worden de compressoren in- of uitgeschakeld om de temperatuurwaarden weer in deze neutrale zone terug te brengen (zie onderstaande afbeelding).

De grootte van de neutrale zone hangt af van de dynamische kenmerken van de installatie. Het zelfaanpassende algoritme is in staat om de dynamiek van de installatie te "meten" en de neutrale minimum zone zodanig te berekenen dat de inschakeltijden van de compressoren en het max. toegestane aantal starts per uur aangehouden worden.

b) De **PID** (Proportionele Integrerende Derivatieve regelaar), waarvan de controlevariabele de uitgangstemperatuur is, wordt geactiveerd na het moment dat de eerste compressor start en wordt geïnactiveerd als deze laatste uitschakelt.

De gecontroleerde variabele is het aantal toeren van de compressoren (vermogensopname bij units met centrifugaalcompressoren), door ze van het minimum tot het maximum dat ingesteld kan worden te variëren, waardoor op die manier een continue regeling van de uitgangstemperatuur van de unit tot stand wordt gebracht.

Verder kunnen de volgende parameters ingesteld worden:  $k_p$  (coëfficiënt van de proportionele component) en  $t_i$  (integratietijd). De derivatieve tijd is van de fabriek uit op een vaste waarde ingesteld.



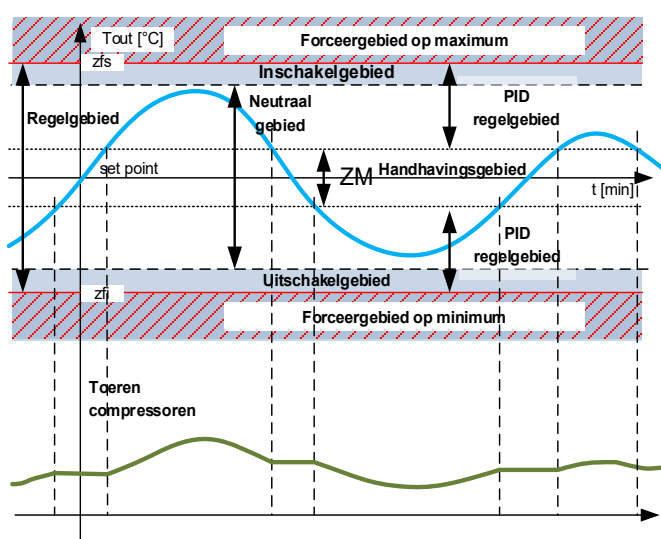
Afbeelding 1-14: regeling met neutrale zone op de uitgangssonde.

Werkingsschema van de PID-regelaar:

Als de uitgangstemperatuur zich op een waarde binnen de *handhavingszone* bevindt, wordt er geen enkele wijziging aan de waarde van de toeren van de compressoren uitgevoerd.

Als de uitgangstemperatuur zich op een waarde binnen de *PID-regelzone* bevindt wordt de waarde van de toeren van de compressoren gewijzigd om de temperatuur op een waarde binnen de *handhavingszone* te brengen.

De parameters  $z_{fi}$ , *handhavingszone* en  $z_{fs}$  zijn in de fabriek ingesteld op een vaste offsetwaarde ten opzichte van de neutrale zone.



Afbeelding 1-15: werkingsschema PID-regelaar op uitgang.



### 1.4.7 Sequentiële regeling op de uitgangssonde + PID op de uitgangssonde

Deze regeling is beschikbaar bij units die uitgerust zijn met een compressor met inverter en één of meer compressoren met vaste snelheid of units waarvan alle compressoren met inverter zijn.

#### 1.4.7.1 Sequentiële regeling bij units die uitgerust zijn met een compressor met inverter en één of meer compressoren met vaste snelheid

De regeling komt tot stand door de bijdrage van twee regelaars die op gecoördineerde wijze werken:

- Sequentiële regelaar** (trapsgewijze regelaar) op de sonde op de uitgang;
- PID** (modulatie) op de uitgangssonde.

De setpoint is dezelfde voor beide regelaars.

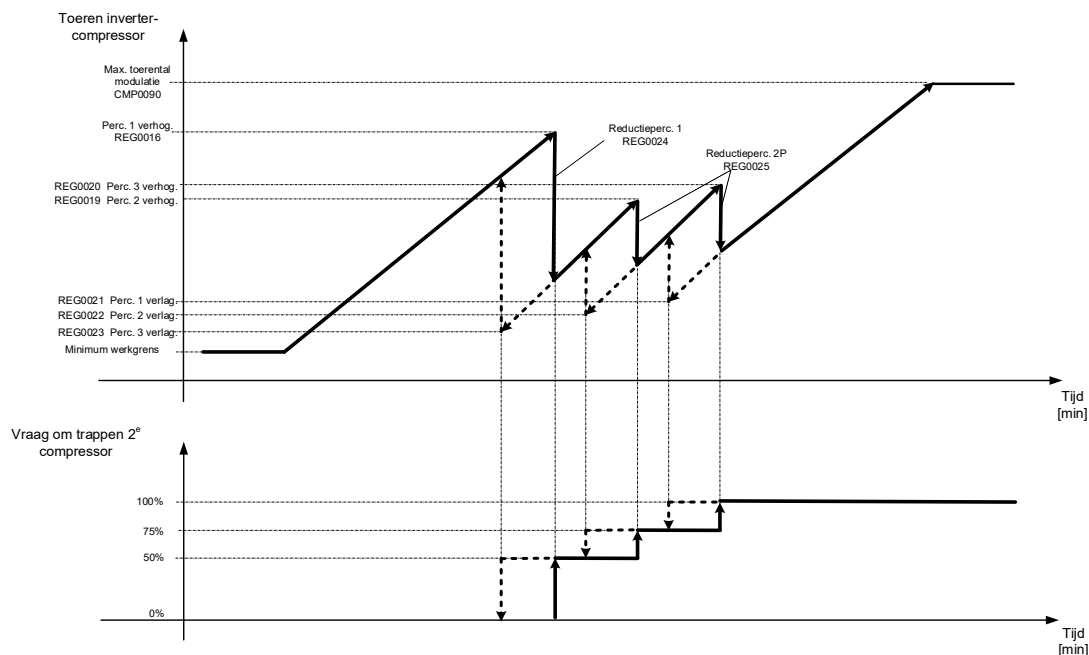
a) Het gaat daarbij om een trapsgewijze regelaar met neutrale zone, waarvan de controlevariabelen de uitgangstemperatuur van de unit **Tout** en het aantal toeren van de compressor met inverter zijn, terwijl de gecontroleerde variabele het aantal te activeren trappen is (compressoren en/of smoringen van de compressoren met vaste snelheid).

De werkingsbeschrijvingen die hieronder vermeld zijn hebben betrekking op de werkingsmodus chiller.

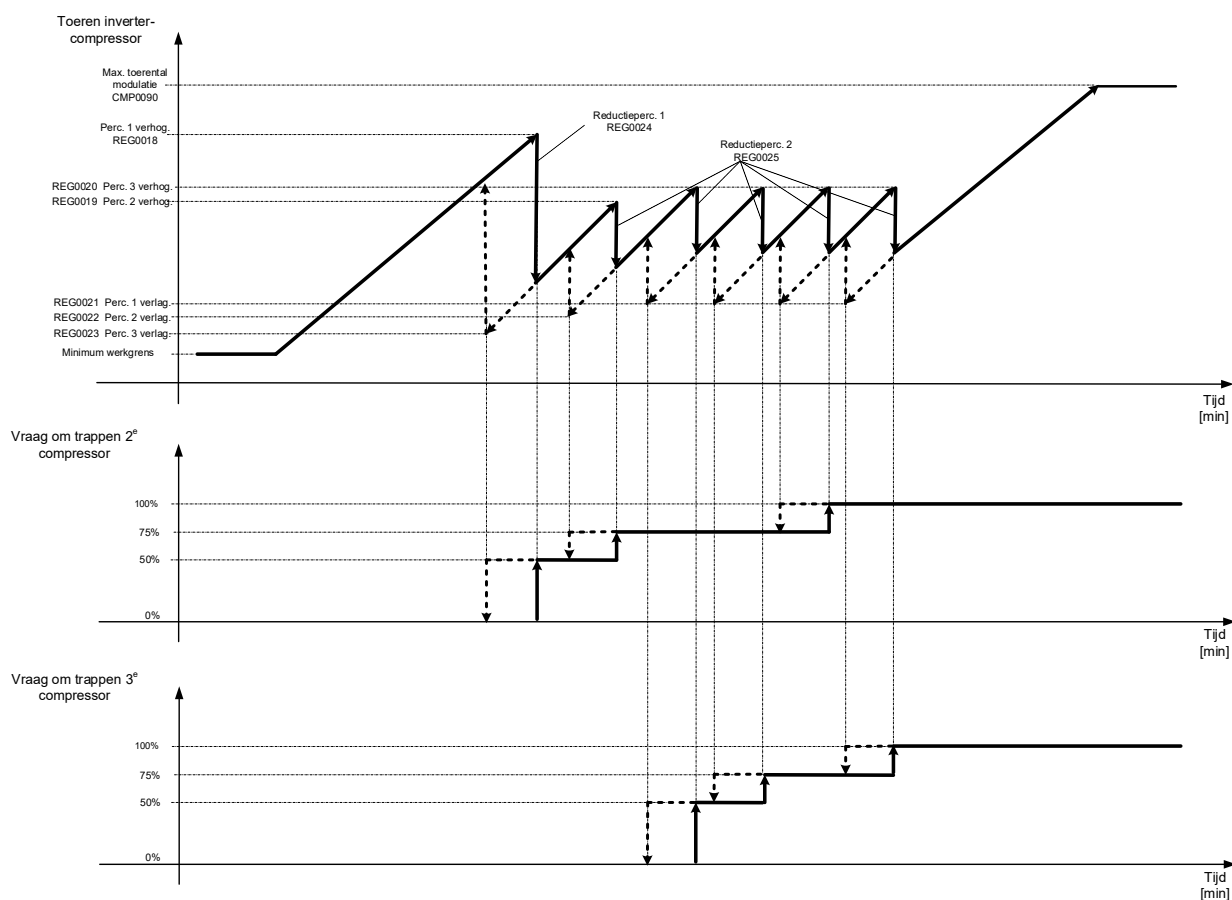
De setpoint bevindt zich binnen een neutrale zone. Als er geen enkele compressor van de unit ingeschakeld is, wacht de regelaar totdat de uitgangstemperatuur boven de bovenste grens van de neutrale zone stijgt, waarna om de eerste trap gevraagd wordt. Dit leidt ertoe dat de compressor met inverter start: de compressor wordt gedurende de starttijd van de compressoren op het starttoerental (CMP0091) gehouden (of onbelast starten, parameter CMP0028). Daarna begint de regelaar de toeren van de compressor met inverter te controleren en om andere trappen te vragen (die aan de compressoren met vaste snelheid toegekend worden, zie Afbeelding 1-16 en Afbeelding 1-17) op basis van enkele procentuele grenzen, die via parameters ingesteld worden, uitgaande van het maximum aantal toeren voor de modulatie van de compressor met inverter. Naarmate het aantal trappen die op de compressoren met vaste snelheid geactiveerd zijn toeneemt wordt het aantal toeren van de compressor met inverter op passende wijze procentueel gereduceerd om een gelijkmatige afgifte van het koelvermogen te behouden.

Als de vraag van de installatie vermindert, reduceert de regelaar ook weer op basis van enkele grenzen van het toerental van de compressor met inverter ingesteld via parameters, het aantal trappen die aan de compressoren met vaste snelheid toegekend zijn. Het uitschakelen van de resources, of het nu gaat om compressoren met vaste snelheid of de compressor met inverter, kan alleen plaatsvinden als de uitgangstemperatuur onder de onderste grens van de neutrale zone daalt.

De grootte van de neutrale zone hangt af van de dynamische kenmerken van de installatie. Het zelfaanpassende algoritme is in staat om de dynamiek van de installatie te "meten" en de neutrale minimum zone zodanig te berekenen dat de inschakeltijden van de compressoren en het max. toegestane aantal starts per uur aangehouden worden.

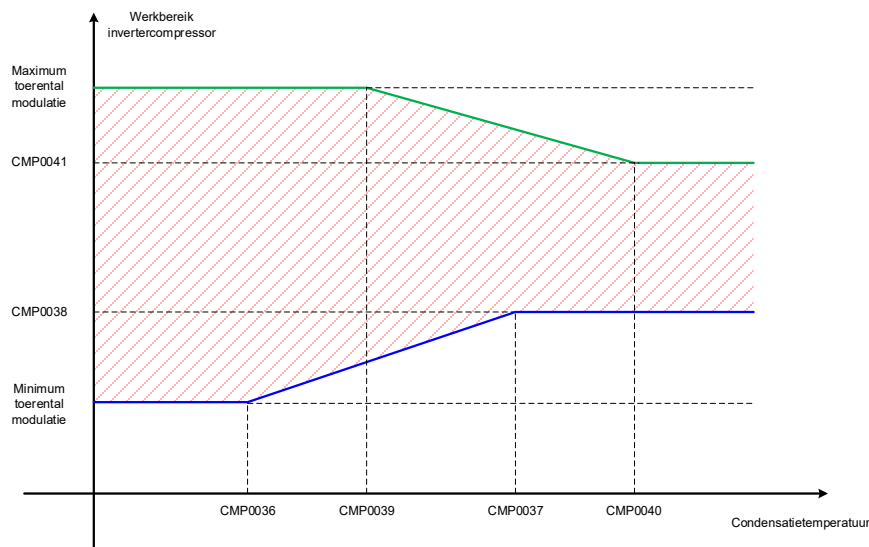


**Afbeelding 1-16:** werkingsschema sequentiële regelaar voor units met 2 schroefcompressoren, waarvan er één aangedreven wordt door een inverter.



**Afbeelding 1-17:** werkingsschema sequentiële regelaar voor units met 3 schroefcompressoren, waarvan er één aangedreven wordt door een inverter.

b) De **PID** (Proportionele Integrerende Differentiërende regelaar), waarvan de controlevariabele de uitgangstemperatuur is, wordt geactiveerd nadat de compressor met inverter start en wordt gedeactiveerd als deze uitschakelt. De gecontroleerde variabele is het toerental van de compressor met inverter. Dit kan gemoduleerd worden binnen een toerenbereik tussen een minimum waarde (Afbeelding 1-18) en een maximum waarde (Afbeelding 1-19) die bepaald worden afhankelijk van de condensatietemperatuur van het circuit:



**Afbeelding 1-18:** berekening van de minimale en maximale bedrijfsdrempel van de compressor met inverter.

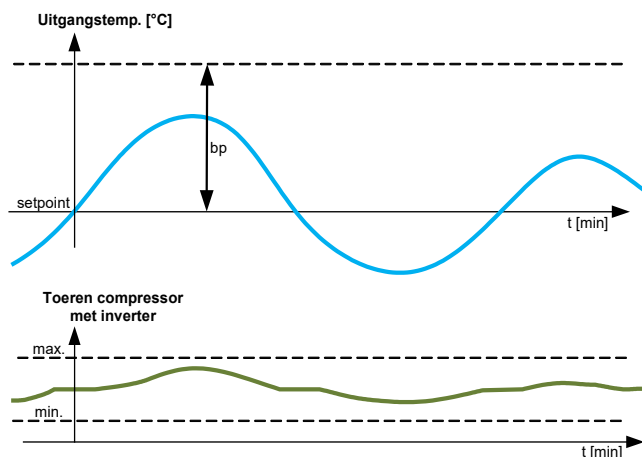
Voor de PID-regelaar kunnen bovendien de volgende parameters ingesteld worden: proportionele band (proportionele component) en  $T_i$  (integratietijd). De derivatieve tijd is van de fabriek uit op een vaste waarde ingesteld.

Hiernaast:

Werkingsschema van de PID-regelaar:

de toevoertemperatuur wordt constant bewaakt en op die manier wordt er een continue controle van het aantal toeren van de compressor verricht.

De PID-regelzone heeft betrekking op de pb (proportionele band) boven het setpoint.



**Afbeelding 1-19:** detail van de PID-regeling op de temperatuur bij uitgang.

### 1.4.7.2 Sequentiële regeling bij units waarvan alle compressoren met inverter zijn

De regeling komt tot stand door de bijdrage van twee regelaars die op gecoördineerde wijze werken:

- Sequentiële regelaar** (trapsgewijze regelaar) op de sonde op de uitgang;
- PID** (modulatie) op de uitgangssonde.

De setpoint is dezelfde voor beide regelaars.

a) Het gaat daarbij om een trapsgewijze regelaar met neutrale zone, waarvan de controlevariabelen de uitgangstemperatuur van de unit **Tout** en het aantal toeren van de compressoren met inverter zijn, terwijl de gecontroleerde variabele het aantal in te schakelen compressoren is.

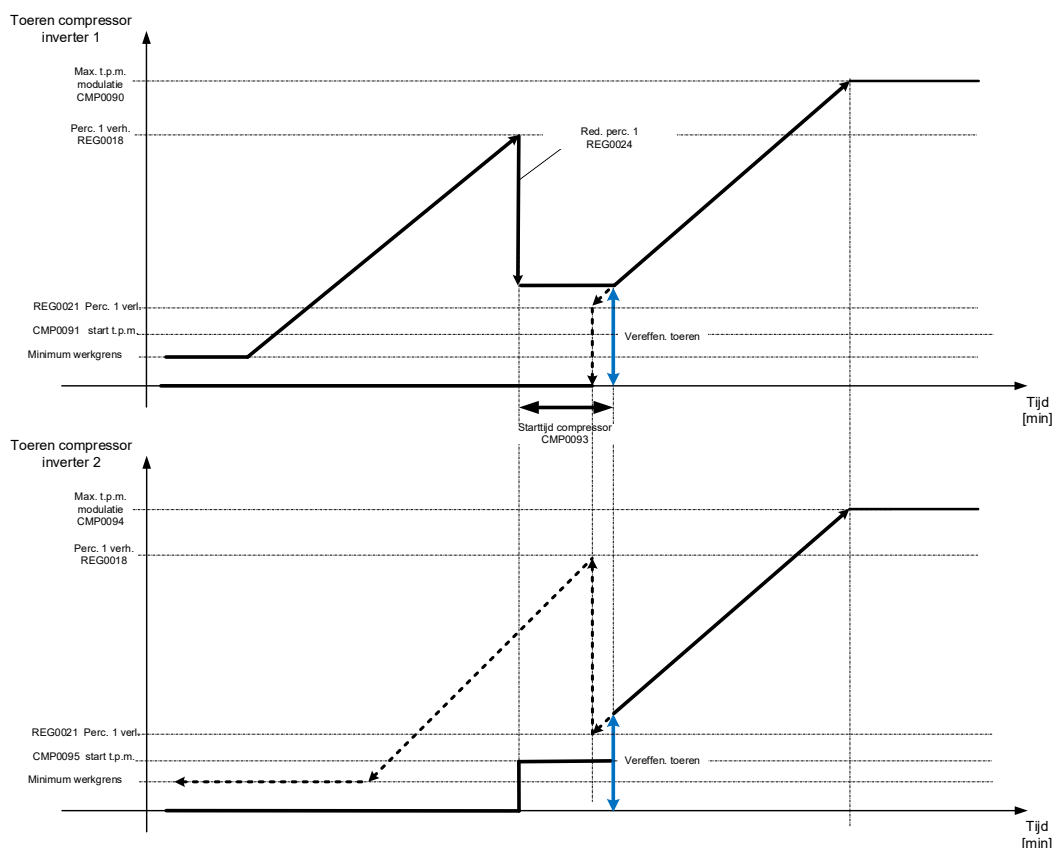
De werkingsbeschrijvingen die hieronder vermeld zijn hebben betrekking op de werkingsmodus chiller voor de units met twee compressoren met inverter.

De setpoint bevindt zich binnen een neutrale zone. Als er geen enkele compressor van de unit ingeschakeld is, wacht de regelaar totdat de uitgangstemperatuur boven de bovenste grens van de neutrale zone stijgt, waarna om de eerste compressor gevraagd wordt. Dit leidt ertoe dat de eerste compressor met inverter start: de compressor wordt gedurende de starttijd van de compressoren op het starttoerental (CMP0091 en CMP0095) gehouden (of onbelast starten, parameter CMP0028). Daarna begint de regelaar de toeren van de compressor met inverter te controleren en om inschakeling van de tweede compressor met inverter te vragen op basis van enkele procentuele grenzen, die via parameters ingesteld worden, uitgaande van het maximum aantal toeren voor de modulatie van de compressor met inverter. Als de tweede compressor inschakelt, wordt het aantal toeren van de eerste compressor met inverter op passende wijze procentueel gereduceerd om een gelijkmatige afgifte van het koelvermogen te behouden. De tweede compressor wordt tijdens het inschakelen gedurende de starttijd van de compressoren (of onbelast starten) op het starttoerental gehouden, na afloop waarvan de toeren van de tweede compressor aangepast worden aan de toeren van de eerste.

Als de vraag van de installatie vermindert, reduceert de regelaar ook weer op basis van enkele grenzen van het toerental van de compressor met inverter ingesteld via parameters, het aantal resources en zorgt er dus voor dat er een compressor uitgeschakeld wordt.

Het uitschakelen van de resources kan alleen plaatsvinden als de uitgangstemperatuur onder de onderste grens van de neutrale zone daalt.

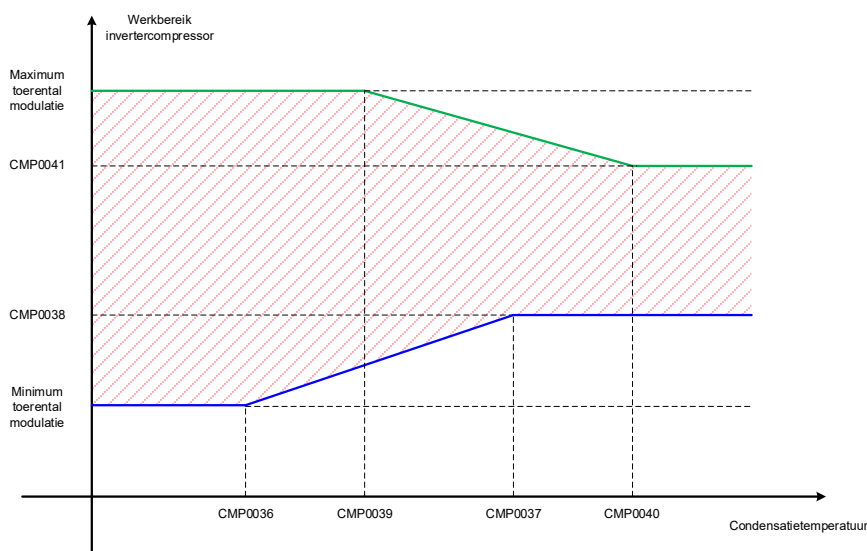
De grootte van de neutrale zone hangt af van de dynamische kenmerken van de installatie. Het zelfaanpassende algoritme is in staat om de dynamiek van de installatie te "meten" en de neutrale minimum zone zodanig te berekenen dat de inschakeltijden van de compressoren en het max. toegestane aantal starts per uur aangehouden worden.



Afbeelding 1-20: werkingsschema sequentiële regelaar voor units met 2 compressoren met inverter.

De regellogica is van toepassing op full inverterunits met max. 4 verschillend afgestelde compressoren met inverter (de snelheden kunnen voor elke compressor apart ingesteld worden).  
De verlaging van het toerental van de ingeschakelde compressoren door inschakeling van de derde en vierde compressor bedraagt 2/3 van het verlagingspercentage dat bij de parameter REG0021 ingesteld is.

b) De **PID** (Proportionele Integrerende Differentiënde regelaar), waarvan de controlevariabele de uitgangstemperatuur is, wordt geactiveerd nadat de compressor met inverter start en wordt gedeactiveerd als deze uitschakelt. De gecontroleerde variabele is het toerental van de compressor met inverter. Dit kan gemoduleerd worden binnen een toerenbereik tussen een minimum waarde (Afbeelding 1-21) en een maximum waarde (Afbeelding 1-22) die bepaald worden afhankelijk van de condensatietemperatuur van het circuit:



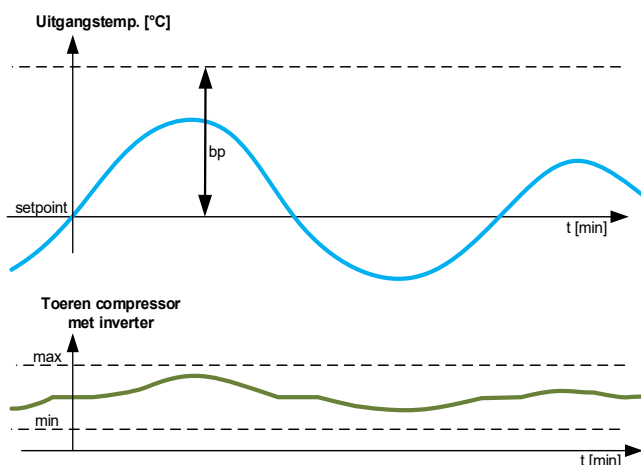
**Afbeelding 1-21:** berekening van de minimale en maximale bedrijfsdrempel van de compressor met inverter.

Voor de PID-regelaar kunnen bovendien de volgende parameters ingesteld worden: proportionele band (proportionele component) en Ti (integratietijd). De derivatieve tijd is van de fabriek uit op een vaste waarde ingesteld.

Hiernaast:

Werkingschema van de PID-regelaar:  
de toevoertemperatuur wordt constant bewaakt en op die manier wordt er een continue controle van het aantal toeren van de compressor verricht.

De PID-regelzone heeft betrekking op de pb (proportionele band) boven het setpoint.



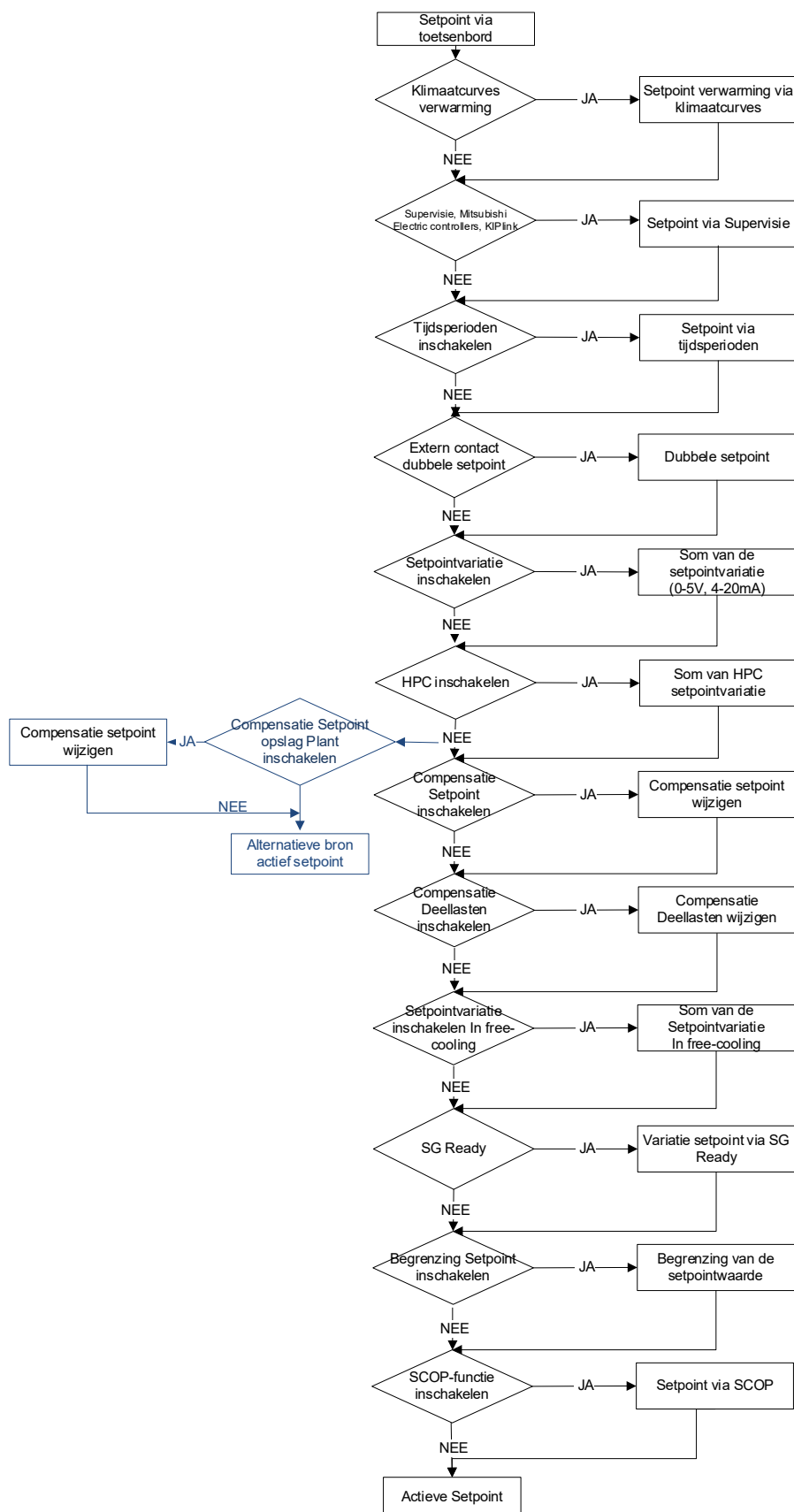
**Afbeelding 1-22:** detail van de PID-regeling op de temperatuur bij uitgang.

## **1.5 Instelling van de setpoints**

Er zijn meerdere procedures om de setpoint in te stellen:

1. setpoint via W3000compact/W3000large/W3000+touch toetsenbord;
2. setpoint via Supervisie of via Mitsubishi Electric externe systeemcontrollers;
3. setpoint via KIPLink;
4. setpoint via tijdsperioden;
5. extern contact dubbele setpoint.

Het met het toetsenbord ingestelde setpoint, of geselecteerd door het externe contact voor de dubbele setpoint, wordt gewijzigd door de eventueel geactiveerde functies, die het omzetten naar de actieve setpoint overgedragen aan de regelaars.



**Afbeelding 1-23:** volgorde van de wijzigingsfuncties van de ingestelde setpoint totdat de actieve setpoint verkregen wordt.

Voorbeeld:

Setpoint toetsenbord: 7,0 °C  
 Dubbele setpoint: 10,0 °C  
 Verandering van setpoint met 50% overeenstemmend met 2,5 °C  
 Actieve setpoint bij open contact:  $7,0 + 2,5 = 9,5$  °C  
 Actieve setpoint bij gesloten contact:  $10,0 + 2,5 = 12,5$  °C

### Opmerking:

Het op de variatie van de setpoint toegepaste signaal wordt altijd opgeteld, onafhankelijk van de werkingsmodus van de unit

### Opmerking:

als de besturing door Manager of Sequencer wordt geactiveerd, worden de functies: tijdsperioden, dubbele setpoint en variatie van de setpoint geforceerd gedeactiveerd.

### Opmerking:

de functies voor de beperking en de compensatie van de setpoints zijn alleen beschikbaar als de temperatuursonde van de buitenlucht aanwezig is. Deze sonde is niet beschikbaar in de units met watercondensatie.

### Opmerking:

Door de SCOP-functie worden de compensatie- en begrenzfuncties van de setpoint van de warmtepomp geïnactiveerd.

In het setpointmenu is de actieve setpoint van de temperatuur te zien (zowel van de primaire setpoint als van de setpoint van de terugwinning/DHW).

Als de functie Besturing installatie actief is, dan is de actieve setpoint van de temperatuur van de groep zichtbaar.

Hieronder volgt de verklaring van de knipperende symbolen die de actieve functies per setpoint en werkingsmodus aangeven:

- R:** wijzigingsfunctie door extern contact of buitentemperatuur.
- V:** veranderingsfunctie door extern signaal.
- B:** wijzigingsfunctie door tijdsperioden.
- C:** compensatiefunctie op grond van de buitentemperatuur.
- L:** beperkingsfunctie op grond van de buitentemperatuur.
- P:** compensatiefunctie bij gedeeltelijke belasting.
- S:** waarde ontvangen door de Sequencer.
- M:** waarde ontvangen door Manager 3000.
- Q:** waarde gewijzigd door de functie Mobiele Band.
- F:** veranderingsfunctie bij freecooling.
- A:** waarde ontvangen van Climapro.
- E:** SCOP-functie.
- D:** functie adaptive setpoint voor groep.
- O:** HPC-functie.

Setpoint actief:

Primair 07,0 °C **B**  
 Terugwinning/DHW 42,5 °C  
**R**

Type unit:  
 chiller  
 Werkingsmodus:  
 auto **R**  
 Actieve regeling:  
 Quick Mind  
 op de uitgang

Setpoint actief  
 voor groep: 07,0 °C **D**

Indien gelijktijdig geactiveerd:

- Configuratie seriële lijn USR0002 = 5 Supervisie met watchdog.
- Activering vrijgave stand-alone werking in geval van loskoppeling van het supervisiesysteem (alleen voor seriële lijn geconfigureerd in de modus "Supervisie met watchdog") (coil15 Modbus protocol, Modbus over IP protocol en Bacnet protocol).
- Herstel lokale instellingen in stand-alone USR0010 = 1:ingeschakeld.

Het supervisiesysteem kan het setpoint dat via het toetsenbord ingesteld is niet veranderen omdat dit in geval van loskoppeling wordt gebruikt (status unit U.ALONE).



## 1.6 Extra functies

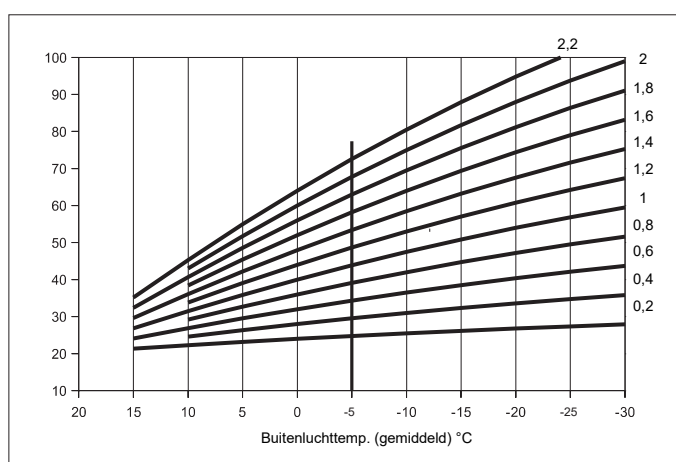
De temperatuur van het water naar het verwarmings- of koelcircuit is een door de controller berekende waarde en is afhankelijk van de volgende factoren:

- A) Compensatie setpoint watertemperatuur installatie voor verwarmen of koelen.
- B) Invloed omgevingstemperatuur.
- C) Setpointwaarde ingestelde omgevingstemperatuur.

### A) Compensatie setpoint watertemperatuur installatie

De setpoint van de watertemperatuur voor verwarmen of koelen wordt berekend door het verloop van de buitentemperatuur te volgen op basis van instelbare curves.

Diagram compensatie setpoint watertemperatuur voor verwarmen:



De klimaatcurve voor verwarmen kan worden gewijzigd om een correcte werking van de warmtepomp mogelijk te maken in overeenstemming met het verwarmingssysteem (met stralingspanelen, verwarmingsradiatoren, ventilatorconvectoren).

Bijvoorbeeld: door een verwarmingscurve van 1,4 te kiezen bij een buitenluchttemperatuur van -5 °C wordt een watertemperatuur van circa +53 °C verkregen.

Een te hoge verwarmingscurve stemt overeen met te hoge toevoertemperaturen, een te lage curve kan ertoe leiden dat de gewenste omgevingstemperatuur niet wordt bereikt.

De bijdrage aan de klimaatcurve door het verschil tussen de setpoint van de omgeving en de omgevingstemperatuur zelf is alleen beschikbaar met de Touch Room HMI.

De volgende compensatiecurves worden gesuggereerd:

| Type terminal         | Coëfficiënt |
|-----------------------|-------------|
| Stralingspanelen      | 0,2 ÷ 0,7   |
| Ventilatorconvectoren | 0,9 ÷ 1,1   |
| Verwarmingsradiatoren | 1,2 ÷ 1,5   |

### De klimaatcurven voor verwarmen worden onderverdeeld in:

- Systeemcurve (HT-zone): bepaalt de werkingssetpoint van de warmtepomp en eventuele hogetemperatuurzones. Het berekende setpoint heeft betrekking op de temperatuur van het toevoerwater van de warmtepomp. Controleer of het temperatuurverschil binnen de door de fabrikant vereiste grenzen ligt.
- Curve LT-zone: bepaalt de waarde van de watertoevoertemperatuur van het gemengde circuit. In geval van systemen die met gemengde zones zijn geconfigureerd, moeten de systeemcurve en de zonecurve worden geselecteerd.

De systeem- en zonecurves werken in cascade, de klimaatcurve van de gemengde zone kan daarom geen hogere waarde vereisen dan die van de systeemcurve. De klimaatcurven hebben betrekking op een omgevingssetpoint die ingesteld is op 20 °C op de Touch Room HMI-bediening.

| Par. Nr. | Beschrijving parameter                                                | Standaard | M.E. | Min. | Max. | Menu     | Submenu  |
|----------|-----------------------------------------------------------------------|-----------|------|------|------|----------|----------|
| SET0034  | Activering klimaatcurves per zone (0: nee - 1: HT - 2: LT - 3: HT+LT) | 0         | -    | 0    | 3    | Setpoint | Setpoint |
| SET0035  | Coëfficiënt klimaatcurve HT-zone                                      | 1,0       | -    | 0    | 2    | Setpoint | Setpoint |
| SET0036  | Offset klimaatcurve HT-zone                                           | 0,0       | °C   | -9,9 | 9,9  | Setpoint | Setpoint |
| SET0037  | Offset op 20 °C klimaatcurve HT-zone                                  | 0,0       | °C   | -9,9 | 9,9  | Setpoint | Setpoint |
| SET0039  | Coëfficiënt klimaatcurve LT-zone                                      | 1,0       | -    | 0    | 2    | Setpoint | Setpoint |
| SET0040  | Offset klimaatcurve LT-zone                                           | 0,0       | °C   | -9,9 | 9,9  | Setpoint | Setpoint |
| SET0041  | Offset op 20 °C klimaatcurve LT-zone                                  | 0,0       | °C   | -9,9 | 9,9  | Setpoint | Setpoint |

### B) Invloed omgevingstemperatuur voor verwarmen



#### WAARSCHUWING:

Functie die alleen actief is als de Touch Room HMI bediening van de omgeving aanwezig is.

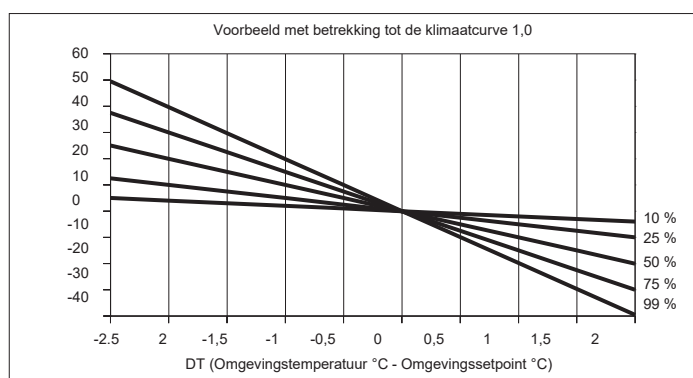
De klimaatcurve bepaalt de waarde van de watertemperatuur voor verwarmen die kan worden gecorrigeerd op basis van het verschil tussen de gewenste setpointwaarde van de omgeving en de werkelijke omgevingstemperatuur. De correctie van de watertemperatuur is afhankelijk van de coëfficiënt "invloed omgevingstemperatuur systeem". Hoe groter de waarde van de coëfficiënt "invloed omgevingstemperatuur systeem", hoe groter de correctie van de watertemperatuur van het systeem en omgekeerd.

Hiermee kan de watertemperatuur snel aangepast worden naarmate de omgevingscombinaties in de ruimtes variëren.

Stel de waarden van de invloed van de omgevingstemperatuur van het systeem in die gelijk zijn aan of groter zijn dan de LT-zones.

Stel een geschikte waarde in voor de invloed van de omgevingstemperatuur van het systeem om een afwijking van de berekende setpoint van de retourwatertemperatuur naar de warmtepomp te verkrijgen.

Op soortgelijke wijze wordt voor de invloed van de omgevingstemperatuur van de LT-zone een afwijking verkregen van de berekende setpoint van de toevoerwatertemperatuur van het systeem, geregeld door de mengklep.

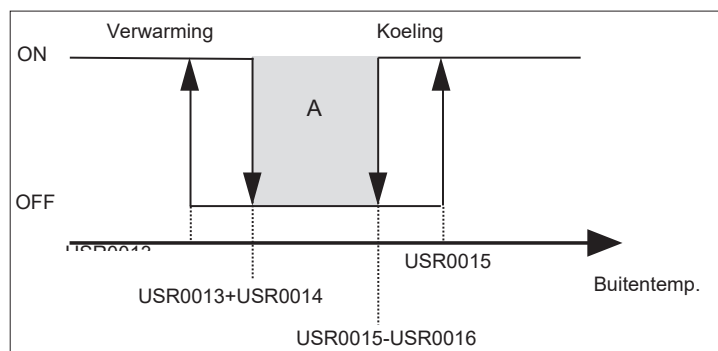


| Par. Nr. | Beschrijving parameter                          | Standaard | M.E. | Min. | Max. | Menu     | Submenu  |
|----------|-------------------------------------------------|-----------|------|------|------|----------|----------|
| SET0038  | Invloedspercentage omgevingstemperatuur HT-zone | 0         | %    | 0    | 99   | Setpoint | Setpoint |
| SET0042  | Invloedspercentage omgevingstemperatuur LT-zone | 0         | %    | 0    | 99   | Setpoint | Setpoint |

### Automatische omschakeling van de werkingsmodus door de buitentemperatuur

In automatische modus vindt de omschakeling van het seizoen (verwarmen/koelen) automatisch plaats, waardoor handmatige acties door de gebruiker worden vermeden.

De wijziging van het seizoen houdt rekening met het schema in de afbeelding:



De centrale zone A komt overeen met een fase van inactiviteit aangezien er vanwege de externe klimaatomstandigheden geen verwarming en ook geen koeling vereist is.

| Par. Nr. | Beschrijving parameter                                                      | Standaard | M.E. | Min   | Max  | Menu      | Submenu   |
|----------|-----------------------------------------------------------------------------|-----------|------|-------|------|-----------|-----------|
| USR0012  | Automatische omschakeling werkingsmodus (0: gedeactiveerd - 1: geactiveerd) | 0         | -    | 0     | 1    | Gebruiker | Gebruiker |
| USR0013  | Verwarmingssetpoint voor automatische omschakeling werkingsmodus            | 16,0      | °C   | -99,9 | 99,9 | Gebruiker | Gebruiker |
| USR0015  | Koelsetpoint voor automatische omschakeling werkingsmodus                   | 24,0      | °C   | -99,9 | 99,9 | Gebruiker | Gebruiker |
| USR0014  | Verwarmingsdifferentieel voor automatische omschakeling werkingsmodus       | 2,0       | °C   | -99,9 | 99,9 | Gebruiker | Gebruiker |
| USR0016  | Koeldifferentieel voor automatische omschakeling werkingsmodus              | 2,0       | °C   | -99,9 | 99,9 | Gebruiker | Gebruiker |

## 1.7 Toegepaste symbolen

Hieronder geven we enkele symbolen weer die in de schermen van de W3000+ en de W3000 compact toegepast zijn.

| Knipperingen<br>hoofdscherm | Beschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BANDS                       | De tijdsperioden zijn actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| FCOOL                       | De unit voert Free-Cooling uit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| LIMIT                       | De vermogenslimiet (Demand Limit) is actief, begrenzing vanwege hoge omgevingstemperatuur of stroom.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| NIGHT ON                    | De nachtfunctie is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| FREEZE                      | Uitgangstemperatuur nadert de setpoint vorstbeveiliging of omgevingstemperatuur onder de setpoint vorstbeveiliging van de omgeving en inschakeling van de vorstbeveiliging van de omgeving.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| PUMP ON                     | Pomp ingeschakeld wegens lage temperatuur van het water/de buitenlucht.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| FULL LOAD                   | De forcering op het maximum van minstens één circuit is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| U.ALONE                     | De unit functioneert zelfstandig na loskoppeling van Manager3000, Sequencer of ClimaPRO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| HPTC                        | Beperking van circuits vanwege hoge condensatiedrukwaarden is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| DEFR                        | De ontdooiing op één of meerdere circuits van de unit is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| DRIP                        | De druppeling op één of meerdere circuits van de unit is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| STORAGE                     | De energieopslagfunctie is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| MIN LOAD                    | De forcering op het minimum van minstens één circuit of een uitschakeling voor olieretur is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| DHW COMPR                   | De unit is warm tapwater DHW aan het produceren met behulp van de compressoren.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DHW BOILER                  | De unit is warm tapwater DHW aan het produceren met de weerstanden of de ketel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DHW BOOST                   | De unit is warm tapwater DHW aan het produceren op de overboost instelling.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| PLT COMPR                   | De unit is de accumulatie van de installatie aan het verwarmen met de compressoren.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| PLT BOILER                  | De unit is de systeemopslag aan het verwarmen met de weerstanden of de ketel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ANTILEG                     | De antilegionellafunctie is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| OFF SNIFF.                  | Om de Snifferfunctie in te schakelen, zijn de pompen uitgeschakeld of als zij in werking zijn, is de aanpassing van de toevoer-/retourtemperaturen bezig voordat de temperatuurregelaars weer vrijgegeven worden.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| OFF STOR.                   | De unit is uitgeschakeld wegens het bereiken van de setpoint van de buffervattemperatuur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| POWER-ON                    | De unit is in afwachting van de startvertragingstijd na een stroomuitval.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| WAIT                        | De unit is ingeschakeld en de temperatuurregelaars zijn in afwachting van de lopende inschakeltijden. De oorzaken van het knippen van 'WAIT' kunnen zijn: <ul style="list-style-type: none"> <li>- Wachten op het stabiliseren van de batterijwissel (units met Free-cooling).</li> <li>- Capaciteitsregeling bij opstarten (hybride units met hermetische compressoren).</li> <li>- Opstartblokkering van de unit wegens hoge temperatuur bij ingang warmtewisselaar.</li> <li>- Toename van het aantal ingeschakelde compressoren.</li> <li>- Actieve tussencompressorveiligheidstijden (ook tussen afzonderlijke circuits).</li> </ul> |
| FAST                        | De snelstartfunctie is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| PUMPDOWN ON                 | De pumpdown-functie is actief op tenminste één van de circuits van de unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| +2P ENABLED                 | +2P module geactiveerd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| KIPlink FOUND               | KIPlink-module gedetecteerd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| OIL T. LOW                  | Lage motorolietemperatuur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| SG READY                    | SG Ready actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| NO REG                      | Als de automatische omschakeling van de werkingsstand actief is, vereisen de externe klimaatomstandigheden niet dat de compressoren ingeschakeld worden (geen verwarming en geen koeling).                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| PLANT OFF                   | De productie van warm of koud water aan installatiezijde is gedeactiveerd wegens geen aanvraag door de zones die in de installatie aanwezig zijn.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| BOOST                       | De Boost-functie is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| CIRC 1 LOCK                 | Circuit 1 geblokkeerd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CIRC 2 LOCK                 | Circuit 2 geblokkeerd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CIRC 3 LOCK                 | Circuit 3 geblokkeerd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CIRC 4 LOCK                 | Circuit 4 geblokkeerd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CHDT                        | Geforceerde uitschakeling van compressoren wegens hoge afvoertemperatuur is actief.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

De knipperingen BANDS, LIMIT, NIGHT ON, NO REG, PLANT OFF, BOOST zijn alleen actief als de unit op ON staat.

| Symbool menu<br>Groep | Beschrijving                                                                      |
|-----------------------|-----------------------------------------------------------------------------------|
| GRP FCOOL             | Minstens één unit van de groep actief in Free-Cooling.                            |
| GRP LIMIT             | Vermogenslimiet groep (demand limit groep) actief.                                |
| GRP FAST              | Snelstartfunctie groep actief.                                                    |
| WAIT LAN              | Storing aansluiting tussen units in de groep. Bediening groep On/Off geblokkeerd. |

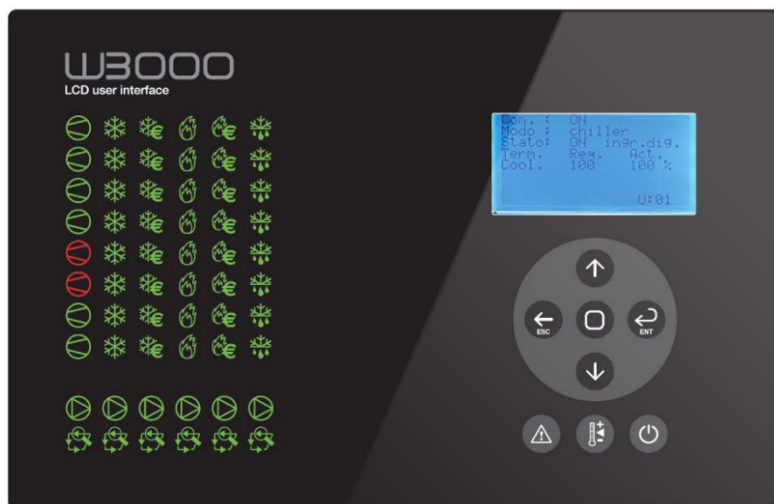
De knipperende symbolen GRP FCOOL, GRP LIMIT en GRP FAST zijn alleen actief als de installatie op ON staat.

| Symbool menu unit | Beschrijving                                                         |
|-------------------|----------------------------------------------------------------------|
| Off               | Unit/circuit uitgeschakeld.                                          |
| Ch nr             | Circuit chiller niet gevraagd door temperatuurregelaar.              |
| Ch                | Circuit chiller gevraagd door temperatuurregelaar.                   |
| Ch+R              | Circuit chiller plus terugwinning gevraagd door temperatuurregelaar. |
| Hp nr             | Circuit warmtepomp niet gevraagd door temperatuurregelaar.           |
| Hp                | Circuit warmtepomp gevraagd door temperatuurregelaar.                |
| R nr              | Circuit alleen terugwinning niet gevraagd door temperatuurregelaar.  |
| R                 | Circuit alleen terugwinning gevraagd door temperatuurregelaar.       |
| Pd                | Circuit in Pumpdown.                                                 |
| Defr              | Circuit in ontdooiing.                                               |
| Drip              | Circuit in uitdruppelen.                                             |

## 2 GEBRUIKERSINTERFACE

### 2.1 Gebruikersterminal

Er zijn drie soorten gebruikersinterfaces beschikbaar:



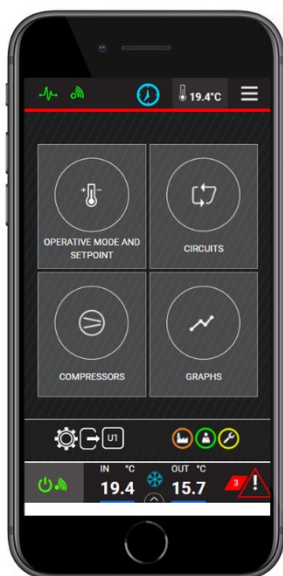
W3000 large



W3000 compact



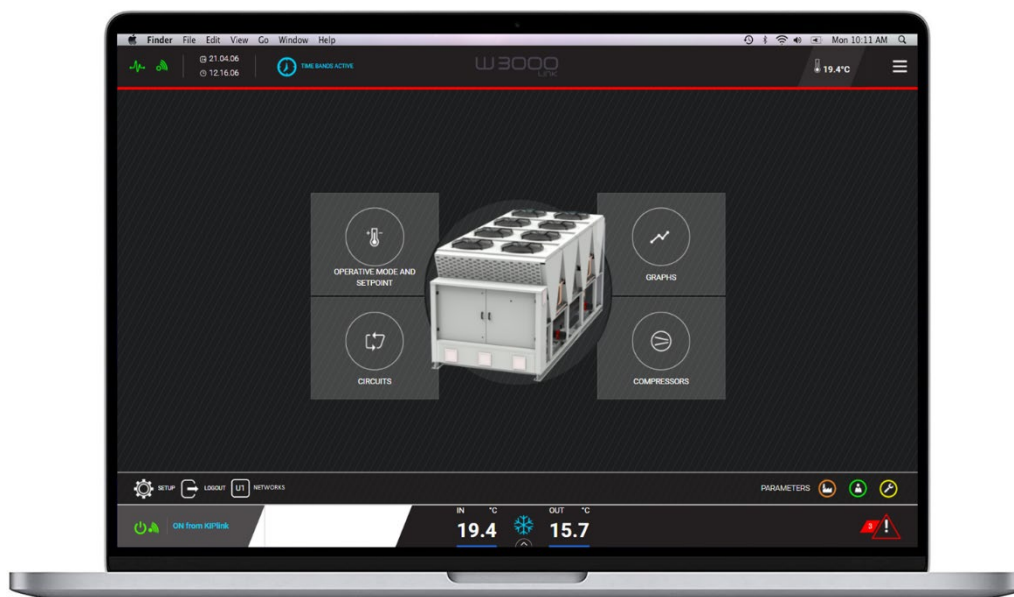
W3000Touch+



Afbeelding 2-1: versie voor mobiele telefoon.



Afbeelding 2-2: versie voor Tablet.



Afbeelding 2-3: versie voor Notebook (Uso Local Monitoring).

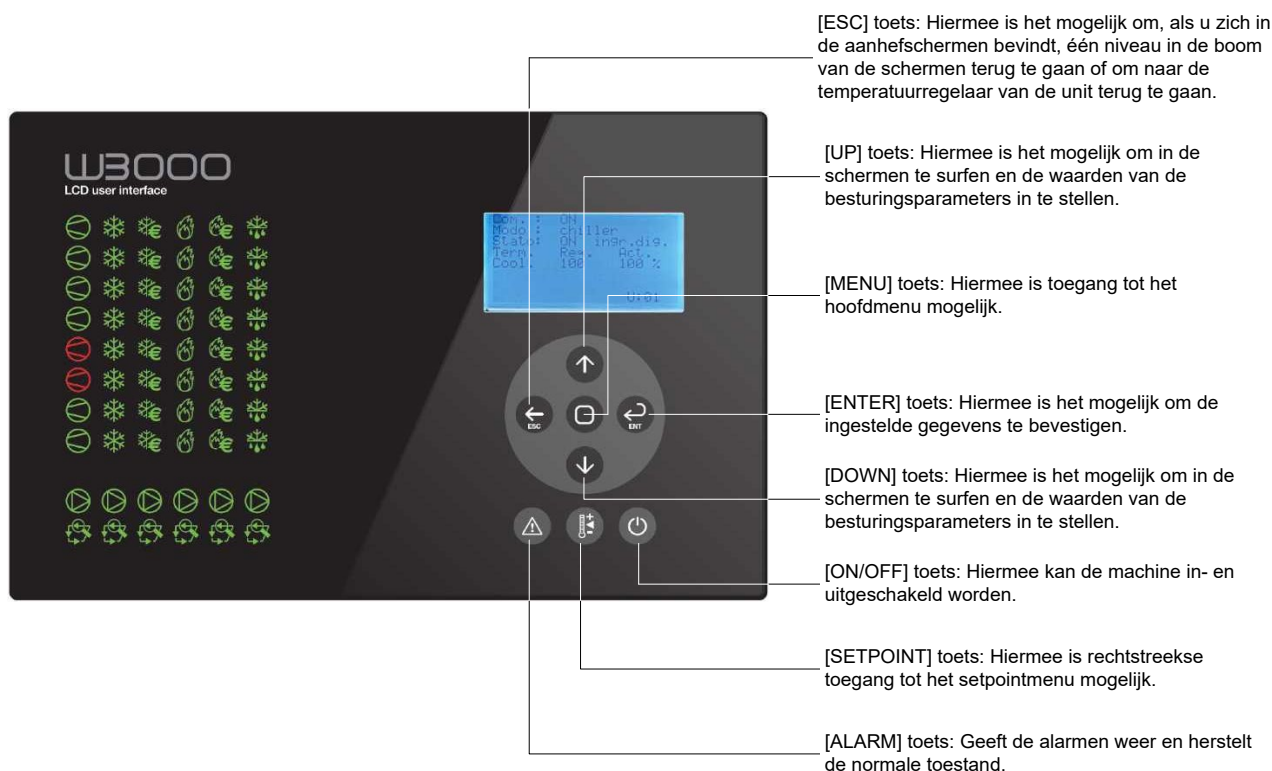


#### INFORMATIE:

Het hoofdoverzichtsscherm dat in de afbeeldingen in deze handleiding is weergegeven is een voorbeeld van een bepaald type machine. Het is daarom mogelijk dat dit afwijkt van hetgeen op de gebruikersinterface van de machinebesturing wordt weergegeven.

### 2.1.1 W3000 large toetsenbord

Betekenis van de toetsen:



**Figuur 2-4:** Betekenis van de toetsen op het W3000 large toetsenbord.



## Betekenis van de leds van de compressoren:

[LED compressor]

- Groen constant aan: de compressor is aan.
- ◐ Groen knipperend: werking compressor vereist.
- Rood: de compressor is geblokkeerd door een alarm van de compressor of het circuit.

[LED chiller]

- Groen constant aan: de compressor staat op de chillerstand.

[LED freecooling]

- Groen constant aan: de "freecooling" functie is actief.

[LED warmtepomp]

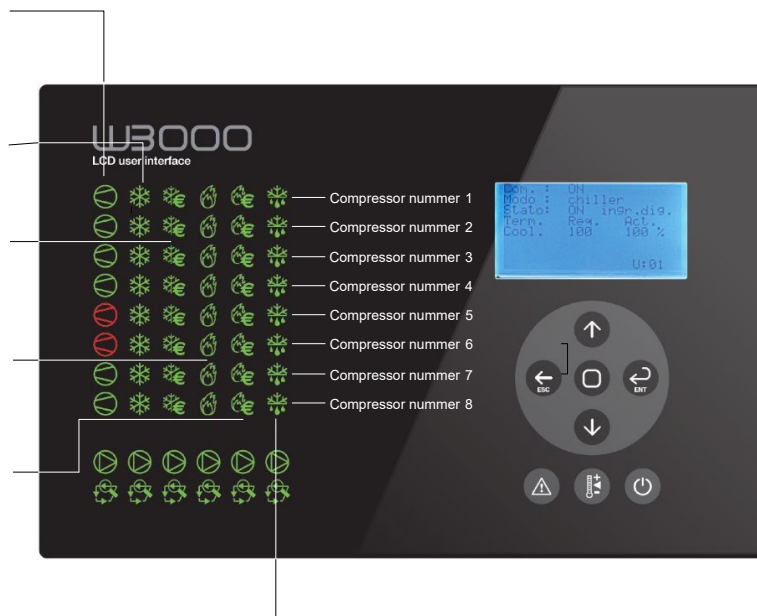
- Groen constant aan: de compressor staat op de werkingsstand "warmtepomp".

[LED terugwinning]

- Groen constant aan: de compressor staat op de werkingsstand "terugwinning".
- ◐ Groen knipperend: compressor in "alarm terugwinning".

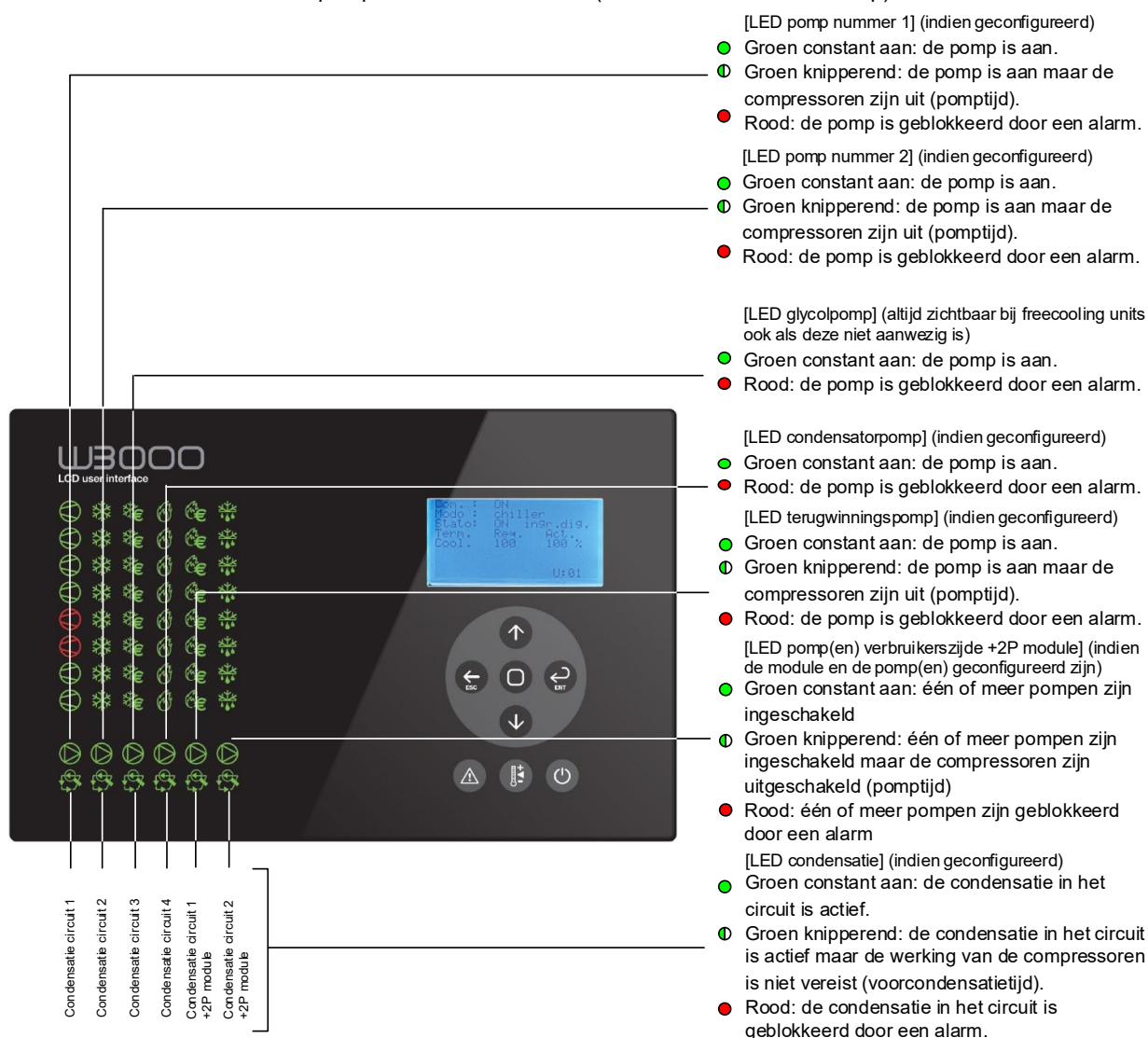
[LED ontdooiing]

- Groen constant aan: de compressor staat op "ontdooien".
- ◐ Groen knipperend: de compressor staat op "druppelen".



**Figuur 2-5:** Betekenis van de leds van de compressoren op het W3000 large toetsenbord.

Betekenis van de LEDs van de pompen en de condensatie (ventilatie of condensatieklep):



**Figuur 2-6:** Betekenis van de leds van de pompen en de condensatie op het W3000 large toetsenbord

#### Opmerkingen:

- Als er spanning wordt geleverd aan de unit, en dus ook aan het toetsenbord, wordt er gedurende enkele seconden een controle van de werking van alle leds verricht door ze allen gelijktijdig in te schakelen (voor de tweekleurige leds eerst rood en dan groen).
- Het voorbeeld van de afbeelding toont het geval van een unit met 8 compressoren; het feit dat de regels van de compressor gaan branden hangt af van het aantal aanwezige compressoren.
- De LEDs van de condensatie kunnen bij meerdere circuits gelijktijdig gaan branden wanneer de condensatie gemeenschappelijk is voor twee of meer circuits.
- De achtergrondverlichting van het toetsenbord gaat 2 minuten nadat er niet op de toetsen gedrukt is uit.
- De achtergrondverlichting van het toetsenbord gaat knipperen bij alarmen op de unit en als er geen interactie met het toetsenbord is.

#### Opmerkingen voor units die uitgerust zijn met de +2P module:

- Met de toetsencombinatie (ESC+UP) is het mogelijk om de gegevens en de parameters van de +2P module te zien; met dezelfde toetsencombinatie gaat u weer terug naar de hoofdgebruikersinterface.
- Het in-/uitschakelen van de unit kan niet plaatsvinden als de gebruikersinterface op besturing van de +2P module staat; in dat geval moet u zich met de toetsencombinatie (ESC+UP) naar de hoofdgebruikersinterface verplaatsen om de gewenste besturingsopdracht te geven.
- De LEDs die normaal bij de compressoren 5, 6, 7, 8 horen geven in dit geval de status van de compressoren 1, 2, 3, 4 van de +2P module weer.

### 2.1.2 W3000 compact toetsenbord

[ALARM] toets: Geeft de alarmen weer en herstelt de normale toestand. Als deze rood verlicht is dan is er minimaal één alarm/signalering voorhanden.

[MENU] toets: Hiermee is toegang tot het hoofdmenu mogelijk. Als deze geel verlicht is dan bevindt u zich in het menu.

[ESC] toets: Hiermee is het mogelijk om, als u zich in de aanhefschermen bevindt, één niveau in de boom van de schermen terug te gaan of om naar de temperatuurregelaar van de unit terug te gaan.



[UP] toets: Hiermee is het mogelijk om in de schermen te surfen en de waarden van de besturingsparameters in te stellen.

[ENTER] toets: Hiermee is het mogelijk om de ingestelde gegevens te bevestigen.

[DOWN] toets: Hiermee is het mogelijk om in de schermen te surfen en de waarden van de besturingsparameters in te stellen.

#### Opmerkingen:

- De achtergrondverlichting van het toetsenbord gaat 2 minuten nadat er niet op de toetsen gedrukt is uit.
- De achtergrondverlichting van het toetsenbord gaat knipperen bij alarmen op de unit en als er geen interactie met het toetsenbord is.

**Figuur 2-7:** Betekenis van de toetsen en de LEDs op het W3000 compact toetsenbord.

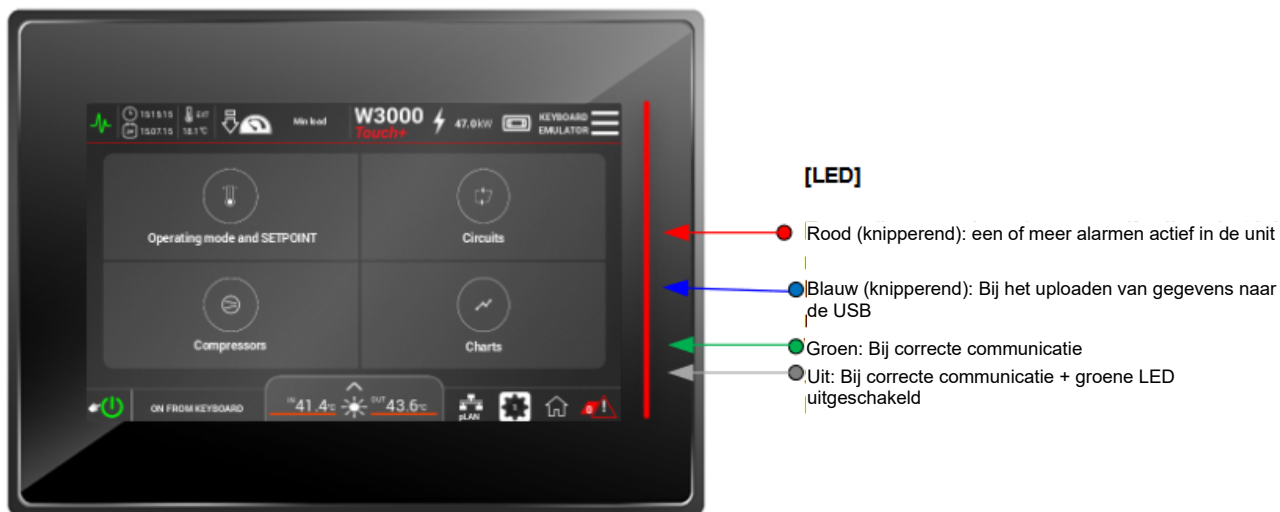
Met toetsencombinaties is het mogelijk om specifieke functies te activeren:

| Toets                                                                                                                                                                                                                                                           | Beschrijving                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  +  +     | <b>[PRG + ALARM + UP] toets:</b><br>Hiermee kan het displaycontrast verhoogd worden.                                                                                                      |
|  +  +  | <b>[PRG + ALARM + DOWN] toets:</b><br>Hiermee kan het displaycontrast verlaagd worden                                                                                                     |
|  +                                                                                        | <b>[Toets ESC + ALARM]:</b><br>In geval van gemeenschappelijk toetsenbord: maakt de overgang van de weergave van de schermen en de parameters tussen de in pLAN verbonden units mogelijk. |
|  +  +  | <b>[UP + DOWN + ENTER] toets:</b><br>Als u deze toetsencombinatie 5 seconden lang ingedrukt houdt, kunt u het pLAN-adres van de gebruikersterminal instellen.                             |
|  +                                                                                        | <b>[Toets ALARM + UP]:</b><br>Bij gebruikersterminal geadresseerd op 0: maakt de configuratie van het pLAN-adres van de besturingskaart mogelijk.                                         |

Deze toetsencombinaties (ook als zij van andere symbolen voorzien zijn) gelden ook voor het W3000 large toetsenbord.

### 2.1.3 W3000Touch+ toetsenbord

Versie met 7"-scherm:



**Figuur 2-8:** Betekenis van de verschillende elementen op het W3000Touch+ toetsenbord met 7"-scherm.

Voor meer informatie over dit toetsenbord zie de betreffende handleiding die bij de softwareversie van de W3000+ hoort.

## 2.1.4 Toegang via de applicatie

Handel als volgt om de unit te openen en te bedienen:

- Installeer eerst de KIPLink in de unit, als die nog niet geïnstalleerd is.
- Download de KIPLink applicatie vanuit de site melcohit.com op het mobiele apparaat.

Het is mogelijk de applicatie te installeren op mobiele apparaten met O.S. Android 5 of hoger / IOS 8 of hoger.

Handel als volgt om de applicatie te openen:

- Scan de QR-code die op de unit is aangebracht.
- Neem de instructies in acht die op het beeldscherm getoond worden om via het wifi-netwerk naar de KIPLink van de unit te gaan.
- Gebruik de in de applicatie aanwezige toetsen om de unit te bedienen.



### INFORMATIE:

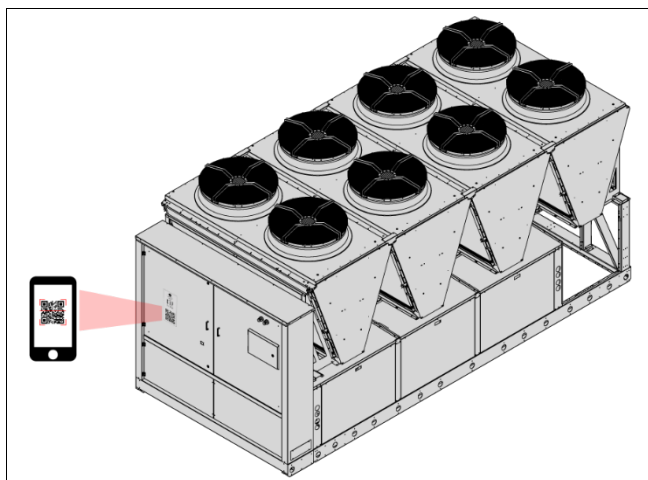
Om de unit te bedienen, dient men zich bij de eerste toegang te authenticeren.



### INFORMATIE:

Op de schakelkast van de unit is een sticker voor de KIPLink aangebracht. Dit etiket is een versleutelde QR-code die alleen leesbaar is via de applicatie. Het etiket toont naast de QR-code:

- het serienummer van de unit waarin de KIPLink geïnstalleerd is.
- of de KIPLink de master van het netwerk is in het geval van netwerken met meer KIPLinks.



### INFORMATIE:

Als de QR-code beschadigd of niet aanwezig is, neem dan contact op met de assistentiedienst om een nieuwe QR-code aan te vragen.



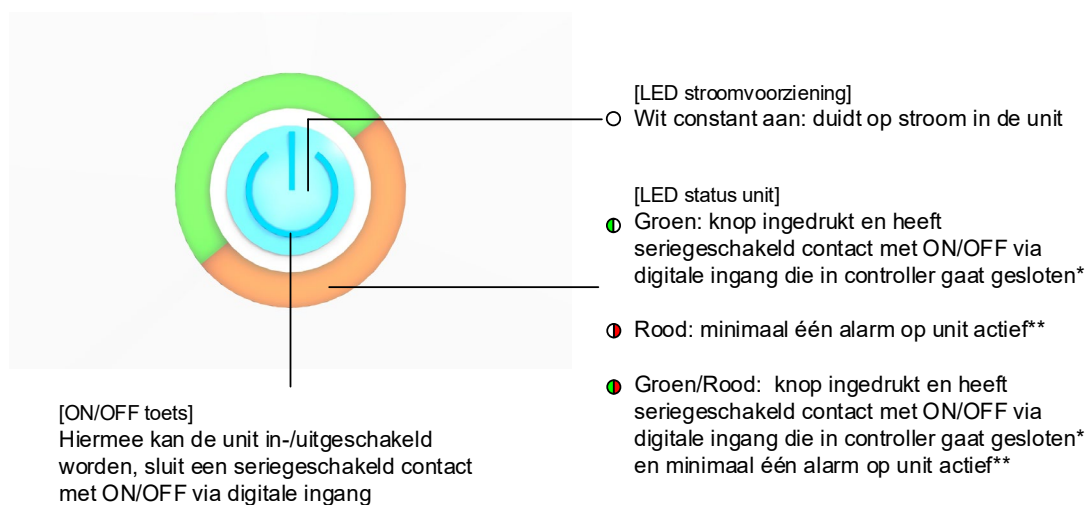
### INFORMATIE:

Raadpleeg voor meer informatie over de gebruikswijze van de applicatie de tutorial in de applicatie.

Meer informatie over het KIPLink apparaat is beschikbaar in de betreffende handleidingen met de volgende codes.

| KIPLink apparaat | KIPLink gebruikershandleiding code                                                                          |
|------------------|-------------------------------------------------------------------------------------------------------------|
| W3000+link       | C024456140-IT, C024456141-EN, C024456142-FR<br>C024456143-DE, C024456144-ES, C024456145-RU<br>C024456146-ML |

Bij de met KIPLink geconfigureerde units is, zonder dat er een tastbaar toetsenbord op de unit wordt gebruikt, een functiekноп opgenomen, die in onderstaande afbeelding wordt getoond, waarmee de unit in-/uitgeschakeld kan worden, aan de hand waarvan zichtbaar is of de stroom ingeschakeld is en de alarmstatus van de unit te zien is.



**Figuur 2-9:** ON/OFF knop voor units met alleen KIPLink gebruikersinterface.



#### INFORMATIE:

\* Het sluitcontact in de knop is serieel geschakeld met het digitale ON/OFF contact.

Als de groene led aan is maar de unit NIET start dan betekent dit dat er een ander element dat de inschakeling beïnvloedt de unit op OFF zet. Controleer of alle elementen (tijdsperioden, supervisiesysteem, remote ON/OFF, KIPLink enz.) de ON-opdracht hebben gegeven.

Om vast te stellen welk element de inschakeling van de unit blokkeert hoeft u slechts de "status van de unit" in de Homepage van de KIPLink of in het hoofdscherm van elk ander soort toetsenbord te controleren.



#### INFORMATIE:

\*\* De rode led hangt af van de digitale uitgang van de besturing en meldt "cumulatieve alarmen". Signaleringen tonen de oplichtende rode LED niet.

## 2.2 Algemene kenmerken van de interface

### 2.2.1 Keuze van de taal

Het bijzondere van de nieuwe hardware is dat het over een extra geheugen beschikt waar alle ondersteunde talen in staan. Tijdens het programmeren worden alle talen in de controller geladen. De eindgebruiker kan de taal die op de display weergegeven wordt dus zelf kiezen door middel van een eenvoudige procedure.

| Italiaans  | Deens | Duits | Grieks    | Engels   | Spaans   | Fins   | Frans | Kroatisch | Hongaars |
|------------|-------|-------|-----------|----------|----------|--------|-------|-----------|----------|
| IT         | DA    | DE    | EL        | EN       | ES       | FI     | FR    | HR        | HU       |
| Nederlands | Noors | Pools | Portugees | Roomeens | Russisch | Zweeds | Turks | Chinees   |          |
| NL         | NO    | PL    | PT        | RO       | RU       | SV     | TR    | ZH        |          |

**Tabel 5:overeenstemmingstabel tussen taal en internationale taalcode.**

Aan de hand van de volgende procedure kiest u een van de beschikbare talen:

|    |                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                   |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 0) | Controleer of de unit op OFF staat.<br>Controleer of in het scherm van het hoofdmenu de aanduiding "OFF" op de eerste regel verschijnt (of dat de status OFF via toetsenbord, OFF via digitale ingang enz. aangegeven is).<br>Als de unit op ON staat leidt de toegang tot het hieronder beschreven systeemmenu tot onmiddellijke uitschakeling van de compressoren. | 09:26 ON ALXXX<br>Modus: chiller<br>Status: ON tsb.<br>Term. Req. Act.<br>Cool. 050 050 %<br>Hot 000 000 %<br>Tijd pomp 000s<br>LIMIT ID:011 U:01 |
| 1) | Druk de toetsen <b>[ALARM]</b> en <b>[ENTER]</b> gelijktijdig in; houd de toetsen ingedrukt tot het hiernaast aangegeven scherm verschijnt.                                                                                                                                                                                                                          | > SYSTEM INFORMATION<br>LOG DATA<br>OTHER INFORMATION<br>FLASH NAND FILES                                                                         |
| 2) | Breng de cursor ">" door middel van de toetsen <b>[UP]</b> en <b>[DOWN]</b> naar de regel "FLASH NAND FILES" en selecteer door op <b>[ENTER]</b> te drukken.                                                                                                                                                                                                         | SYSTEM INFORMATION<br>LOG DATA<br>OTHER INFORMATION<br>> FLASH NAND FILES                                                                         |
| 3) | Als het hiernaast aangegeven scherm verschijnt, dan betekent dit dat er toegang verkregen is tot het menu "FLASH NAND FILES". Door op de toets <b>[ESC]</b> te drukken wordt het menu gesloten en wordt de taal niet veranderd.                                                                                                                                      | [ ]<br>TA001_PGD1_IT.iup                                                                                                                          |
| 4) | Nu moet het bestand voor de gewenste taal geselecteerd worden. Door op de toets <b>[ENTER]</b> te drukken, wordt de taal geselecteerd en verschijnt er een "X" tussen vierkante haken, door nogmaals op <b>[ENTER]</b> te drukken wordt de taal gedeselecteerd.                                                                                                      | [X]<br>TA001_PGD1_IT.iup                                                                                                                          |
| 5) | Met de toetsen <b>[UP]</b> en <b>[DOWN]</b> verschijnen er andere bestanden. De bestanden met de extensie ".iup" zijn de bestanden van de taal. Het bestand met de extensie ".bin" is het bestand van de applicatie. Het bestand met de extensie ".grp" is het bestand van de grafische resources.                                                                   | [ ]<br>TA.grp                                                                                                                                     |
| 6) | Het is noodzakelijk om <b>uitsluitend een bestand ".iup"</b> te kiezen op basis van de taal die u wilt weergeven (zie de overeenstemmingstabel tussen taal en internationale taalcode).                                                                                                                                                                              | [X]<br>TA001_PGD1_IT.iup                                                                                                                          |
| 7) | Het bestand met de extensie ".bin" moet gekozen worden.                                                                                                                                                                                                                                                                                                              | [X]<br>TA.bin                                                                                                                                     |
| 8) | Het bestand met de extensie ".grp" moet gekozen worden.                                                                                                                                                                                                                                                                                                              | [X]<br>TA.grp                                                                                                                                     |
| 9) | Zodra er een ".iup" bestand, het ".bin" bestand en het ".grp" bestand gekozen is moet u in het hiernaast aangegeven scherm gaan staan en op <b>[ENTER]</b> .                                                                                                                                                                                                         | Press Enter<br>to start copying                                                                                                                   |

|     |                                                                                                                                                                                                           |                                                  |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 9b) | Druk bij het verzoek in het scherm hiernaast op <b>[ENTER]</b> en laat "NO" staan. Dit scherm verschijnt bij omvangrijke applicatieversies, maar het kan gebeuren dat het niet verschijnt.                | Erase Log data?<br>NO<br>press<br>ENTER to conf. |
| 10) | Het hiernaast aangegeven scherm verschijnt, dat aangeeft dat het kopiëren bezig is.                                                                                                                       | copy process<br>is running                       |
| 11) | Aan het einde van het installatieproces verschijnt het hiernaast aangegeven scherm.                                                                                                                       | ok, copy completed.<br>wait for restart          |
| 12) | Tijdens het proces kunnen er aanduidingen zoals "I/O BOARD FAULT" of "NO LINK" verschijnen. Dit hangt samen met het restartproces van de applicatie, de meldingen zullen na een paar seconden verdwijnen. | I/O BOARD FAULT                                  |
| 13) | Na afloop van de procedure zullen de schermen in de geselecteerde taal weergegeven worden. In het menu "Unit" kan de geïnstalleerde taal gecontroleerd worden.                                            | W 3000 +<br>Cod. TA 22.00 IT                     |

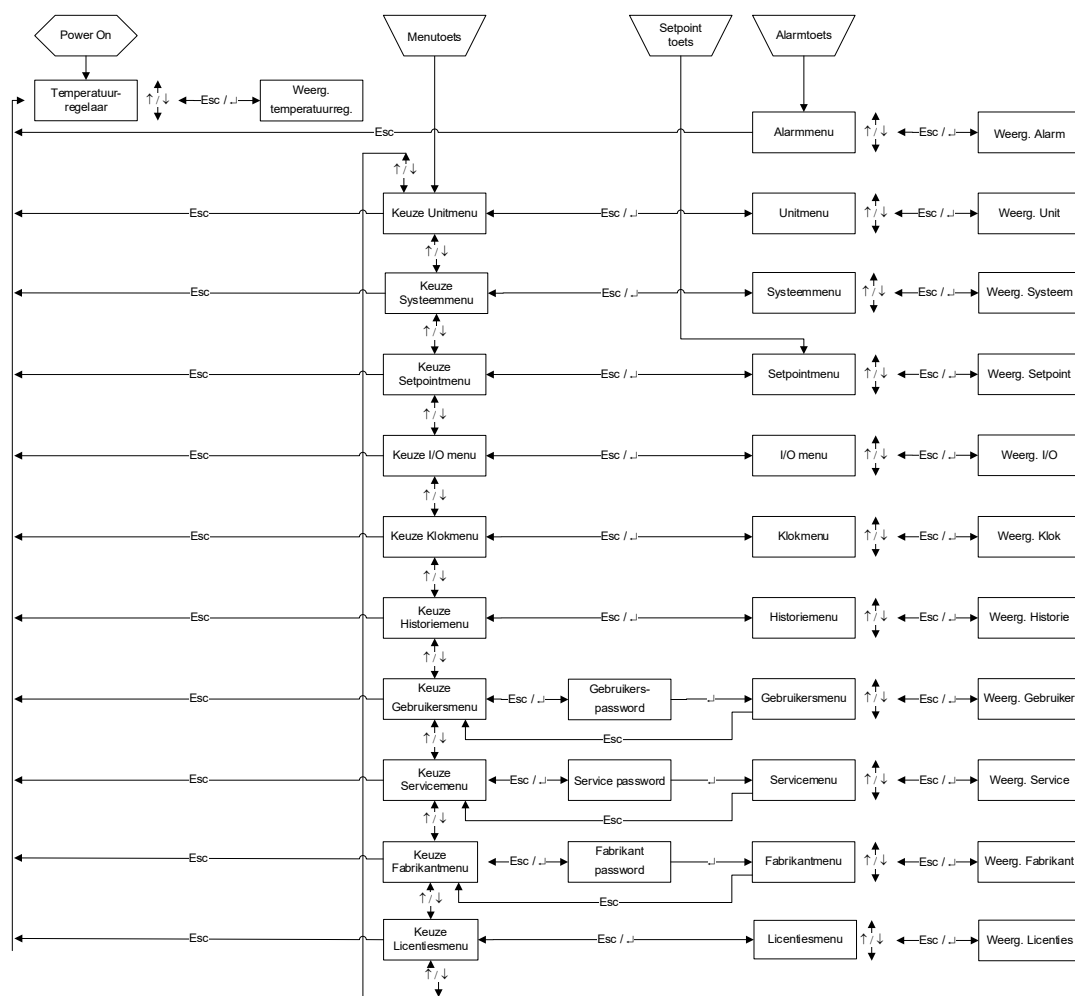
Het is noodzakelijk dat alle stappen van de procedure uitgevoerd worden; als er ook maar één bestand achterwege gelaten wordt, treden de hieronder beschreven storingen op:

|                                                                                                                                                                                                                                                                                                                              |                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Als er geen ".iup" bestand geselecteerd is, dan betekent dit dat er geen taal geselecteerd is en dan is het resultaat een leeg scherm! Dan moet de handeling herhaald worden waarbij u erop moet letten dat u een ".iup" bestand selecteert.                                                                                 | Select one iup file                       |
| Als het ".bin" bestand niet geselecteerd is, dan betekent dit dat het bestand van de applicatie niet geselecteerd is en verschijnt het hiernaast aangegeven scherm. Dan moet u op de toets [ESC] drukken en moet de handeling worden herhaald waarbij u erop moet letten dat u het ".bin" bestand selecteert.                | ERROR : press menu<br>select one blb file |
| Als het ".grp" bestand niet geselecteerd is, dan betekent dit dat het bestand van het grafische gedeelte niet geselecteerd is. Taal en applicatie zijn geïnstalleerd, maar de afbeeldingen zullen niet beheerd worden. Dan moet de handeling herhaald worden waarbij u erop moet letten dat u het ".grp" bestand selecteert. | Select one blb file                       |
| Er is geen bestand geselecteerd.                                                                                                                                                                                                                                                                                             | No files selected                         |
| Er heeft zich een fout voorgedaan tijdens het kopiëren in het NOR geheugen                                                                                                                                                                                                                                                   | Error copying files                       |
| Er heeft zich een fout voorgedaan tijdens het lezen van het bestand uit het NAND geheugen                                                                                                                                                                                                                                    | Error reading file (11)                   |
| CRC niet goed berekend tijdens het kopiëren in het NOR geheugen                                                                                                                                                                                                                                                              | Error reading file (12)                   |
| Er heeft zich een fout voorgedaan tijdens het lezen van het bestand uit het NAND geheugen                                                                                                                                                                                                                                    | Error reading file (13)                   |
| Er heeft zich een fout voorgedaan tijdens het schrijven in het NOR geheugen                                                                                                                                                                                                                                                  | Writing error (14)                        |
| Het bestand is te groot en kan daarom geen geldig DEV bestand zijn.                                                                                                                                                                                                                                                          | DEV file not valid                        |
| Het bestand is geen geldig DEV bestand (adressering niet herkend).                                                                                                                                                                                                                                                           | Code error 9                              |
| Alle andere situaties.                                                                                                                                                                                                                                                                                                       | Code error X                              |



## 2.2.2 Structuur van de menu's

Hieronder worden de boomstructuren weergegeven om in de diverse menu's te surfen.



**Afbeelding 2-10:** boomstructuur voor navigatie in de menu's.

Hieronder volgt een korte beschrijving van de menu's:

- In het "Unitmenu" worden de gegevens van de unit weergegeven zoals temperatuur, druk en status van de circuits.
- In het "Systeemmenu" wordt de informatie met betrekking tot het beheer van het systeem met Multi Manager (indien aanwezig) of het beheer van woonunits weergegeven.
- In het "Setpointmenu" kunnen de setpoints van de diverse beschikbare functies worden ingesteld. Afhankelijk van de beschikbare werkingsmodi (chiller, warmtepomp en terugwinning) is het mogelijk om verschillende setpoints in te stellen. Verder is het mogelijk om de dubbele setpointwaarden voor de werking op de chiller- en de warmtepompstand in te stellen (alleen als de digitale ingang voorhanden is en als de functie "dubbel setpoint" in het "gebruikersmenu" vrijgegeven is).
- In het "I/O menu" worden de status van de digitale ingangen en de door de analoge ingangen afgelezen waarden aangegeven. Verder worden de status van de digitale uitgangen en de spanning die aan de analoge uitgangen verstrekt wordt weergegeven.

Er kunnen extra uitbreidingskaarten nodig zijn (op basis van de configuratieparameters); in dat geval zal ook de status van de in- en uitgangen van deze uitbreidingskaarten te zien zijn.

- In het "Klokmenu" kan, als de klokkaart aanwezig is, de datum en de tijd worden ingesteld en weergegeven; hierin kunnen ook de tijdsperioden worden ingesteld.
- In het "Historiemenu" (dat alleen toegankelijk is als de klokkaart geïnstalleerd is) is het mogelijk om de lijst van de voorvallen die door de unit waargenomen zijn te laten weergegeven.
- In het "Gebruikersmenu" is het mogelijk om parameters met betrekking tot de programmering van de gebruiker van de unit weer te geven en in te stellen.
- In het "Servicemenu" kan het servicepersoneel parameters weergeven en instellen.
- In het "Menu Fabrikant" is het mogelijk om parameters voor de configuratie van de unit weer te geven en in te stellen.
- In het "Menu Licenties" is het mogelijk om de functies onder licentie weer te geven en te beheren.

### 3 TABEL SCHERMEN

Gebruik de toets [UP] of [DOWN] om van een scherm naar een ander scherm binnen hetzelfde menu over te gaan. Om de parameter op te roepen moet u op de toets [ENTER] drukken, om de waarde van de parameter te veranderen moet u op de toets [UP] of [DOWN] drukken.

| Scherm van de handleiding                                                                                                                               | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ID parameter |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 09:26 ON ALXXXX<br>Modus : chiller<br>Status: ON tsb.<br>Term. Req. Act.<br>Cool. 050 050 %<br>Terugw. 000 000 %<br>Tijd pomp 000s<br>LIMIT ID:011 U:01 | Hoofdweergavescherm. Geeft de werkingsmodus en -status weer. De unit kan worden in- of uitgeschakeld door middel van de opdracht On/Off: druk op de toets [ENTER] om naar "ON/OFF" te gaan, gebruik de toetsen [UP] of [DOWN] om de opdracht te selecteren en bevestig door nogmaals op [ENTER] te drukken.<br><b>Bij de units met luchtverdamping wordt de on/off-opdracht door de controller van het luchtbehandelingsgedeelte gegeven.</b><br>Hiermee kunt u ook eventuele meldingen weergeven:<br>"ALxxx" : er is een alarm actief,<br>"Sxxx" : er is een signalering actief,<br>"U:xx" : duidt op het configuratieadres van de unit,<br>"ID:xxx" : duidt op het supervisieadres van de unit,<br>Daarnaast verschijnen enkele symbolen die de status van de unit beschrijven.<br>Al naargelang de kenmerken van de unit worden sommige velden mogelijk niet weergegeven.<br>Als er op de regel "status" "Standby" wordt weergegeven, dan betekent dit dat sommige mechanische onderdelen van de unit gestart kunnen worden ook als de unit op OFF staat. |              |
| STATUS GROEP<br>15:19 OFF ALXXXX<br>Modus : chiller<br>Status: ON tsb.<br>Term. Req. Act.<br>Cool. 100 100 %<br>ID:00                                   | Hoofdscherm voor weergave van de status van de groep LAN Multi Manager-units.<br>Het is mogelijk om het systeem in of uit te schakelen door middel van de opdracht On/Off: druk op de toets [ENTER], gebruik de toetsen [UP] of [DOWN] om de opdracht te selecteren en bevestig door opnieuw op [ENTER] te drukken.<br>Hiermee kunt u ook eventuele meldingen weergeven:<br>"ID:xxx" : geeft het adres van de unit in het LAN Multi Manager-netwerk weer. Al naargelang de kenmerken van de unit worden sommige velden mogelijk niet weergegeven.<br>Als er op de regel "status" "Standby" wordt weergegeven, dan betekent dit dat sommige mechanische onderdelen van de unit gestart kunnen worden ook als de unit op OFF staat.                                                                                                                                                                                                                                                                                                                            |              |
| STATUS Master-Client<br>15:19 ON<br>Modus : Cooling+DHW<br>Status: ON tsb.<br>Act.<br>Plant 100 %<br>DHW 000 %                                          | Hoofdscherm voor weergave van de status van de groep Master-Client units.<br>Het is mogelijk om het systeem in of uit te schakelen door middel van de opdracht On/Off: druk op de toets [ENTER], gebruik de toetsen [UP] of [DOWN] om de opdracht te selecteren en bevestig door opnieuw op [ENTER] te drukken.<br>Al naargelang de kenmerken van de unit worden sommige velden mogelijk niet weergegeven.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |
| Master-Client<br>Status Act.<br>1:ON Plant 100 %<br>2:OFF --- %<br>3:ON Plant 100 %<br>4:Offline --- %                                                  | Scherm voor weergave van de status van de units in de groep, met het relatieve actieve percentage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |
| Temp. In. Out.<br>Verdamp. 12.5 07.0 °C<br>Terugw. 35.6 40.5 °C<br>Cond. 38,0 42,5 °C<br>A.DHW 59,8 °C<br>A.PLANT 44,0 °C                               | Geeft de watertemperatuur op de in- en uitgang van de unit weer. (verdamp, terugwinningssysteem, condensator en Accumulatie DHW en Accumulatie Plant alleen zichtbaar indien aanwezig).<br>Bij units met meerdere verdampers wordt, als de gemeenschappelijke uitgangssonde gedeactiveerd is, de gemiddelde temperatuur van de twee uitgangssondes van de afzonderlijke verdampers weergegeven.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |

| Scherm van de handleiding                                                                                                                                                | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                     | ID parameter |
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| Temp. In. Out.<br>Verd. 12,5 07,0 °C<br>Verd1 07,2 °C<br>Verd2 06,9 °C                                                                                                   | (Indien er meerdere verdamperen aanwezig zijn) geeft de in- en uitgangstemperatuur van de verdampers of de condensator weer (al naargelang de werking in chiller of warmtepomp) en de uitgangstemperatuur van de verdamperen.                                                                                                                                                                                          |              |
| Temp. In. Out.<br>Cond. 24,3 22,4 °C<br>Cond.1 22,3 °C<br>Cond.2 22,4 °C                                                                                                 | (Indien er 2 condensatoren aanwezig zijn) geeft de in- en uitgangstemperatuur van de verdampers of de condensator weer (al naargelang de werking in modus) en de uitgangstemperatuur van de twee condensatoren.                                                                                                                                                                                                        |              |
| Temp. In. Out.<br>Verd. 45,0 40,0 °C<br>Verd.1 38,0 °C<br>Verd.2 42,0 °C<br>Cond. 70,0 75,0 °C<br><br>+2P MODULE                                                         | (Indien de +2P module aanwezig is) geeft de in- en uitgangstemperatuur van de verdampers en de uitgangstemperatuur van de condensator weer.                                                                                                                                                                                                                                                                            |              |
| Temp.<br>Freecooling 12,3 °C<br>Buitenlucht 15,4 °C<br>Optional 19,6 °C<br>Acc. install. 12,5 °C<br>Acc. Terugwinning 40,5 °C<br>Drycooler 10,0 °C<br>Comp.comp. 32,7 °C | (Voor units met luchtcondensatie) toont de temperaturen voor Freecooling (in de units chiller + Freecooling), de temperatuur van de buitenlucht en de optionele temperatuur (indien de sondes actief zijn). Weergave van de systeemopslag- en hersteltemperaturen (als de sondes zijn ingeschakeld), de temperatuur van de Drycooler (indien ingeschakeld) en het compressorcompartiment (als de sonde wordt beheerd). |              |

| Scherm van de handleiding                                                           | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                            | ID parameter                  |
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| Gebruiker<br>Password: 0000                                                         | Scherm van toegang tot het Gebruikersmenu. Om hier toegang toe te krijgen moet u het gebruikerswachtwoord ingeven.                                                                                                                                                                                                                                            |                               |
| Gebruiker<br>↑<br>← ↓                                                               | Scherm van verkregen toegang tot het Gebruikersmenu. Druk op de toetsen [UP] of [DOWN] om door de andere schermen te bladeren, of op [ESC] om terug te keren naar het submenu.                                                                                                                                                                                |                               |
| Tijdsperiodes<br>inschakelen:<br>Gedeactiveerd                                      | Hiermee kan het gebruik van de tijdsperiodes in-/uitgeschakeld worden. Als de externe setpoint geactiveerd is, dan kunnen de tijdsperiodes niet geactiveerd worden.                                                                                                                                                                                           | USR0001                       |
| Configuratie van de<br>seriële lijn:<br>Gedeactiveerd                               | Hiermee is het mogelijk om de systemen die op de seriële interfacekaart aangesloten zijn te activeren en te kiezen (0:Gedeactiveerd - 1:Supervisie - 2:Sequencer - 3:Manager 3000 - 4:ClimaPRO - 5:Supervisie met Watchdog - 6:LAN Multi Manager - 7:Manager 3000+ - 8:W3000-NET - 9:Data Center Manager+). N.B.: De servicesoftware vereist geen activering. | USR0002                       |
| Activering controle<br>Master-Client voor<br>meerdere units:<br>Gedeactiveerd       | Hiermee kunt u de Master-Client-besturing voor meerdere units inschakelen.                                                                                                                                                                                                                                                                                    | USR0018                       |
| Activ. via superv.:<br>On/Off: N<br>Werksmodus: N                                   | Hiermee kan het in- en uitschakelen van de unit via een supervisiesysteem ingesteld worden. Verder is het mogelijk om de werkwijze om te schakelen (om dit laatste te veranderen moet de unit uitgeschakeld zijn).                                                                                                                                            | USR0003<br>USR0004            |
| Herstel<br>locale instellingen<br>in Standalone:<br>Gedeactiveerd                   | Hiermee is het mogelijk om in te stellen of de unit in stand-alone terugkeert naar de instellingen via het toetsenbord als supervisie met watchdog ingesteld is. Deze functie geldt alleen voor het chiller setpoint dat via BMS ingesteld is en voor de vermogensbegrenzing die via BMS ingesteld is.                                                        | USR0010                       |
| Seriële instelling<br>Modbus-protocol<br>Snelheid 9600 baud<br>Identificatienr. 011 | Hiermee kunnen de verbindingsparameters met het supervisiesysteem ingesteld worden: type protocol, communicatiesnelheid en identificatienummer van de unit.                                                                                                                                                                                                   | USR0005<br>USR0006<br>USR0007 |

| Scherm van de handleiding                                                                                                        | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ID parameter                  |
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| Activ. via dig. ing.:<br>On/Off: S<br>Werkingsmodus: N<br>Plant/DHW: N                                                           | Hiermee kan de besturing van de unit via externe toestemmingssignalen geactiveerd worden.<br>Het is mogelijk om de ON/OFF-besturing te activeren om de unit via een digitale ingang in of uit te schakelen.<br>Het is mogelijk om de werkingsmodus te wijzigen (voor de units warmtepompen, units chiller met terugwinning, units chiller met Free-Cooling is een digitale ingang voldoende. Voor de polyvalente units of units warmtepompen met terugwinning zijn drie digitale ingangen noodzakelijk).<br>Het is mogelijk om tussen modus Plant en DHW om te schakelen. | USR0008<br>USR0009<br>USR0017 |
| Automat. omschakeling<br>werkingsmodus<br>Geactiveerd<br><br>Instelling verwarming:<br>16,0 °C<br>Versch. verwarming:<br>02,0 °C | Hiermee kan de automatische omschakeling van de werkingsmodus op basis van de buitentemperatuur geactiveerd worden.<br>Het is mogelijk om een setpoint voor de overgang naar verwarmen (warmtepomp) en een betreffende differentieel in te stellen. Boven de waarde setpoint + differentieel worden de compressoren uitgeschakeld.                                                                                                                                                                                                                                        | USR0012<br>USR0013<br>USR0015 |
| Automat. omschakeling<br>werkingsmodus<br><br>Instelling koeling:<br>24,0 °C<br>Versch. koeling:<br>02,0 °C                      | Het is mogelijk om een setpoint voor de overgang naar koelen (chiller) en een betreffende differentieel in te stellen.<br>Onder de waarde setpoint - differentieel worden de compressoren uitgeschakeld.                                                                                                                                                                                                                                                                                                                                                                  | USR0014<br>USR0016            |
| Activ. via KIPLink:<br>On/Off: N                                                                                                 | Hiermee is het mogelijk om de on/off-besturing via KIPLink te activeren.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | USR0011                       |
| Reset default<br>password onlyread<br>KIPLink Local<br>Monitoring: N<br>Wachten aub ...                                          | Wordt het veld op "JA" gezet, dan gaat het na enkele seconden weer op "NEE" staan; op die manier wordt het wachtwoord met OR (only read)-profiel om in te loggen voor de local monitoring functie van KIPLink weer op de standaard waarde ingesteld: 1234                                                                                                                                                                                                                                                                                                                 |                               |
| Reset default<br>password read/write<br>touchscreen: N                                                                           | Hiermee kan het wachtwoord voor lezen/schrijven van het touchscreen worden gereset naar de standaardwaarde.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |
| Licentiebeheer<br><br>Func. Code: 0000<br><br>Password: 00000000                                                                 | Het beheer van de vrijgave van de functies met licentie stelt u in staat om de met wachtwoord beveiligde functies te activeren en te deactiveren. De wachtwoorden zijn uniek en worden door het systeem gegenereerd op basis van het serienummer van de unit en de functiecode.                                                                                                                                                                                                                                                                                           |                               |
| Voer ander<br>password<br>gebruiker in<br><br>0000                                                                               | Hiermee kan een nieuw wachtwoord ingesteld worden dat in plaats van het standaard wachtwoord zal komen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |

| Scherm van de handleiding                                                                                                                                                                                                                              | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ID parameter |
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| <p>W 3000 +</p> <p>Cod. TA 22.00 IT </p> <p>Handl. C024456220</p> <p>HW pCO5+ L NAND 50MB</p> <p>Flash 2MB +7MB +4MB</p> <p>Ram 2048KB</p> <p>Boot 5.01 Bios 6.52</p> | <p>Dit scherm bevat de referentie-informatie van de applicatie [Code TA 22. 00 NL] en van de technische referentiehandleiding [Handl. C024456220-NL].</p> <p>Er wordt bovendien aangegeven door middel van het symbool van het dichte hangslot dat de kaart gekenmerkt wordt door een softwarehandtekening; alleen bij units met 3 of 4 circuits verschijnen er twee hangsloten.</p> <p>In het tweede gedeelte van het scherm worden de gegevens van de hardware weergegeven, met name het formaat (M, L, XL), de geheugens (NAND 50MB, flash 2+7+4MB, ram 2048KB) en verder de versies van het besturingssysteem dat geïnstalleerd is (boot en bios).</p> |              |

| Scherm van de handleiding                                                                        | Schermbeschrijving                                                                                                                                                                                                         | ID parameter |
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| <div style="text-align: center;"> ↑<br/> <b>Licenties</b><br/> ↓<br/> ← </div>                   | Scherm van verkregen toegang tot het licentiemenu. Druk op de toetsen <b>[UP]</b> of <b>[DOWN]</b> om door de andere schermen te bladeren, of op <b>[ESC]</b> om terug te keren naar het submenu.                          |              |
| Status Licenties<br><br>Functie: 1234<br><br>Status: tijdelijk<br><br>Vervaldatum:<br>31/12/2021 | Scherm voor weergave van de status van de licenties. Aan de code van de functie is de status actief, niet actief of tijdelijk gekoppeld. In geval van tijdelijke activering is de vervaldatum van de licentie beschikbaar. |              |

| Scherm van de handleiding                                                                                                                          | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ID parameter |
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| <div style="text-align: center;"> ↑<br/> <b>Historie</b><br/> ↓<br/> ← </div>                                                                      | Scherm voor verkregen toegang tot het menu Historie voorvallen. Druk op de toetsen <b>[UP]</b> of <b>[DOWN]</b> om door de andere schermen te bladeren, of op <b>[ESC]</b> om terug te keren naar het submenu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |
| 10:36:04 01/05/08<br>N°001 S A0711 A - 032<br>Alarm<br>stroomvoorziening<br>inverter 1<br><br>Reset : Auto<br>Positie: Compr.<br>Blokkring: Compr. | <p>Scherm voor de weergave van de historie van de voorvallen (alleen zichtbaar als de klokkaart aanwezig is). Van elke geregistreerde gebeurtenis worden de volgende details vermeld:</p> <ul style="list-style-type: none"> <li>Datum en tijd.</li> <li>Activerings- of deactiveringsgebeurtenis (S = set, R = reset).</li> <li>Alarm- of signaleringscode.</li> <li>Nummer van de gebeurtenis.</li> <li>Type reset (automatisch of handmatig).</li> <li>Beschrijving van de gebeurtenis.</li> <li>Positie waarop het alarm betrekking heeft en type blokkering.</li> </ul> <p>Voor alarmen met betrekking tot bepaalde types compressorinverters wordt de specifieke codering gegeven van het alarm dat door de inverter wordt gegenereerd.</p> |              |



| Scherf van de handleiding                                                                                                                                                                                                | Scherfbeschrifving                                                                                                                                                                                                                                                                                                                | ID parameter                                                                                                                     |
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| <div style="text-align: center;"> ↑<br/> Klok<br/> ←                      ↓ </div>                                                                                                                                       | Scherf van verkregen toegang tot het klokmenu. Druk op de toetsen <b>[UP]</b> of <b>[DOWN]</b> om door de andere schermen te bladeren, of op <b>[ESC]</b> om terug te keren naar het submenu.                                                                                                                                     |                                                                                                                                  |
| Kaart klok<br>niet geïnstalleerd                                                                                                                                                                                         | Scherf dat aangeeft dat de klokbesturingskaart niet aanwezig of beschadigd is.                                                                                                                                                                                                                                                    |                                                                                                                                  |
| Configuratie klok:<br>Datum                      Tijd<br>01/05/08            10:40                                                                                                                                       | Instelling van de huidige datum en tijdstip.                                                                                                                                                                                                                                                                                      |                                                                                                                                  |
| Tijdsperiodes<br>niet ingeschakeld.<br><br>Zie gebruikersmenu                                                                                                                                                            | Geeft aan dat de tijdsperiodes op de juiste manier ingesteld zijn maar niet geactiveerd zijn. Zie het gebruikersmenu om ze te activeren.                                                                                                                                                                                          |                                                                                                                                  |
| Programmering van de<br>dagtijdsperiodes:<br>geavanceerd                                                                                                                                                                 | Met de geavanceerde programmering van de dagtijdsperiodes kunnen per dag vier verschillende tijdsperiodes, type A en type B, ingesteld worden, waarvan de tijden naar uw eigen wensen en onafhankelijk van elkaar ingesteld kunnen worden. Bij de standaard programmering kunnen alleen de tijdsperiodes type A toegepast worden. | BND0001                                                                                                                          |
| Tijd wekelijks<br>maandag            type A<br>dinsdag            type B<br>woensdag type B<br>donderdag            type B<br>vrijdag            type B<br>zaterdag            type C<br>zondag            uitgeschakeld | Instelling van het weekprogramma.                                                                                                                                                                                                                                                                                                 | BND0002<br>BND0003<br>BND0004<br>BND0005<br>BND0006<br>BND0007<br>BND0008                                                        |
| Periode 1A Uit<br>Tijd 00:00 / 06:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 2A Regel.<br>Tijd 06:00 / 20:00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C                                                            | Instelling van tijdsperiode A, eerste en tweede dagtijdsperiode.                                                                                                                                                                                                                                                                  | BND0009<br>BND0010<br>BND0011<br>BND0012<br>BND0013<br>BND0014<br>BND0015<br>BND0016<br>BND0017<br>BND0018<br>BND0019<br>BND0020 |

| Scherm van de handleiding                                                                                                                                     | Schermbeschrijving                                                 | ID parameter                                                                                                                                           |
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| Periode 3A Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 4A Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C    | Instelling van tijdsperiode A, derde en vierde dagtijdsperiode.    | BND0021<br>BND0022<br>BND0023<br>BND0024<br>BND0025<br>BND0026<br>BND0027<br>BND0022<br>BND0023<br>BND0028<br>BND0029<br>BND0030<br>BND0031<br>BND0032 |
| Periode 5A Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 6A Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C    | Instelling van tijdsperiode A, vijfde en zesde dagtijdsperiode.    | BND0033<br>BND0034<br>BND0035<br>BND0036<br>BND0037<br>BND0038<br>BND0039<br>BND0034<br>BND0035<br>BND0040<br>BND0041<br>BND0042<br>BND0043<br>BND0044 |
| Periode 7A Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 8A Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C    | Instelling van tijdsperiode A, zevende en achtste dagtijdsperiode. | BND0045<br>BND0046<br>BND0047<br>BND0048<br>BND0049<br>BND0050<br>BND0051<br>BND0046<br>BND0047<br>BND0052<br>BND0053<br>BND0054<br>BND0055<br>BND0056 |
| Periode 9A Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 10A Uit<br>Tijd 20:00 / 23:59<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C   | Instelling van tijdsperiode A, negende en tiende dagtijdsperiode.  | BND0057<br>BND0058<br>BND0059<br>BND0060<br>BND0061<br>BND0062<br>BND0063<br>BND0058<br>BND0059<br>BND0064<br>BND0065<br>BND0066                       |
| Periode 1B Uit<br>Tijd 00:00 / 07:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 2B Regel.<br>Tijd 07:00 / 12:00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C | Instelling van tijdsperiode B, eerste en tweede dagtijdsperiode.   | BND0067<br>BND0068<br>BND0069<br>BND0070<br>BND0071<br>BND0072<br>BND0073<br>BND0068<br>BND0069<br>BND0074<br>BND0075<br>BND0076<br>BND0077<br>BND0078 |

| Scherm van de handleiding                                                                                                                                     | Schermbeschrijving                                                 | ID parameter                                                                                                                                           |
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| Periode 3B Uit<br>Tijd 12:00 / 14:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 4B Regel.<br>Tijd 14:00 / 20:00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C | Instelling van tijdsperiode B, derde en vierde dagtijdsperiode.    | BND0079<br>BND0080<br>BND0081<br>BND0082<br>BND0083<br>BND0084<br>BND0085<br>BND0080<br>BND0081<br>BND0086<br>BND0087<br>BND0088<br>BND0089<br>BND0090 |
| Periode 5B Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 6B Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C    | Instelling van tijdsperiode B, vijfde en zesde dagtijdsperiode.    | BND0091<br>BND0092<br>BND0093<br>BND0094<br>BND0095<br>BND0096<br>BND0097<br>BND0092<br>BND0093<br>BND0098<br>BND0099<br>BND0100<br>BND0101<br>BND0102 |
| Periode 7B Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 8B Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C    | Instelling van tijdsperiode B, zevende en achtste dagtijdsperiode. | BND0103<br>BND0104<br>BND0105<br>BND0106<br>BND0107<br>BND0108<br>BND0109<br>BND0104<br>BND0105<br>BND0110<br>BND0111<br>BND0112<br>BND0113<br>BND0114 |
| Periode 9B Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 10B Uit<br>Tijd 20:00 / 23:59<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C   | Instelling van tijdsperiode B, negende en tiende dagtijdsperiode.  | BND0115<br>BND0116<br>BND0117<br>BND0118<br>BND0119<br>BND0120<br>BND0121<br>BND0116<br>BND0117<br>BND0122<br>BND0123<br>BND0124                       |
| Periode 1C Uit<br>Tijd 00:00 / 07:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 2C Regel.<br>Tijd 07:00 / 12:00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C | Instelling van tijdsperiode C, eerste en tweede dagtijdsperiode.   | BND0125<br>BND0126<br>BND0127<br>BND0128<br>BND0129<br>BND0130<br>BND0131<br>BND0126<br>BND0127<br>BND0132<br>BND0133<br>BND0134<br>BND0135<br>BND0136 |

| Schermbeschrijving                                                  | Scherm van de handleiding                                                                                                                                     | ID parameter                                                                                                                                           |
|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Instelling van tijdsperiode C, derde en vierde dagtijdsperiode.     | Periode 3C Uit<br>Tijd 12:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 4C Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C    | BND0137<br>BND0138<br>BND0139<br>BND0140<br>BND0141<br>BND0142<br>BND0143<br>BND0138<br>BND0139<br>BND0144<br>BND0145<br>BND0146<br>BND0147<br>BND0148 |
| Instelling van tijdsperiode C, vijfde en zesde dagtijdsperiode.     | Periode 5C Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 6C Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C    | BND0149<br>BND0150<br>BND0151<br>BND0152<br>BND0153<br>BND0154<br>BND0155<br>BND0150<br>BND0151<br>BND0156<br>BND0157<br>BND0158<br>BND0159<br>BND0160 |
| Instelling van tijdsperiode C, zevende en achtste dagtijdsperiode.  | Periode 7C Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 8C Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C    | BND0161<br>BND0162<br>BND0163<br>BND0164<br>BND0165<br>BND0166<br>BND0167<br>BND0162<br>BND0163<br>BND0168<br>BND0169<br>BND0170<br>BND0171<br>BND0172 |
| Instelling van tijdsperiode C, negende en tiende dagtijdsperiode.   | Periode 9C Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 10C Uit<br>Tijd 20:00 / 23:59<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C   | BND0173<br>BND0174<br>BND0175<br>BND0176<br>BND0177<br>BND0178<br>BND0179<br>BND0174<br>BND0175<br>BND0180<br>BND0181<br>BND0182                       |
| Instelling van de tijdsperiode D, eerste en tweede dagtijdsperiode. | Periode 1D Uit<br>Tijd 00:00 / 07:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 2D Regel.<br>Tijd 07:00 / 12:00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C | BND0183<br>BND0184<br>BND0185<br>BND0186<br>BND0187<br>BND0188<br>BND0189<br>BND0184<br>BND0185<br>BND0190<br>BND0191<br>BND0192<br>BND0193<br>BND0194 |

| Scherm van de handleiding                                                                                                                                   | Schermbeschrijving                                                    | ID parameter                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Periode 3D Uit<br>Tijd 12:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 4D Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Instelling van de tijdsperiode D, derde en vierde dagtijdsperiode.    | BND0195<br>BND0196<br>BND0197<br>BND0198<br>BND0199<br>BND0200<br>BND0201<br>BND0196<br>BND0197<br>BND0202<br>BND0203<br>BND0204<br>BND0205<br>BND0206 |
| Periode 5D Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 6D Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Instelling van de tijdsperiode D, vijfde en zesde dagtijdsperiode.    | BND0207<br>BND0208<br>BND0209<br>BND0210<br>BND0211<br>BND0212<br>BND0213<br>BND0208<br>BND0209<br>BND0214<br>BND0215<br>BND0216<br>BND0217<br>BND0218 |
| Periode 7D Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 8D Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Instelling van de tijdsperiode D, zevende en achtste dagtijdsperiode. | BND0219<br>BND0220<br>BND0221<br>BND0222<br>BND0223<br>BND0224<br>BND0225<br>BND0220<br>BND0221<br>BND0226<br>BND0227<br>BND0228<br>BND0229<br>BND0230 |
| Periode 9D Uit<br>Tijd 20:00 / 20:00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Periode 10D Uit<br>Tijd 20:00 / 23:59<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C | Instelling van de tijdsperiode D, negende en tiende dagtijdsperiode.  | BND0231<br>BND0232<br>BND0233<br>BND0234<br>BND0235<br>BND0236<br>BND0237<br>BND0232<br>BND0233<br>BND0238<br>BND0239<br>BND0240                       |

| Scherm van de handleiding                                                                                                                                                         | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                    | ID parameter |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p style="text-align: center;">↑</p> <p style="text-align: center;">In/Out</p> <p style="text-align: center;">←      ↓</p>                                                        | <p>Scherm van verkregen toegang tot het menu In/Out. Druk op de toetsen <b>[UP]</b> of <b>[DOWN]</b> om door de andere schermen te bladeren, of op <b>[ESC]</b> om terug te keren naar het submenu.</p>                                                                                                                                                                                                                               |              |
| <p>Dig. In. 12345 67890<br/>master CCCCC CCCCC<br/>          CCCCC CCC</p> <p>Dig. Out. 12345 67890<br/>master CCCCC CCCCC<br/>          CCCCC CCCCC<br/>          CCCCC CCCC</p> | <p>Geeft de status van de digitale in- en uitgangen weer en geeft het aantal ervan aan.<br/>C: Contact gesloten<br/>A: Contact open<br/>Het aantal ingangen dat weergegeven wordt, is afhankelijk van het type unit.<br/>Alleen bij units met 3 of 4 circuits wordt master aangegeven.</p>                                                                                                                                            |              |
| <p>An. In. master<br/>Nr.        Waarde<br/>1        07,3 bar<br/>2        12,3 °C<br/>3        12,3 °C<br/>4        12,3 °C<br/>5        12,3 °C</p>                             | <p>Weergave van de analoge ingangen 1, 2, 3, 4, 5.<br/>Alleen bij units met 3 of 4 circuits wordt master aangegeven.</p>                                                                                                                                                                                                                                                                                                              |              |
| <p>An. In. master<br/>Nr.        Waarde<br/>6        15,2 bar<br/>7        27,6 °C<br/>8        04,0 °C<br/>9        15,3 °C<br/>10       C</p>                                   | <p>Weergave van de analoge ingangen 6, 7, 8, 9 en 10.<br/>C: Contact gesloten<br/>A: Contact open (Indien de analoge ingangen als digitale ingangen geconfigureerd zijn)<br/>Het aantal analoge ingangen dat weergegeven wordt, is afhankelijk van het type unit.<br/>Alleen bij units met 3 of 4 circuits wordt master aangegeven.</p>                                                                                               |              |
| <p>An. In. master<br/>Nr.        Waarde<br/>11       02,1 bar<br/>12       15,1 °C</p>                                                                                            | <p>Weergave van de analoge ingangen 11,12.<br/>Alleen bij units met 3 of 4 circuits wordt master aangegeven.</p>                                                                                                                                                                                                                                                                                                                      |              |
| <p>An. Out. master<br/>N°        Waarde<br/>1        00.0 V<br/>2        00.0 V<br/>3        00.0 V<br/>4        00.0 V<br/>5        00.0 V<br/>6        00.0 V</p>               | <p>Toegepaste spanning op de analoge uitgangen.<br/>Het aantal analoge uitgangen dat weergegeven wordt is afhankelijk van het type unit.<br/>Alleen bij units met 3 of 4 circuits wordt master aangegeven.</p>                                                                                                                                                                                                                        |              |
| <p>Benodigde masters<br/>Exp.1: S Exp.2: N<br/>Exp.3: S Exp.4: N<br/>Exp.5: N<br/>On-line master<br/>Exp.1: S Exp.2: N<br/>Exp.3: S Exp.4: N<br/>Exp.5: N</p>                     | <p>Scherm dat dient om het adres dat de uitbreidingskaarten moeten hebben aan te geven. Dit verandert naargelang de parameters die ingesteld zijn.<br/>Bovendien wordt in het tweede gedeelte van het scherm de verbinding met de uitbreidingskaarten weergegeven. De letter N geeft aan dat er geen verbinding met de uitbreiding met het aangegeven adres is.<br/>Alleen bij units met 3 of 4 circuits wordt master aangegeven.</p> |              |
| <p>Dig. In. 12345 67890<br/>expl CCCC<br/>master</p> <p>Dig. Out. 12345 67890<br/>expl ACAA<br/>master</p>                                                                        | <p>Geeft de status van de digitale in- en uitgangen van de uitbreiding 1 (indien aanwezig) weer en geeft het aantal ervan aan.<br/>C: Contact gesloten<br/>A: Contact open<br/>Alleen bij units met 3 of 4 circuits wordt master aangegeven.</p>                                                                                                                                                                                      |              |

| Scherm van de handleiding                                                                                         | Schermbeschrijving                                                                                                                                                                                                                                                              | ID parameter |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| An. In. master exp1<br>Nr. Waarde<br>1 35,6 °C<br>2 40,5 °C<br>3 37,2 °C<br>4 37,2 °C                             | Weergave van de analoge ingangen 1, 2, 3 en 4 van de uitbreiding 1 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                                                                                          |              |
| An. Out. master exp1<br>N° Waarde<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V                                             | Toegepaste spanning op de analoge uitgangen van de uitbreiding 1. Het aantal analoge uitgangen dat weergegeven wordt is afhankelijk van het type unit.<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                         |              |
| Dig.In. 12345 67890<br>exp2 CCCC<br>master<br><br>Dig.Out. 12345 67890<br>exp2 ACAA<br>master                     | Geeft de status van de digitale in- en uitgangen van de uitbreiding 2 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                          |              |
| An. In. master exp2<br>Nr. Waarde<br>1 04,2 bar<br>2 03,9 bar<br>3 35,6 °C<br>4 40,5 °C<br>5 22,3 °C<br>6 24,2 °C | Weergave van de analoge ingangen 1, 2, 3, 4, 5 en 6 van de uitbreiding 2 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                                                                                    |              |
| An. In. master exp2<br>Nr. Waarde<br>7 22,4 °C<br>8 - °C                                                          | Weergave van de analoge ingangen 7 en 8 van de uitbreiding 2 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                                                                                                |              |
| An. Out. master exp2<br>N° Waarde<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V<br>4 00.0 V                                 | Toegepaste spanning op de analoge uitgangen van de uitbreiding 2. Het aantal analoge uitgangen dat weergegeven wordt is afhankelijk van het type unit.<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                         |              |
| Dig.In. 12345 67890<br>exp3 CCCC<br>master<br><br>Dig.Out. 12345 67890<br>exp3 ACAA<br>master                     | Geeft de status van de digitale in- en uitgangen van de uitbreiding 3 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                          |              |
| An. In. master exp3<br>Nr. Waarde<br>1 06,0 °C<br>2 00,0 °C<br>3 00,0 °C<br>4 00,0 °C<br>5 A<br>6 A               | Weergave van de analoge ingangen 1, 2, 3 en 4 van de uitbreiding 3 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.<br><br>C: Contact gesloten<br>A: Contact open<br>(Indien de analoge ingangen als digitale ingangen geconfigureerd zijn). |              |

| Scherm van de handleiding                                                                                                                                                           | Schermbeschrijving                                                                                                                                                                                                                                                             | ID parameter |
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| An. Out. master exp3<br>N°            Waarde<br>1            05.0 V<br>2            06.1 V<br>3            04.5 V                                                                   | Toegepaste spanning op de analoge uitgangen 1, 2 en 3 van de uitbreiding 3 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                                                                                 |              |
| Dig.In.    12345 67890<br>exp4        CCCC<br>master<br><br>Dig.Out.   12345 67890<br>exp4        ACAA<br>master                                                                    | Geeft de status van de digitale in- en uitgangen van de uitbreiding 4 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                         |              |
| An. In.    master exp4<br>Nr.        Waarde<br>1            058,2 °C<br>2            067,3 °C<br>3            04,2 bar<br>4            03,9 bar<br>5            C<br>6            A | Weergave van de analoge ingangen 1, 2, 3 en 4 van de uitbreiding 4 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.<br><br>C: Contact gesloten<br>A: Contact open<br>(Indien de analoge ingangen als digitale ingangen geconfigureerd zijn) |              |
| An. Out. master exp4<br>N°            Waarde<br>1            05.0 V<br>2            06.1 V<br>3            04.5 V                                                                   | Toegepaste spanning op de analoge uitgangen 1, 2 en 3 van de uitbreiding 4 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                                                                                 |              |
| Dig.In.    12345 67890<br>exp5        CCCC<br>master<br><br>Dig.Out.   12345 67890<br>exp5        ACAA<br>master                                                                    | Geeft de status van de digitale in- en uitgangen van de uitbreiding 5 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                         |              |
| An. In.    master exp5<br>Nr.        Waarde<br>1            00,0 °C<br>2            00,0 °C<br>3            00,0 °C<br>4            00,0 °C                                         | Weergave van de analoge ingangen 1, 2, 3 en 4 van de uitbreiding 5 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                                                                                         |              |
| An. In.    master exp5<br>N°            Waarde<br>7            055.3 kPa<br>8            -<br>9            12.0 mA<br>10          14.0 mA                                           | Weergave van de analoge ingangen 7, 8, 9 en 10 van de uitbreiding 5 (indien aanwezig).<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.<br>(Wordt alleen weergegeven bij uitbreiding 5 type M).                                                                |              |
| An. Out. master exp5<br>N°            Waarde<br>1            00.0 V<br>2            00.0 V<br>3            00.0 V                                                                   | Toegepaste spanning op de analoge uitgangen van de uitbreiding 5.<br>Het aantal analoge uitgangen dat weergegeven wordt is afhankelijk van het type unit.<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven.                                                     |              |



| Scherm van de handleiding                                                                                                                     | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                          | ID parameter |
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| Dig. In. 12345 67890<br>slave CCCCC CCCCC<br>CCCCC CCC<br><br>Dig. Out. 12345 67890<br>slave CCCCC CCCCC<br>CCCCC CCCCC<br>CCCCC CCCC         | Geeft de status van de digitale in- en uitgangen weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open<br>Het aantal ingangen dat weergegeven wordt, is afhankelijk van het type unit.                                                                                                                                              |              |
| An. In. slave<br>Nr. Waarde<br>1 07,3 bar<br>2 12,3 °C<br>3 12,3 °C<br>4 12,3 °C<br>5 12,3 °C                                                 | Weergave van de analoge ingangen 1, 2, 3, 4 en 5 van de slave (bij units met 3 of 4 circuits).                                                                                                                                                                                                                                                              |              |
| An. In. slave<br>Nr. Waarde<br>6 07,3 bar<br>7 27,6 °C<br>8 04,0 °C<br>9 -<br>10 -                                                            | Weergave van de analoge ingangen 6,7,8,9 en 10 van de slave (bij units met 3 of 4 circuits).<br>C: Contact gesloten<br>A: Contact open (Indien de analoge ingangen als digitale ingangen geconfigureerd zijn)<br>Het aantal analoge ingangen dat weergegeven wordt, is afhankelijk van het type unit.                                                       |              |
| An. Out. slave<br>N° Waarde<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V<br>4 00.0 V<br>5 00.0 V<br>6 00.0 V                                           | Toegepaste spanning op de analoge uitgangen van de slave (bij units met 3 of 4 circuits).<br>Het aantal analoge uitgangen dat weergegeven wordt is afhankelijk van het type unit.                                                                                                                                                                           |              |
| Benodigde slaves<br>Exp.1: N Exp.2: N<br>Exp.3: N Exp.4: N<br>Exp.5: N<br>On-line slave<br>Exp.1: N Exp.2: N<br>Exp.3: N Exp.4: N<br>Exp.5: N | Scherm dat dient om het adres dat de uitbreidingskaarten moeten hebben aan te geven. Dit verandert naargelang de parameters die ingesteld zijn.<br>Bovendien wordt in het tweede gedeelte van het scherm de verbinding met de uitbreidingskaarten weergegeven. De letter N geeft aan dat er geen verbinding met de uitbreiding met het aangegeven adres is. |              |
| Dig.In. 12345 67890<br>expl CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>expl ACAA<br>slave                                                   | Geeft de status van de digitale in- en uitgangen van de uitbreiding 1 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open                                                                                                                                                                                       |              |
| An. In. slave expl<br>Nr. Waarde<br>1 35,6 °C<br>2 40,5 °C<br>3 37,2 °C<br>4 37,2 °C                                                          | Weergave van de analoge ingangen 1, 2, 3 en 4 van de uitbreiding 1 van de slave (indien aanwezig bij units met 3 of 4 circuits).                                                                                                                                                                                                                            |              |
| An. Out. slave expl<br>N° Waarde<br>1 00.0 V                                                                                                  | Toegepaste spanning op de analoge uitgangen van de uitbreiding 1 van de slave (bij units met 3 of 4 circuits).<br>Het aantal analoge uitgangen dat weergegeven wordt is afhankelijk van het type unit.                                                                                                                                                      |              |

| Scherm van de handleiding                                                                                            | Schermbeschrijving                                                                                                                                                                                                                     | ID parameter |
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| Dig.In. 12345 67890<br>exp2 CCCCC CCCCC<br>master CCCC<br><br>Dig.Out. 12345 67890<br>exp2 CCCCC CCCCC<br>master CCC | Geeft de status van de digitale in- en uitgangen van de uitbreiding 2 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open<br>Alleen bij units met 3 of 4 circuits wordt master aangegeven. |              |
| An. In. slave exp2<br>Nr. Waarde<br>1 04,2 bar<br>2 03,9 bar<br>3 35,6 °C<br>4 40,5 °C<br>5 22,3 °C<br>6 24,2 °C     | Weergave van de analoge ingangen 1, 2, 3, 4, 5 en 6 van de uitbreiding 2 van de slave (indien aanwezig bij units met 3 of 4 circuits).                                                                                                 |              |
| An. In. slave exp2<br>Nr. Waarde<br>7 22,4 °C<br>8 - °C                                                              | Weergave van de analoge ingangen 7 en 8 van de uitbreiding 2 (indien aanwezig).                                                                                                                                                        |              |
| An. Out. slave exp2<br>N° Waarde<br>1 00.0 V<br>2 00.0 V<br>3 00.0 V<br>4 00.0 V                                     | Toegepaste spanning op de analoge uitgangen van de uitbreiding 2 van de slave (bij units met 3 of 4 circuits).<br>Het aantal analoge uitgangen dat weergegeven wordt is afhankelijk van het type unit.                                 |              |
| Dig.In. 12345 67890<br>exp3 CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>exp3 ACAA<br>slave                          | Geeft de status van de digitale in- en uitgangen van de uitbreiding 3 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open                                                                  |              |
| An. In. slave exp3<br>Nr. Waarde<br>1 06,0 °C<br>2 00,0 °C<br>3 00,0 °C<br>4 00,0 °C                                 | Weergave van de analoge ingangen 1, 2, 3 en 4 van de uitbreiding 3 van de slave (indien aanwezig bij units met 3 of 4 circuits).                                                                                                       |              |
| An. Out. slave exp3<br>N° Waarde<br>1 00.0 V                                                                         | Toegepaste spanning op de analoge uitgang 1 van de uitbreiding 3 (indien aanwezig).                                                                                                                                                    |              |
| Dig.In. 12345 67890<br>exp4 CCCC<br>slave<br><br>Dig.Out. 12345 67890<br>exp4 ACAA<br>slave                          | Geeft de status van de digitale in- en uitgangen van de uitbreiding 4 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open                                                                  |              |

| Scherm van de handleiding                                                                     | Schermbeschrijving                                                                                                                                                    | ID parameter |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| An. In. slave exp4<br>N° Waarde<br>1 A<br>2 A<br>3 A<br>4 A                                   | Weergave van de analoge ingangen 1, 2, 3 en 4 van de uitbreiding 4 van de slave (indien aanwezig bij units met 3 of 4 circuits).                                      |              |
| Dig. In. 12345 67890<br>exp5 CCCC<br>slave<br><br>Dig. Out. 12345 67890<br>exp5 ACAA<br>slave | Geeft de status van de digitale in- en uitgangen van de uitbreiding 5 (indien aanwezig) weer en geeft het aantal ervan aan.<br>C: Contact gesloten<br>A: Contact open |              |
| An. In. slave exp5<br>Nr. Waarde<br>1 00,0 °C<br>2 00,0 °C<br>3 00,0 °C<br>4 00,0 °C          | Weergave van de analoge ingangen 1, 2, 3 en 4 van de uitbreiding 5 van de slave (indien aanwezig bij units met 3 of 4 circuits).                                      |              |
| An. Out. slave exp5<br>N° Waarde<br>1 00.0 V                                                  | Toegepaste spanning op de analoge uitgang 1 van de uitbreiding 5 (indien aanwezig).                                                                                   |              |

| Scherm van de handleiding                                                                                                                   | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ID parameter                             |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p style="text-align: center;">↑</p> <p style="text-align: center;">Setpoint</p> <p style="text-align: center;">←      ↓</p>                | <p>Scherm van verkregen toegang tot het setpointmenu. Druk op de toetsen <b>[UP]</b> of <b>[DOWN]</b> om door de andere schermen te bladeren, of op <b>[ESC]</b> om terug te keren naar het submenu.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                          |
| Type unit:<br>chiller<br>Werksmodus:<br>auto<br>Actieve regeling:<br>Quick Mind<br>op uitgang                                               | <p>Scherm waarop het type unit kan worden weergegeven en de werksmodus kan worden ingesteld. Geeft bovendien het type regeling weer dat actief is. Als er rechts van de bedrijfsmodus een R wordt weergegeven, wordt de werksmodus bestuurd op afstand met de digitale ingangen.</p> <p>Onderschrift van de symbolen: zie handleiding.</p>                                                                                                                                                                                                                                                                                                                          | SET0001                                  |
| PLANT<br>Modus: WINTER<br>Aanvulling<br>accumulatie:<br>HeatPump<br>DHW<br>Modus: OFF<br>Aanvulling<br>accumulatie:<br>HeatPump+Verv. ketel | <p>Hiermee kunt u het type regeling voor de installatie instellen (OFF / WINTER / ZOMER) en het type aanvulling van de accumulatie van de installatie indien aanwezig (Heatpump, HeatP+Verv.ketel, HeatP+Integr.ketel, Alleen ketel).</p> <p>Hiermee is het mogelijk om de temperatuur van de accumulatie van het DHW (OFF / ON) te controleren (indien aanwezig). U kunt ook het type accumulatie lading van het DHW instellen (HeatPump, HeatPump+Verv.ketel. Alleen ketel) of de mogelijkheid om de accumulatie van het DHW op het DHW setpoint te brengen met slechts één unit op warmtepomp of met warmtepomp en vervangende ketel of alleen met de ketel.</p> | SET0002<br>SET0003<br>SET0004<br>SET0005 |
| Status installatie:<br><br>OFF<br><br>Status DHW:<br><br>OFF                                                                                | <p>Hiermee kunt u de status weergeven van de installatie en van de werking van de DHW (indien geactiveerd).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                          |
| Setpoint actief:<br>Primair 07,0 °C<br><br>Terugwinning/DHW 42,5 °C<br>Module +2P 75,0 °C<br>Acc.Plant 45,0 °C                              | <p>Weergavescherm van het actuele setpoint van de primaire kring, van de terugwinning, van het DHW (indien aanwezig), van de +2P module (indien aanwezig) en van de accumulatie (indien aanwezig). Als er rechts van de waarde een R weergegeven wordt, is de actieve setpoint de secundaire.</p> <p>Onderschrift van de symbolen: zie handleiding.</p>                                                                                                                                                                                                                                                                                                             |                                          |
| Ingestelde setpoint:<br>Chiller 07,0 °C<br>Heatpump 42,5 °C<br>Terugwinning/DHW 42,5 °C<br>Overboost 80,0 °C                                | <p>Scherm voor de instelling van het setpoint van de chiller, de warmtepomp en het terugwinningssysteem (DHW indien aanwezig). Als de accumulatie van het DHW aanwezig is, dan is het mogelijk om ook de overboost setpoint in te stellen (indien geactiveerd).</p>                                                                                                                                                                                                                                                                                                                                                                                                 | SET0006<br>SET0007<br>SET0008<br>SET0009 |
| Neutrale zone actief:<br>Primair<br>hoog 01,6 °C<br>laag 05,5 °C<br><br>Terugwinning<br>hoog 02,0 °C<br>laag 05,5 °C                        | <p>Hiermee kunnen de grenzen van de neutrale zone worden weergegeven voor de primaire temperatuurregelaar en die van de terugwinning.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                          |
| Forcering DHW<br>Nee                                                                                                                        | <p>Scherm om de unit handmatig te forceren om aan de vraag van DHW te voldoen.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                          |

| Scherm van de handleiding                                                                                                                 | Schermbeschrijving                                                                                                                                                                                                                                                                                                     | ID parameter                  |
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| Dubbele setpoint:<br>Chiller 07,0 °C<br>Heatpump 45,0 °C<br>Terugwinning/DHW<br>45,0 °C                                                   | Scherm voor de instelling van de tweede setpoint (wordt alleen weergegeven als de dubbele setpointfunctie geactiveerd is).                                                                                                                                                                                             | SET0010<br>SET0011<br>SET0012 |
| Setpoint module +2P<br>75,0 °C<br><br>Inschakeling +2P ON                                                                                 | Scherm voor het instellen van de setpoint van de +2P module en voor de activering van de module                                                                                                                                                                                                                        | SET0013<br>SET0014            |
| Setpoint actief<br>voor groep: 07,0 °C                                                                                                    | Scherm voor weergave van de actuele setpoint van de groep.                                                                                                                                                                                                                                                             |                               |
| Parameters groep<br>Ingestelde setpoint:<br>Chiller 7,0 °C<br>Heatpump 43,5 °C                                                            | Scherm voor instelling setpoint groep.                                                                                                                                                                                                                                                                                 | SET0015<br>SET0023            |
| Groepsparameters:<br>Regelingsband:<br>Chiller: 05,0 °C<br>Heatpump: 05,0 °C<br>DHW: 05,0 °C                                              | Scherm voor het instellen van de groepsregelingsband (DHW aanwezig indien ingeschakeld met Master-Client).                                                                                                                                                                                                             | SET0016<br>SET0024<br>SET0045 |
| Parameters groep<br>Dubbele setpoint:<br>Chiller 5,0 °C<br>Heatpump 45,0 °C                                                               | Scherm voor instelling dubbele setpoint (alleen zichtbaar indien de functie dubbele setpoint is geactiveerd).                                                                                                                                                                                                          | SET0017<br>SET0025            |
| Werkingsmodus<br>groep:<br>chiller                                                                                                        | Scherm voor instelling van de werkingsmodus van de groep.                                                                                                                                                                                                                                                              | SET0021                       |
| Stroombegrenzing<br>Setpoint actief:<br>0100 A<br>Ingestelde setpoint:<br>0100 A<br>Setpointgrenzen<br>minimum: 0060 A<br>maximum: 0100 A | Scherm voor weergave van de actieve setpoint en voor weergave van de ingestelde setpoint via het toetsenbord of via BMS voor de functie "Stroombegrenzing".<br><br>Hiermee is het bovendien mogelijk om de grenzen van de opneembare stroom te bekijken die zijn gekoppeld aan de analoge ingang (indien geactiveerd). | SET0022<br>SET0026<br>SET0027 |

| Scherm van de handleiding                                                                                                                             | Schermbeschrijving                                                                                                                                                                                                              | ID parameter                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Demand Limit<br><br>Actief percentage:<br><br>Chiller 050%<br>Warmtepomp 050%<br>Terugwinning 050%                                                    | Mask voor de weergave van het begrenzingspercentage voor het actieve vermogen. Dit wordt weergegeven in geval van een unit met Demand Limit geactiveerd via analoge ingang.                                                     |                                          |
| Offset SG Ready<br>Tussentijdse boost:<br><br>Chiller: -1,0 °C<br><br>Heatpump: 2,0 °C<br><br>Terugw./DHW: 1,0 °C                                     | Hiermee kunnen de offsetwaarden worden bepaald die toegepast moeten worden op de setpoints van de verschillende werkingsmodi van de unit wanneer pattern 2 (tussentijdse boost) van de Smart Grid Ready-functie is geactiveerd. | SET0028<br>SET0030<br>SET0032            |
| Offset SG Ready<br>Maximum boost:<br><br>Chiller: -1,5 °C<br><br>Heatpump: 2,0 °C<br><br>Terugw./DHW: 2,0 °C                                          | Hiermee kunnen de offsetwaarden worden bepaald die toegepast moeten worden op de setpoints van de verschillende werkingsmodi van de unit wanneer pattern 3 (maximum boost) van de Smart Grid Ready-functie is geactiveerd.      | SET0029<br>SET0031<br>SET0033            |
| Activering<br>klimaatcurves<br>verwarming:<br>Ja                                                                                                      | Hiermee kunnen de klimaatcurves voor verwarming geactiveerd worden die op de setpoints van de zones inwerken.                                                                                                                   | SET0034                                  |
| Klimaatcurve HT<br>Set kamer: 25,0 °C<br>Coëfficiënt: 1,0<br>Offset: 0,0 °C<br>Offset op 20°C: 0,0 °C<br><br>Perc. invloed<br>kamertemp.: 25 %        | Hiermee kunt u de omgevingssetpoint van de HT-zone weergeven en de specifieke parameters voor de klimaatcurve van de HT-zone instellen.                                                                                         | SET0035<br>SET0036<br>SET0037<br>SET0038 |
| Klimaatcurve LT<br>Set kamer: 20,0 °C<br>Coëfficiënt: 1,0<br>Offset: 0,0 °C<br>Offset op 20°C: 0,0 °C<br><br>Perc. invloed<br>kamertemp.: 25          | Hiermee kunt u de omgevingssetpoint van de LT-zone weergeven en de specifieke parameters voor de klimaatcurve van de LT-zone instellen.                                                                                         | SET0039<br>SET0040<br>SET0041<br>SET0042 |
| Instelling omg. zones<br><br>Actieve instelling HT:<br>25,0 °C<br>Diff. On HT: 0,5 °C<br><br>Actieve instelling LT:<br>18,0 °C<br>Diff. On LT: 0,5 °C | Hiermee kunt u de actieve setpoints weergeven en de betreffende differentieelwaarden van de HT- en LT-zones instellen.                                                                                                          | SET0043<br>SET0044                       |
| Actieve setpoint<br>water LT-zone:<br><br>018,0 °C                                                                                                    | Geeft de actieve setpoint van het water op de LT-zone weer.                                                                                                                                                                     |                                          |

| Schermbeschrijving                         | Scherm van de handleiding | ID parameter |
|--------------------------------------------|---------------------------|--------------|
| Hiermee kunt u de Boost-functie activeren. | Activering Boost: N       |              |

| Scherm van de handleiding                                                                                                                                                                         | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                  | ID parameter |
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| <p style="text-align: center;">↑</p> <p style="text-align: center;">Units</p> <p style="text-align: center;">←      ↓</p>                                                                         | <p>Scherm van verkregen toegang tot het unitmenu. Druk op de toetsen <b>[UP]</b> of <b>[DOWN]</b> om door de andere schermen te bladeren, of op <b>[ESC]</b> om terug te keren naar het submenu.</p>                                                                                                                                                                                                                                                |              |
| <p>Temp. In. Out.</p> <p>Verdamp. 12,5 07,0°C</p> <p>Terugw. 35,6 40,5°C</p> <p>Cond. 38,0 42,5°C</p><br><p>A.Plant 38,2 °C</p> <p>A.DHW 59,8 °C</p>                                              | <p>Geeft de watertemperatuur op de in- en uitgang van de unit weer. (verdampers, terugwinningssysteem, condensator en Accumulatie Plant en Accumulatie DHW alleen zichtbaar indien aanwezig). Bij units met meerdere verdampers wordt, als de gemeenschappelijke uitgangssonde gedeactiveerd is, de gemiddelde temperatuur van de twee uitgangssondes van de afzonderlijke verdampers weergegeven.</p>                                              |              |
| <p>Temp. In. Out.</p> <p>Verd. 12,5 07,0°C</p> <p>Verd1 07,2°C</p> <p>Verd2 06,9°C</p>                                                                                                            | <p>(indien er meerdere verdampers aanwezig zijn) Geeft de in- en uitgangstemperatuur van de verdampers of de condensator weer (al naargelang de werking in chiller of warmtepomp) en de uitgangstemperatuur van de verdampers.</p>                                                                                                                                                                                                                  |              |
| <p>Temp. In. Out.</p> <p>Cond. 24,3 22,4°C</p> <p>Cond.1 22,3°C</p> <p>Cond.2 22,4°C</p>                                                                                                          | <p>(indien er 2 condensatoren aanwezig zijn) Geeft de in- en uitgangstemperatuur van de verdampers of de condensator weer (al naargelang de werking in chiller of warmtepomp) en de uitgangstemperatuur van de twee condensatoren.</p>                                                                                                                                                                                                              |              |
| <p>Temp.</p> <p>Freecooling 12,3°C</p> <p>Buitenlucht 15,4°C</p> <p>Optional 19,6°C</p> <p>Acc. Install. 12,5°C</p> <p>Acc. Terugwin. 40,5°C</p> <p>Drycooler 08,6°C</p> <p>Comp.comp. 35,7°C</p> | <p>(bij units met luchtcondensatie) Geeft de freecooling temperatuur weer (bij de chiller+freecooling units), de temperatuur van de buitenlucht en de optionele temperatuur (als de sondes geactiveerd zijn). Weergave temperaturen accumulatie installatie en terugwinning (als de sondes vrijgegeven zijn). Toont de temperatuur van de Drycooler (indien aanwezig) en van het compressorcompartiment (als de relevante sonde wordt beheerd).</p> |              |
| <p>Circ hp lp st</p> <p>1 07.3 04.2 Off</p> <p>2 07.3 03.9 Off</p> <p>3 07.3 04.2 Off</p> <p>4 07.3 03.9 Off</p> <p>bar bar</p>                                                                   | <p>Weergave van de hoge en lage drukwaarden (als de druktransductoren aanwezig zijn) en codering van de werkingsmodus van circuit 1, 2, 3 en 4.</p>                                                                                                                                                                                                                                                                                                 |              |
| <p>Comp hp lp</p> <p>1 07.3 04.2 bar</p> <p>2 07.3 03.9 bar</p><br><p>Status circuits</p> <p>1: Ch</p>                                                                                            | <p>Weergave van de hoge en lage drukwaarden (als de transducers aanwezig zijn) in geval van verdeling over transducers op compressorniveau in plaats van circuitniveau. Codering van de werkingsmodus van de circuits.</p>                                                                                                                                                                                                                          |              |
| <p>Circ tc tl ond</p> <p>1 07,3 00,0 00,0</p> <p>2 07,3 00,0 00,0</p> <p>3 07,3 00,0 00,0</p> <p>4 07,3 00,0 00,0</p> <p>°C °C °C</p>                                                             | <p>(bij de chillerunits met terugwinning) Weergave van de drukwaarden omgezet in temperatuur, de temperatuur van de vloeistof en de onderkoelingsberekening van circuit 1, 2, 3 en 4.</p>                                                                                                                                                                                                                                                           |              |



| Scherm van de handleiding                                                                                                               | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ID parameter |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Timer tuning defrost<br>Range 1200 - 03600 s<br><br>Free Defrost 0370 s                                                                 | Geeft voor de tuning defrost timer het variatiebereik van de vertragingstijd voor ontdooiing berekend op basis van de buitentemperatuur weer.<br>Geeft bovendien de maximum duur van de free defrost procedure berekend op basis van de buitentemperatuur weer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |
| Circ Time<br>1 02700<br>2 02700<br>3 02700<br>4 02700<br>s<br>Timer tuning defrost                                                      | Weergave van de vertragingstijd voor ontdooiing berekend door het algoritme van de tuning defrost timer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |
| Circ Time Max<br>1 0188 0125<br>2 0125 0270<br>3 0188 0125<br>4 0125 0270<br>s        s<br>Free Defrost                                 | Weergave van de inschakeltijd van de free defrost en de maximumtijd berekend op basis van de opgetelde vertragingstijd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |
| Circ defr T.vertr<br>T.dur<br>1 N 0904 0000<br>2 N 0000 0028<br>3 N 0904 0000<br>4 N 0000 0028<br>s        s                            | Weergave van de ontdooiingstoestand, de vertragingstijd om met het ontdooien te beginnen en in beslag genomen tijd om te ontdooien.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |
| Temperaturen afvoer<br>compressoren<br>C1:105,9 C2:058,2<br>C3:098,4 C4:067,3<br>C5:105,3 C6:104,9<br>C7:098,4 C8:068,2<br>°C        °C | Weergave van de afvoertemperaturen van de compressoren (als de sondes aanwezig zijn).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |
| Verschiltransducer<br><br>verdamper: 060.1 kPa<br>terugwinning: 055.3 kPa<br>condensator: 050.4 kPa                                     | Weergave van de drukverschilwaarden (als er transducers aanwezig zijn) van het watercircuit van de verdamper, het terugwinningssysteem en de condensator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |
| Regeling ventilat.:<br>Circ1: 060 %<br>Circ2: 043 %<br>Circ3: 056 %<br>Circ4: 092 %<br>Circ1-2: 060 %<br>Circ3-4: 092 %                 | Weergave van de ventilatiepercentages (of opening condensatiekleppen bij met water gecondenseerde units) van elk circuit.<br>Dit vraagpercentage stemt niet overeen met de in V afgegeven spanning voor niet lineaire systemen (ventilatoren of kleppen). Als de uitgang AC-ventilatoren of kleppen gaat besturen, is de aangegeven waarde het resultaat van de vraag van de condensatieregelaar. Deze vraag wordt gelineariseerd (geconverteerd) voordat deze naar de ventilator of klep wordt gestuurd om ervoor te zorgen dat 60% van de vraag overeenkomt met 60% van de maximaal toelaatbare waarde (ventilatordebiet of klepopening).<br>In geval van EC-ventilatoren komt de uitgang perfect overeen met de waarde van de vraag van de regelaar. Dus als we 60% lezen treffen we op de uitgang 6Vdc aan. Dit komt omdat de linearisatie van het signaal uitgevoerd wordt door de inverter van de ventilator zelf.<br>Er verschijnt Circ1-2: in geval van units met hermetische compressoren met gescheiden condensatie en de betreffende waarde stemt overeen met het hoogste van de percentages van circuit 1 en 2 (hetzelfde geldt bij units met 4 circuits voor Circ3-4). |              |

| Scherm van de handleiding                                                                                          | Schermbeschrijving                                                                                                                                                                                                          | ID parameter |
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| Analoge uitgangen:<br>Reg.Condens. 1:000 %<br>Reg.Condens. 2:000 %<br>Reg.Condens. 3:000 %<br>Reg.Condens. 4:000 % | Weergave van de condensatiepercentages voor HW pCOEM. Geeft het vraagpercentage van de systemen die daarop aangesloten zijn aan (voor niet lineaire systemen geldt de overeenstemming met de in V afgegeven spanning niet). |              |
| Analoge uitgangen: 5<br><br>Snelheid pomp installatie: 000%<br><br>Klepregeling installatie: 000%                  | Weergave van de analoge uitgangen van de uitbreiding 5.                                                                                                                                                                     |              |
| Analoge uitgangen: 1<br><br>Snelheid pomp terugwinning: 000%<br><br>Klepregeling terugwinning: 000%                | Weergave van de analoge uitgangen van de uitbreiding 1.                                                                                                                                                                     |              |
| Analoge uitgangen: 2<br><br>Snelheid pomp terugwinning: 000%<br><br>Klepregeling terugwinning: 000%                | Weergave van de analoge uitgangen van de uitbreiding 2.                                                                                                                                                                     |              |
| Analoge uitgangen: 3<br>Freecooling :000 %                                                                         | Weergave van de analoge uitgangen van de uitbreiding 3.                                                                                                                                                                     |              |
| Analoge uitgangen: 3<br>Freecooling :000 %                                                                         | Weergave van de analoge uitgangen van de uitbreiding 3 van de slave.                                                                                                                                                        |              |
| Urenteller<br><br>Pomp 1 001010<br>Pomp 2 000982<br>Terugw.pomp 000450<br>Cond.pomp 000625                         | Hiermee kunt u de werkingsuren van de circulatiepompen weergeven (de weergave wordt onderscheiden door de activering van de pomp).                                                                                          |              |
| P3 - verdamper<br>Pomp 1<br>Status: OFF<br>Uren: 000000<br><br>Pomp 2<br>Status: OFF<br>Uren: 000000               | Geeft informatie weer met betrekking tot de pompen aan de verdamperzijde die zijn gekoppeld aan de eventuele P3 module (indien geactiveerd).                                                                                |              |

| Scherm van de handleiding                                                                                          | Schermbeschrijving                                                                                                                                                                                                                      | ID parameter |
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| P3 -<br>terugwinningssysteem<br>Pomp 1<br>Status: OFF<br>Uren: 000000<br><br>Pomp 2<br>Status: OFF<br>Uren: 000000 | Geeft informatie weer met betrekking tot de pompen aan de zijde van het terugwinningssysteem (of condensator) die zijn gekoppeld aan de eventuele P3 module (indien geactiveerd).                                                       |              |
| Urenteller<br>compressoren<br>Gem.uren 000000<br>C1 000000 C2 000000<br>C3 000000 C4 000000<br>C5 000000 C6 000000 | Hiermee kunt u het gemiddelde van de uren van de compressoren weergeven.<br>Hiermee kunt u de werkingsuren van de compressoren weergeven.                                                                                               |              |
| Work<br>Act << 082%<br><br>RPM 32450<br>CR 2,8<br>lp 03,9bar<br>afvoertemp. 78,5°C                                 | Hiermee kunt u de werkingstoestand van de Turbocor-compressoren, het actieve percentage, het toerental en het opbrengstpercentage weergeven. Hiermee kunt u ook andere gegevens weergeven, zoals de uitlaattemperatuur en de inlaatdruk |              |
| Work<br>Act << 080%<br><br>RPM 29500<br>CR 2,8<br>lp 03,9bar<br>afvoertemp. 78,5°C                                 | Hiermee kunt u de werkingstoestand van de Turbocor-compressoren, het actieve percentage, het toerental en het opbrengstpercentage weergeven. Hiermee kunt u ook andere gegevens weergeven, zoals de uitlaattemperatuur en de inlaatdruk |              |
| Work<br>Act << 082%<br><br>RPM 32450<br>CR 2,8<br>lp 03,9bar<br>afvoertemp. 78,5°C                                 | Hiermee kunt u de werkingstoestand van de Turbocor-compressoren, het actieve percentage, het toerental en het opbrengstpercentage weergeven. Hiermee kunt u ook andere gegevens weergeven, zoals de uitlaattemperatuur en de inlaatdruk |              |
| Work<br>Act << 080%<br><br>RPM 29500<br>CR 2,8<br>lp 03,9bar<br>afvoertemp. 78,5°C                                 | Hiermee kunt u de werkingstoestand van de Turbocor-compressoren, het actieve percentage, het toerental en het opbrengstpercentage weergeven. Hiermee kunt u ook andere gegevens weergeven, zoals de uitlaattemperatuur en de inlaatdruk |              |
| Work<br>Act << 081%<br><br>RPM 32120<br>CR 2,8<br>lp 03,9bar<br>afvoertemp. 78,5°C                                 | Hiermee kunt u de werkingstoestand van de Turbocor-compressoren, het actieve percentage, het toerental en het opbrengstpercentage weergeven. Hiermee kunt u ook andere gegevens weergeven, zoals de uitlaattemperatuur en de inlaatdruk |              |
| Work<br>Act << 078%<br><br>RPM 34550<br>CR 2,3<br>lp 03,1bar<br>afvoertemp. 76,5°C                                 | Hiermee kunt u de werkingstoestand van de Turbocor-compressoren, het actieve percentage, het toerental en het opbrengstpercentage weergeven. Hiermee kunt u ook andere gegevens weergeven, zoals de uitlaattemperatuur en de inlaatdruk |              |

| Scherm van de handleiding                                                                                                          | Schermbeschrijving                                                                                                                                                                                                                                                   | ID parameter |
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| Work<br>Act << 081%<br><br>RPM 31450<br>CR 2,8<br>lp 03,2bar<br>afvoertemp. 78,5°C                                                 | Hiermee kunt u de werkingstoestand van de Turbocor-compressoren, het actieve percentage, het toerental en het opbrengstpercentage weergeven. Hiermee kunt u ook andere gegevens weergeven, zoals de uitlaattemperatuur en de inlaatdruk                              |              |
| Work<br>Act << 080%<br><br>RPM 14500<br>CR 2,6<br>lp 03,7bar<br>afvoertemp. 78,2°C                                                 | Hiermee kunt u de werkingstoestand van de Turbocor-compressoren, het actieve percentage, het toerental en het opbrengstpercentage weergeven. Hiermee kunt u ook andere gegevens weergeven, zoals de uitlaattemperatuur en de inlaatdruk                              |              |
| subc 03,8 03,6 °C<br>st Reg Reg<br>step 1824 1630                                                                                  | Hiermee kunt u de onderkoelingswaarde van de circuits, de staat van de drivers van de elektronische thermostatische kleppen en het aantal openingsstappen van de kleppen weergeven                                                                                   |              |
| Circ SH % st<br>1 05,9 80 Ok<br>2 06,1 70 Ok<br>3 06,0 60 Ok<br>4 05,7 85 Ok<br>°C<br>Inlaatttemp.: 000,0 °C                       | Hiermee kunt u de waarde van de oververhitting van de circuits, de status van de drivers van de elektronische thermostatische kleppen, het percentage van het aantal stappen voor opening van de kleppen en de inlaattemperatuur met geïntegreerde driver weergeven. |              |
| Circuit 1 EEV details<br>Klep SH Open<br>Status<br>1 02.0 0032 Ok<br>2 05.7 0012 Alarm<br>3 01.1 0040 Ok<br>4 01.2 0041 Ok<br>°C % | Geeft voor circuit 1 weer: oververhittingswaarde, status en aantal openingsstappen in procenten van thermostatische kleppen.                                                                                                                                         |              |
| Circuit 2 EEV details<br>Klep SH Open Status<br>1 03,0 0075 Ok<br>2 02,9 0071 Ok<br>3 02,9 0082 Ok<br>4 03,1 0091 Ok<br>°C %       | Geeft voor circuit 2 weer: oververhittingswaarde, status en aantal openingsstappen in procenten van thermostatische kleppen.                                                                                                                                         |              |
| Circuit 3 EEV details<br>Klep SH Open Status<br>1 11,0 0100 Alarm<br>2 03,0 0080 Alarm<br>3 03,0 0087 Ok<br>4 02,2 0081 Ok<br>°C % | Geeft voor circuit 3 weer: oververhittingswaarde, status en aantal openingsstappen in procenten van thermostatische kleppen.                                                                                                                                         |              |
| Circuit 4 EEV details<br>Klep SH Open Status<br>1 01,0 0050 Ok<br>2 01,7 0051 Ok<br>3 03,3 0100 Alarm<br>4 02,1 0053 Alarm<br>°C % | Geeft voor circuit 4 weer: oververhittingswaarde, status en aantal openingsstappen in procenten van thermostatische kleppen.                                                                                                                                         |              |

| Scherm van de handleiding                                  | Schermbeschrijving                                                                                                                                                   | ID parameter |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Inverter 1: Online<br>Opdracht 1200 rpm<br>Toeren 1200 rpm | Hiermee kunt u zien of inverter 1 online is met de controller.<br>Bovendien wordt de besturing en de werkelijke draaisnelheid van de invertercompressor aangegeven.  |              |
| Inverter 2: Online<br>Opdracht 1400 rpm<br>Toeren 1400 rpm | Hiermee kunt u zien of inverter 2 online is met de controller.<br>Bovendien wordt de besturing en de werkelijke draaisnelheid van de invertercompressor aangegeven.  |              |
| Inverter 3: Online<br>Opdracht 1200 rpm<br>Toeren 1200 rpm | Hiermee kunt u zien of inverter 3 online is met de controller.<br>Bovendien wordt de besturing en de werkelijke draaisnelheid van de invertercompressor aangegeven.  |              |
| Inverter 4: Online<br>Opdracht 1400 rpm<br>Toeren 1400 rpm | Hiermee kunt u zien of inverter 4 online is met de controller.<br>Bovendien wordt de besturing en de werkelijke draaisnelheid van de invertercompressor aangegeven.  |              |
| Compr. 1: Online<br>Opdracht 060%<br>Perc. actief 060%     | Hiermee kunt u zien of inverter 1 online is met de controller.<br>Bovendien wordt de besturing en het actieve percentage van de CSW105 schroefcompressor aangegeven. |              |
| Compr. 2: Online<br>Opdracht 080%<br>Perc. actief 080%     | Hiermee kunt u zien of inverter 2 online is met de controller.<br>Bovendien wordt de besturing en het actieve percentage van de CSW105 schroefcompressor aangegeven. |              |
| Compr. 3: Online<br>Opdracht 055%<br>Perc. actief 055%     | Hiermee kunt u zien of inverter 3 online is met de controller.<br>Bovendien wordt de besturing en het actieve percentage van de CSW105 schroefcompressor aangegeven. |              |
| Compr. 4: Online<br>Opdracht 070%<br>Perc. actief 070%     | Hiermee kunt u zien of inverter 4 online is met de controller.<br>Bovendien wordt de besturing en het actieve percentage van de CSW105 schroefcompressor aangegeven. |              |

| Scherm van de handleiding                                                                                                                                                                                                             | Schermbeschrijving                                                                                                                                                                                                                                        | ID parameter |
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| Comp.1                      Work<br>IGV                            063,0%<br><br>Frequency                50,0Hz<br>CR                            2,2<br>Olietemp.                47,0°C<br>Afvoertemp.            52,0°C             | Hiermee kunt u de werkingstoestand van de Hanbell centrifugaalcompressoren, het IGV-percentages en de werkingfrequentie weergeven. Bovendien kunt u andere gegevens weergeven zoals de uitlaattemperatuur, de olietemperatuur en de compressieverhouding. |              |
| Energiemeter<br>Spanning (V)<br>L1-L2                      400<br>L2-L3                      401<br>L3-L1                      403<br>Neutraal 1                233<br>Neutraal 2                231<br>Neutraal 3                230 | Hiermee kunt u de door de energiemeter afgelezen grootheden weergeven.                                                                                                                                                                                    |              |
| Energiemeter<br>Stroom (A)<br>L1                            0030,0<br>L2                            0035,0<br>L3                            0028,0                                                                                    | Hiermee kunt u de door de energiemeter afgelezen grootheden weergeven.                                                                                                                                                                                    |              |
| Energiemeter<br>Actief vermogen (kW)<br>L1                            0017,2<br>L2                            0021,4<br>L3                            0019,0<br>Totaal                      0057,6                                    | Hiermee kunt u de door de energiemeter afgelezen grootheden weergeven.                                                                                                                                                                                    |              |
| Energiemeter<br>Reactief vermogen (kVar)<br>L1                            0014,2<br>L2                            0028,4<br>L3                            0012,0<br>Totaal                      0054,6                                | Hiermee kunt u de door de energiemeter afgelezen grootheden weergeven.                                                                                                                                                                                    |              |
| Energiemeter<br>Schijnbaar vermogen (kVA)<br>L1                            0024.2<br>L2                            0018.4<br>L3                            0021.1<br>Totale                      0063.7                               | Hiermee kunt u de door de energiemeter afgelezen grootheden weergeven.                                                                                                                                                                                    |              |
| Energiemeter<br><br>Energie                    0000009 kWu<br><br>Tijd                        0000002 u                                                                                                                               | Hiermee kunt u de door de energiemeter afgelezen grootheden weergeven.                                                                                                                                                                                    |              |
| Vermogensmeter<br>warmte<br><br>Debiet                    0015,6 m3/u<br>T1                            012,3 °C<br>T2                            007,2 °C<br>Delta T                    005,1 °C<br>Vermogen                00092 kW  | Hiermee kunt u de gemeten gegevens en het door de warmtevermogensmeter berekende warmtevermogen weergeven.                                                                                                                                                |              |

| Scherm van de handleiding                                                                                                                                                   | Schermbeschrijving                                                                                                                                                                                                                                                                             | ID parameter                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Onmiddellijk rendement</p> <p>4,50</p>                                                                                                                                   | <p>Rendement berekend als de verhouding tussen koel-/warmtevermogen en vermogensopname. Het is beschikbaar in de volgende omstandigheden:</p> <ul style="list-style-type: none"> <li>Beide meters (Thermal meter en Energy meter) zijn aanwezig en werken.</li> <li>De unit is aan.</li> </ul> |                                                                                                                                                                                     |
| <p>Meter thermisch vermogen terugwinning</p> <p>Debiet 0015.0 m3/h</p> <p>T1 032.4 °C</p> <p>T2 039.0 °C</p> <p>Delta T 006.6 °C</p> <p>Vermogen 00078 kW</p>               | <p>Hiermee kunt u de gemeten gegevens en het door de warmtevermogensmeter berekende warmtevermogen op de terugwinningsaftakking weergeven.</p>                                                                                                                                                 |                                                                                                                                                                                     |
| <p>Onmiddellijk rendement terugwinning</p> <p>03.65</p>                                                                                                                     | <p>Maakt het mogelijk het onmiddellijke rendement van de terugwinningsaftakking weer te geven.</p>                                                                                                                                                                                             |                                                                                                                                                                                     |
| <p>Omschakeling Elektrische lijn</p> <p>Voeding 1:</p> <p>Afwezig</p> <p>Losgekoppeld</p> <p>Voeding 2:</p> <p>Afwezig</p> <p>Losgekoppeld</p>                              | <p>Hiermee kunt u de status weergeven van de omschakelaar van de elektrische lijn.</p>                                                                                                                                                                                                         |                                                                                                                                                                                     |
| <p>Inschakeling circuits</p> <p>Circ1: S Circ2: S</p> <p>Circ3: N Circ4: N</p> <p>compressoren</p> <p>C1:S C2:S C3:S C4:S</p> <p>C5:S C6:S C7:N C8:N</p>                    | <p>Hiermee kunt u de circuits selecteren/deselecteren.</p>                                                                                                                                                                                                                                     | <p>UNT0001</p> <p>UNT0002</p> <p>UNT0003</p> <p>UNT0004</p> <p>UNT0005</p> <p>UNT0006</p> <p>UNT0007</p> <p>UNT0008</p> <p>UNT0009</p> <p>UNT0010</p> <p>UNT0011</p> <p>UNT0012</p> |
| <p>KIPlink</p> <p>Status: online</p> <p>Wifi-netwerk SSID:</p> <p>KIPlink_032078434</p> <p>IP-adres:</p> <p>192.168.030.001</p>                                             | <p>Scherm voor de weergave van de status en de belangrijkste gegevens van de KIPlink-module.</p>                                                                                                                                                                                               |                                                                                                                                                                                     |
| <p>KIPlink</p> <p>Type module:</p> <p>Master-EthOFF-WifiON</p> <p>Actief kanaal: WIFI</p> <p>Ip: 192.168.030.001</p> <p>Sub: 255.255.255.000</p> <p>Gw: 000.000.000.000</p> | <p>Scherm voor de weergave van de status en de belangrijkste gegevens van de KIPlink-module.</p>                                                                                                                                                                                               |                                                                                                                                                                                     |
| <p>KIPlink</p> <p>ETHERNET-kanaal</p> <p>Ip: 192.168.030.001</p> <p>Sub: 255.255.255.000</p> <p>Gw: 000.000.000.000</p>                                                     | <p>Scherm voor de weergave van gegevens van het Ethernet-netwerk KIPlink.</p>                                                                                                                                                                                                                  |                                                                                                                                                                                     |

| Scherm van de handleiding                                                                                                                                         | Schermbeschrijving                                                                                                                                                                                                                                                          | ID parameter |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| KIPlink<br>WIFI-kanaal<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000.000.000.000                                                                  | Scherm voor de weergave van gegevens van het wifi-netwerk KIPlink.                                                                                                                                                                                                          |              |
| Netwerken met meerdere<br>KIPlinks<br>Naam master wifi-<br>netwerk<br>KIPlink_032078434<br><br>IP master van netwerk:<br>192.168.030.001<br><br>Id in netwerk: 01 | Scherm voor de weergave van de belangrijkste gegevens van de master module van het KIPlink-netwerk.                                                                                                                                                                         |              |
| Sensor gaslekken<br>Online<br><br>Dagen tot de<br>kalibratie: 0400 g<br><br>Nuttige levensduur:<br>1800 g                                                         | Hiermee kan informatie worden gevisualiseerd in verband met de detectiesensor van koelgaslekken: <ul style="list-style-type: none"> <li>• De resterende dagen tot aan het volgende onderhoud.</li> <li>• De resterende gegarandeerde werkingstijd van de sensor.</li> </ul> |              |
| Koelvermogen:<br>000000.0 kW<br><br>Vermogensopname:<br>000000.0 kW<br><br>EER: 00,00                                                                             | Toont het koel- en verwarmingsvermogen en het opgenomen vermogen.<br>Bovendien wordt de efficiëntiewaarde (EER/COP/COP DHW) weergegeven.                                                                                                                                    |              |
| Geproduceerde energie<br>huidige dag<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br><br>Tot: 000000,0 kWh                                        | Toont de geproduceerde energie met betrekking tot de huidige dag.                                                                                                                                                                                                           |              |
| Opgenomen energie<br>huidige dag<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br><br>Tot: 000000,0 kWh                                            | Toont de opgenomen energie met betrekking tot de huidige dag.                                                                                                                                                                                                               |              |
| Geproduceerde energie<br>huidige dag<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br><br>Tot: 000000,0 kWh                                        | Toont de geproduceerde energie met betrekking tot de vorige dag.                                                                                                                                                                                                            |              |
| Opgenomen energie<br>vorige dag<br>Ch: 000000.0 kWh<br>Hp: 000000.0 kWh<br>DHW: 000000.0 kWh<br><br>Tot: 000000,0 kWh                                             | Toont de opgenomen energie met betrekking tot de vorige dag.                                                                                                                                                                                                                |              |



| Scherm van de handleiding                                                                                                                                                                                        | Schermbeschrijving                                                                  | ID parameter |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------|
| Energie-efficiëntie<br>geïntegreerd<br>dag    huidig         vorig<br> <br>Ch:        00.00         00.00<br>Hp:        00.00         00.00<br>DHW:      00.00         00.00<br>Tot:       00.00         00.00   | Toont de geïntegreerde energie-efficiëntie van de huidige dag en de vorige dag.     |              |
| Geproduceerde energie<br>huidige maand<br>Ch:        000000.0 kWh<br>Hp:        000000.0 kWh<br>DHW:      000000.0 kWh<br><br>Tot:        000000,0 kWh                                                           | Toont de geproduceerde energie met betrekking tot de huidige maand.                 |              |
| Opgenomen energie<br>huidige maand<br>Ch:        000000.0 kWh<br>Hp:        000000.0 kWh<br>DHW:      000000.0 kWh<br><br>Tot:        000000,0 kWh                                                               | Toont de opgenomen energie met betrekking tot de huidige maand.                     |              |
| Geproduceerde energie<br>vorige maand<br>Ch:        000000.0 kWh<br>Hp:        000000.0 kWh<br>DHW:      000000.0 kWh<br><br>Tot:        000000,0 kWh                                                            | Toont de geproduceerde energie met betrekking tot de vorige maand.                  |              |
| Opgenomen energie<br>vorige maand<br>Ch:        000000.0 kWh<br>Hp:        000000.0 kWh<br>DHW:      000000.0 kWh<br><br>Tot:        000000,0 kWh                                                                | Toont de opgenomen energie met betrekking tot de vorig maand.                       |              |
| Energie-efficiëntie<br>geïntegreerd<br>maand    huidig         vorig<br> <br>Ch:        00.00         00.00<br>Hp:        00.00         00.00<br>DHW:      00.00         00.00<br>Tot:       00.00         00.00 | Toont de geïntegreerde energie-efficiëntie van de huidige maand en de vorige maand. |              |
| Geproduceerde energie<br>huidig jaar<br>Ch:        000000000.0 kWh<br>Hp:        000000000.0 kWh<br>DHW:      000000000.0 kWh<br><br>Tot:       000000000,0 kWh                                                  | Toont de geproduceerde energie met betrekking tot het huidige jaar.                 |              |
| Opgenomen energie<br>huidig jaar<br>Ch:        000000000.0 kWh<br>Hp:        000000000.0 kWh<br>DHW:      000000000.0 kWh<br><br>Tot:       000000000,0 kWh                                                      | Toont de opgenomen energie met betrekking tot het huidige jaar.                     |              |

| Scherm van de handleiding                                                                                                                                                   | Schermbeschrijving                                                                                                                                                    | ID parameter |
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| Geproduceerde energie<br>vorig jaar<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Tot: 000000000,0 kWh                                       | Toont de geproduceerde energie met betrekking tot het vorige jaar.                                                                                                    |              |
| Opgenomen energie<br>vorig jaar<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Tot: 000000000,0 kWh                                           | Toont de opgenomen energie met betrekking tot het vorige jaar.                                                                                                        |              |
| Geproduceerde energie<br>jaar -2<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Tot: 000000000,0 kWh                                          | Toont de geproduceerde energie met betrekking tot 2 jaar geleden.                                                                                                     |              |
| Opgenomen energie<br>jaar -2<br>Ch: 000000000.0 kWh<br>Hp: 000000000.0 kWh<br>DHW: 000000000.0 kWh<br><br>Tot: 000000000,0 kWh                                              | Toont de opgenomen energie met betrekking tot 2 jaar geleden.                                                                                                         |              |
| Energie-efficiëntie<br>geïntegreerd<br>jaar huidig   vorig<br> -2<br><br>Ch: 00.00 00.00 00.00<br>Hp: 00.00 00.00 00.00<br>DHW: 00.00 00.00 00.00<br>Tot: 00.00 00.00 00.00 | Toont de geïntegreerde energie-efficiëntie van het huidige jaar, het vorige jaar en 2 jaar geleden.                                                                   |              |
| Koelvermogen:<br>000 000.0 kW<br>Warmtevermogen:<br>000 000.0 kW<br>Vermogensopname:<br>000000.0 kW<br><br>TER: 00-00                                                       | Toont het koel- en verwarmingsvermogen en het opgenomen vermogen.<br>Bovendien wordt de efficiëntiewaarde (TER) weergegeven.<br>Zichtbaar voor unit met terugwinning. |              |
| Geproduceerde energie<br>huidige dag<br>Koeling:<br>000000.0 kWh<br><br>Warmte:<br>000000.0 kWh<br><br>Tot:<br>000000,0 kWh                                                 | Toont de geproduceerde energie met betrekking tot de huidige dag.<br>Zichtbaar voor unit met terugwinning.                                                            |              |
| Opgenomen energie<br>huidige dag<br><br>000000.0 kWh                                                                                                                        | Toont de opgenomen energie met betrekking tot de huidige dag.<br>Zichtbaar voor unit met terugwinning.                                                                |              |

| Scherm van de handleiding                                                                                             | Schermbeschrijving                                                                                                           | ID parameter |
|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------|
| Geproduceerde energie<br>vorige dag<br>Koeling:<br>000000.0 kWh<br>Warmte:<br>000000.0 kWh<br>Tot:<br>000000,0 kWh    | Toont de geproduceerde energie met betrekking tot de vorige dag.<br>Zichtbaar voor unit met terugwinning.                    |              |
| Opgenomen energie<br>vorige dag<br>000000.0 kWh                                                                       | Toont de opgenomen energie met betrekking tot de vorige dag.<br>Zichtbaar voor unit met terugwinning.                        |              |
| Energie-efficiëntie<br>geïntegreerd<br>dag huidig   vorig<br> <br>TER: 00.00   00.00                                  | Toont de geïntegreerde energie-efficiëntie van de huidige dag en de<br>vorige dag. Zichtbaar voor unit met terugwinning.     |              |
| Geproduceerde energie<br>huidige maand<br>Koeling:<br>000000.0 kWh<br>Warmte:<br>000000.0 kWh<br>Tot:<br>000000,0 kWh | Toont de geproduceerde energie met betrekking tot de huidige<br>maand. Zichtbaar voor unit met terugwinning.                 |              |
| Opgenomen energie<br>huidige maand<br>000000.0 kWh                                                                    | Toont de opgenomen energie met betrekking tot de huidige maand.<br>Zichtbaar voor unit met terugwinning.                     |              |
| Geproduceerde energie<br>vorige maand<br>Koeling:<br>000000.0 kWh<br>Warmte:<br>000000.0 kWh<br>Tot:<br>000000,0 kWh  | Toont de geproduceerde energie met betrekking tot de vorige maand.<br>Zichtbaar voor unit met terugwinning.                  |              |
| Opgenomen energie<br>vorige maand<br>000000.0 kWh                                                                     | Toont de opgenomen energie met betrekking tot de vorig maand.<br>Zichtbaar voor unit met terugwinning.                       |              |
| Energie-efficiëntie<br>geïntegreerd<br>maand huidig   vorig<br> <br>TER: 00.00   00.00                                | Toont de geïntegreerde energie-efficiëntie van de huidige maand en<br>de vorige maand. Zichtbaar voor unit met terugwinning. |              |

| Scherm van de handleiding                                                                                                                                             | Schermbeschrijving                                                                                                                                                                                                | ID parameter |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Geproduceerde energie<br>huidig jaar<br>Koeling:<br>000000000.0 kWh<br>Warmte:<br>000000000.0 kWh<br>Tot:<br>000000000,0 kWh                                          | Toont de geproduceerde energie met betrekking tot het huidige jaar.<br>Zichtbaar voor unit met terugwinning.                                                                                                      |              |
| Opgenomen energie<br>huidig jaar<br>000000000.0 kWh                                                                                                                   | Toont de opgenomen energie met betrekking tot het huidige jaar.<br>Zichtbaar voor unit met terugwinning.                                                                                                          |              |
| Geproduceerde energie<br>vorig jaar<br>Koeling:<br>000000000.0 kWh<br>Warmte:<br>000000000.0 kWh<br>Tot:<br>000000000,0 kWh                                           | Toont de geproduceerde energie met betrekking tot het vorige jaar.<br>Zichtbaar voor unit met terugwinning.                                                                                                       |              |
| Opgenomen energie<br>vorig jaar<br>000000000.0 kWh                                                                                                                    | Toont de opgenomen energie met betrekking tot het vorige jaar.<br>Zichtbaar voor unit met terugwinning.                                                                                                           |              |
| Geproduceerde energie<br>jaar -2<br>Koeling:<br>000000000.0 kWh<br>Warmte:<br>000000000.0 kWh<br>Tot:<br>000000000,0 kWh                                              | Toont de geproduceerde energie met betrekking tot 2 jaar geleden.<br>Zichtbaar voor unit met terugwinning.                                                                                                        |              |
| Opgenomen energie<br>jaar -2<br>000000000.0 kWh                                                                                                                       | Toont de opgenomen energie met betrekking tot 2 jaar geleden.<br>Zichtbaar voor unit met terugwinning.                                                                                                            |              |
| Energie-efficiëntie<br>geïntegreerd<br>jaar huidig   vorig   -2<br>     <br>TER: 00.00 00.00 00.00                                                                    | Toont de geïntegreerde energie-efficiëntie voor: <ul style="list-style-type: none"> <li>Het huidige jaar.</li> <li>Het vorige jaar.</li> <li>2 jaar geleden.</li> </ul> Zichtbaar voor de units met terugwinning. |              |
| Benaderingen<br>warmtewisselaars<br><br>Warmtewisselaar 1:<br>02.0°C<br>Warmtewisselaar 2:<br>01.6°C<br>Warmtewisselaar 3:<br>01.5°C<br>Warmtewisselaar 4:<br>03,9 °C | Geeft de benaderingen van de belangrijkste aanwezige<br>warmtewisselaars gebruikerskant weer.                                                                                                                     |              |

| Scherminhoud                                                                                                                                  | Schermbeschrijving                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ID parameter |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p>Benaderingen verwijderaars</p> <p>Verwijderaar 1: 01.0°C<br/>Verwijderaar 2: 02.6°C<br/>Verwijderaar 3: 02.5°C<br/>Verwijderaar 4: ---</p> | Geeft de benaderingen van de aanwezige warmtewisselaars verwijderaars weer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |
| <p>Benaderingen recuperators</p> <p>Recuperator 1:04.0°C<br/>Recuperator 2:03.6°C<br/>Recuperator 3:---<br/>Recuperator 4:---</p>             | Geeft de benaderingen van de aanwezige warmtewisselaars recuperators weer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |
| <p>Serienummer unit:<br/>032078434</p>                                                                                                        | Scherminhoud voor de weergave van het serienummer van de unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |
| <p>W 3000 +</p> <p>Cod. TA 22.00 IT EE</p> <p>HW pCO5+ L NAND 50MB<br/>Flash 2MB +7MB +4MB<br/>Ram 2048KB<br/>Boot 5.01 Bios 6.52</p>         | <p>In dit scherm worden de referentiegegevens van de applicatie vermeld [code TA 22.00 NL]</p> <p>Er wordt bovendien aangegeven door middel van het symbool van het dichte hangslot dat de kaart gekenmerkt wordt door een softwarehandtekening; alleen bij units met 3 of 4 circuits verschijnen er twee hangsloten.</p> <p>In het tweede gedeelte van het scherm worden de gegevens van de hardware weergegeven, met name het formaat (M, L, XL), de geheugens (NAND 50MB, flash 2+7+4MB, ram 2048KB) en verder de versies van het besturingssysteem dat geïnstalleerd is (boot en bios).</p> |              |

| Scherm van de handleiding                                                                                             | Schermbeschrijving                                                                                                                                                                                           | ID parameter                                                                         |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <div>↑</div> <div>Installatie</div> <div>← ↓</div>                                                                    | Scherm van verkregen toegang tot het menu van de installatie. Druk op de toetsen <b>[UP]</b> of <b>[DOWN]</b> om door de andere schermen te bladeren, of op <b>[ESC]</b> om terug te keren naar het submenu. |                                                                                      |
| Temp. In. Out.<br>Install. 10,3 6,5 °C<br><br>Buitenlucht 27,4 °C                                                     | Scherm voor weergave van de temperatuur van de waterlus van de installatie en de buitenlucht van de installatie (gemiddelde van de sondes van de units of enkele sonde van de installatie).                  |                                                                                      |
| Demand limit via<br>an. ingang: 040%                                                                                  | Scherm voor weergave van de demand limit waarde verworven via analoge ingang.                                                                                                                                |                                                                                      |
| Inschakeling<br>buitenunits<br><br>1:S 2:N 3:S 4:S<br><br>5:N 6:N 7:N 8:N                                             | Hiermee kunnen de geconfigureerde buitenunits in- of uitgeschakeld worden.                                                                                                                                   | GRO0001<br>GRO0002<br>GRO0003<br>GRO0004<br>GRO0005<br>GRO0006<br>GRO0007<br>GRO0008 |
| Status buitenunits<br><br>1:On 5:Alarm<br>2:On 6:On<br>3:On 7:Offline<br>4:Off 8:Offline                              | Scherm voor weergave van de status van de buitenunits.                                                                                                                                                       |                                                                                      |
| Werksmodus<br>buitenunits<br>1:chiller 5:chiller<br>2:chiller 6:chiller<br>3:chiller 7:chiller<br>4:chiller 8:chiller | Scherm voor weergave van de werksmodus van de externe units.                                                                                                                                                 |                                                                                      |
| Perc. actief unit<br><br>1:030% 5:060%<br>2:050% 6:060%<br>3:100% 7:000%<br>4:100% 8:000%                             | Scherm voor weergave van de actieve percentages van de externe units.                                                                                                                                        |                                                                                      |
| Status interne groepen<br><br>1:ON 6:OFFLINE<br>2:-- 7:OFFLINE<br>3:ON 8:ON<br>4:-- 9:--<br>5:OFF 10:OFFLINE          | Scherm voor weergave van de status van de interne units.                                                                                                                                                     |                                                                                      |

| Scherminhoud                                                                                                                                                                                                      | Schermbeschrijving                                                                                                                                                                                         | ID parameter |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <b>Status interne groepen</b><br><br>11:ON          16:OFF<br>12:ON          17:OFFLINE<br>13:--          18:ON<br>14:--          19:ON<br>15:OFF        20:--                                                    | Scherminhoud voor weergave van de status van de interne units.                                                                                                                                             |              |
| <b>Adaptieve setpoint binnenunits</b><br>01: 03,0 °C 06: ----°C<br>02: ----°C 07: ----°C<br>03: 00,6 °C 08: 00,2°C<br>04: ----°C 09: ----°C<br>05: ----°C 10: ----°C                                              | Scherminhoud voor weergave van het verzoek om adaptieve setpoint ontvangen van de groepen interne units.                                                                                                   |              |
| <b>Adaptieve setpoint binnenunits</b><br>11: 01,0 °C 16: ----°C<br>12: 00,6 °C 17: ----°C<br>13: ----°C 18: 00,9°C<br>14: ----°C 19: 00,2°C<br>15: ----°C 20: ----°C                                              | Scherminhoud voor weergave van het verzoek om adaptieve setpoint ontvangen van de groepen interne units.                                                                                                   |              |
| <b>Vraag var setpoint interne groepen</b><br>01:ok          06:-----<br>02:optimal.07:ok<br>03:-----    08:reset<br>04:verminderen 09:ok<br>05:-----    10:-----                                                  | Scherminhoud voor weergave van het verzoek om dynamisch setpoint in HPC-modus ontvangen van de groepen interne units.                                                                                      |              |
| <b>Vraag var setpoint interne groepen</b><br>11:-----    16:ok<br>12:ok          17:reset<br>13:-----    18:-----<br>14:-----    19:-----<br>15:verminderen 20:ok                                                 | Scherminhoud voor weergave van het verzoek om dynamisch setpoint in HPC-modus ontvangen van de groepen interne units.                                                                                      |              |
| <b>Dynamisch setpoint:</b><br>02,3 °C                                                                                                                                                                             | Scherminhoud dat de dynamische setpointwaarde toont die aan de externe units doorgegeven wordt als waarde die toegevoegd moet worden aan de ingestelde setpoint.                                           |              |
| <b>ID masterunit in de groep:</b> 02<br><br><b>ID KIPlink-unit master:</b> 03                                                                                                                                     | Scherminhoud dat de ID van de unit met master KIPlink in het KIPlan-netwerk aangeeft en van de externe master-unit in het LAN Multi Manager-netwerk.                                                       |              |
| <b>Omgevingstemperatuur</b><br>HT-zone:          20,0 °C<br>LT-zone:          18,0 °C<br><br><b>Relatieve omg.vochtigheid</b><br>HT-zone:            060 %<br>LT-zone:            045 %<br>Ontvochtiging:      On | Alleen zichtbaar bij touch omgevingsthermostaat. Hiermee kunt u de omgevingstemperatuur en de luchtvochtigheid voor de HT- en LT-zones weergeven en, indien geconfigureerd, de status van de ontvochtiger. |              |

| Scherm van de handleiding                                                                                | Schermbeschrijving                                                                                                                                                                                                                                                                     | ID parameter |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Status HT-zone<br><br>HT: Vraag actief<br><br>LT: Niet aanwezig<br><br>Recirc. DHW: On                   | Hiermee kunt u de status van de vraag van de touch omgevingsthermostaat bekijken, afhankelijk van de zone waarop deze geactiveerd is.<br>Bovendien is de status van activering van de recirculatie van het DHW zichtbaar, indien geconfigureerd.                                       |              |
| Gemengd LT-circuit<br><br>Watertemp.: 035,0 °C<br><br>Pompstatus: On<br><br>Openingsperc.<br>klep: 045 % | Hiermee kunt u de temperatuur van het water in het gemengde circuit, de status van de pomp en het openingspercentage van de opening weergeven.                                                                                                                                         |              |
| LAN Multi Manager<br><br>Cod. TG 03.00 IT<br><br>HW pCO5+ S<br><br>Boot 5.01 Bios 6.52                   | In dit scherm worden de referentiegegevens van de applicatie vermeld [code TG 03.00 NL]<br>In het tweede gedeelte van het scherm worden de gegevens van de hardware weergegeven, met name het formaat (S) en de versies van het besturingssysteem dat geïnstalleerd is (boot en bios). |              |



## 4 ALARMEN

Door eenmaal op de toets **[ALARM]** te drukken, wordt het “Menu alarm” geopend, met de weergave van de alarmmelding en de betreffende code, datum en tijd van het alarm, alarmbericht, type reset (automatisch of handmatig), bij het alarm betrokken positie en type blokkering. Voor alarmen met betrekking tot bepaalde types compressorinverters wordt de specifieke codering gegeven van het alarm dat door de inverter wordt gegenereerd.

De zojuist genoemde gegevens worden in een scherm weergegeven, waarvan hieronder een voorbeeld is opgenomen:

```
10:36:04    01/05/23
              A0721-0032
Alarm voeding
inverter 1

Reset       : Auto
Positie: Compr.
Blok        : Compr.
```

In geval van meerdere alarmen kan door het menu gebladerd worden met de toets **[UP]** of **[DOWN]**.

Om het menu te verlaten, drukt u op een willekeurige toets.

**Om het alarm te resetten**, moet u voor de tweede keer op de toets **[ALARM]** drukken en deze toets ingedrukt houden totdat de melding “Geen alarm actief” weergegeven wordt. Als de melding niet verschijnt, dan betekent dit dat de alarmtoestand nog aanwezig is.

### 4.1 Historie voorvallen op display

Met deze functie worden de alarmgebeurtenissen geregistreerd en op het display weergegeven met vermelding van datum en tijd van het voorval, het nummer van het voorval, het voorval dat tot het activeren of deactiveren geleid heeft, de alarm- of signaleringscode, beschrijving van het voorval, soort reset (automatisch of handmatig), betreffende plaats van het alarm en soort blokkering. Voor alarmen met betrekking tot bepaalde types compressorinverters wordt de specifieke codering gegeven van het alarm dat door de inverter wordt gegenereerd. De zojuist genoemde gegevens worden in een scherm weergegeven, waarvan hieronder een voorbeeld is opgenomen. Voor de juiste weergave van de historie van de voorvallen moet de klokkaart aanwezig zijn.

```
10:36:04    01/05/23
N°001 S  A0711 A - 0032
Alarm stroomvoorziening
inverter 1

Reset       : Auto
Positie: Compr.
Blokking: Compr.
```

Dezelfde gegevens van de historie van de voorvallen die door de besturing van de W3000+ eruit worden genomen worden ook in het toetsenbord W3000+ touch in de betreffende pagina vermeld.

## 4.2 Tabel alarmen W3000+

Verklaring van de tekens in de kolom "Reset":

|                |                                                                                                                                                                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>M</b>       | Alarm met handmatige reset (als de toestand waardoor het alarm veroorzaakt is ophoudt moet het alarm via het toetsenbord gereset worden); stelt de "cumulatieve alarmen" in.                                                                        |
| <b>A</b>       | Alarm met automatische reset (als de alarmtoestand ophoudt wordt het alarm automatisch gereset); stelt de "cumulatieve alarmen" in.                                                                                                                 |
| <b>A/M</b>     | Alarm met automatische reset tijdens de eerste "n" voorvallen, daarna handmatig; stelt de "cumulatieve alarmen" in (*: specifiek voor het compressormodel PSD. Raadpleeg de betreffende overeenstemmingstabel van de alarmen voor meer informatie). |
| <b>S</b>       | Signalering op display (maar stelt de "cumulatieve alarmen" niet in)                                                                                                                                                                                |
| <b>S-A</b>     | Signalering (waardoor de machine niet geblokkeerd wordt) of alarm met automatische reset. De ene of de andere modus kan via parameter ingesteld worden                                                                                              |
| <b>S-M</b>     | Signalering (waardoor de machine niet geblokkeerd wordt) of alarm met handmatige reset. De ene of de andere modus kan via parameter ingesteld worden.                                                                                               |
| <b>S-M</b>     | Signalering (waardoor de machine niet geblokkeerd wordt) met handmatige reset.                                                                                                                                                                      |
| <b>M - A/M</b> | Alarm met handmatige reset (bij hermetische, alternatieve en schroefcompressoren), automatisch tijdens de eerste "n" ingrepen, daarna handmatig (bij Turbocor-compressoren).                                                                        |
| <b>B</b>       | Blokkering die niet via de display gereset kan worden; stelt de "cumulatieve alarmen" in. Om het alarm op te heffen moet de stroom naar de compressor die in alarm is uit- en weer ingeschakeld worden.                                             |

Verklaring van de tekens in de kolom "Actie":

|            |                                                                                                                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-</b>   | Geen blokkering.                                                                                                                                                                                     |
| <b>U</b>   | Blokkering van de unit.                                                                                                                                                                              |
| <b>-/U</b> | Geen blokkering of blokkering van de unit. Het type actie hangt af van de ingestelde parameter voor reset.                                                                                           |
| <b>U*</b>  | Blokkering van de unit in de geforceerde werkingsmodi. Tijdens de automatische werkingsfunctie blokkeert de unit niet maar gaat hij op de beschikbare werkingsfuncties staan.                        |
| <b>CI</b>  | Blokkering van het bij het voorval betrokken circuit.                                                                                                                                                |
| <b>CO</b>  | Blokkering van de bij het voorval betrokken compressor.                                                                                                                                              |
| <b>FC*</b> | Blokkering van de functie freecooling; de unit gaat over naar de beschikbare werkingsmodi.                                                                                                           |
| <b>*</b>   | Al naargelang de sensor die in alarm is, kan het zijn dat er geen blokkering is of dat er compressoren, circuits of de hele unit geblokkeerd worden.                                                 |
| <b>PR</b>  | Vooralarm: geen blokkering van de unit, signalering (activeerbaar via parameter) dat de gecontroleerde grootte een grens overschreden heeft (ingesteld via parameter) dicht bij de echte alarmgrens. |
| <b>GR</b>  | Alarmen die de werking van het systeem zullen beperken.                                                                                                                                              |

| Code | Beschrijving                             | Details                                                                                                                                                                                                                        | Reset | Actie | Drempel |
|------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 002  | Fasevolgorde / Spanning buiten bereik    | Duidt op een verkeerde aansluiting van de fases. Zorgt ervoor dat de unit volledig geblokkeerd wordt (wordt alleen weergegeven als de ingang aanwezig is die dit waarneemt).                                                   | A     | U     |         |
| 003  | Geen waterstroming naar verdamper        | Duidt erop dat de stroming naar de verdamper ontbreekt. Het alarm wordt 3 keer in hetzelfde uur automatisch gereset, als de reset binnen de maximum werkingstijd van de pompen met weinig water plaatsvindt, anders handmatig. | A/M   | U     |         |
| 005  | Lage temperatuur op ingang               | Alleen actief tijdens de werking op de warmtepompstand. Duidt erop dat de watertemperatuur op de ingang van de warmtewisselaar warme zijde laag is.                                                                            | S-A   | -/U   | STG0085 |
| 006  | Hoge temperatuur op ingang               | Alleen actief tijdens de werking "chiller". Duidt erop dat de watertemperatuur op de ingang van de verdamper hoog is.                                                                                                          | S-A   | -/U   | STG0084 |
| 007  | Blokkering alternatieve bron installatie | Duidt op een blokkering in de werking van de alternatieve bron die gebruikt wordt voor aanvulling van de accumulatie van de installatie.                                                                                       | S     | -     |         |
| 008  | Blokkering alternatieve DHW-bron         | Duidt op een blokkering in de werking van de alternatieve bron die gebruikt wordt voor aanvulling van de DHW-accumulatie.                                                                                                      | S     | -     |         |
| 010  | Vorstbeveiliging verdamper               | Watertemperatuur op de uitgang van de verdamper laag. Er wordt bovendien weergegeven op welke verdamper (als er meer dan één zijn) de alarmtoestand opgetreden is.                                                             | M     | CI    | STG0073 |

| Code | Beschrijving                                | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Reset | Actie | Drempel            |
|------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|--------------------|
|      |                                             | Het alarm treedt ook op als de vorstbeveiliging tijdens 8 uur werking meer dan 5 keer inschakelt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |       |                    |
| 014  | Geen druk in de installatie                 | Alleen zichtbaar als de betreffende ingang aanwezig is (zie I/O menu). Duidt erop dat de unit gestopt is door middel van een externe drukregelaar.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | S/M   | -/U   |                    |
| 017  | Lage buitenluchttemperatuur                 | Duidt erop dat de temperatuur van de buitenlucht onder de ingestelde grens gedaald is.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | S-A   | -     | STG0071            |
| 021  | Geringe hoeveelheid water in de installatie | De ingangstemperatuur van de verdamper (condensor indien warmtepomp) varieert te snel vanwege de geringe hoeveelheid water in de installatie.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | S     | -     |                    |
| 022  | Laag waterdebiet in de installatie          | Geeft aan dat het temperatuurverschil tussen in- en uitgang van de warmtewisselaar die op de installatie is aangesloten te hoog is of dat het waterdebiet erin te laag is.<br>Het alarm wordt gegenereerd als het temperatuurverschil groter is dan een bepaald setpoint (PMP0065 of PMP0083) gedurende een tijd die minstens gelijk is aan PMP0066 of PMP0084.<br>Het alarm wordt in hetzelfde uur een aantal keren automatisch gereset zoals ingesteld in par. SFT0014, als de reset binnen de maximumtijd plaatsvindt zoals ingesteld in par. STG0081, anders handmatig. Tijdens het ontthooien of druppelen met ingeschakelde compressoren is de regeling onmiddellijk en wordt niet gewacht tot de tijd STG0081 is verstreken.<br>Bij warmtepompen met inversie waterzijde wordt het alarm geactiveerd door de regelsondes te controleren (verdamer in chillermodus, condensator in warmtepompmodus). | A/M   | U*    | PMP0065<br>PMP0083 |
| 023  | Hoog waterdebiet in de installatie          | Duidt erop dat het waterdebiet naar de verdamper te hoog is.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | M     | U*    | PMP0058            |
| 041  | Lage temperatuur op ingang condensator      | Alleen actief tijdens de werking "warmtepomp" en terugwinning. Duidt erop dat de watertemperatuur op de ingang van de condensator laag is.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | S-A   | -/U   | STG0112            |
| 042  | Hoge temperatuur op uitgang condensator     | Alleen actief tijdens de werking "chiller". Duidt erop dat de watertemperatuur op de uitgang van de condensator hoog is.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | S-A   | -/U   | STG0111            |
| 043  | Laag waterdebiet in de condensator          | Geeft aan dat het temperatuurverschil tussen in- en uitgang van de condensator te hoog is of dat het waterdebiet erin te laag is. Het alarm wordt in hetzelfde uur een aantal keren automatisch gereset zoals ingesteld in par. SFT0014, als de reset binnen de maximumtijd plaatsvindt zoals ingesteld in par. SFT0020, anders handmatig.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A/M   | U     | PMP0063            |
| 044  | Hoog waterdebiet in de condensator          | Duidt erop dat het waterdebiet naar de condensator te hoog is.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | M     | U     | PMP0062            |
| 045  | Geen waterstroming condensator              | Net zoals bij "Geen waterstroming naar verdamper" (alleen bij de water-/waterunits met freon-inversie).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A/M   | U     |                    |
| 046  | Geen waterstroming terugwinningssysteem     | Duidt erop dat de waterstroming bij het terugwinningssysteem ontbreekt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | A/M   | U*    |                    |
| 051  | Onderhoud pomp 1                            | De voor het onderhoud van de pomp voorgeschreven limiet is overschreden (bij units met slechts één pomp is pomp 1 de pomp van de verdamper).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | S     | -     | STG0001            |
| 052  | Onderhoud pomp 2                            | (Bij units met meer dan één pomp). De voor het onderhoud van pomp 2 voorgeschreven grens (in werkingsuren) is overschreden.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | S     | -     | STG0004            |
| 057  | Onderhoud pomp terugwinningssysteem/DHW     | (bij units met pomp terugwinningssysteem). De voor het onderhoud van de pomp van het terugwinningssysteem voorgeschreven grens (in werkingsuren) is overschreden.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | S     | -     | STG0007            |
| 058  | Onderhoud pomp condensator                  | (bij units met pomp van de condensator). De voor het onderhoud van de pomp van de condensator voorgeschreven grens (in werkingsuren) is overschreden.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | S     | -     | STG0010            |

| Code | Beschrijving                                          | Details                                                                                                                                                                                                                                                                                                                                                                                                                                      | Reset | Actie | Drempel |
|------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 060  | Onderhoud voedingscondensatoren                       | (alleen bij units met Turbocor-compressoren). De voor het onderhoud van de voedingscondensatoren voorgeschreven grens (in werkingsuren) is overschreden.                                                                                                                                                                                                                                                                                     | S     | -     | STG0053 |
| 061  | Driver onderkoeling / eerste trap n°1 offline         | Duidt erop dat de driver voor het beheer van de onderkoeling van circuit 1 / klep eerste trap van compressor 1 losgekoppeld is (alleen bij units met Turbocor-compressoren).                                                                                                                                                                                                                                                                 | A     | CI    |         |
| 062  | Driver onderkoeling / eerste trap n°2 offline         | "als boven maar in dit geval voor circuit n° 2" / klep eerste trap van compressor 2.                                                                                                                                                                                                                                                                                                                                                         | A     | CI    |         |
| 063  | Driver onderkoeling / eerste trap n°3 offline         | "als boven maar in dit geval voor circuit n° 1" / klep eerste trap van compressor 3.                                                                                                                                                                                                                                                                                                                                                         | A     | CI    |         |
| 064  | Driver onderkoeling / eerste trap n°4 offline         | "als boven maar in dit geval voor circuit n° 2" / klep eerste trap van compressor 4.                                                                                                                                                                                                                                                                                                                                                         | A     | CI    |         |
| 065  | Geringe hoeveelheid water in het terugwinningscircuit | De ingangstemperatuur van het terugwinningsstelsel varieert te snel vanwege de geringe hoeveelheid water in het terugwinningscircuit.                                                                                                                                                                                                                                                                                                        | S     | -     |         |
| 066  | Laag waterdebiet in het terugwinningscircuit          | Duidt erop dat het temperatuurverschil tussen de ingang en de uitgang van het terugwinningsstelsel te groot is, of dat het waterdebiet naar het terugwinningsstelsel te laag is. Het alarm wordt 3 keer in hetzelfde uur automatisch gereset, als de reset binnen de ingestelde maximum werkingstijd plaatsvindt, anders handmatig. Tijdens het ontdooien of druppelen gebeurt dit als de compressoren ingeschakeld zijn meteen met de hand. | A/M   | U*    | PMP0061 |
| 067  | Anti-legionella alarm                                 | De anti-legionella functie heeft de ingestelde maximum temperatuur (DHW0022) gedurende het maximaal toegestane aantal cycli (DHW0021) overschreden.                                                                                                                                                                                                                                                                                          | S     | -     | DHW0021 |
| 068  | Storing van controller koelgedeelte                   | Duidt op een alarm dat afkomstig is van de hoofdcontroller bij de units met +2P module. Om het alarm in detail te zien en te resetten gaat u met de toetsencombinatie <b>[ESC+UP]</b> over naar de interface van de hoofdcontroller.                                                                                                                                                                                                         | S     | -     |         |
| 069  | Storing van controller luchtgedeelte                  | Duidt op een alarm dat afkomstig is van de controller van het luchtgedeelte bij de rooftop units. Om het alarm in detail te zien en te resetten gaat u met de toetsencombinatie <b>[ESC+UP]</b> over naar de interface van de hoofdcontroller.                                                                                                                                                                                               | S     | -     |         |
| 070  | Storing van controller +2P module                     | Duidt op een alarm dat afkomstig is van de controller van de +2P module. Om het alarm in detail te zien en te resetten gaat u met de toetsencombinatie <b>[ESC+UP]</b> over naar de interface van de controller van de +2P module.                                                                                                                                                                                                           | S     | -     |         |
| 072  | Hoog waterdebiet in het terugwinningscircuit          | Duidt erop dat het waterdebiet naar het terugwinningsstelsel te hoog is.                                                                                                                                                                                                                                                                                                                                                                     | M     | U*    | PMP0060 |
| 075  | Vorstbeveiliging condensator                          | Watertemperatuur op de uitgang van de condensator laag. Behalve bij de W3000+ base wordt er bovendien weergegeven op welke condensator (als er meer dan één zijn) de alarmtoestand opgetreden is (alleen bij de water-/waterunits met freon-inversie). Het alarm treedt ook op als de vorstbeveiliging tijdens 8 uur werking meer dan 5 keer inschakelt (alleen bij de water-/waterunits met freon-inversie).                                | M     | U*    | STG0077 |
| 076  | Vorstbeveiliging terugwinningsstelsel                 | Watertemperatuur op de uitgang van het terugwinningsstelsel laag.                                                                                                                                                                                                                                                                                                                                                                            | A     | U*    | STG0079 |
| 079  | Loskoppeling besturingsmodule installatie VPF         | Loskoppeling van de module die de taak heeft om het waterdebiet op het primaire circuit te regelen                                                                                                                                                                                                                                                                                                                                           | A     | -     |         |
| 080  | Storing besturingsmodel installatie VPF               | Storing aan de module die de taak heeft om het waterdebiet op het primaire circuit te regelen. Controleer de storing op de gebruikersinterface van de module.                                                                                                                                                                                                                                                                                | A     | -     |         |
| 081  | Thermische beveiliging pomp 1                         | Duidt op oververhitting van pomp 1. (bij units met slechts één pomp is pomp 1 de pomp van de verdamper).                                                                                                                                                                                                                                                                                                                                     | M     | U*    |         |

| Code | Beschrijving                                     | Details                                                                                                                                                                                                   | Reset   | Actie | Drempel |
|------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------|---------|
| 082  | Thermische beveiliging pomp 2                    | (Bij units met meer dan één pomp) duidt op oververhitting van pomp 2.                                                                                                                                     | M       | U*    |         |
| 085  | Thermische beveiliging pomp condensator          | Duidt op oververhitting van de pomp van de condensator (alleen voor watergecondenseerde units).                                                                                                           | M       | U     |         |
| 086  | Thermische beveiliging pomp terugwinningssysteem | Duidt op oververhitting van de pomp van het terugwinningssysteem.                                                                                                                                         | M       | U*    |         |
| 087  | Thermische beveiliging glycolenpomp              | Duidt op oververhitting van de glycolenpomp (bij freecoolingunits).                                                                                                                                       | A       | FC*   |         |
| 090  | Slave losgekoppeld                               | Duidt erop dat de slavekaart losgekoppeld is (alleen bij units met 3 of 4 circuits). Als de unit met de +2P module is uitgerust duidt dit erop dat de module niet aangesloten is.                         | A       | U     |         |
| 091  | Uitbreiding 1 losgekoppeld                       | Duidt erop dat de uitbreiding n° 1 van de master losgekoppeld is, de aanduiding master wordt bij de units met 3 of 4 circuits weergegeven.                                                                | A       | U     |         |
| 092  | Uitbreiding 2 losgekoppeld                       | "als boven maar in dit geval voor uitbreiding n° 2"                                                                                                                                                       | A       | U     |         |
| 093  | Uitbreiding 3 losgekoppeld                       | "als boven maar in dit geval voor uitbreiding n° 3"                                                                                                                                                       | A       | U     |         |
| 094  | Uitbreiding 4 losgekoppeld                       | "als boven maar in dit geval voor uitbreiding n° 4"                                                                                                                                                       | A       | U     |         |
| 095  | Uitbreiding 5 losgekoppeld                       | "als boven maar in dit geval voor uitbreiding n° 5"                                                                                                                                                       | A       | U     |         |
| 100  | Energimeter losgekoppeld                         | Duidt erop dat de energimeter losgekoppeld is.                                                                                                                                                            | S       | -     |         |
| 101  | Uitbreiding 1 slave losgekoppeld                 | Duidt erop dat uitbreiding n° 1 van de slave losgekoppeld is.                                                                                                                                             | A       | U     |         |
| 102  | Uitbreiding 2 slave losgekoppeld                 | "als boven maar in dit geval voor uitbreiding n° 2"                                                                                                                                                       | A       | U     |         |
| 103  | Uitbreiding 3 slave losgekoppeld                 | "als boven maar in dit geval voor uitbreiding n° 3"                                                                                                                                                       | A       | U     |         |
| 104  | Uitbreiding 4 slave losgekoppeld                 | "als boven maar in dit geval voor uitbreiding n° 4"                                                                                                                                                       | A       | U     |         |
| 105  | Uitbreiding 5 slave losgekoppeld                 | "als boven maar in dit geval voor uitbreiding n° 5"                                                                                                                                                       | A       | U     |         |
| 106  | P3-module losgekoppeld                           | Duidt erop dat de P3-module voor het beheer van meer dan 2 pompen losgekoppeld is.                                                                                                                        | A       | -     |         |
| 111  | Olie compressor 1                                | Duidt erop dat de olie van compressor n° 1 ontbreekt vanwege laag oliepeil of lage oliedruk van de compressor.                                                                                            | A/M     | CO    |         |
| 112  | Olie compressor 2                                | "als boven maar in dit geval voor compressor n° 2"                                                                                                                                                        | A/M     | CO    |         |
| 113  | Olie compressor 3                                | "als boven maar in dit geval voor compressor n° 3"                                                                                                                                                        | A/M     | CO    |         |
| 114  | Olie compressor 4                                | "als boven maar in dit geval voor compressor n° 4"                                                                                                                                                        | A/M     | CO    |         |
| 121  | Afvoertemperatuur compressor 1 hoog              | Duidt erop dat de afvoertemperatuur van compressor n° 1 hoger is dan de ingestelde grens.                                                                                                                 | A/M     | CO    | SFT0009 |
| 122  | Afvoertemperatuur compressor 2 hoog              | "als boven maar in dit geval voor compressor n° 2"                                                                                                                                                        | A/M     | CO    |         |
| 123  | Afvoertemperatuur compressor 3 hoog              | "als boven maar in dit geval voor compressor n° 3"                                                                                                                                                        | A/M     | CO    |         |
| 124  | Afvoertemperatuur compressor 4 hoog              | "als boven maar in dit geval voor compressor n° 4"                                                                                                                                                        | A/M     | CO    |         |
| 125  | Afvoertemperatuur compressor 5 hoog              | "als boven maar in dit geval voor compressor n° 5"                                                                                                                                                        | A/M     | CO    |         |
| 126  | Afvoertemperatuur compressor 6 hoog              | "als boven maar in dit geval voor compressor n° 6"                                                                                                                                                        | A/M     | CO    |         |
| 127  | Afvoertemperatuur compressor 7 hoog              | "als boven maar in dit geval voor compressor n° 7"                                                                                                                                                        | A/M     | CO    |         |
| 128  | Afvoertemperatuur compressor 8 hoog              | "als boven maar in dit geval voor compressor n° 8"                                                                                                                                                        | A/M     | CO    |         |
| 131  | Storing compressor 1                             | Duidt op oververhitting van de elektromotor van compressor n° 1 of een andere storing. Bij units met Turbocor centrifugaalcompressoren kan dit op oververhitting van de reactantie van compressor duiden. | M - A/M | CO    |         |
| 132  | Storing compressor 2                             | "als boven maar in dit geval voor compressor of low lift pomp n° 2"                                                                                                                                       | M - A/M | CO    |         |
| 133  | Storing compressor 3                             | "als boven maar in dit geval voor compressor of low lift pomp n° 3"                                                                                                                                       | M - A/M | CO    |         |
| 134  | Storing compressor 4                             | "als boven maar in dit geval voor compressor of low lift pomp n° 4"                                                                                                                                       | M - A/M | CO    |         |
| 135  | Storing compressor 5                             | "als boven maar in dit geval voor compressor of low lift pomp n° 5"                                                                                                                                       | M - A/M | CO    |         |
| 136  | Storing compressor 6                             | "als boven maar in dit geval voor compressor of low lift pomp n° 6"                                                                                                                                       | M - A/M | CO    |         |
| 137  | Storing compressor 7                             | "als boven maar in dit geval voor compressor of low lift pomp n° 7"                                                                                                                                       | M - A/M | CO    |         |
| 138  | Storing compressor 8                             | "als boven maar in dit geval voor compressor of low lift pomp n° 8"                                                                                                                                       | M - A/M | CO    |         |
| 141  | Compressor 1 offline                             | Duidt erop dat er geen communicatie is met compressor n° 1 (alleen bij de units met centrifugaalcompressoren).                                                                                            | A       | CO    |         |
| 142  | Compressor 2 offline                             | "als boven maar in dit geval voor compressor n° 2"                                                                                                                                                        | A       | CO    |         |
| 143  | Compressor 3 offline                             | "als boven maar in dit geval voor compressor n° 3"                                                                                                                                                        | A       | CO    |         |
| 144  | Compressor 4 offline                             | "als boven maar in dit geval voor compressor n° 4"                                                                                                                                                        | A       | CO    |         |

| Code | Beschrijving                   | Details                                                                                                                                                                                     | Reset                           | Actie | Drempel             |
|------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------|---------------------|
| 151  | Onderhoud compressor 1         | De voor het onderhoud van compressor n° 1 voorgeschreven grens (in werkingsuren) is overschreden.                                                                                           | S                               | -     | STG0013             |
| 152  | Onderhoud compressor 2         | "als boven maar in dit geval voor compressor n° 2".                                                                                                                                         | S                               | -     | STG0018             |
| 153  | Onderhoud compressor 3         | "als boven maar in dit geval voor compressor n° 3".                                                                                                                                         | S                               | -     | STG0023             |
| 154  | Onderhoud compressor 4         | "als boven maar in dit geval voor compressor n° 4".                                                                                                                                         | S                               | -     | STG0028             |
| 155  | Onderhoud compressor 5         | "als boven maar in dit geval voor compressor n° 5".                                                                                                                                         | S                               | -     | STG0033             |
| 156  | Onderhoud compressor 6         | "als boven maar in dit geval voor compressor n° 6".                                                                                                                                         | S                               | -     | STG0038             |
| 157  | Onderhoud compressor 7         | "als boven maar in dit geval voor compressor n° 7".                                                                                                                                         | S                               | -     | STG0043             |
| 158  | Onderhoud compressor 8         | "als boven maar in dit geval voor compressor n° 8".                                                                                                                                         | S                               | -     | STG0048             |
| 161  | Voeding motor compressor 1     | Motor van compressor 1 in alarm (alleen bij units met Turbocor-compressoren).                                                                                                               | A/B                             | CO    |                     |
| 162  | Voeding motor compressor 2     | "als boven maar in dit geval voor compressor n° 2".                                                                                                                                         | A/B                             | CO    |                     |
| 163  | Voeding motor compressor 3     | "als boven maar in dit geval voor compressor n° 3".                                                                                                                                         | A/B                             | CO    |                     |
| 164  | Voeding motor compressor 4     | "als boven maar in dit geval voor compressor n° 4".                                                                                                                                         | A/B                             | CO    |                     |
| 165  | Voeding motor compressor 5     | "als boven maar in dit geval voor compressor n° 5".                                                                                                                                         | A/B                             | CO    |                     |
| 166  | Voeding motor compressor 6     | "als boven maar in dit geval voor compressor n° 6".                                                                                                                                         | A/B                             | CO    |                     |
| 167  | Voeding motor compressor 7     | "als boven maar in dit geval voor compressor n° 7".                                                                                                                                         | A/B                             | CO    |                     |
| 168  | Voeding motor compressor 8     | "als boven maar in dit geval voor compressor n° 8".                                                                                                                                         | A/B                             | CO    |                     |
| 171  | Time-out start compressor 1    | Bij Turbocor compressoren: compressor 1 niet gestart binnen de vastgelegde time-outgrens.<br><br>Bij schroefcompressoren: mogelijke startpoging terwijl freon in compressor n° 1 ontbreekt. | Turbocor: A/M<br><br>schroef: A | CO    | 180s<br><br>SFT0003 |
| 172  | Time-out start compressor 2    | "als boven maar in dit geval voor compressor n° 2".                                                                                                                                         | Turbocor: A/M<br><br>schroef: A | CO    | 180s<br><br>SFT0003 |
| 173  | Time-out start compressor 3    | "als boven maar in dit geval voor compressor n° 3".                                                                                                                                         | Turbocor: A/M<br><br>schroef: A | CO    |                     |
| 174  | Time-out start compressor 4    | "als boven maar in dit geval voor compressor n° 4".                                                                                                                                         | Turbocor: A/M<br><br>schroef: A | CO    |                     |
| 175  | Time-out start compressor 5    | "als boven maar in dit geval voor compressor n° 5".                                                                                                                                         | Turbocor: A/M                   | CO    |                     |
| 176  | Time-out start compressor 6    | "als boven maar in dit geval voor compressor n° 6".                                                                                                                                         | Turbocor: A/M                   | CO    |                     |
| 177  | Time-out start compressor 7    | "als boven maar in dit geval voor compressor n° 7".                                                                                                                                         | Turbocor: A/M                   | CO    |                     |
| 178  | Time-out start compressor 8    | "als boven maar in dit geval voor compressor n° 8".                                                                                                                                         | Turbocor: A/M                   | CO    |                     |
| 191  | Economizer compressor 1        | Duidt op een hoog koelmiddelniveau in de economizer van compressor n° 1.                                                                                                                    | A                               | CO    |                     |
| 192  | Economizer compressor 2        | "als boven maar in dit geval voor compressor n° 2".                                                                                                                                         | A                               | CO    |                     |
| 193  | Economizer compressor 3        | "als boven maar in dit geval voor compressor n° 3".                                                                                                                                         | A                               | CO    |                     |
| 194  | Economizer compressor 4        | "als boven maar in dit geval voor compressor n° 4".                                                                                                                                         | A                               | CO    |                     |
| 201  | Storing circuit 1              | Duidt op een storing in de regeling van de ventilatie van koelcircuit n° 1.<br><b>Neem contact op met het plaatselijke servicecentrum.</b>                                                  | S                               | -     |                     |
| 202  | Storing circuit 2              | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                            | S                               | -     |                     |
| 203  | Storing circuit 3              | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                            | S                               | -     |                     |
| 204  | Storing circuit 4              | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                            | S                               | -     |                     |
| 211  | Hoge druk circuit 1            | Duidt erop dat de druk van koelcircuit n° 1 hoog is                                                                                                                                         | A/M                             | CI    |                     |
| 212  | Hoge druk circuit 2            | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                            | A/M                             | CI    |                     |
| 213  | Hoge druk circuit 3            | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                            | A/M                             | CI    |                     |
| 214  | Hoge druk circuit 4            | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                            | A/M                             | CI    |                     |
| 221  | Storing ventilatoren circuit 1 | Signaleert een storing in de werking van de condensatieventilator van circuit n° 1, als gevolg waarvan hij stopt.                                                                           | M                               | CI    |                     |
| 222  | Storing ventilatoren circuit 2 | "als boven maar in dit geval voor circuit n° 2"                                                                                                                                             | M                               | CI    |                     |
| 223  | Storing ventilatoren circuit 3 | "als boven maar in dit geval voor circuit n° 3"                                                                                                                                             | M                               | CI    |                     |
| 224  | Storing ventilatoren circuit 4 | "als boven maar in dit geval voor circuit n° 4"                                                                                                                                             | M                               | CI    |                     |



| Code | Beschrijving                             | Details                                                                                                                                                                                            | Reset                                    | Actie | Drempel                       |
|------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------|-------------------------------|
| 231  | Lage druk circuit 1                      | Duidt op de lage druk waargenomen door de transducer/drukregelaar in circuit n° 1.                                                                                                                 | A/M                                      | CI    | SFT0002<br>SFT0003            |
| 232  | Lage druk circuit 2                      | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                                   | A/M                                      | CI    |                               |
| 233  | Lage druk circuit 3                      | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                                   | A/M                                      | CI    |                               |
| 234  | Lage druk circuit 4                      | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                                   | A/M                                      | CI    |                               |
| 241  | Hoge druk via transducer 1               | Duidt op de hoge druk waargenomen door de transducer in het koelcircuit n° 1                                                                                                                       | A/M                                      | CI    | STG0057                       |
| 242  | Hoge druk via transducer 2               | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                                   | A/M                                      | CI    |                               |
| 243  | Hoge druk via transducer 3               | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                                   | A/M                                      | CI    |                               |
| 244  | Hoge druk via transducer 4               | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                                   | A/M                                      | CI    |                               |
| 251  | Time-out inschakeling circuit 1          | Mogelijke startpoging terwijl freon in circuit n° 1 ontbreekt                                                                                                                                      | A                                        | CI    | SFT0003                       |
| 252  | Time-out inschakeling circuit 2          | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                                   | A                                        | CI    |                               |
| 253  | Time-out inschakeling circuit 3          | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                                   | A                                        | CI    |                               |
| 254  | Time-out inschakeling circuit 4          | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                                   | A                                        | CI    |                               |
| 261  | Geen freon in circuit 1                  | Mogelijk geen freon in het circuit N° 1 aangezien het alarm "Time-out inschakeling" al minstens 8 uur voortduurt.                                                                                  | A                                        | CI    |                               |
| 262  | Geen freon in circuit 2                  | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                                   | A                                        | CI    |                               |
| 263  | Geen freon in circuit 3                  | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                                   | A                                        | CI    |                               |
| 264  | Geen freon in circuit 4                  | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                                   | A                                        | CI    |                               |
| 271  | Lamellenbatterij circuit 1               | Duidt erop dat de condensatiebatterij van circuit n° 1 tijdens het ontdooien verstopt is.                                                                                                          | S-M                                      | CI    | DFR0011                       |
| 272  | Lamellenbatterij circuit 2               | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                                   | S-M                                      | CI    |                               |
| 273  | Lamellenbatterij circuit 3               | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                                   | S-M                                      | CI    |                               |
| 274  | Lamellenbatterij circuit 4               | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                                   | S-M                                      | CI    |                               |
| 281  | Verdampingsdruk onvoldoende circuit n° 1 | Mogelijk geen freon in circuit n° 1 omdat het circuit met een lagere verdampingsdruk dan de ingestelde grens functioneert.                                                                         | M                                        | CI    | STG0068<br>STG0167<br>STG0168 |
| 282  | Verdampingsdruk onvoldoende circuit n° 2 | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                                   | M                                        | CI    |                               |
| 283  | Verdampingsdruk onvoldoende circuit n° 3 | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                                   | M                                        | CI    |                               |
| 284  | Verdampingsdruk onvoldoende circuit n° 4 | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                                   | M                                        | CI    |                               |
| 291  | Freongehalte onvoldoende circuit n°1     | Freongehalte in circuit n°1 onvoldoende aangezien de unit onder de approach grens gewerkt heeft.                                                                                                   | A/M                                      | CI    | SFT0022                       |
| 292  | Freongehalte onvoldoende circuit n°2     | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                                   | A/M                                      | CI    |                               |
| 293  | Freongehalte onvoldoende circuit n°3     | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                                   | A/M                                      | CI    |                               |
| 294  | Freongehalte onvoldoende circuit n°4     | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                                   | A/M                                      | CI    |                               |
| 301  | Temperatuur inverter compressor 1        | Te hoge temperatuur van de inverter van compressor n° 1 (alleen bij units met Turbocor-compressoren).                                                                                              | A/M/B                                    | CO    |                               |
| 302  | Temperatuur inverter compressor 2        | "als boven maar in dit geval voor compressor n° 2".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 303  | Temperatuur inverter compressor 3        | "als boven maar in dit geval voor compressor n° 3".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 304  | Temperatuur inverter compressor 4        | "als boven maar in dit geval voor compressor n° 4".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 305  | Temperatuur inverter compressor 5        | "als boven maar in dit geval voor compressor n° 5".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 306  | Temperatuur inverter compressor 6        | "als boven maar in dit geval voor compressor n° 6".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 307  | Temperatuur inverter compressor 7        | "als boven maar in dit geval voor compressor n° 7".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 308  | Temperatuur inverter compressor 8        | "als boven maar in dit geval voor compressor n° 8".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 311  | Uitlaattemperatuur compressor 1          | Te hoge uitlaattemperatuur van compressor n° 1 (alleen bij units met Turbocor-compressoren).                                                                                                       | A/M/B                                    | CO    |                               |
| 312  | Uitlaattemperatuur compressor 2          | "als boven maar in dit geval voor compressor n° 2".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 313  | Uitlaattemperatuur compressor 3          | "als boven maar in dit geval voor compressor n° 3".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 314  | Uitlaattemperatuur compressor 4          | "als boven maar in dit geval voor compressor n° 4".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 315  | Uitlaattemperatuur compressor 5          | "als boven maar in dit geval voor compressor n° 5".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 316  | Uitlaattemperatuur compressor 6          | "als boven maar in dit geval voor compressor n° 6".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 317  | Uitlaattemperatuur compressor 7          | "als boven maar in dit geval voor compressor n° 7".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 318  | Uitlaattemperatuur compressor 8          | "als boven maar in dit geval voor compressor n° 8".                                                                                                                                                | A/M/B                                    | CO    |                               |
| 321  | Lage druk compressor 1                   | Bij Turbocor-compressoren: inlaatdruk lager dan minimumgrens van compressor n° 1<br><br>Bij schroefcompressoren: duidt op lage druk waargenomen door de transducer/drukregelaar in compressor n° 1 | Turbocor:<br>A/M/B<br><br>Schoef:<br>A/M | CO    |                               |
| 322  | Lage druk compressor 2                   | "als boven maar in dit geval voor compressor n° 2".                                                                                                                                                | Turbocor:<br>A/M/B                       | CO    |                               |

| Code | Beschrijving                | Details                                                                                                                                                      | Reset                                     | Actie | Drempel |
|------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------|---------|
|      |                             |                                                                                                                                                              | Schroef:<br>A/M                           |       |         |
| 323  | Lage druk compressor 3      | "als boven maar in dit geval voor compressor n° 3".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 324  | Lage druk compressor 4      | "als boven maar in dit geval voor compressor n° 4".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 325  | Lage druk compressor 5      | "als boven maar in dit geval voor compressor n° 5".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 326  | Lage druk compressor 6      | "als boven maar in dit geval voor compressor n° 6".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 327  | Lage druk compressor 7      | "als boven maar in dit geval voor compressor n° 7".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 328  | Lage druk compressor 8      | "als boven maar in dit geval voor compressor n° 8".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 331  | Hoge druk compressor 1      | Bij Turbocor-compressoren: compressiedruk hoger dan maximumgrens voor compressor n° 1<br><br>Bij schroefcompressoren: duidt op hoge druk van compressor n° 1 | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 332  | Hoge druk compressor 2      | "als boven maar in dit geval voor compressor n° 2".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 333  | Hoge druk compressor 3      | "als boven maar in dit geval voor compressor n° 3".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 334  | Hoge druk compressor 4      | "als boven maar in dit geval voor compressor n° 4".                                                                                                          | Turbocor:<br>A/M/B<br><br>Schroef:<br>A/M | CO    |         |
| 335  | Hoge druk compressor 5      | "als boven maar in dit geval voor compressor n° 5".                                                                                                          | Turbocor:<br>A/M/B                        | CO    |         |
| 336  | Hoge druk compressor 6      | "als boven maar in dit geval voor compressor n° 6".                                                                                                          | Turbocor:<br>A/M/B                        | CO    |         |
| 337  | Hoge druk compressor 7      | "als boven maar in dit geval voor compressor n° 7".                                                                                                          | Turbocor:<br>A/M/B                        | CO    |         |
| 338  | Hoge druk compressor 8      | "als boven maar in dit geval voor compressor n° 8".                                                                                                          | Turbocor:<br>A/M/B                        | CO    |         |
| 341  | Voedingsstroom compressor 1 | Stroomopname door compressor n° 1 hoger dan maximumgrens (alleen bij de units met Turbocor-compressoren).                                                    | A/M/B                                     | CO    |         |
| 342  | Voedingsstroom compressor 2 | "als boven maar in dit geval voor compressor n° 2".                                                                                                          | A/M/B                                     | CO    |         |
| 343  | Voedingsstroom compressor 3 | "als boven maar in dit geval voor compressor n° 3".                                                                                                          | A/M/B                                     | CO    |         |
| 344  | Voedingsstroom compressor 4 | "als boven maar in dit geval voor compressor n° 4".                                                                                                          | A/M/B                                     | CO    |         |
| 345  | Voedingsstroom compressor 5 | "als boven maar in dit geval voor compressor n° 4".                                                                                                          | A/M/B                                     | CO    |         |
| 346  | Voedingsstroom compressor 6 | "als boven maar in dit geval voor compressor n° 4".                                                                                                          | A/M/B                                     | CO    |         |
| 347  | Voedingsstroom compressor 7 | "als boven maar in dit geval voor compressor n° 4".                                                                                                          | A/M/B                                     | CO    |         |
| 348  | Voedingsstroom compressor 8 | "als boven maar in dit geval voor compressor n° 4".                                                                                                          | A/M/B                                     | CO    |         |



| Code | Beschrijving                      | Details                                                                                                       | Reset | Actie | Drempel |
|------|-----------------------------------|---------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 351  | Temperatuur rotor compressor 1    | Temperatuur rotor van compressor n° 1 hoger dan maximumgrens (alleen bij units met Turbocor-compressoren).    | A/M/B | CO    |         |
| 352  | Temperatuur rotor compressor 2    | "als boven maar in dit geval voor compressor n° 2".                                                           | A/M/B | CO    |         |
| 353  | Temperatuur rotor compressor 3    | "als boven maar in dit geval voor compressor n° 3".                                                           | A/M/B | CO    |         |
| 354  | Temperatuur rotor compressor 4    | "als boven maar in dit geval voor compressor n° 4".                                                           | A/M/B | CO    |         |
| 355  | Temperatuur rotor compressor 5    | "als boven maar in dit geval voor compressor n° 5".                                                           | A/M/B | CO    |         |
| 356  | Temperatuur rotor compressor 6    | "als boven maar in dit geval voor compressor n° 6".                                                           | A/M/B | CO    |         |
| 357  | Temperatuur rotor compressor 7    | "als boven maar in dit geval voor compressor n° 7".                                                           | A/M/B | CO    |         |
| 358  | Temperatuur rotor compressor 8    | "als boven maar in dit geval voor compressor n° 8".                                                           | A/M/B | CO    |         |
| 361  | Compressieverhouding compressor 1 | Compressieverhouding van compressor n° 1 hoger dan maximumgrens (alleen bij units met Turbocor-compressoren). | A/M/B | CO    |         |
| 362  | Compressieverhouding compressor 2 | "als boven maar in dit geval voor compressor n° 2".                                                           | A/M/B | CO    |         |
| 363  | Compressieverhouding compressor 3 | "als boven maar in dit geval voor compressor n° 3".                                                           | A/M/B | CO    |         |
| 364  | Compressieverhouding compressor 4 | "als boven maar in dit geval voor compressor n° 4".                                                           | A/M/B | CO    |         |
| 365  | Compressieverhouding compressor 5 | "als boven maar in dit geval voor compressor n° 5".                                                           | A/M/B | CO    |         |
| 366  | Compressieverhouding compressor 6 | "als boven maar in dit geval voor compressor n° 6".                                                           | A/M/B | CO    |         |
| 367  | Compressieverhouding compressor 7 | "als boven maar in dit geval voor compressor n° 7".                                                           | A/M/B | CO    |         |
| 368  | Compressieverhouding compressor 8 | "als boven maar in dit geval voor compressor n° 8".                                                           | A/M/B | CO    |         |
| 371  | Lager compressor 1                | Storing lagere van compressor n° 1 (alleen bij units met Turbocor-compressoren).                              | A/M/B | CO    |         |
| 372  | Lager compressor 2                | "als boven maar in dit geval voor compressor n° 2".                                                           | A/M/B | CO    |         |
| 373  | Lager compressor 3                | "als boven maar in dit geval voor compressor n° 3".                                                           | A/M/B | CO    |         |
| 374  | Lager compressor 4                | "als boven maar in dit geval voor compressor n° 4".                                                           | A/M/B | CO    |         |
| 375  | Lager compressor 5                | "als boven maar in dit geval voor compressor n° 5".                                                           | A/M/B | CO    |         |
| 376  | Lager compressor 6                | "als boven maar in dit geval voor compressor n° 6".                                                           | A/M/B | CO    |         |
| 377  | Lager compressor 7                | "als boven maar in dit geval voor compressor n° 7".                                                           | A/M/B | CO    |         |
| 378  | Lager compressor 8                | "als boven maar in dit geval voor compressor n° 8".                                                           | A/M/B | CO    |         |
| 381  | Temperatuur SCR compressor 1      | Temperatuur SCR van compressor n° 1 hoger dan maximumgrens (alleen bij units met Turbocor-compressoren).      | A/M/B | CO    |         |
| 382  | Temperatuur SCR compressor 2      | "als boven maar in dit geval voor compressor n° 2".                                                           | A/M/B | CO    |         |
| 383  | Temperatuur SCR compressor 3      | "als boven maar in dit geval voor compressor n° 3".                                                           | A/M/B | CO    |         |
| 384  | Temperatuur SCR compressor 4      | "als boven maar in dit geval voor compressor n° 4".                                                           | A/M/B | CO    |         |
| 385  | Temperatuur SCR compressor 5      | "als boven maar in dit geval voor compressor n° 5".                                                           | A/M/B | CO    |         |
| 386  | Temperatuur SCR compressor 6      | "als boven maar in dit geval voor compressor n° 6".                                                           | A/M/B | CO    |         |
| 387  | Temperatuur SCR compressor 7      | "als boven maar in dit geval voor compressor n° 7".                                                           | A/M/B | CO    |         |
| 388  | Temperatuur SCR compressor 8      | "als boven maar in dit geval voor compressor n° 8".                                                           | A/M/B | CO    |         |
| 391  | Blokking rotor compressor 1       | Compressor n° 1 geblokkeerd (alleen bij units met Turbocor-compressoren).                                     | A/M/B | CO    |         |
| 392  | Blokking rotor compressor 2       | "als boven maar in dit geval voor compressor n° 2".                                                           | A/M/B | CO    |         |
| 393  | Blokking rotor compressor 3       | "als boven maar in dit geval voor compressor n° 3".                                                           | A/M/B | CO    |         |
| 394  | Blokking rotor compressor 4       | "als boven maar in dit geval voor compressor n° 4".                                                           | A/M/B | CO    |         |
| 395  | Blokking rotor compressor 5       | "als boven maar in dit geval voor compressor n° 5".                                                           | A/M/B | CO    |         |
| 396  | Blokking rotor compressor 6       | "als boven maar in dit geval voor compressor n° 6".                                                           | A/M/B | CO    |         |
| 397  | Blokking rotor compressor 7       | "als boven maar in dit geval voor compressor n° 7".                                                           | A/M/B | CO    |         |
| 398  | Blokking rotor compressor 8       | "als boven maar in dit geval voor compressor n° 8".                                                           | A/M/B | CO    |         |
| 400  | Err sonde 10                      | Fout sonde 10. Door sonde 10 afgelezen waarde buiten de grenzen.                                              | A     | *     |         |
| 401  | Err sonde 1                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 402  | Err sonde 2                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 403  | Err sonde 3                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 404  | Err sonde 4                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 405  | Err sonde 5                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 406  | Err sonde 6                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 407  | Err sonde 7                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 408  | Err sonde 8                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 409  | Err sonde 9                       | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 410  | Exp 1 Err sonde 10                | Storing sonde 10, uitbreiding 1                                                                               | A     | *     |         |
| 411  | Exp 1 Err sonde 1                 | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 412  | Exp 1 Err sonde 2                 | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 413  | Exp 1 Err sonde 3                 | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 414  | Exp 1 Err sonde 4                 | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 415  | Exp 1 Err sonde 5                 | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 416  | Exp 1 Err sonde 6                 | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 417  | Exp 1 Err sonde 7                 | "analoog, zoals hierboven".                                                                                   | A     | *     |         |
| 418  | Exp 1 Err sonde 8                 | "analoog, zoals hierboven".                                                                                   | A     | *     |         |

| Code | Beschrijving             | Details                                                                           | Reset | Actie | Drempel |
|------|--------------------------|-----------------------------------------------------------------------------------|-------|-------|---------|
| 419  | Exp 1 Err sonde 9        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 420  | Exp 2 Err sonde 10       | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 421  | Exp 2 Err sonde 1        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 422  | Exp 2 Err sonde 2        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 423  | Exp 2 Err sonde 3        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 424  | Exp 2 Err sonde 4        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 425  | Exp 2 Err sonde 5        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 426  | Exp 2 Err sonde 6        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 427  | Exp 2 Err sonde 7        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 428  | Exp 2 Err sonde 8        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 429  | Exp 2 Err sonde 9        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 430  | Exp 3 Err sonde 10       | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 431  | Exp 3 Err sonde 1        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 432  | Exp 3 Err sonde 2        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 433  | Exp 3 Err sonde 3        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 434  | Exp 3 Err sonde 4        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 435  | Exp 3 Err sonde 5        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 436  | Exp 3 Err sonde 6        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 437  | Exp 3 Err sonde 7        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 438  | Exp 3 Err sonde 8        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 439  | Exp 3 Err sonde 9        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 440  | Exp 4 Err sonde 10       | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 441  | Exp 4 Err sonde 1        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 442  | Exp 4 Err sonde 2        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 443  | Exp 4 Err sonde 3        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 444  | Exp 4 Err sonde 4        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 445  | Exp 4 Err sonde 5        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 446  | Exp 4 Err sonde 6        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 447  | Exp 4 Err sonde 7        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 448  | Exp 4 Err sonde 8        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 449  | Exp 4 Err sonde 9        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 450  | Exp 5 Err sonde 10       | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 451  | Exp 5 Err sonde 1        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 452  | Exp 5 Err sonde 2        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 453  | Exp 5 Err sonde 3        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 454  | Exp 5 Err sonde 4        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 455  | Exp 5 Err sonde 5        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 456  | Exp 5 Err sonde 6        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 457  | Exp 5 Err sonde 7        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 458  | Exp 5 Err sonde 8        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 459  | Exp 5 Err sonde 9        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 460  | Err sonde 11             | Storing sonde 11                                                                  | A     | *     |         |
| 461  | Err sonde 12             | Storing sonde 12                                                                  | A     | *     |         |
| 500  | Slave Err sonde 10       | Storing sonde 10 van de slave, alleen aanwezig bij units met meer dan 2 circuits. | A     | *     |         |
| 501  | Slave Err sonde 1        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 502  | Slave Err sonde 2        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 503  | Slave Err sonde 3        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 504  | Slave Err sonde 4        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 505  | Slave Err sonde 5        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 506  | Slave Err sonde 6        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 507  | Slave Err sonde 7        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 508  | Slave Err sonde 8        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 509  | Slave Err sonde 9        | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 510  | Exp 1 Slave Err sonde 10 | Storing sonde 10, uitbreiding 1, aangesloten op de slave.                         | A     | *     |         |
| 511  | Exp 1 Slave Err sonde 1  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 512  | Exp 1 Slave Err sonde 2  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 513  | Exp 1 Slave Err sonde 3  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 514  | Exp 1 Slave Err sonde 4  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 515  | Exp 1 Slave Err sonde 5  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 516  | Exp 1 Slave Err sonde 6  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 517  | Exp 1 Slave Err sonde 7  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 518  | Exp 1 Slave Err sonde 8  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 519  | Exp 1 Slave Err sonde 9  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 520  | Exp 2 Slave Err sonde 10 | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 521  | Exp 2 Slave Err sonde 1  | "analoog, zoals hierboven".                                                       | A     | *     |         |
| 522  | Exp 2 Slave Err sonde 2  | "analoog, zoals hierboven".                                                       | A     | *     |         |

| Code | Beschrijving                           | Details                                                                                                                                                                                 | Reset | Actie | Drempel |
|------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 523  | Exp 2 Slave Err sonde 3                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 524  | Exp 2 Slave Err sonde 4                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 525  | Exp 2 Slave Err sonde 5                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 526  | Exp 2 Slave Err sonde 6                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 527  | Exp 2 Slave Err sonde 7                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 528  | Exp 2 Slave Err sonde 8                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 529  | Exp 2 Slave Err sonde 9                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 530  | Exp 3 Slave Err sonde 10               | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 531  | Exp 3 Slave Err sonde 1                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 532  | Exp 3 Slave Err sonde 2                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 533  | Exp 3 Slave Err sonde 3                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 534  | Exp 3 Slave Err sonde 4                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 535  | Exp 3 Slave Err sonde 5                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 536  | Exp 3 Slave Err sonde 6                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 537  | Exp 3 Slave Err sonde 7                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 538  | Exp 3 Slave Err sonde 8                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 539  | Exp 3 Slave Err sonde 9                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 540  | Exp 4 Slave Err sonde 10               | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 541  | Exp 4 Slave Err sonde 1                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 542  | Exp 4 Slave Err sonde 2                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 543  | Exp 4 Slave Err sonde 3                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 544  | Exp 4 Slave Err sonde 4                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 545  | Exp 4 Slave Err sonde 5                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 546  | Exp 4 Slave Err sonde 6                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 547  | Exp 4 Slave Err sonde 7                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 548  | Exp 4 Slave Err sonde 8                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 549  | Exp 4 Slave Err sonde 9                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 550  | Exp 5 Slave Err sonde 10               | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 551  | Exp 5 Slave Err sonde 1                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 552  | Exp 5 Slave Err sonde 2                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 553  | Exp 5 Slave Err sonde 3                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 554  | Exp 5 Slave Err sonde 4                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 555  | Exp 5 Slave Err sonde 5                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 556  | Exp 5 Slave Err sonde 6                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 557  | Exp 5 Slave Err sonde 7                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 558  | Exp 5 Slave Err sonde 8                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 559  | Exp 5 Slave Err sonde 9                | "analoog, zoals hierboven".                                                                                                                                                             | A     | *     |         |
| 580  | Fout temperatuursonde HT-zone          | Duidt op een fout van de temperatuursonde van de HT zone.                                                                                                                               | A     | GR    |         |
| 581  | Fout temperatuursonde LT-zone          | Duidt op een fout van de temperatuursonde van de LT zone.                                                                                                                               | A     | GR    |         |
| 582  | Fout vochtigheidssonde HT-zone         | Duidt op een fout van de relatieve vochtigheidssonde van de HT zone.                                                                                                                    | A     | GR    |         |
| 583  | Fout vochtigheidssonde LT-zone         | Duidt op een fout van de relatieve vochtigheidssonde van de LT zone.                                                                                                                    | A     | GR    |         |
| 590  | Maximum temperatuur gemengd circuit    | Duidt erop dat de temperatuur van het water in het gemengde circuit (LT) de ingestelde maximumwaarde heeft overschreden.                                                                | A     | GR    | STG0185 |
| 602  | Seriële lijn BMS2 losgekoppeld         | Duidt erop dat de communicatie met het apparaat dat op de seriële poort BMS2 aangesloten is verloren gegaan is.                                                                         | S     | -     |         |
| 611  | Vooralarm vorstbeveiliging verdamper 1 | Vooralarm dat op de lage temperatuur van het water uit de verdamper duidt. Er wordt bovendien weergegeven op welke verdamper (als er meer dan één zijn) de alarmtoestand opgetreden is. | S     | PR    |         |
| 612  | Vooralarm vorstbeveiliging verdamper 2 | "als boven maar in dit geval voor de verdamper n° 2".                                                                                                                                   | S     | PR    |         |
| 613  | Vooralarm vorstbeveiliging verdamper 3 | "als boven maar in dit geval voor de verdamper n° 3".                                                                                                                                   | S     | PR    |         |
| 614  | Vooralarm vorstbeveiliging verdamper 4 | "als boven maar in dit geval voor de verdamper n° 4".                                                                                                                                   | S     | PR    |         |
| 631  | Vooralarm lage druk circuit 1          | Vooralarm dat op lage druk waargenomen door de transducer in circuit n° 1 duidt.                                                                                                        | S     | PR    |         |
| 632  | Vooralarm lage druk circuit 2          | "als boven maar in dit geval voor circuit n° 2".                                                                                                                                        | S     | PR    |         |
| 633  | Vooralarm lage druk circuit 3          | "als boven maar in dit geval voor circuit n° 3".                                                                                                                                        | S     | PR    |         |
| 634  | Vooralarm lage druk circuit 4          | "als boven maar in dit geval voor circuit n° 4".                                                                                                                                        | S     | PR    |         |
| 641  | Vooralarm hoge druk circuit 1          | Vooralarm dat op hoge druk waargenomen door de transducer in circuit n° 1 duidt.                                                                                                        | S     | PR    |         |

| Code | Beschrijving                                                                        | Details                                                                                                                                       | Reset | Actie | Drempel |
|------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 642  | Vooralarm hoge druk circuit 2                                                       | "als boven maar in dit geval voor circuit n° 2".                                                                                              | S     | PR    |         |
| 643  | Vooralarm hoge druk circuit 3                                                       | "als boven maar in dit geval voor circuit n° 3".                                                                                              | S     | PR    |         |
| 644  | Vooralarm hoge druk circuit 4                                                       | "als boven maar in dit geval voor circuit n° 4".                                                                                              | S     | PR    |         |
| 651  | Controle omhulling: lage oververhitting op toevoer naar compressoren van circuit 1  | Duidt erop dat de compressoren in circuit 1 op een te lage oververhittingswaarde functioneren (op basis van de actieve compressieverhouding). | M     | CI    |         |
| 652  | Controle omhulling: lage oververhitting op toevoer naar compressoren van circuit 2  | "als boven maar in dit geval voor circuit n° 2".                                                                                              | M     | CI    |         |
| 653  | Controle omhulling: lage oververhitting op toevoer naar compressoren van circuit 3  | "als boven maar in dit geval voor circuit n° 3".                                                                                              | M     | CI    |         |
| 654  | Controle omhulling: lage oververhitting op toevoer naar compressoren van circuit 4  | "als boven maar in dit geval voor circuit n° 4".                                                                                              | M     | CI    |         |
| 661  | Controle omhulling: hoge oververhitting op toevoer naar compressoren van circuit 1  | Duidt erop dat de compressoren in circuit 1 op een te hoge oververhittingswaarde functioneren (op basis van de actieve compressieverhouding). | M     | CI    |         |
| 662  | Controle omhulling: hoge oververhitting op toevoer naar compressoren van circuit 2  | "als boven maar in dit geval voor circuit n° 2".                                                                                              | M     | CI    |         |
| 663  | Controle omhulling: hoge oververhitting op toevoer naar compressoren van circuit 3  | "als boven maar in dit geval voor circuit n° 3".                                                                                              | M     | CI    |         |
| 664  | Controle omhulling: hoge oververhitting op toevoer naar compressoren van circuit 4  | "als boven maar in dit geval voor circuit n° 4".                                                                                              | M     | CI    |         |
| 671  | Controle omhulling: minimumgrens van de hoge druk van de compressoren van circuit 1 | Duidt erop dat de compressoren in het koelcircuit nr. 1 buiten de toegestane grens functioneren.                                              | M     | CI    |         |
| 672  | Controle omhulling: minimumgrens van de hoge druk van de compressoren van circuit 2 | "als boven maar in dit geval voor circuit n° 2".                                                                                              | M     | CI    |         |
| 673  | Controle omhulling: minimumgrens van de hoge druk van de compressoren van circuit 3 | "als boven maar in dit geval voor circuit n° 3".                                                                                              | M     | CI    |         |
| 674  | Controle omhulling: minimumgrens van de hoge druk van de compressoren van circuit 4 | "als boven maar in dit geval voor circuit n° 4".                                                                                              | M     | CI    |         |
| 681  | Alarm omhulling compressor 1                                                        | Duidt erop dat compressor 1 buiten de toegestane grens functioneert                                                                           | A/M   | CO    |         |
| 682  | Alarm omhulling compressor 2                                                        | "als boven maar in dit geval voor compressor n° 2".                                                                                           | A/M   | CO    |         |
| 683  | Alarm omhulling compressor 3                                                        | "als boven maar in dit geval voor compressor n° 3".                                                                                           | A/M   | CO    |         |
| 684  | Alarm omhulling compressor 4                                                        | "als boven maar in dit geval voor compressor n° 4".                                                                                           | A/M   | CO    |         |
| 701  | Inverter 1 offline                                                                  | Duidt erop dat er geen communicatie is met de inverter van compressor n° 1 (alleen bij units met compressoren met inverter)                   | A     | CO    |         |
| 702  | Inverter 2 offline                                                                  | "als boven maar in dit geval voor compressor n° 2".                                                                                           | A     | CO    |         |
| 703  | Inverter 3 offline                                                                  | "als boven maar in dit geval voor compressor n° 3".                                                                                           | A     | CO    |         |
| 704  | Inverter 4 offline                                                                  | "als boven maar in dit geval voor compressor n° 4".                                                                                           | A     | CO    |         |
| 711  | Alarm stroomvoorziening inverter 1 (**)                                             | Storing in de stroomvoorziening van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).                         | A/M*  | CO    |         |
| 712  | Alarm stroomvoorziening inverter 2 (**)                                             | "als boven maar in dit geval voor compressor n° 2".                                                                                           | A/M*  | CO    |         |
| 713  | Alarm stroomvoorziening inverter 3 (**)                                             | "als boven maar in dit geval voor compressor n° 3".                                                                                           | A/M*  | CO    |         |
| 714  | Alarm stroomvoorziening inverter 4 (**)                                             | "als boven maar in dit geval voor compressor n° 4".                                                                                           | A/M*  | CO    |         |
| 721  | Alarm stroomvoorziening motor inverter 1 (**)                                       | Storing in de stroomvoorziening van de motor van compressor n° 1 (alleen bij units met compressoren met inverter).                            | A/M*  | CO    |         |
| 722  | Alarm stroomvoorziening motor inverter 2 (**)                                       | "als boven maar in dit geval voor compressor n° 2".                                                                                           | A/M*  | CO    |         |
| 723  | Alarm stroomvoorziening motor inverter 3 (**)                                       | "als boven maar in dit geval voor compressor n° 3".                                                                                           | A/M*  | CO    |         |
| 724  | Alarm stroomvoorziening motor inverter 4 (**)                                       | "als boven maar in dit geval voor compressor n° 4".                                                                                           | A/M*  | CO    |         |
| 731  | Alarm stroomvoorziening inverter 1 (**)                                             | Overbelasting van de variator van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).                           | M     | CO    |         |
| 732  | Alarm stroomvoorziening inverter 2 (**)                                             | "als boven maar in dit geval voor compressor n° 2".                                                                                           | M     | CO    |         |

| Code | Beschrijving                                               | Details                                                                                                                      | Reset | Actie | Drempel |
|------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 733  | Alarm stroomvoorziening inverter 3 (**)                    | "als boven maar in dit geval voor compressor n° 3".                                                                          | M     | CO    |         |
| 734  | Alarm stroomvoorziening inverter 4 (**)                    | "als boven maar in dit geval voor compressor n° 4".                                                                          | M     | CO    |         |
| 741  | Alarm thermische beveiliging gelijkrichter inverter 1 (**) | Overbelasting van de gelijkrichter van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).     | M     | CO    |         |
| 742  | Alarm thermische beveiliging gelijkrichter inverter 2 (**) | "als boven maar in dit geval voor compressor n° 2".                                                                          | M     | CO    |         |
| 743  | Alarm thermische beveiliging gelijkrichter inverter 3 (**) | "als boven maar in dit geval voor compressor n° 3".                                                                          | M     | CO    |         |
| 744  | Alarm thermische beveiliging gelijkrichter inverter 4 (**) | "als boven maar in dit geval voor compressor n° 4".                                                                          | M     | CO    |         |
| 751  | Alarm thermische beveiliging variator inverter 1 (**)      | Thermische beveiliging van de motor van compressor n° 1 (alleen bij units met compressoren met inverter).                    | M     | CO    |         |
| 752  | Alarm thermische beveiliging variator inverter 2 (**)      | "als boven maar in dit geval voor compressor n° 2".                                                                          | M     | CO    |         |
| 753  | Alarm thermische beveiliging variator inverter 3 (**)      | "als boven maar in dit geval voor compressor n° 3".                                                                          | M     | CO    |         |
| 754  | Alarm thermische beveiliging variator inverter 4 (**)      | "als boven maar in dit geval voor compressor n° 4".                                                                          | M     | CO    |         |
| 761  | Alarm thermische beveiliging variator inverter 1 (**)      | Thermische beveiliging van de variator van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter). | M     | CO    |         |
| 762  | Alarm thermische beveiliging variator inverter 2 (**)      | "als boven maar in dit geval voor compressor n° 2".                                                                          | M     | CO    |         |
| 763  | Alarm thermische beveiliging variator inverter 3 (**)      | "als boven maar in dit geval voor compressor n° 3".                                                                          | M     | CO    |         |
| 764  | Alarm thermische beveiliging variator inverter 4 (**)      | "als boven maar in dit geval voor compressor n° 4".                                                                          | M     | CO    |         |
| 771  | Alarm IGBT inverter 1 (**)                                 | Storing IGBT van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).                           | M     | CO    |         |
| 772  | Alarm IGBT inverter 2 (**)                                 | "als boven maar in dit geval voor compressor n° 2".                                                                          | M     | CO    |         |
| 773  | Alarm IGBT inverter 3 (**)                                 | "als boven maar in dit geval voor compressor n° 3".                                                                          | M     | CO    |         |
| 774  | Alarm IGBT inverter 4 (**)                                 | "als boven maar in dit geval voor compressor n° 4".                                                                          | M     | CO    |         |
| 781  | Alarm statorweerstand inverter 1 (**)                      | Storing aan de statorweerstand van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).         | M     | CO    |         |
| 782  | Alarm statorweerstand inverter 2 (**)                      | "als boven maar in dit geval voor compressor n° 2".                                                                          | M     | CO    |         |
| 783  | Alarm statorweerstand inverter 3 (**)                      | "als boven maar in dit geval voor compressor n° 3".                                                                          | M     | CO    |         |
| 784  | Alarm statorweerstand inverter 4 (**)                      | "als boven maar in dit geval voor compressor n° 4".                                                                          | M     | CO    |         |
| 791  | Alarm te hoge snelheid inverter 1 (**)                     | Storing te hoge snelheid van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).               | M     | CO    |         |
| 792  | Alarm te hoge snelheid inverter 2 (**)                     | "als boven maar in dit geval voor compressor n° 2".                                                                          | M     | CO    |         |
| 793  | Alarm te hoge snelheid inverter 3 (**)                     | "als boven maar in dit geval voor compressor n° 3".                                                                          | M     | CO    |         |
| 794  | Alarm te hoge snelheid inverter 4 (**)                     | "als boven maar in dit geval voor compressor n° 4".                                                                          | M     | CO    |         |
| 801  | Alarm veldbus inverter 1 (**)                              | Storing veldbus van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).                        | A/M*  | CO    |         |
| 802  | Alarm veldbus inverter 2 (**)                              | "als boven maar in dit geval voor compressor n° 2".                                                                          | A/M*  | CO    |         |
| 803  | Alarm veldbus inverter 3 (**)                              | "als boven maar in dit geval voor compressor n° 3".                                                                          | A/M*  | CO    |         |
| 804  | Alarm veldbus inverter 4 (**)                              | "als boven maar in dit geval voor compressor n° 4".                                                                          | A/M*  | CO    |         |
| 811  | Alarm communicatie inverter 1 (**)                         | Storing interne communicatie van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).           | A/M*  | CO    |         |
| 812  | Alarm communicatie inverter 2 (**)                         | "als boven maar in dit geval voor compressor n° 2".                                                                          | A/M*  | CO    |         |
| 813  | Alarm communicatie inverter 3 (**)                         | "als boven maar in dit geval voor compressor n° 3".                                                                          | A/M*  | CO    |         |
| 814  | Alarm communicatie inverter 4 (**)                         | "als boven maar in dit geval voor compressor n° 4".                                                                          | A/M*  | CO    |         |
| 821  | Alarm ingang beveiliging inverter 1 (**)                   | Storing ingang beveiliging van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).             | A/M*  | CO    |         |
| 822  | Alarm ingang beveiliging inverter 2 (**)                   | "als boven maar in dit geval voor compressor n° 2".                                                                          | A/M*  | CO    |         |
| 823  | Alarm ingang beveiliging inverter 3 (**)                   | "als boven maar in dit geval voor compressor n° 3".                                                                          | A/M*  | CO    |         |
| 824  | Alarm ingang beveiliging inverter 4 (**)                   | "als boven maar in dit geval voor compressor n° 4".                                                                          | A/M*  | CO    |         |
| 831  | Alarm zelfkalibratie inverter 1 (**)                       | Storing zelfkalibratie van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).                 | M     | CO    |         |
| 832  | Alarm zelfkalibratie inverter 2 (**)                       | "als boven maar in dit geval voor compressor n° 2".                                                                          | M     | CO    |         |
| 833  | Alarm zelfkalibratie inverter 3 (**)                       | "als boven maar in dit geval voor compressor n° 3".                                                                          | M     | CO    |         |
| 834  | Alarm zelfkalibratie inverter 4 (**)                       | "als boven maar in dit geval voor compressor n° 4".                                                                          | M     | CO    |         |



| Code | Beschrijving                                                         | Details                                                                                                                       | Reset | Actie | Drempel |
|------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 841  | Alarm tegen-rotatie inverter 1 (**)                                  | Storing tegen-rotatie van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).                   | M     | CO    |         |
| 842  | Alarm tegen-rotatie inverter 2 (**)                                  | "als boven maar in dit geval voor compressor n° 2".                                                                           | M     | CO    |         |
| 843  | Alarm tegen-rotatie inverter 3 (**)                                  | "als boven maar in dit geval voor compressor n° 3".                                                                           | M     | CO    |         |
| 844  | Alarm tegen-rotatie inverter 4 (**)                                  | "als boven maar in dit geval voor compressor n° 4".                                                                           | M     | CO    |         |
| 851  | Algemeen alarm inverter 1 (**)                                       | Algemeen alarm van de inverter van compressor n° 1 (alleen bij units met compressoren met inverter).                          | A/M*  | CO    |         |
| 852  | Algemeen alarm inverter 2 (**)                                       | "als boven maar in dit geval voor compressor n° 2".                                                                           | A/M*  | CO    |         |
| 853  | Algemeen alarm inverter 3 (**)                                       | "als boven maar in dit geval voor compressor n° 3".                                                                           | A/M*  | CO    |         |
| 854  | Algemeen alarm inverter 4 (**)                                       | "als boven maar in dit geval voor compressor n° 4".                                                                           | A/M*  | CO    |         |
| 871  | Hoge druk transducer compressor 1                                    | Duidt erop dat de druk van compressor n° 1 hoog is                                                                            | A/M   | CO    | STG0057 |
| 872  | Hoge druk transducer compressor 2                                    | "als boven maar in dit geval voor compressor n° 2".                                                                           | A/M   | CO    |         |
| 873  | Hoge druk transducer compressor 3                                    | "als boven maar in dit geval voor compressor n° 3".                                                                           | A/M   | CO    |         |
| 874  | Hoge druk transducer compressor 4                                    | "als boven maar in dit geval voor compressor n° 4".                                                                           | A/M   | CO    |         |
| 875  | Hoge druk transducer compressor 5                                    | "als boven maar in dit geval voor compressor n° 5".                                                                           | A/M   | CO    |         |
| 876  | Hoge druk transducer compressor 6                                    | "als boven maar in dit geval voor compressor n° 6".                                                                           | A/M   | CO    |         |
| 877  | Hoge druk transducer compressor 7                                    | "als boven maar in dit geval voor compressor n° 7".                                                                           | A/M   | CO    |         |
| 878  | Hoge druk transducer compressor 8                                    | "als boven maar in dit geval voor compressor n° 8".                                                                           | A/M   | CO    |         |
| 881  | Geen freon in compressor 1                                           | Mogelijk geen freon in compressor n° 1 aangezien het alarm "Time-out inschakeling" al minstens 8 uur voortduurt.              | A     | CO    |         |
| 882  | Geen freon in compressor 2                                           | "als boven maar in dit geval voor compressor n° 2".                                                                           | A     | CO    |         |
| 883  | Geen freon in compressor 3                                           | "als boven maar in dit geval voor compressor n° 3".                                                                           | A     | CO    |         |
| 884  | Geen freon in compressor 4                                           | "als boven maar in dit geval voor compressor n° 4".                                                                           | A     | CO    |         |
| 885  | Geen freon in compressor 5                                           | "als boven maar in dit geval voor compressor n° 5".                                                                           | A     | CO    |         |
| 886  | Geen freon in compressor 6                                           | "als boven maar in dit geval voor compressor n° 6".                                                                           | A     | CO    |         |
| 887  | Geen freon in compressor 7                                           | "als boven maar in dit geval voor compressor n° 7".                                                                           | A     | CO    |         |
| 888  | Geen freon in compressor 8                                           | "als boven maar in dit geval voor compressor n° 8".                                                                           | A     | CO    |         |
| 891  | Vooralarm lage druk compressor 1                                     | Vooralarm dat op lage druk waargenomen door de transducer in compressor n° 1 duidt                                            | S     | PR    |         |
| 892  | Vooralarm lage druk compressor 2                                     | "als boven maar in dit geval voor compressor n° 2".                                                                           | S     | PR    |         |
| 893  | Vooralarm lage druk compressor 3                                     | "als boven maar in dit geval voor compressor n° 3".                                                                           | S     | PR    |         |
| 894  | Vooralarm lage druk compressor 4                                     | "als boven maar in dit geval voor compressor n° 4".                                                                           | S     | PR    |         |
| 895  | Vooralarm lage druk compressor 5                                     | "als boven maar in dit geval voor compressor n° 5".                                                                           | S     | PR    |         |
| 896  | Vooralarm lage druk compressor 6                                     | "als boven maar in dit geval voor compressor n° 6".                                                                           | S     | PR    |         |
| 897  | Vooralarm lage druk compressor 7                                     | "als boven maar in dit geval voor compressor n° 7".                                                                           | S     | PR    |         |
| 898  | Vooralarm lage druk compressor 8                                     | "als boven maar in dit geval voor compressor n° 8".                                                                           | S     | PR    |         |
| 901  | Vooralarm hoge druk compressor 1                                     | Vooralarm dat op hoge druk waargenomen door de transducer in compressor n° 1 duidt.                                           | S     | PR    |         |
| 902  | Vooralarm hoge druk compressor 2                                     | "als boven maar in dit geval voor compressor n° 2".                                                                           | S     | PR    |         |
| 903  | Vooralarm hoge druk compressor 3                                     | "als boven maar in dit geval voor compressor n° 3".                                                                           | S     | PR    |         |
| 904  | Vooralarm hoge druk compressor 4                                     | "als boven maar in dit geval voor compressor n° 4".                                                                           | S     | PR    |         |
| 905  | Vooralarm hoge druk compressor 5                                     | "als boven maar in dit geval voor compressor n° 5".                                                                           | S     | PR    |         |
| 906  | Vooralarm hoge druk compressor 6                                     | "als boven maar in dit geval voor compressor n° 6".                                                                           | S     | PR    |         |
| 907  | Vooralarm hoge druk compressor 7                                     | "als boven maar in dit geval voor compressor n° 7".                                                                           | S     | PR    |         |
| 908  | Vooralarm hoge druk compressor 8                                     | "als boven maar in dit geval voor compressor n° 8".                                                                           | S     | PR    |         |
| 911  | Controle omhulling: lage oververhitting op toevoer naar compressor 1 | Duidt erop dat compressor 1 op een te lage oververhittingswaarde functioneert (op basis van de actieve compressieverhouding). | M     | CO    |         |
| 912  | Controle omhulling: lage oververhitting op toevoer naar compressor 2 | "als boven maar in dit geval voor compressor n° 2".                                                                           | M     | CO    |         |
| 913  | Controle omhulling: lage oververhitting op toevoer naar compressor 3 | "als boven maar in dit geval voor compressor n° 3".                                                                           | M     | CO    |         |
| 914  | Controle omhulling: lage oververhitting op toevoer naar compressor 4 | "als boven maar in dit geval voor compressor n° 4".                                                                           | M     | CO    |         |
| 915  | Controle omhulling: lage oververhitting op toevoer naar compressor 5 | "als boven maar in dit geval voor compressor n° 5".                                                                           | M     | CO    |         |
| 916  | Controle omhulling: lage oververhitting op toevoer naar compressor 6 | "als boven maar in dit geval voor compressor n° 6".                                                                           | M     | CO    |         |
| 917  | Controle omhulling: lage oververhitting op toevoer naar compressor 7 | "als boven maar in dit geval voor compressor n° 7".                                                                           | M     | CO    |         |
| 918  | Controle omhulling: lage oververhitting op toevoer naar compressor 8 | "als boven maar in dit geval voor compressor n° 8".                                                                           | M     | CO    |         |
| 921  | Controle omhulling: hoge oververhitting op toevoer naar compressor 1 | Duidt erop dat compressor 1 op een te hoge oververhittingswaarde functioneert (op basis van de actieve compressieverhouding). | M     | CO    |         |

| Code | Beschrijving                                                         | Details                                                                                                                                         | Reset | Actie | Drempel |
|------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 922  | Controle omhulling: hoge oververhitting op toevoer naar compressor 2 | "als boven maar in dit geval voor compressor n° 2".                                                                                             | M     | CO    |         |
| 923  | Controle omhulling: hoge oververhitting op toevoer naar compressor 3 | "als boven maar in dit geval voor compressor n° 3".                                                                                             | M     | CO    |         |
| 924  | Controle omhulling: hoge oververhitting op toevoer naar compressor 4 | "als boven maar in dit geval voor compressor n° 4".                                                                                             | M     | CO    |         |
| 925  | Controle omhulling: hoge oververhitting op toevoer naar compressor 5 | "als boven maar in dit geval voor compressor n° 5".                                                                                             | M     | CO    |         |
| 926  | Controle omhulling: hoge oververhitting op toevoer naar compressor 6 | "als boven maar in dit geval voor compressor n° 6".                                                                                             | M     | CO    |         |
| 927  | Controle omhulling: hoge oververhitting op toevoer naar compressor 7 | "als boven maar in dit geval voor compressor n° 7".                                                                                             | M     | CO    |         |
| 928  | Controle omhulling: hoge oververhitting op toevoer naar compressor 8 | "als boven maar in dit geval voor compressor n° 8".                                                                                             | M     | CO    |         |
| 931  | Controle omhulling: minimumgrens van de hoge druk van compressor 1   | Duidt erop dat compressor 1 buiten de toegestane grens functioneert.                                                                            | M     | CO    |         |
| 932  | Controle omhulling: minimumgrens van de hoge druk van compressor 2   | "als boven maar in dit geval voor compressor n° 2".                                                                                             | M     | CO    |         |
| 933  | Controle omhulling: minimumgrens van de hoge druk van compressor 3   | "als boven maar in dit geval voor compressor n° 3".                                                                                             | M     | CO    |         |
| 934  | Controle omhulling: minimumgrens van de hoge druk van compressor 4   | "als boven maar in dit geval voor compressor n° 4".                                                                                             | M     | CO    |         |
| 935  | Controle omhulling: minimumgrens van de hoge druk van compressor 5   | "als boven maar in dit geval voor compressor n° 5".                                                                                             | M     | CO    |         |
| 936  | Controle omhulling: minimumgrens van de hoge druk van compressor 6   | "als boven maar in dit geval voor compressor n° 6".                                                                                             | M     | CO    |         |
| 937  | Controle omhulling: minimumgrens van de hoge druk van compressor 7   | "als boven maar in dit geval voor compressor n° 7".                                                                                             | M     | CO    |         |
| 938  | Controle omhulling: minimumgrens van de hoge druk van compressor 8   | "als boven maar in dit geval voor compressor n° 8".                                                                                             | M     | CO    |         |
| 941  | Minimum compressieverhouding bij start van compressor 1              | Duidt erop dat compressor n° 1 met een lage compressieverhouding functioneert.                                                                  | M     | CO    | ENV0096 |
| 942  | Minimum compressieverhouding bij start van compressor 2              | "als boven maar in dit geval voor compressor n° 2".                                                                                             | M     | CO    |         |
| 943  | Minimum compressieverhouding bij start van compressor 3              | "als boven maar in dit geval voor compressor n° 3".                                                                                             | M     | CO    |         |
| 944  | Minimum compressieverhouding bij start van compressor 4              | "als boven maar in dit geval voor compressor n° 4".                                                                                             | M     | CO    |         |
| 945  | Minimum compressieverhouding bij start van compressor 5              | "als boven maar in dit geval voor compressor n° 5".                                                                                             | M     | CO    |         |
| 946  | Minimum compressieverhouding bij start van compressor 6              | "als boven maar in dit geval voor compressor n° 6".                                                                                             | M     | CO    |         |
| 947  | Minimum compressieverhouding bij start van compressor 7              | "als boven maar in dit geval voor compressor n° 7".                                                                                             | M     | CO    |         |
| 948  | Minimum compressieverhouding bij start van compressor 8              | "als boven maar in dit geval voor compressor n° 8".                                                                                             | M     | CO    |         |
| 951  | HGBP-klep van compressor 1 losgekoppeld                              | Duidt erop dat de driver van de bypass-klep van compressor n° 1 losgekoppeld is                                                                 | S     | CO    |         |
| 952  | HGBP-klep van compressor 2 losgekoppeld                              | "als boven maar in dit geval voor compressor n° 2".                                                                                             | S     | CO    |         |
| 953  | HGBP-klep van compressor 3 losgekoppeld                              | "als boven maar in dit geval voor compressor n° 3".                                                                                             | S     | CO    |         |
| 954  | HGBP-klep van compressor 4 losgekoppeld                              | "als boven maar in dit geval voor compressor n° 4".                                                                                             | S     | CO    |         |
| 960  | Therm. meter losgekoppeld                                            | Duidt erop dat de warmte-energie analyser losgekoppeld is.                                                                                      | S     | -     |         |
| 961  | Driver eerste trap n° 5 offline                                      | Duidt erop dat de driver voor het beheer van de klep eerste trap van compressor 5 losgekoppeld is (alleen bij units met Turbocor-compressoren). | A     | CI    |         |
| 962  | Driver eerste trap n° 6 offline                                      | "als boven maar in dit geval voor compressor 6".                                                                                                | A     | CI    |         |
| 963  | Driver eerste trap n° 7 offline                                      | "als boven maar in dit geval voor compressor 7".                                                                                                | A     | CI    |         |
| 964  | Driver eerste trap n° 8 offline                                      | "als boven maar in dit geval voor compressor 8".                                                                                                | A     | CI    |         |
| 965  | ATS losgekoppeld                                                     | Signaleert de loskoppeling van de ATS-omschakelaar                                                                                              | A     | -     |         |
| 966  | Touch HT-zone losgekoppeld                                           | Duidt erop dat de touch thermostaat van de HT losgekoppeld is.                                                                                  | S     | GR    |         |
| 967  | Touch LT-zone losgekoppeld                                           | Duidt erop dat de touch thermostaat van de LT losgekoppeld is.                                                                                  | S     | GR    |         |

| Code | Beschrijving                            | Details                                                                                                                                                                                                                                                                                                                                  | Reset | Actie | Drempel |
|------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 968  | Preventie vastlopen van de compressor   | Signaleert het geforceerd stoppen van de inverter-compressor en van het betreffende circuit om vastlopen te voorkomen wegens overmatige stroomopname.                                                                                                                                                                                    | M     | CI    |         |
| 969  | Hoge buitenluchttemperatuur             | Signaleert dat de unit aan het werk is met een te hoge buitenluchttemperatuur. Deze controle wordt ook uitgevoerd wanneer de compressoren uit staan.                                                                                                                                                                                     | S-M   | U     | STG0200 |
| 970  | Geringe hoeveelheid terugwinningswater. | Signaleert dat er weinig water is in het watercircuit van de terugwinning. Deze geringe hoeveelheid veroorzaakt herhaaldelijk omschakelen van de werkwijze van de circuits, wat de kleppen van het koelcircuit kan beschadigen.                                                                                                          | S-M   | U     |         |
| 971  | Onderhoud gassensor                     | De signalering verschijnt als het gasdetectieapparaat offline blijkt ofwel als het nodig is om onderhoud aan de sensor uit te voeren.                                                                                                                                                                                                    | M     | -     |         |
| 972  | Storing low-lift pomp 1                 | Voor units met centrifugaalcompressoren signaleert Turbocor een fout in de low-lift pomp nr. 1.                                                                                                                                                                                                                                          | A/M   | -     |         |
| 973  | Storing low-lift pomp 2                 | Voor units met centrifugaalcompressoren rapporteert Turbocor een storing in de low-lift pomp nr. 2.                                                                                                                                                                                                                                      | A/M   | -     |         |
| 974  | Alarm lage temperatuur Drycooler        | Het signaal verschijnt voor units die zijn uitgerust met een Drycooler als de temperatuur van de omgeving waar de Drycooler is geïnstalleerd lager is dan het setpoint.                                                                                                                                                                  | A     | U     |         |
| 975  | Storing Drycooler                       | Het signaal verschijnt voor units die zijn uitgerust met een Drycooler als de thermische beveiliging van de ventilatoren of de speciale pomp (indien aanwezig) in werking treedt.                                                                                                                                                        | M     | U     |         |
| 979  | Therm. meter terugwinning losgekoppeld  | Duidt erop dat de warmte-energie analyser voor terugwinning losgekoppeld is.                                                                                                                                                                                                                                                             | S     | -     |         |
| 981  | Short-cycle compressor 1                | De signalering met handmatige reset verschijnt wanneer de compressor ingeschakeld blijft gedurende een tijd die korter is dan CMP0004. De signalering wordt een alarm met handmatige reset als de compressor uitgeschakeld wordt in short-cycle gedurende een aantal keren dat groter is dan parameter CMP0151 in een interval van 4 uur | S-M   | CO    |         |
| 5001 | Storing wijziging werksmodus            | Alarm dat een storing signaleert tijdens de forcering van de wijziging van de werksmodus van de unit bij het wijzigen van de werksmodus van de installatie. Het alarm treedt op als het forceren niet gelukt is binnen de maximale tijd die in de parameter is ingesteld.                                                                | M     | GR    | GRP0126 |
| 5005 | Fout sonde gemiddelde inl.watertemp.    | Fout in gemiddelde van inlaattemperatuurwaarden afgelezen door de sondes van alle units die deel uitmaken van de groep.                                                                                                                                                                                                                  | A     | GR    |         |
| 5006 | Fout sonde gemiddelde uitl.watertemp.   | Fout in gemiddelde van uitlaattemperatuurwaarden afgelezen door de sondes van alle units die deel uitmaken van de groep.                                                                                                                                                                                                                 | A     | GR    |         |
| 5050 | Fout sonde gemiddelde buit.temp.        | Fout in gemiddelde van buitenluchttemperatuurwaarden afgelezen door de sondes van alle units die deel uitmaken van de groep.                                                                                                                                                                                                             | A     | GR    |         |
| 5080 | Therm. beveil. pomp inst.               | Duidt op oververhitting van de pomp van de installatie.                                                                                                                                                                                                                                                                                  | M     | GR    |         |
| 5100 | VPF-besturingsmodule groep losgekomen   | Loskoppeling van de module die de taak heeft om het waterdebiet op de installatie te regelen. Controleer de storing op de gebruikersinterface van de module.                                                                                                                                                                             | A     | GR    |         |
| 5101 | Storing VPF-besturingsmodule groep      | Storing aan de module die de taak heeft om het waterdebiet op de installatie te regelen. Controleer de storing op de gebruikersinterface van de module.                                                                                                                                                                                  | A     | GR    |         |



| Code | Beschrijving                     | Details                                                                                                                            | Reset | Actie | Drempel |
|------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|
| 5120 | Onderbreking dynamische setpoint | Onderbreking van het dynamische beheer van de setpoint van de groep. Controleer of er in het KIPlan-netwerk niets losgekoppeld is. | A     | GR    |         |
| 5201 | Fout sonde 1 groep               | Fout sonde 1 van de controller van de groep. Door sonde 1 afgelezen waarde buiten de grenzen.                                      | A     | GR    |         |
| 5202 | Fout sonde 2 groep               | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5203 | Fout sonde 3 groep               | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5204 | Fout sonde 4 groep               | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5205 | Fout sonde 5 groep               | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5206 | Fout sonde 6 groep               | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5207 | Fout sonde 7 groep               | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5208 | Fout sonde 8 groep               | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5209 | Fout sonde 9 groep               | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5210 | Fout sonde 10 groep              | "analoog, zoals hierboven".                                                                                                        | A     | GR    |         |
| 5301 | Unit 1 offline                   | Unit 1 losgekoppeld van LAN Multi Manager-netwerk. Controleer de seriële aansluiting van de unit.                                  | A     | GR    |         |
| 5302 | Unit 2 offline                   | "analoog zoals hierboven voor unit 2".                                                                                             | A     | GR    |         |
| 5303 | Unit 3 offline                   | "analoog zoals hierboven voor unit 3".                                                                                             | A     | GR    |         |
| 5304 | Unit 4 offline                   | "analoog zoals hierboven voor unit 4".                                                                                             | A     | GR    |         |
| 5305 | Unit 5 offline                   | "analoog zoals hierboven voor unit 5".                                                                                             | A     | GR    |         |
| 5306 | Unit 6 offline                   | "analoog zoals hierboven voor unit 6".                                                                                             | A     | GR    |         |
| 5307 | Unit 7 offline                   | "analoog zoals hierboven voor unit 7".                                                                                             | A     | GR    |         |
| 5308 | Unit 8 offline                   | "analoog zoals hierboven voor unit 8".                                                                                             | A     | GR    |         |
| 5350 | KIPlink master offline           | KIPlink bestemd voor gegevensuitwisseling tussen externe en interne units losgekoppeld. Controleer de seriële aansluitingen.       | A     | GR    |         |
| 5401 | Storing unit 1                   | Alarmen groepssondes aanwezig herleidbaar naar unit 1                                                                              | A     | GR    |         |
| 5402 | Storing unit 2                   | "analoog zoals hierboven voor unit 2".                                                                                             | A     | GR    |         |
| 5403 | Storing unit 3                   | "analoog zoals hierboven voor unit 3".                                                                                             | A     | GR    |         |
| 5404 | Storing unit 4                   | "analoog zoals hierboven voor unit 4".                                                                                             | A     | GR    |         |
| 5405 | Storing unit 5                   | "analoog zoals hierboven voor unit 5".                                                                                             | A     | GR    |         |
| 5406 | Storing unit 6                   | "analoog zoals hierboven voor unit 6".                                                                                             | A     | GR    |         |
| 5407 | Storing unit 7                   | "analoog zoals hierboven voor unit 7".                                                                                             | A     | GR    |         |
| 5408 | Storing unit 8                   | "analoog zoals hierboven voor unit 8".                                                                                             | A     | GR    |         |

(\*\*): voor specifieke alarmgebeurtenissen van bepaalde compressorinverters wordt een speciale codering gegeven die een nauwkeurige beschrijving vormt van de gebeurtenis die afkomstig is van de inverter die het alarm heeft gegenereerd in de controller W3000+.

Voor de volledige lijst van specifieke alarmcodes, zie de volgende tabellen met inverteralarmen.

### 4.3 Tabel Alarmen van VSCM expansievoelers

Hieronder staan de alarmen van de voelers met de betekenis ervan, op basis van het gebruikte type printplaat en eventueel op basis van het type unit.

| AL  | pCO base / pCO Compact                                  |         | pCO5+                                                   |    |
|-----|---------------------------------------------------------|---------|---------------------------------------------------------|----|
| 421 | Transducer hoge druk circuit 1 / niveausensor circuit 1 | B1      | Transducer lage druk circuit 1                          | U1 |
| 422 | Transducer hoge druk circuit 2 / niveausensor circuit 2 | B2      | Transducer lage druk circuit 2                          | U2 |
| 423 | Vloeistoftemperatuur circuit 1                          | B3      | Vloeistoftemperatuur circuit 1 / niveausensor circuit 1 | U3 |
| 424 | Vloeistoftemperatuur circuit 2                          | B4      | Vloeistoftemperatuur circuit 2 / niveausensor circuit 2 | U4 |
| 425 | Transducer lage druk circuit 1                          | S1 EVO1 |                                                         |    |
| 426 | Transducer lage druk circuit 2                          | S1 EVO2 |                                                         |    |

| AL  | uPC                                                     |         | uPC MECH/MEHP-iS                                                                          |          |
|-----|---------------------------------------------------------|---------|-------------------------------------------------------------------------------------------|----------|
| 421 | Transducer hoge druk circuit 1 / niveausensor circuit 1 | B5      | Transducer lage druk circuit 1                                                            | B5       |
| 422 | Transducer hoge druk circuit 2 / niveausensor circuit 2 | B10     |                                                                                           |          |
| 423 | Vloeistoftemperatuur circuit 1                          | B3      | Vloeistoftemperatuur circuit 1 (in heatpump)<br>Aanzuigtemperatuur circuit 1 (in chiller) | B3<br>B6 |
| 424 | Vloeistoftemperatuur circuit 2                          | B4      |                                                                                           |          |
| 425 | Transducer lage druk circuit 1                          | S1 EVO1 |                                                                                           |          |
| 426 | Transducer lage druk circuit 2                          | S1 EVO2 |                                                                                           |          |

#### 4.4 Tabel alarmen Turbocor compressoren

Hieronder is het gedetailleerde overzicht van de alarmen voor de Turbocor compressoren opgenomen die door de compressor via seriële aansluiting naar de W3000+ worden gestuurd.

Eventuele meerdere compressoralarmcodes die onder dezelfde alarmcode in de controller W3000+ bijeengebracht zijn, zijn ook weergegeven.

| Alarm W3000+ |                                   |              | Alarm TURBOCOR |                                                                                                                 |
|--------------|-----------------------------------|--------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| AL           | Beschrijving                      | Modbus adres | Alarmbit       | Oorzaak van de storing                                                                                          |
| 141          | Compressor offline                |              |                | Loskoppeling turbocor                                                                                           |
| 161          | Stroomvoorziening compressormotor | 40106        | 0x0002         | DC bus high voltage detect                                                                                      |
|              |                                   |              | 0x0010         | IGBT inverter error signal active                                                                               |
|              |                                   |              | 0x0100         | Output voltage on the motor generate no current. IGBT inverter command signals disconnected or drive coil error |
|              |                                   |              | 0x0800         | Motor back EMF is low. Shaft might be demagnetized.                                                             |
|              |                                   |              | 0x2000         | Compressor is running in generator mode.                                                                        |
|              |                                   |              | 0x4000         | SCR phase loss.                                                                                                 |
|              |                                   | 40026        | 0x1000         | Winding Temperature                                                                                             |
|              |                                   |              | 0x2000         | Super Heat                                                                                                      |
|              |                                   |              | 0x4000         | Earth Leakage                                                                                                   |
|              |                                   |              | 0x8000         | Soft Start Temperature                                                                                          |
| 301          | Temperatuur inverter compressor   | 40026        | 0x0001         | Inverter temperature                                                                                            |
| 311          | Uitlaattertemperatuur compressor  |              | 0x0002         | Discharge temperature                                                                                           |
| 321          | Lage druk compressor              |              | 0x0004         | Suction pressure                                                                                                |
| 331          | Hoge druk compressor              |              | 0x0008         | Discharge pressure                                                                                              |
| 341          | Voedingsstroom compressor         |              | 0x0010         | 3 phase current trip                                                                                            |
| 351          | Temperatuur rotor compressor      |              | 0x0020         | Shaft cavity temperature                                                                                        |
| 361          | Compressieverhouding compressor   |              | 0x0080         | Total compression ratio fault                                                                                   |
| 371          | Lagers compressor                 |              | 0x0100         | Bearing motor fault                                                                                             |
| 381          | SCR temperatuur compressor        |              | 0x0400         | SCR temp fault                                                                                                  |
| 391          | Blokkering rotor compressor       | 40106        | 0x0020         | Mogelijke blokkering van de rotor                                                                               |

## 4.5 Tabel alarmen CSCV compressoren

Hieronder is het gedetailleerde overzicht van de alarmen voor de CSCV compressoren opgenomen die door de compressor via seriële aansluiting naar de W3000+ worden gestuurd.

Eventuele meerdere compressoralarmcodes die onder dezelfde alarmcode in de controller W3000+ bijeengebracht zijn, zijn ook weergegeven. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

| Alarm W3000+ |                                   | Alarmen CSCV compressor |                                  |                                                   |
|--------------|-----------------------------------|-------------------------|----------------------------------|---------------------------------------------------|
| AL           | Beschrijving                      | Nr.                     | Console                          | Oorzaak van de storing                            |
| 701          | Offline inverter                  |                         |                                  | Inverter losgekoppeld                             |
| 711          | Alarm stroomvoorziening           | 1200                    | Mains failure                    | Verlies van stroomvoorziening van wisselstroomnet |
|              |                                   | 5002                    | Over Voltage                     | Te hoge spanning                                  |
|              |                                   | 5003                    | Under Voltage                    | Te lage spanning                                  |
| 721          | Alarm motorvoeding                | 4000                    | Motor Overload                   | Overbelasting motor                               |
| 731          | Alarm stroomvoorziening inverter  | 5001                    | Over Current                     | Overstroom op uitgang                             |
| 751          | Alarm therm. beveil. motor        | 4301                    | Motor Thermal Overload           | Thermische sonde motor ingeschakeld               |
| 761          | Alarm therm. beveil. variator     | 5300                    | Over Temperature: Power Module   | Oververhitting: Power Module                      |
|              |                                   | 5301                    | Over Temperature: Cold Plate     | Oververhitting: Cold Plate                        |
|              |                                   | 5302                    | Over Temperature: Power I. Board | Oververhitting: Power I. Board                    |
|              |                                   | 6303                    | Over Temperature: Control Board  | Oververhitting: Control Board                     |
| 771          | Alarm IGBT                        | 5000                    | Inverter Output                  | Storing inverter                                  |
|              |                                   | 5004                    | FC Overload                      | Overbelasting inverter                            |
|              |                                   | 5801                    | HW Fault: Power MCU              | HW storing: Power MCU                             |
|              |                                   | 5802                    | HW Fault: Inrush Fault           | HW storing: Inrush Fault                          |
|              |                                   | 5803                    | HW Fault: Inrush Supply Fault    | HW storing: Inrush Supply Fault                   |
|              |                                   | 5810                    | HW Fault: Gate Drive U           | HW storing: Gate Drive U                          |
|              |                                   | 5811                    | HW Fault: Gate Drive V           | HW storing: Gate Drive V                          |
|              |                                   | 5812                    | HW Fault: Gate Drive W           | HW storing: Gate Drive W                          |
|              |                                   | 5820                    | HW Fault: Fan1 Speed Low         | HW storing: Fan1 Speed Low                        |
|              |                                   | 5821                    | HW Fault: Fan2 Speed Low         | HW storing: Fan2 Speed Low                        |
|              |                                   | 5851                    | HW Fault: 24 V                   | HW storing: 24 V                                  |
|              |                                   | 5852                    | HW Fault: 15V                    | HW storing: 15V                                   |
|              |                                   | 5853                    | HW Fault: N15V                   | HW storing: N15V                                  |
|              |                                   | 5854                    | HW Fault: PIB 3,3V               | HW storing: PIB 3,3V                              |
|              |                                   | 6801                    | HW Fault: Control MCU            | HW storing: Control MCU                           |
|              |                                   | 6810                    | HW Fault: CB 3,3V                | HW storing: CB 3,3V                               |
|              |                                   | 6811                    | HW Fault: User 5V                | HW storing: User 5V                               |
|              |                                   | 6812                    | HW Fault: User/Pres 5V           | HW storing: User/Pres 5V                          |
|              |                                   | 6850                    | HW Fault: Power MCU Comm         | HW storing: Power MCU Comm                        |
| 811          | Alarm communicatie                | 1100                    | Serial Control Timeout           | Verlies communicatie seriële aansluiting          |
| 821          | Alarm ingang beveiliging inverter | 2500                    | Safe Torque Off                  | Veilig uitgeschakeld koppel                       |
|              |                                   | 6814                    | HW: STO Diagnostics              | HW: Diagnostics STO                               |
|              |                                   | 6901                    | SW: STO Diagnostics              | SW: Diagnostics STO                               |
| 851          | Algemeen alarm                    | 3001                    | Envelope Fault: SST Low, SDT Low | Envelope fout: SST Low, SDT Low                   |
|              |                                   | 3002                    | Envelope Fault: SST Low, SDT OK  | Envelope fout: SST Low, SDT OK                    |

| Alarm W3000+ |      | Alarmen CSCV compressor                               |                                               |
|--------------|------|-------------------------------------------------------|-----------------------------------------------|
|              | 3003 | Envelope Fault: SST Low, SDT High                     | Envelope fout: SST Low, SDT High              |
|              | 3004 | Envelope Fault: SST OK, SDT High                      | Envelope fout: SST OK, SDT High               |
|              | 3005 | Envelope Fault: SST High, SDT High                    | Envelope fout: SST High, SDT High             |
|              | 3006 | Envelope Fault: SST High, SDT OK                      | Envelope fout: SST High, SDT OK               |
|              | 3007 | Envelope Fault: SST High, SDT Low                     | Envelope fout: SST High, SDT Low              |
|              | 3008 | Envelope Fault: SST OK, SDT Low                       | Envelope fout: SST OK, SDT Low                |
|              | 3010 | Envelope Fault: Startup Timeout                       | Envelope fout: Startup Timeout                |
|              | 3011 | Envelope Fault: Configuration Failure                 | Envelope fout: Configuration Failure          |
|              | 3300 | High Oil Temperature                                  | Overtemperatuur olie                          |
|              | 3400 | Suction pressure low                                  | Aanzuigdruk compressor laag                   |
|              | 3411 | Discharge Pressure High                               | Afvoerdruk compressor hoog                    |
|              | 5600 | HW Configuration Fault: Power Not Supported           | HW configuratiestoring: Power Not Supported   |
|              | 5601 | HW config: Gate Drive Missing                         | HW storing: Gate Drive ontbreekt              |
|              | 6601 | HW Configuration Fault: Control Not Supported         | HW configuratiestoring: Control Not Supported |
|              | 6602 | HW Configuration Fault: No XB                         | HW configuratiestoring: No XB                 |
|              | 5700 | Configuration Data Fault: Power Data                  | Fout in configuratiegegevens: Power Data      |
|              | 5701 | Configuration Data Fault: Prod Data                   | Fout in configuratiegegevens: Prod Data       |
|              | 6700 | Configuration Data Fault: No File                     | Fout in configuratiegegevens: No File         |
|              | 6701 | Configuration Data Fault: CRC error                   | Fout in configuratiegegevens: CRC error       |
|              | 6702 | Configuration Data Fault: Wrong version               | Fout in configuratiegegevens: Wrong version   |
|              | 6703 | Configuration Data Fault: Read Only                   | Fout in configuratiegegevens: Read Only       |
|              | 6900 | Datalog error                                         | Datalogger Fout                               |
|              | 5710 | Parameter Configuration Fault: Motor Data             | Fout in configuratieparameters: Motor Data    |
|              | 7300 | Temperature Sensor Fault: Power Module                | Storing temperatuursonde: Power Module        |
|              | 7301 | Temperature Sensor Fault: Cold Plate                  | Storing temperatuursonde: Cold Plate          |
|              | 7302 | Temperature Sensor Fault: Power I. Board              | Storing temperatuursonde: Power I. Board      |
|              | 7303 | Temperature Sensor Fault: Control Board               | Storing temperatuursonde: Control Board       |
|              | 7304 | Temperature Sensor Fault: Motor Thermistor            | Storing temperatuursonde: Motor Thermistor    |
|              | 7305 | Temperature Sensor Fault: Oil Temperature             | Storing temperatuursonde: Oil Temperature     |
|              | 7403 | Pressure Sensor Fault: Suction Pressure Signal Low    | Storing druksensor: inlaatdruksignaal laag    |
|              | 7404 | Pressure Sensor Fault: Suction Pressure Signal High   | Storing druksensor: inlaatdruksignaal hoog    |
|              | 7405 | Pressure Sensor Fault: Discharge Pressure Signal Low  | Storing druksensor: uitlaatdruksignaal laag   |
|              | 7406 | Pressure Sensor Fault: Discharge Pressure Signal High | Storing druksensor: uitlaatdruksignaal hoog   |

## 4.6 Tabel alarmen CSW105-compressoren

Hieronder is het gedetailleerde overzicht van de alarmen voor de CSW105-compressoren opgenomen die door de compressor via seriële aansluiting naar de W3000+ worden gestuurd.

Eventuele meerdere compressoralarmcodes die onder dezelfde alarmcode in de controller W3000+ bijeengebracht zijn, zijn ook weergegeven. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

| Alarm W3000+ |                            | Alarmen CSW105-compressor |                                                      |                                                                              |
|--------------|----------------------------|---------------------------|------------------------------------------------------|------------------------------------------------------------------------------|
| AL           | Beschrijving               | Nr.                       | Console                                              | Oorzaak van de storing                                                       |
| 701          | Offline inverter           |                           |                                                      | Inverter losgekoppeld                                                        |
| 711          | Alarm stroomvoorziening    | 1200                      | Mains failure                                        | Verlies van stroomvoorziening van wisselstroomnet                            |
| 721          | Alarm motorvoeding         | 3900                      | Locked rotor                                         | Rotor geblokkeerd                                                            |
|              |                            | 4201                      | Motor phase loss                                     | Faseverlies motor                                                            |
|              |                            | 4202                      | Motor phase sequence                                 | Fasevolgordefout                                                             |
|              |                            | 4220                      | Motor frequency low                                  | Lage motorfrequentie                                                         |
|              |                            | 4221                      | Motor frequency high                                 | Hoge motorfrequentie                                                         |
|              |                            | 8200                      | Low output current                                   | Lage uitgangsstroom                                                          |
|              |                            | 8201                      | High output current                                  | Hoge uitgangsstroom                                                          |
| 751          | Alarm therm. beveil. motor | 4301                      | Motor temperature high                               | Hoge motortemperatuur                                                        |
|              |                            | 4302                      | Motor temperature cooldown                           | Motorkoeling                                                                 |
| 811          | Alarm communicatie         | 1100                      | Serial Control Timeout                               | Verlies communicatie seriële aansluiting                                     |
| 851          | Algemeen alarm             | 1000                      | Too many identical resets in 24 hours                | Te veel identieke resets binnen 24 uur                                       |
|              |                            | 1001                      | Too many timed resets in 1 hour                      | Te veel resets binnen het uur                                                |
|              |                            | 2700                      | Setup fault                                          | Installatiefout                                                              |
|              |                            | 3001                      | Envelope: SST low, SDT low                           | Envelope: lage SST, lage SDT                                                 |
|              |                            | 3002                      | Envelope: SST low                                    | Envelope: lage SST                                                           |
|              |                            | 3003                      | Envelope: SST low, SDT high                          | Envelope: lage SST, hoge SDT                                                 |
|              |                            | 3004                      | Envelope: SDT high                                   | Envelope: hoge SDT                                                           |
|              |                            | 3005                      | Envelope: SST high, SDT high                         | Envelope: Hoge SST, Hoge SDT                                                 |
|              |                            | 3006                      | Envelope: SST high                                   | Envelope: hoge SST                                                           |
|              |                            | 3007                      | Envelope: SST high, SDT low                          | Envelope: Hoge SST, Lage SDT                                                 |
|              |                            | 3008                      | Envelope: SDT low                                    | Envelope: lage SDT                                                           |
|              |                            | 3010                      | Envelope: startup timeout                            | Envelope: startup timeout                                                    |
|              |                            | 3011                      | Envelope: Configuration failure                      | Envelope: configuratiefout                                                   |
|              |                            | 3022                      | Too many compressor starts                           | Te veel starten van de compressor                                            |
|              |                            | 3024                      | Minimum compressor stop time not respected           | Minimale stilstand van de compressor wordt niet gerespecteerd                |
|              |                            | 3025                      | Minimum compressor run time not respected            | Minimale loopduur compressor niet gerespecteerd                              |
|              |                            | 3026                      | Minimum compressor start to start time not respected | Minimale tijd tussen opeenvolgende compressorstarts wordt niet gerespecteerd |
|              |                            | 3027                      | Compressor start without being fully unloaded        | Compressor gestart zonder volledig afgevoerd te zijn                         |
|              |                            | 3302                      | Discharge temperature high                           | Hoge uitlaattemperatuur                                                      |
|              |                            | 3400                      | Suction pressure low                                 | Lage zuigdruk                                                                |
|              |                            | 3411                      | Discharge pressure high                              | Hoge afvoerdruk                                                              |
|              |                            | 3431                      | High pressure switch                                 | Interventie van de drukregelaar                                              |
|              |                            | 3501                      | Oil flow                                             | Oliedebietregelaar                                                           |

| Alarm W3000+ |      | Alarmen CSW105-compressor              |                                            |
|--------------|------|----------------------------------------|--------------------------------------------|
|              | 3502 | Oil pressure low                       | Lage oliedruk                              |
|              | 3503 | Oil stop valve                         | Olie-afsluitklep                           |
|              | 3520 | Oil injection has no effect            | Ineffectieve olie-injectie                 |
|              | 5851 | HW: 24 V                               | HW: 24 V                                   |
|              | 6700 | Config data: no file                   | Config data: no file                       |
|              | 6701 | Config data: CRC error                 | Config data: CRC error                     |
|              | 6702 | Config data: wrong version             | Config data: verkeerde versie              |
|              | 6703 | Config data: read only                 | Config data: alleen lezen                  |
|              | 6810 | HW: 3,3 V                              | HW: 3,3 V                                  |
|              | 6811 | HW: user 5 V                           | HW: 5 V gebruiker                          |
|              | 6813 | HW: 24 V                               | HW: 24 V                                   |
|              | 6900 | Datalog error                          | Datalogfout                                |
|              | 7304 | Sensor: motor thermistor               | Sensor: motorthermistor                    |
|              | 7308 | Sensor: Discharge temperature          | Sensor: uitlaattemperatuur                 |
|              | 7320 | Sensor: aux temperature                | Sensor: hulptemperatuur                    |
|              | 7401 | Sensor: suction pressure               | Sensor: zuigdruk                           |
|              | 7402 | Sensor: discharge pressure             | Sensor: uitlaatdruk                        |
|              | 7403 | Sensor: suction pressure signal low    | Sensor: signaal lage zuigdruk              |
|              | 7404 | Sensor: suction pressure signal high   | Sensor: signaal hoge zuigdruk              |
|              | 7405 | Sensor: discharge pressure signal low  | Sensor: signaal lage uitlaatdruk           |
|              | 7406 | Sensor: discharge pressure signal high | Sensor: signaal hoge uitlaatdruk           |
|              | 7510 | Sensor: oil protection                 | Sensor: oliebescherming                    |
|              | 7511 | Sensor: oil protection 2               | Sensor: oliebescherming 2                  |
|              | 7580 | Slider: no sensor detected             | Slider: geen sensor gedetecteerd           |
|              | 7581 | Slider: less than 2 magnets detected   | Slider: minder dan 2 magneten gedetecteerd |
|              | 7582 | Slider: sample data invalid            | Slider: onjuiste monstergegevens           |
|              | 7583 | Slider: more than 2 magnets detected   | Slider: meer dan 2 magneten gedetecteerd   |
|              | 7584 | Slider: position invalid               | Slider: onjuiste positie                   |
|              | 8202 | Output current: oil heater low         | Uitgangsstroom: olieverwarming (laag)      |
|              | 8203 | Output current: oil heater high        | Uitgangsstroom: olieverwarming (hoog)      |
|              | 8204 | Output current: additional fan low     | Uitgangsstroom: extra ventilator (laag)    |
|              | 8205 | Output current: head fan high          | Uitgangsstroom: extra ventilator (hoog)    |
|              | 8206 | Output current: CR-1 low               | Uitgangsstroom: CR-1 (laag)                |
|              | 8207 | Output current: CR-1 high              | Uitgangsstroom: CR-1 (hoog)                |
|              | 8208 | Output current: CR-2 low               | Uitgangsstroom: CR-2 (laag)                |
|              | 8209 | Output current: CR-2 high              | Uitgangsstroom: CR-2 (hoog)                |
|              | 8210 | Output current: CR-3 low               | Uitgangsstroom: CR-3 (laag)                |
|              | 8211 | Output current: CR-3 high              | Uitgangsstroom: CR-3 (hoog)                |
|              | 8212 | Output current: unloader low           | Uitgangsstroom: debietregelaar (laag)      |
|              | 8213 | Output current: unloader high          | Uitgangsstroom: debietregelaar (hoog)      |
|              | 8214 | Output current: oil inj low            | Uitgangsstroom: olie-injectie (laag)       |
|              | 8215 | Output current: oil inj high           | Uitgangsstroom: olie-injectie (hoog)       |
|              | 8216 | Output current: liquid inj low         | Uitgangsstroom: vloeistofinjectie (laag)   |
|              | 8217 | Output current: liquid inj high        | Uitgangsstroom: vloeistofinjectie (hoog)   |

| Alarm W3000+ |  | Alarmen CSW105-compressor |                                 |                              |
|--------------|--|---------------------------|---------------------------------|------------------------------|
|              |  | 8218                      | Output current: HW trip         | Uitgangsstroom: HW-fout      |
|              |  | 8580                      | Slider: Vi position control     | Slider: Vi-positieregeling   |
|              |  | 8581                      | Slider: CR position control     | Slider: CR-positieregeling   |
|              |  | 8582                      | Slider: Gap between Vi and CR   | Slider: gap tussen Vi en CR  |
|              |  | 8583                      | Slider: Gap between Zero and Vi | Slider: gap tussen nul en Vi |



## 4.7 Tabel alarmen M35A compressoren met inverter

Hieronder worden in detail de alarmen voor de M35A compressoren met inverter beschreven die door de inverter via seriële aansluiting naar de W3000+ gezonden worden.

Ook de eventuele groepering van meerdere inverteralarmcodes onder dezelfde alarmcode in de W3000 + controller is vermeld. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

| Alarm W3000+ |                                  | Alarmen M35A compressoren met inverter |                                                    |                                              |
|--------------|----------------------------------|----------------------------------------|----------------------------------------------------|----------------------------------------------|
| AL           | Beschrijving                     | Nr.                                    | Beschrijving                                       | Oorzaak van de storing                       |
| 701          | Offline inverter                 |                                        |                                                    | Inverter losgekoppeld                        |
| 711          | Alarm stroomvoorziening          | 5                                      | DC Bus under voltage (LU)                          | Overspanning op DC link tussencircuit        |
|              |                                  | 6                                      | DC Bus over voltage (OU)                           | Onderspanning op DC link tussencircuit       |
|              |                                  | 10                                     | Over current at acceleration state (Software trip) | Overstroom inverter tijdens acceleratiefase  |
|              |                                  | 12                                     | Over current at steady state (Software trip)       | Overstroom inverter tijdens stationaire fase |
|              |                                  | 13                                     | Over current at deceleration state (Software trip) | Overstroom inverter tijdens deceleratiefase  |
| 721          | Alarm motorvoeding               | 2                                      | Over current at acceleration state (Hardware trip) | Overstroom motor tijdens acceleratiefase     |
|              |                                  | 3                                      | Over current at steady state (Hardware trip)       | Overstroom motor tijdens stationaire fase    |
|              |                                  | 4                                      | Over current at deceleration state (Hardware trip) | Overstroom motor tijdens deceleratiefase     |
| 731          | Alarm stroomvoorziening inverter | 11                                     | Overload trip (OL)                                 | Nominale stroom inverter overschreden        |
| 751          | Alarm therm. beveil. motor       | 7                                      | Compressor Overheat (Software trip)                | Oververhitting motor                         |
| 811          | Alarm communicatie               | 14                                     | Compressor connected loss                          | Verlies communicatie seriële aansluiting     |
|              |                                  | 15                                     | Communication time out error                       | Time-out communicatie                        |
| 851          | Algemeen alarm                   | 1                                      | Fin Overheat                                       | Oververhitting koellichaam inverter          |
|              |                                  | 16                                     | Power module over temperature                      | Besturingskaart inverter oververhit          |
|              |                                  | 20                                     | Driver error                                       | Algemene fout driver                         |
|              |                                  | 30                                     | Emergency switch active (HW)                       | Activering noodstop (hardware)               |
|              |                                  | 31                                     | Emergency switch active (SW)                       | Activering noodstop (software)               |
|              |                                  | 40                                     | Abnormal condition                                 | Abnormale werkingsomstandigheden             |
|              |                                  | 128                                    | Internal memory error                              | Storing inwendig geheugen inverter           |
|              |                                  | 129                                    | Internal memory error                              | Storing inwendig geheugen inverter           |

## 4.8 Tabel alarmen Danfoss invertercompressoren

Hieronder is het gedetailleerde overzicht van de alarmen voor de Danfoss invertercompressoren opgenomen die door de inverter via seriële aansluiting naar de W3000+ worden gestuurd.

Ook de eventuele groepering van meerdere inverteralarmcodes onder dezelfde alarmcode in de W3000 + controller is vermeld. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

| Alarm W3000+ |                                  | Alarmen Danfoss invertercompressor |                                   |                                                                                                                  |
|--------------|----------------------------------|------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------|
| AL           | Beschrijving                     | Nr.                                | Beschrijving                      | Oorzaak van de storing                                                                                           |
| 701          | Offline inverter                 |                                    |                                   | Inverter losgekoppeld                                                                                            |
| 711          | Alarm stroomvoorziening          | 4                                  | Mains phase loss                  | Uitval van een fase van de voedingsspanning of spanningsonbalans tussen de fases te groot                        |
|              |                                  | 7                                  | DC over voltage                   | Overspanning op DC link tussencircuit                                                                            |
|              |                                  | 8                                  | DC under voltage                  | Onderspanning op DC link tussencircuit                                                                           |
|              |                                  | 36                                 | Mains failure                     | Uitval voedingsspanning                                                                                          |
| 721          | Alarm motorvoeding               | 13                                 | Over Current                      | Overstroom op uitgang                                                                                            |
|              |                                  | 14                                 | Earth Fault                       | Aardlekken van de uitgangsfases van de inverter (in de kabel tussen de inverter en de motor of in de motor zelf) |
|              |                                  | 16                                 | Short Circuit                     | Kortsluiting in de motor of in de aansluitverbindingen op de motor                                               |
|              |                                  | 30                                 | Motor phase U is missing          | Uitval van fase U tussen de inverter en de motor                                                                 |
|              |                                  | 31                                 | Motor phase V is missing          | Uitval van fase V tussen de inverter en de motor                                                                 |
|              |                                  | 32                                 | Motor phase W is missing          | Uitval van fase W tussen de inverter en de motor                                                                 |
|              |                                  | 33                                 | Inrush fault                      | Te groot aantal power-ups in korte tijd                                                                          |
| 731          | Alarm stroomvoorziening inverter | 9                                  | Inverter overloaded               | Nominale stroom inverter overschreden                                                                            |
| 751          | Alarm therm. beveil. motor       | 10                                 | Motor ETR over temperature        | Motor oververhit (Electronic Thermal Protection)                                                                 |
|              |                                  | 11                                 | Motor thermistor over temperature | Motor oververhit (thermistor) of thermistor eventueel losgekoppeld                                               |
| 811          | Alarm communicatie               | 17                                 | Control Word Timeout              | Verlies communicatie seriële aansluiting                                                                         |
|              |                                  | 34                                 | Fieldbus communication fault      | Fieldbus communicatiekaart functioneert niet                                                                     |
| 851          | Algemeen alarm                   | 2                                  | Live zero error                   | Het signaal naar de aansluitingen 53 of 54 is 50% van het minimum dat voor deze aansluitingen is ingesteld       |
|              |                                  | 12                                 | Torque limit                      | Het afgegeven koppel is groter dan de ingestelde maximum grens                                                   |
|              |                                  | 23                                 | Internal fans fault               | Inverterventilatoren in storing of niet geïnstalleerd                                                            |
|              |                                  | 24                                 | External fan fault                | Inverterventilatoren in storing of niet geïnstalleerd                                                            |
|              |                                  | 25                                 | Brake resistor short-circuited    | Kortsluiting in remweerstand                                                                                     |
|              |                                  | 26                                 | Brake resistor power limit        | Het gedissipeerde vermogen door de remweerstand is groter dan de ingestelde maximum grens                        |
|              |                                  | 27                                 | Brake chopper fault               | Storing transistor remweerstand                                                                                  |
|              |                                  | 28                                 | Brake check failed                | Storing remweerstand                                                                                             |
|              |                                  | 29                                 | Drive over temperature            | Inverter oververhit (95 °C ± 5 °C)                                                                               |
|              |                                  | 38                                 | Internal fault                    | Inwendige storing inverter                                                                                       |
|              |                                  | 47                                 | 24 V supply low                   | Storing besturingskaart inverter                                                                                 |
|              |                                  | 48                                 | 1,8 V supply low                  | Storing besturingskaart inverter                                                                                 |
|              |                                  | 50 + 58                            | AMA not ok                        | AMA fout (Automatic Motor Adaptation)                                                                            |

| Alarm W3000+ |  | Alarmen Danfoss invertercompressor |                                    |                                                            |
|--------------|--|------------------------------------|------------------------------------|------------------------------------------------------------|
|              |  | 65                                 | Control Card Over Temperature      | Besturingskaart inverter oververhit                        |
|              |  | 67                                 | Option Configuration has Changed   | Optionele modules toevoegen/verwijderen                    |
|              |  | 68                                 | Safe Stop                          | Safe Stop functie geactiveerd                              |
|              |  | 80                                 | Drive Initialised to Default Value | De inverter is handmatig op de fabriekswaarden geïnitieerd |
|              |  | 95                                 | Broken Belt                        | Koppel lager dan ingestelde minimum grens                  |
|              |  | 250                                | New Spare Part                     | Inwendig onderdeel inverter vervangen                      |
|              |  | 251                                | New Type Code                      | De inverter heeft een nieuwe Type Code                     |

## 4.9 Tabel alarmen Mitsubishi FR-F800 invertercompressoren

Hieronder worden in detail de alarmen voor de Mitsubishi compressoren met inverter beschreven die door de inverter via seriële aansluiting naar de W3000 + gezonden worden.

Ook de eventuele groepering van meerdere inverteralarmcodes onder dezelfde alarmcode in de W3000 + controller is vermeld. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

| Alarm W3000+ |                                     | Alarmen Mitsubishi FR-F800 invertercompressoren |     |                                                            |                                                                                   |
|--------------|-------------------------------------|-------------------------------------------------|-----|------------------------------------------------------------|-----------------------------------------------------------------------------------|
| AL           | Beschrijving                        | Code display inverter                           | Nr. | Beschrijving                                               | Oorzaak van de storing                                                            |
| 701          | Offline inverter                    |                                                 |     |                                                            | Inverter losgekoppeld                                                             |
| 711          | Alarm stroomvoorziening             | E.OV1                                           | 32  | Regenerative overvoltage trip during acceleration          | Overspanning op DC tussencircuit tijdens acceleratie                              |
|              |                                     | E.OV2                                           | 33  | Regenerative overvoltage trip during constant speed        | Overspanning op DC tussencircuit op constante snelheid                            |
|              |                                     | E.OV3                                           | 34  | Regenerative overvoltage trip during deceleration or stop  | Overspanning op DC tussencircuit tijdens deceleratie                              |
|              |                                     | E.IPF                                           | 80  | Instantaneous power failure                                | Uitval voedingsspanning                                                           |
|              |                                     | E.UVT                                           | 81  | Undervoltage                                               | Onderspanning voeding van inverter                                                |
|              |                                     | E.ILF                                           | 82  | Input phase loss                                           | Uitval van fase van voedingsspanning                                              |
|              |                                     | E.GF                                            | 128 | Output side earth (ground) fault overcurrent               | Overmatige lekstroom                                                              |
|              |                                     | E.LF                                            | 129 | Output phase loss                                          | Uitval van fase tussen inverter en motor                                          |
|              |                                     | E.IOH                                           | 197 | Inrush current limit circuit fault                         | Oververhitting van weerstand inschakelcircuit                                     |
| 721          | Alarm motorvoeding                  | E.OC1                                           | 16  | Overcurrent trip during acceleration                       | Overstroom op uitgang tijdens acceleratie                                         |
|              |                                     | E.OC2                                           | 17  | Overcurrent trip during constant speed                     | Overstroom op uitgang op constante snelheid                                       |
|              |                                     | E.OC3                                           | 18  | Overcurrent trip during deceleration or stop               | Overstroom op uitgang tijdens deceleratie                                         |
|              |                                     | E.THM                                           | 49  | Motor overload trip (electronic thermal relay function)    | Motor oververhit (Electronic Thermal Protection)                                  |
|              |                                     | E.CDO                                           | 196 | Abnormal output current detection                          | Overstroom op uitgang                                                             |
| 731          | Alarm stroomvoorziening inverter    | E.THT                                           | 48  | Inverter overload trip (electronic thermal relay function) | Nominale stroom inverter overschreden                                             |
| 751          | Alarm therm. beveil. motor          | E.OHT                                           | 144 | External thermal relay operation                           | Oververhitting motor waargenomen door thermistor binnenzijde of buitenzijde motor |
| 791          | Alarm oversnelheid                  | E.LUP                                           | 98  | Upper limit fault detection                                | Overbelasting motor                                                               |
| 811          | Alarm communicatie                  | E.OPT                                           | 160 | Option fault                                               | Alarm vast te stellen door parameters                                             |
|              |                                     | E.OP1                                           | 161 | Communication option fault                                 | Verlies communicatie seriële aansluiting                                          |
|              |                                     | E.PUE                                           | 177 | PU disconnection                                           | Verlies communicatie tussen inverter en vermogensunit                             |
|              |                                     | E.SER                                           | 198 | Communication fault (inverter)                             | Verlies communicatie seriële aansluiting                                          |
|              |                                     | E.EHR                                           | 231 | Ethernet communication fault                               | Verlies communicatie ethernet aansluiting                                         |
| 821          | Alarm ingang beveiliging inverter 1 | E.SAF                                           | 201 | Safety circuit error                                       | Fout veiligheidscircuit                                                           |
| 851          | Algemeen alarm                      | E.FIN                                           | 64  | Heatsink overheat                                          | Oververhitting koellichaam inverter                                               |
|              |                                     | E.OLT                                           | 96  | Stall prevention stop                                      | Stop door preventiefunctie van stilstand                                          |
|              |                                     | E.SOT                                           | 97  | Loss of synchronism detection                              | Verlies synchronisme tussen inverter en motor                                     |
|              |                                     | E.LDN                                           | 99  | Lower limit fault detection                                | Onderbelasting motor                                                              |

| Alarm W3000+ |  | Alarmen Mitsubishi FR-F800 invertercompressoren |     |                                                                                       |                                                                            |
|--------------|--|-------------------------------------------------|-----|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
|              |  | E.BE                                            | 112 | Internal circuit fault                                                                | Inwendige storing inverter                                                 |
|              |  | E.PTC                                           | 145 | PTC thermistor operation                                                              | Stop door overtemperatuur PTC thermistor                                   |
|              |  | E.16                                            | 164 | User definition error by the PLC function                                             | Alarmen vastgesteld door PLC functies                                      |
|              |  | E.17                                            | 165 |                                                                                       |                                                                            |
|              |  | E.18                                            | 166 |                                                                                       |                                                                            |
|              |  | E.19                                            | 167 |                                                                                       |                                                                            |
|              |  | E.20                                            | 168 |                                                                                       |                                                                            |
|              |  | E.PE                                            | 176 | Parameter storage device fault                                                        | Storing opslag parameters (besturingskaart)                                |
|              |  | E.RET                                           | 178 | Retry count excess                                                                    | Overschrijding maximum aantal automatische reset alarmen                   |
|              |  | E.PE2                                           | 179 | Parameter storage device fault                                                        | Storing opslag parameters (hoofdkaart)                                     |
|              |  | E.CPU                                           | 192 | CPU fault                                                                             | Storing CPU inverter                                                       |
|              |  | E.CTE                                           | 193 | Operation panel power supply short circuit/RS-485 terminal power supply short circuit | Kortsluiting schakelpaneel / kortsluiting communicatieaansluitingen RS-485 |
|              |  | E.P24                                           | 194 | 24 V DC power fault                                                                   | Kortsluiting voeding 24 V DC                                               |
|              |  | E.AIE                                           | 199 | Analog input fault                                                                    | Abnormale stroom of spanning op ingang naar aansluiting 2                  |
|              |  | E.USB                                           | 200 | USB communication fault                                                               | Verlies communicatie USB aansluiting                                       |
|              |  | E.PBT                                           | 202 | Internal circuit fault                                                                | Inwendige storing inverter                                                 |
|              |  | E.OS                                            | 208 | Overspeed occurrence                                                                  | Oversnelheid motor                                                         |
|              |  | E.LCI                                           | 228 | 4 mA input fault                                                                      | Stroomniveau analoge ingang lager dan 2 mA                                 |
|              |  | E.PCH                                           | 229 | Pre-charge fault                                                                      | Storing voorvullen                                                         |
|              |  | E.PID                                           | 230 | PID signal fault                                                                      | Storing PID regeling                                                       |
|              |  | E. 1                                            | 241 | Option fault                                                                          | Storing aansluiting optionele kaarten                                      |
|              |  | E. 2                                            | 242 |                                                                                       |                                                                            |
|              |  | E. 3                                            | 243 |                                                                                       |                                                                            |
|              |  | E. 5                                            | 245 | CPU fault                                                                             | Storing CPU inverter                                                       |
|              |  | E. 6                                            | 246 |                                                                                       |                                                                            |
|              |  | E. 7                                            | 247 |                                                                                       |                                                                            |
|              |  | E.13                                            | 253 | Internal circuit fault                                                                | Inwendige storing inverter                                                 |

## 4.10 Tabel alarmeren compressoren met STEP-inverter

Hieronder is het gedetailleerde overzicht van de alarmeren voor de STEP invertercompressoren opgenomen die door de inverter via seriële aansluiting naar de W3000+ worden gestuurd.

Ook de eventuele groepering van meerdere inverteralarmcodes onder dezelfde alarmcode in de W3000 + controller is vermeld. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

| Alarm W3000+ |                         | Alarmeren compressor met STEP-inverter |                                    |                                                                                                                                                                                                                                                                                                             |
|--------------|-------------------------|----------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AL           | Beschrijving            | Nr.                                    | Beschrijving                       | Oorzaak van de storing                                                                                                                                                                                                                                                                                      |
| 701          | Offline inverter        |                                        |                                    | Inverter losgekoppeld                                                                                                                                                                                                                                                                                       |
| 711          | Alarm stroomvoorziening | 8                                      | Bus over voltage protection        | Abnormal input voltage<br>Re-rapid starting during motor in high speed rotating<br>Too high load rotational inertia<br>Too short deceleration time<br>Too high braking resistance or no resistor<br>Abnormal input power<br>Too large load rotational inertia<br>Too high braking resistance or no resistor |
|              |                         | 9                                      | Bus undervoltage                   | Power voltage lower than minimum equipment working voltage<br>Instantaneous power off<br>Too high fluctuation of input power voltage<br>Loose power connection block<br>Internal switch power abnormal<br>A large starting current load existing in the same power supply system                            |
|              |                         | 23                                     | Input over-voltage                 | Too high input voltage<br>Problem by detection loop of switch voltage                                                                                                                                                                                                                                       |
|              |                         | 29                                     | Loss input phase                   | Abnormal voltage at input side<br>Loss input voltage phase<br>Input terminal block loose                                                                                                                                                                                                                    |
|              |                         | 44                                     | The input power supply is abnormal | The input power supply changes a lot<br>Input contactor abnormally connected<br>Temporary electricity                                                                                                                                                                                                       |
| 721          | Alarm motorvoeding      | 10                                     | Loss of output phase               | Abnormal wiring at inverter output, missing or breaking connection<br>Loose output terminal block<br>Insufficient motor power, less than 1/20 of maximum applicable inverter motor capacity<br>Unbalanced three phase output                                                                                |
|              |                         | 11                                     | Motor over current at low speed    | Low network voltage<br>Improper motor parameter setting<br>Rapid start during motor running<br>The acceleration time for load inertia (GD2) is too short.<br>Low network voltage<br>Too large load rotational inertia<br>Improper motor parameter setting<br>Too short deceleration time                    |

| Alarm W3000+ |                                  | Alarmer compressor met STEP-inverter |                                                       |                                                                                                     |
|--------------|----------------------------------|--------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
|              |                                  |                                      |                                                       | The deceleration time for load inertia (GD2) is too short                                           |
|              |                                  |                                      |                                                       | Abrupt load change in running                                                                       |
|              |                                  |                                      |                                                       | Improper motor parameter setting                                                                    |
|              |                                  | 16                                   | Wrong motor phase                                     | Motor reversed connected                                                                            |
|              |                                  | 21                                   | abc over current                                      | Motor single phase shorted to earth                                                                 |
|              |                                  |                                      |                                                       | Encoder fault                                                                                       |
|              |                                  |                                      |                                                       | Test loop of drive board fault                                                                      |
|              |                                  | 27                                   | Output over current                                   | Too long time operation under overload status. The larger the load, the shorter the time is.        |
|              |                                  |                                      |                                                       | Motor blocked                                                                                       |
|              |                                  |                                      |                                                       | Motor coil short                                                                                    |
|              |                                  |                                      |                                                       | Output short                                                                                        |
|              |                                  | 31                                   | Over current at motor high speed                      | Power grid voltage too low                                                                          |
|              |                                  |                                      |                                                       | Abrupt load in operation                                                                            |
|              |                                  |                                      |                                                       | Incorrect motor parameter                                                                           |
|              |                                  | 32                                   | Grounding protection                                  | Wrong encoder parameter or interference                                                             |
|              |                                  |                                      |                                                       | Wrong wiring                                                                                        |
|              |                                  |                                      |                                                       | Abnormal motor                                                                                      |
|              |                                  | 35                                   | Unbalance output                                      | Large drain current to earth at inverter output side                                                |
|              |                                  |                                      |                                                       | Abnormal wiring at inverter output side, missing or broken connection                               |
|              |                                  |                                      |                                                       | Motor three phase unbalance                                                                         |
|              |                                  | 39                                   | Too high instantaneous current                        | Three phase instantaneous current over and alarm while Ia, Ib and Ic not in operation               |
|              |                                  | 42                                   | IGBT short circuit protection                         | The cause is the same as Fault 1.                                                                   |
|              |                                  | 45                                   | I <sub>2t</sub> instantaneous over current protection | Same as fault 21,27                                                                                 |
|              |                                  | 46                                   | I <sub>2t</sub> valid over current protection         |                                                                                                     |
|              |                                  | 51                                   | Abnormal running output current                       | Improper parameter setting Disconnection between the inverter and the motor Inverter hardware fault |
| 731          | Alarm stroomvoorziening inverter | 1                                    | Module over-current protection                        | Too high voltage at DC terminal                                                                     |
|              |                                  |                                      |                                                       | Possible short connection to peripheral circuit                                                     |
|              |                                  |                                      |                                                       | Losing output phase                                                                                 |
|              |                                  |                                      |                                                       | Encoder fault                                                                                       |
|              |                                  |                                      |                                                       | Hardware poor contact or damage                                                                     |
|              |                                  |                                      |                                                       | Internal component loose                                                                            |
|              |                                  |                                      |                                                       | The power circuit components overheat due to the cooling fan or cooling system problem.             |
| 811          | Alarm communicatie               | 43                                   | Communication fault                                   | Communication disconnected No communication data received within the fixed time                     |
| 851          | Algemeen alarm                   | 2                                    | 2 ADC fault                                           | Current sensor damaged                                                                              |
|              |                                  |                                      |                                                       | Problem of current sampling loop                                                                    |
|              |                                  | 3                                    | Heatsink overheat                                     | Ambient temperature too high                                                                        |
|              |                                  |                                      |                                                       | The cooling fan damaged or foreign object entered into the cooling system.                          |
|              |                                  |                                      |                                                       | Cooling fan is abnormal                                                                             |
|              |                                  |                                      |                                                       | Temperature detect circuit fault                                                                    |
|              |                                  | 4                                    | Braking unit failure                                  | Braking unit damaged                                                                                |

| Alarm W3000+ |    | Alarmer compressor met STEP-inverter |                                                                         |
|--------------|----|--------------------------------------|-------------------------------------------------------------------------|
|              |    |                                      | External braking resistor circuit short                                 |
|              | 5  | Blown fuse failure                   | Fuse blown by high current                                              |
|              | 6  | Over torque output                   | Too low input voltage                                                   |
|              |    |                                      | Motor stop rotating or abrupt loading change                            |
|              |    |                                      | Encoder failure                                                         |
|              |    |                                      | Missing output phase                                                    |
|              | 7  | Speed deviation                      | Too short acceleration time                                             |
|              |    |                                      | Too high load                                                           |
|              |    |                                      | Too low current limit                                                   |
|              | 13 | Current detected at stopping         | Current keep on flowing while motor stops                               |
|              | 22 | Brake detection fault                | Inactive output relay                                                   |
|              |    |                                      | Relay triggered, brake not released                                     |
|              |    |                                      | No signal detected by feedback component                                |
|              | 30 | Over speed protection                | Wrong encoder parameter set or interference                             |
|              |    |                                      | Abrupt load change                                                      |
|              |    |                                      | Wrong parameter for over speed protection                               |
|              | 33 | Capacitor aged                       | Inverter capacitor aged                                                 |
|              | 34 | External fault                       | External fault signal input                                             |
|              | 36 | Wrong parameter setting              | Wrong parameter setting                                                 |
|              | 37 | Current sensor fault                 | Drive board hardware fault                                              |
|              | 38 | Brake resistor short                 | Connection of external brake resistor short                             |
|              | 40 | KMY detection fault                  | KMY detect contactor signal and KMY control signal don't match          |
|              | 41 | Brake switch detection fault         | Brake switch detect contactor signal and its control signal don't match |



## 4.11 Tabel alarmen compressoren met PSD-inverter

In de tabel staan de alarmcodes en statussen van de PSD-inverter (die via seriële verbinding verzonden worden naar de controller W3000+) en de betreffende alarmcode van de controller W3000+. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

Voor de alarmen met automatische reset (zie de paragraaf "alarmtabel W3000+") is het maximale aantal voorvallen 3 per minuut, daarna is handmatige interventie vereist.

De W3000+ controller probeert het alarm elke 2 minuten automatisch te resetten tot een maximum van 10 pogingen, waarna het alarm handmatig wordt gereset.

In het geval van veiligheidsalarmen (waarden groter dan 100 of 200 onder de kolom Nr./Bit in de tabel) moet er 240 seconden worden gewacht voordat het alarm kan worden gereset.

Voor de volgende tabel wordt de codering van alarmen die afkomstig zijn van de inverter als volgt weergegeven:

1-28: basisalarmcode

100-115: status veiligheidsalarmen 1 (elk nummer komt overeen met de relatieve bits van het eerste register in oplopende volgorde. Voorbeeld: 100 = bit 0)

200-215: status veiligheidsalarmen 2 (elk nummer komt overeen met de relatieve bits van het tweede register in oplopende volgorde. Voorbeeld: 201 = bit 1)

| Alarm W3000+ |                          | Alarmen compressor met PSD-inverter |        |                                            |
|--------------|--------------------------|-------------------------------------|--------|--------------------------------------------|
| AL           | Beschrijving             | Variabele                           | Nº/Bit | Beschrijving                               |
| 701          | Offline inverter         |                                     |        | Inverter losgekoppeld                      |
| 711          | Alarm stroomvoorziening  | Alarmcode                           | 1      | Te hoge stroom                             |
|              |                          |                                     | 3      | Te hoge spanning                           |
|              |                          |                                     | 4      | Te lage spanning                           |
|              |                          |                                     | 7      | Te hoge stroom HW                          |
|              |                          |                                     | 21     | Te hoge voedingsspanning                   |
|              |                          |                                     | 22     | Te lage voedingsspanning of fase ontbreekt |
|              |                          |                                     | 25     | Aardingsfout                               |
|              |                          |                                     | 28     | Overbelasting drive                        |
|              |                          | Status alarm 1                      | 100    | Fout in meting U,V,W-stromen               |
|              |                          |                                     | 101    | Onbalans U,V,W-stromen                     |
|              |                          |                                     | 102    | Te hoge stroom of aardingsfout             |
|              |                          |                                     | 105    | Geen voeding                               |
|              |                          |                                     | 114    | Te lage voedingsspanning                   |
|              |                          |                                     | 115    | Fout in meting voedingsspanning            |
| 721          | Alarm motorvoeding       | Alarmcode                           | 2      | Overbelasting motor                        |
|              |                          |                                     | 17     | Motorfase ontbreekt                        |
|              |                          |                                     | 19     | Motor gestopt                              |
|              |                          | Status alarm 1                      | 106    | Fout in besturing motor                    |
|              |                          |                                     | 109    | Compressor gestopt                         |
| 801          | Alarm veldbus inverter 1 | Alarmcode                           | 12     | Golving DC-bus                             |
|              |                          |                                     | 10     | Te hoge stroom DC-bus                      |
|              |                          | Status alarm 1                      | 11     | Fout meting stroom DC-bus                  |
|              |                          |                                     | 12     | Spanning DC-bus buiten grens               |
|              |                          |                                     | 13     | Fout meting spanning DC-bus                |

| Alarm W3000+ |                                           | Alarmeren compressor met PSD-inverter |     |                                   |
|--------------|-------------------------------------------|---------------------------------------|-----|-----------------------------------|
|              |                                           | Status alarm 2                        | 200 | Overbelasting DC-bus              |
|              |                                           |                                       | 201 | Fout meting belasting DC-bus      |
| 811          | Alarm communicatie                        | Alarmcode                             | 13  | Seriële communicatiefout          |
|              |                                           | Status alarm 1                        | 108 | Seriële communicatiefout          |
| 821          | Alarm ingang beveiliging inverter 1 (STO) | Status alarm 1                        | 103 | STO-ingang open                   |
|              |                                           |                                       | 104 | Storing intern STO-circuit        |
| 851          | Algemeen alarm                            | Alarmcode                             | 5   | Te hoge temperatuur drive         |
|              |                                           |                                       | 6   | Te lage temperatuur drive         |
|              |                                           |                                       | 10  | CPU-fout                          |
|              |                                           |                                       | 11  | Standaardparameters               |
|              |                                           |                                       | 14  | Interne thermistor defect         |
|              |                                           |                                       | 20  | Fout PFC-module                   |
|              |                                           |                                       | 26  | Synchronisatiefout 1 CPU          |
|              |                                           |                                       | 27  | Synchronisatiefout 2 CPU          |
|              |                                           | Status alarm 2                        | 202 | Te hoge temperatuur drive         |
|              |                                           |                                       | 203 | Te lage temperatuur drive         |
|              |                                           |                                       | 204 | Interne thermistor defect         |
|              |                                           |                                       | 205 | Synchronisatiefout                |
|              |                                           |                                       | 206 | Veiligheidsparameters niet geldig |
|              |                                           |                                       | 208 | Fout bestuurscircuit              |

## 4.12 Alarmentabel ABB ACH 580 invertercompressoren

Hieronder is het gedetailleerde overzicht van de alarmen voor de ABB invertercompressoren opgenomen die door de inverter via seriële aansluiting naar de W3000+ worden gestuurd.

Ook de eventuele groepering van meerdere inverteralarmcodes onder dezelfde alarmcode in de W3000 + controller is vermeld. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

| Alarm W3000+ |                                  | Alarmen ABB ACH 580 invertercompressor |                                         |                                                                                                                                                                                                                  |
|--------------|----------------------------------|----------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AL           | Beschrijving                     | Nr.                                    | Beschrijving                            | Oorzaak van de storing                                                                                                                                                                                           |
| 701          | Offline inverter                 |                                        |                                         | Inverter losgekoppeld.                                                                                                                                                                                           |
| 711          | Alarm stroomvoorziening          | 2330                                   | Aardlek                                 | De omvormer heeft een onbalans in de belasting waargenomen, gewoonlijk te wijten aan een aardingsprobleem in de motor of de motorkabel.                                                                          |
|              |                                  | 3130                                   | Faseuitval ingang                       | De gelijkstroomspanning van het tussencircuit schommelt vanwege fase-uitval op de inkomende vermogenslijn of door een doorgebrande zekering.                                                                     |
|              |                                  | 3210                                   | DC-koppeling overspanning               | Te hoge gelijkstroomspanning van het tussencircuit.                                                                                                                                                              |
|              |                                  | 3220                                   | Underspanning gelijkstroomverbinding    | De gelijkstroomspanning van het tussencircuit is onvoldoende vanwege: uitval van een voedingsfase, een doorgebrande zekering of een defect in de gelijkrichterbrug.                                              |
| 721          | Alarm motorvoeding               | 2340                                   | Kortsluiting                            | Kortsluiting in de motorkabel(s) of in de motor zelf.                                                                                                                                                            |
|              |                                  | 3181                                   | Defect in de bedrading of de aarding    | Onjuiste verbinding van het inkomende vermogen en de motorkabel (d.w.z. de inkomende vermogenskabel is verbonden met de motoraansluiting van de frequentieomvormer).                                             |
|              |                                  | 3381                                   | Faseuitval uitgang                      | Defect in het motorcircuit vanwege een ontbrekende verbinding van de motor (niet alle drie de fasen zijn aangesloten).                                                                                           |
|              |                                  | 8002                                   | Defect wegens overbelasting ULC         | Belastingscurve gebruiker: het signaal is te lang boven de overbelastingscurve geweest.                                                                                                                          |
| 731          | Alarm stroomvoorziening inverter | 2310                                   | Te hoge stroom                          | De uitgaande stroom heeft de interne foutlimiet overschreden. Afgezien van een effectieve situatie met overstroom, kan dit defect ook zijn veroorzaakt door een aardingsprobleem of uitval van een voedingsfase. |
| 771          | Alarm IGBT                       | 2381                                   | Overbelasting IGBT                      | Te hoge temperatuur koppeling IGBT-doos. Dit defect beveiligd de IGBT's en kan worden geactiveerd door kortsluiting in de motorkabel.                                                                            |
|              |                                  | 4210                                   | Overtemperatuur IGBT                    | Te hoge geschatte temperatuur van de IGBT's van de omvormer.                                                                                                                                                     |
|              |                                  | 4201                                   | Temperatuur IGBT                        | Te hoge temperatuur van de IGBT's van de omvormer.                                                                                                                                                               |
|              |                                  | 4380                                   | Te groot temperatuurverschil            | Te groot temperatuurverschil tussen de IGBT's van verschillende fasen.                                                                                                                                           |
|              |                                  | 7191                                   | Kortsluiting chopper                    | Kortsluiting in de IGBT's van de remchopper.                                                                                                                                                                     |
|              |                                  | 7192                                   | Te hoge temperatuur IGBT-chopper        | De temperatuur van de IGBT's van de remchopper heeft de interne foutlimiet overschreden.                                                                                                                         |
| 781          | Alarm statorweerstand            | 7181                                   | Remweerstand                            | Remweerstand stuk of niet aangesloten.                                                                                                                                                                           |
|              |                                  | 7183                                   | Te hoge temperatuur van de remweerstand | De temperatuur van de remweerstand heeft de foutlimiet overschreden die is gedefinieerd door parameter 43.11 <i>Foutlimiet remweerstand</i> .                                                                    |
|              |                                  | 7184                                   | Bedrading remweerstand                  | Kortsluiting van de remweerstand of defect in de besturing van de remchopper.                                                                                                                                    |

| Alarm W3000+ |                                                                   | Alarmen ABB ACH 580 invertercompressor |                             |                                                                                                                                                                                                                              |
|--------------|-------------------------------------------------------------------|----------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 791          | Alarm oversnelheid                                                | 7310                                   | Oversnelheid                | Het toerental van de motor is hoger dan het maximaal toegestane toerental vanwege: onjuiste instelling van de min./max. snelheid, te laag remkoppel, wijzigingen in de belasting wanneer de koppelreferentie wordt gebruikt. |
| 801          | Alarm veldbus inverter                                            | 6681                                   | Communicatieverlies EFB     | Onderbreking in de communicatie van de geïntegreerde veldbus (EFB).                                                                                                                                                          |
| 811          | Alarm communicatie                                                | 5681                                   | Communicatie PU             | Communicatiefouten waargenomen tussen de besturingsunit van de omvormer en de voedingsunit.                                                                                                                                  |
|              |                                                                   | 5682                                   | Verlies PU                  | Geen verbinding meer tussen de besturingsunit van de omvormer en de voedingsunit.                                                                                                                                            |
|              |                                                                   | 6682                                   | Configuratiebestand EFB     | Het configuratiebestand van de geïntegreerde veldbus (EFB) kan niet gelezen worden.                                                                                                                                          |
|              |                                                                   | 6683                                   | EFB-parameters niet geldig  | De parameterinstellingen van de geïntegreerde veldbus (EFB) zijn incoherent of incompatibel met het geselecteerde protocol.                                                                                                  |
|              |                                                                   | 6684                                   | Belastingsfout EFB          | De firmware van de geïntegreerde veldbus (EFB) kan niet geladen worden.                                                                                                                                                      |
|              |                                                                   |                                        |                             | Incompatibiliteit tussen de firmwareversies van het EFB-protocol en de frequentieomvormer.                                                                                                                                   |
|              |                                                                   | 6685                                   | Storing 2 EFB               | Storing gereserveerd voor toepassing van het EFB-protocol.                                                                                                                                                                   |
|              |                                                                   | 6686                                   | Storing 3 EFB               | Storing gereserveerd voor toepassing van het EFB-protocol.                                                                                                                                                                   |
|              |                                                                   | 6882                                   | Overflow tab teksten 32 bit | Interne storing.                                                                                                                                                                                                             |
|              |                                                                   | 6885                                   | Overflow tekstbestand       | Interne storing.                                                                                                                                                                                                             |
| 821          | Alarm ingang beveiliging inverter (STO)                           | 7510                                   | Communicatie FBA A          | Uitval van de cyclische communicatie tussen de omvormer en de veldbusadapter A of tussen de PLC en de adaptermodule van veldbus A.                                                                                           |
|              |                                                                   | 5090                                   | Hardwarestoring STO         | De diagnostiek van de STO-hardware heeft een hardwarestoring waargenomen.                                                                                                                                                    |
|              |                                                                   | 5091                                   | Safe Torque Off             | De functie Safe Torque Off is actief, d.w.z. er treedt een verlies van een of meer signalen op van het veiligheidscircuit dat verbonden is met de STO-connector tijdens het starten of bedrijf.                              |
|              |                                                                   | 81                                     | Safe Torque Off 1           | Functie Safe Torque Off actief d.w.z. het circuit STO 1 is defect.                                                                                                                                                           |
| 851          | Algemeen alarm (specifieke code wordt niet weergegeven in W3000+) | 82                                     | Safe Torque Off 2           | Functie Safe Torque Off actief d.w.z. het circuit STO 2 is defect.                                                                                                                                                           |
|              |                                                                   | 1080                                   | Time-out back-up/herstel    | Het paneel of de tool PC heeft niet met de omvormer gecommuniceerd tijdens het maken of herstellen van de back-up.                                                                                                           |
|              |                                                                   | 1081                                   | Storing ID                  | De software van de omvormer is er niet in geslaagd om de ID van de omvormer te lezen.                                                                                                                                        |
|              |                                                                   | 4110                                   | Temperatuur besturingskaart | Te hoge temperatuur van de besturingskaart.                                                                                                                                                                                  |
|              |                                                                   | 4290                                   | Koeling                     | Te hoge temperatuur van de omvormermodule.                                                                                                                                                                                   |
|              |                                                                   | 4310                                   | Te hoge temperatuur         | De temperatuur van de voedingsmodule is te hoog.                                                                                                                                                                             |
|              |                                                                   | 4981                                   | Buitentemperatuur 1         | De gemeten temperatuur 1 heeft de foutlimiet overschreden.                                                                                                                                                                   |
|              |                                                                   | 4982                                   | Buitentemperatuur 2         | De gemeten temperatuur 2 heeft de foutlimiet overschreden.                                                                                                                                                                   |
|              |                                                                   | 5081                                   | Defect aux ventilator       | Een secundaire koelventilator (verbonden met de connectors van de ventilator op de besturingsunit) is vastgelopen of is niet meer verbonden.                                                                                 |
|              |                                                                   | 5092                                   | Logische fout PU            | Het geheugen van de voedingsunit is gewist.                                                                                                                                                                                  |

| Alarm W3000+ |      | Alarmen ABB ACH 580 invertercompressor |                                                                                                                                                                                                                                                                               |
|--------------|------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | 5093 | ID komt niet overeen                   | De hardware van de omvormer stemt niet overeen met de informatie in het geheugen. Dit kan bijvoorbeeld gebeuren na een firmware-update.                                                                                                                                       |
|              | 5094 | Temperatuur meetcircuit                | Probleem bij het meten van de interne temperatuur van de omvormer.                                                                                                                                                                                                            |
|              | 50A0 | Ventilator                             | Koelventilator geblokkeerd of niet verbonden.                                                                                                                                                                                                                                 |
|              | 5690 | Interne communicatie voeding           | Interne communicatiefout.                                                                                                                                                                                                                                                     |
|              | 5691 | ADC meetcircuit                        | Storing in het meetcircuit.                                                                                                                                                                                                                                                   |
|              | 5692 | Geen voeding voedingskaart             | Storing in de voeding van de voedingsunit.                                                                                                                                                                                                                                    |
|              | 5693 | DFF meetcircuit                        | Storing in het meetcircuit.                                                                                                                                                                                                                                                   |
|              | 5696 | Feedback status PU                     | De feedback van de staat van de uitgangsfasen stemt niet overeen met de besturingssignalen.                                                                                                                                                                                   |
|              | 5697 | Feedback belasting                     | Geen feedbacksignaal van de belasting.                                                                                                                                                                                                                                        |
|              | 6181 | Incompatibele FPGA-versie              | De versies van de firmware en FPGA zijn niet compatibel.                                                                                                                                                                                                                      |
|              | 6306 | Mappingbestand FBA A                   | Leesfout van het mappingbestand van de veldbusadapter A.                                                                                                                                                                                                                      |
|              | 6481 | Overbelasting task                     | Interne storing.                                                                                                                                                                                                                                                              |
|              | 6487 | Overflow stack                         | Interne storing.                                                                                                                                                                                                                                                              |
|              | 64A1 | Laden intern bestand                   | Leesfout van het bestand.                                                                                                                                                                                                                                                     |
|              | 64B2 | Storing gebruikersset                  | Het laden van de set gebruikersaparameters is niet gelukt want: <ul style="list-style-type: none"> <li>• De gevraagde set bestaat niet</li> <li>• De set is niet compatibel met het besturingsprogramma</li> <li>• De omvormer is uitgeschakeld tijdens het laden.</li> </ul> |
|              | 64E1 | Overbelasting kernel                   | Fout van het besturingssysteem.                                                                                                                                                                                                                                               |
|              | 6581 | Parametersysteem                       | Laden of opslaan van parameters mislukt.                                                                                                                                                                                                                                      |
|              | 65A1 | Conflict parameters FBA A              | De omvormer heeft niet de functionaliteit die gevraagd wordt door de PLC of de gevraagde functionaliteit is niet geactiveerd.                                                                                                                                                 |
|              | 7081 | Control panel loss                     | Het bedieningspaneel of de tool PC die is geselecteerd als actieve bedieningspost voor de inverter heeft de communicatie verbroken.                                                                                                                                           |
|              | 7121 | Motor stall                            | De motor werkt in het stalling-gebied, bijvoorbeeld vanwege een te hoge belasting of onvoldoende vermogen van de motor.                                                                                                                                                       |
|              | 73B0 | Noodstopcurve mislukt                  | De noodstop is niet voltooid binnen de beoogde tijd.                                                                                                                                                                                                                          |
|              | 8001 | Defect wegens onderbelasting ULC       | Belastingscurve gebruiker: het signaal is te lang boven de onderbelastingscurve geweest.                                                                                                                                                                                      |
|              | 80A0 | Defect supervisie AI                   | Een analoog signaal heeft de limieten overschreden die zijn gespecificeerd voor de analoge ingang.                                                                                                                                                                            |
|              | 80B0 | Supervisie van de signalen             | Storing gegenereerd door de supervisiefunctie van de signalen 1.                                                                                                                                                                                                              |
|              | 80B1 | Supervisie van de signalen             | Storing gegenereerd door de supervisiefunctie van de signalen 2.                                                                                                                                                                                                              |
|              | 80B2 | Supervisie van de signalen             | Storing gegenereerd door de supervisiefunctie van de signalen 3.                                                                                                                                                                                                              |
|              | 80B3 | Supervisie van de signalen             | Storing gegenereerd door de supervisiefunctie van de signalen 4.                                                                                                                                                                                                              |
|              | 80B4 | Supervisie van de signalen             | Storing gegenereerd door de supervisiefunctie van de signalen 5.                                                                                                                                                                                                              |
|              | 80B5 | Supervisie van de signalen             | Storing gegenereerd door de supervisiefunctie van de signalen 6.                                                                                                                                                                                                              |
|              | 9081 | Storing sonde 1                        | Storing in extern apparaat 1.                                                                                                                                                                                                                                                 |
|              | 9082 | Storing sonde 2                        | Storing in extern apparaat 2.                                                                                                                                                                                                                                                 |

| Alarm W3000+ |  | Alarmen ABB ACH 580 invertercompressor |                       |                                                                                        |
|--------------|--|----------------------------------------|-----------------------|----------------------------------------------------------------------------------------|
|              |  | 9083                                   | Storing sonde 3       | Storing in extern apparaat 3.                                                          |
|              |  | 9084                                   | Storing sonde 4       | Storing in extern apparaat 4.                                                          |
|              |  | 9085                                   | Storing sonde 5       | Storing in extern apparaat 5.                                                          |
|              |  | FF61                                   | ID run                | De motor ID-run is niet met succes voltooid.                                           |
|              |  | FF81                                   | Geforceerde trip FB A | Er is een fouttrip-opdracht ontvangen via veldbusadapter A.                            |
|              |  | FF8E                                   | Geforceerde trip EFB  | Er is een fouttrip-opdracht ontvangen via de interface van de geïntegreerde veldbus A. |

### 4.13 Tabel alarmen compressoren met Sanhua-inverter

In de tabel vindt u details over de alarmen voor compressoren met Sanhua-inverter (verzonden door de inverter naar de controller W3000+ via seriële verbinding) en de betreffende inverteralarmcode van de controller W3000+. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

Voor de volgende tabel wordt de codering van alarmen die afkomstig zijn van de inverter als volgt weergegeven:

100-115: alarmregister 1 (elk nummer komt overeen met de relatieve bits van het eerste register in oplopende volgorde.

Voorbeeld: 100 = bit 0)

200-215: alarmregister 2 (elk nummer komt overeen met de relatieve bits van het tweede register in oplopende volgorde.

Voorbeeld: 201 = bit 1)

| Alarm W3000+ |                                                       | Alarmen compressor met Sanhua-inverter |        |                                                         |
|--------------|-------------------------------------------------------|----------------------------------------|--------|---------------------------------------------------------|
| AL           | Beschrijving                                          | Variabele                              | N°/Bit | Beschrijving                                            |
| 701          | Offline inverter                                      |                                        |        | Inverter losgekoppeld                                   |
| 711          | Alarm stroomvoorziening                               | Register 1                             | 100    | Overstroombeveiliging compressor                        |
|              |                                                       |                                        | 105    | Beveiliging faseuitval aan uitgang                      |
|              |                                                       |                                        | 114    | Fout circuitwissel                                      |
|              |                                                       | Register 2                             | 200    | Overstroombeveiliging AC                                |
|              |                                                       |                                        | 202    | Overstroombeveiliging hardware PFC                      |
|              |                                                       |                                        | 204    | Beveiliging faseuitval AC software                      |
|              |                                                       |                                        | 212    | Onderspanningsbeveiliging AC                            |
|              |                                                       |                                        | 213    | Overspanningsbeveiliging AC                             |
| 731          | Alarm stroomvoorziening variator inverter 1           | Register 1                             | 103    | Overstroombeveiliging hardware IPM                      |
|              |                                                       |                                        | 112    | Onderspanningsbeveiliging DC                            |
|              |                                                       |                                        | 113    | Overspanningsbeveiliging software DC                    |
|              |                                                       | Register 2                             | 203    | Overspanningsbeveiliging hardware DC                    |
| 741          | Alarm thermische beveiliging gelijkrichter inverter 1 | Register 2                             | 210    | Overtemperatuurbeveiliging PFC                          |
|              |                                                       |                                        | 211    | Defect temperatuursensor PFC                            |
| 761          | Alarm thermische beveiliging variator inverter 1      | Register 1                             | 110    | Overtemperatuurbeveiliging IPM                          |
|              |                                                       |                                        | 111    | Storing temperatuursensor IPM                           |
| 811          | Alarm communicatie inverter 1                         | Register 1                             | 115    | Communicatieverlies host                                |
|              |                                                       | Register 2                             | 209    | Bescherming DLT                                         |
|              |                                                       |                                        | 214    | Fout afwijkend gegeven EEPROM                           |
| 851          | Algemeen alarm inverter 1                             | Register 1                             | 104    | Fout afwijkende offset AD                               |
|              |                                                       |                                        | 106    | Fout startup compressor                                 |
|              |                                                       |                                        | 107    | Fout in de uitlijning van de snelheid van de compressor |
|              |                                                       | Register 2                             | 205    | Onbalans fasen AC software                              |
|              |                                                       |                                        | 208    | Bescherming HPS                                         |
|              |                                                       |                                        | 215    | Fout zelftest MCU                                       |

## 4.14 Tabel alarmen compressoren met Emerson-inverter

In de tabel vindt u details over de alarmen voor compressoren met Emerson-inverter (verzonden door de inverter naar de controller W3000+ via seriële verbinding) en de betreffende inverteralarmcode van de controller W3000+. De alarmcodes van de inverter worden samen aangegeven met het veld van de alarmcode van W3000+ in de alarmschermen en de alarmgeschiedenis van de controller.

| Alarm W3000+ |                         |                       | Alarmen compressor met Emerson-inverter |                                                              |
|--------------|-------------------------|-----------------------|-----------------------------------------|--------------------------------------------------------------|
| AL           | Beschrijving            | Code display inverter | Nr.                                     | Beschrijving                                                 |
| 701          | Offline inverter        |                       |                                         | Inverter losgekoppeld                                        |
| 711          | Alarm stroomvoorziening | 63                    | 101                                     | Overstroom AC-ingang                                         |
|              |                         | 6                     | 102                                     | Overspanning DC-bus                                          |
|              |                         | 7                     | 103                                     | Onderspanning DC-bus                                         |
|              |                         | 8                     | 104                                     | Overspanning AC-ingang                                       |
|              |                         | 9                     | 105                                     | Onderspanning AC-ingang                                      |
|              |                         | 60                    | 106                                     | Fase-uitval / Ongebalanceerde fasen AC-ingang                |
|              |                         | 29                    | 204                                     | Time-out foldback AC-ingangsstroom                           |
|              |                         | 25                    | 313                                     | Fout bij het aflezen van de AC-spanning                      |
| 721          | Alarm motorvoeding      | -                     | 100                                     | Overstroom fase compressor                                   |
|              |                         | -                     | 109                                     | Uitval fase compressor                                       |
|              |                         | -                     | 200                                     | Onderspanning DC-tak                                         |
|              |                         | -                     | 202                                     | Time-out op foldback van de fasestroom van de compressor     |
|              |                         | 59                    | 300                                     | Fasestroom compressor uit balans                             |
|              |                         | 50                    | 308                                     | Overstroom fase U compressor                                 |
|              |                         | 51                    | 309                                     | Overstroom fase V compressor                                 |
|              |                         | 52                    | 310                                     | Overstroom fase W compressor                                 |
|              |                         | 49                    | 311                                     | Overstroom HW compressor                                     |
|              |                         | 26                    | 314                                     | Fout bij het aflezen van de DC-spanning                      |
|              |                         | 53                    | 315                                     | Compressor overbelast                                        |
| 791          | Alarm oversnelheid      | 24                    | 303                                     | Oversnelheid                                                 |
| 811          | Alarm communicatie      | -                     | 206                                     | Time-out zelfconfiguratie communicatie                       |
|              |                         | 14                    | 207                                     | Communicatieverlies Modbus                                   |
| 851          | Algemeen alarm          | -                     | 107                                     | Desaturatie inverter                                         |
|              |                         | 58                    | 108                                     | Drukschakelaar defect                                        |
|              |                         | 23                    | 110                                     | Verlies van motorregeling                                    |
|              |                         | 10                    | 111                                     | Te hoge temperatuur drive                                    |
|              |                         | 57                    | 113                                     | Startfout compressor                                         |
|              |                         | 28                    | 203                                     | Time-out bij foldback-temperatuurregeling                    |
|              |                         | -                     | 205                                     | Time-out temperatuur DLT                                     |
|              |                         | 13                    | 208                                     | Overtemperatuur DLT                                          |
|              |                         | -                     | 211                                     | Te hoge temperatuur van de vermogensmodule van de compressor |
|              |                         | -                     | 302                                     | Micro-elektronica defect                                     |
|              |                         | 15                    | 304                                     | EEPROM-fout                                                  |
|              |                         | 16                    | 306                                     | Fout configuratie compressor                                 |
|              |                         | -                     | 402                                     | Fout DLT-sensor                                              |



| Alarm W3000+ |  |   | Alarmen compressor met Emerson-inverter |                                        |
|--------------|--|---|-----------------------------------------|----------------------------------------|
|              |  | - | 405                                     | Fout temperatuursensor vermogensmodule |
|              |  | - | 411                                     | Ventilatorstoring                      |
|              |  | - | 415                                     | Blokkering foutenlimiet                |

## 5 KENMERKEN VAN DE MONITORING EN BEDIENING OP AFSTAND

**Onderwerp.** De aangeschafte units kunnen met apparaten zijn uitgerust waarmee uitsluitend Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. (hierna “**MEHITS**”) op afstand, door middel van een mobiele of bedrade connectiviteit, bedrijfsgegevens van de units kan (i) bewaken, (ii) controleren, (iii) verwerven en analyseren.

**Functies en systeem.** De functies kunnen via de Machine-to-Machine (M2M) modus of de Cloud modus vervuld worden. Voor elke functie is de installatie en het gebruik van een specifiek hardware- en/of softwareproduct (**Systeem**) vereist.

**Connectiviteit.** Voor het gebruik van elke service is een internetverbinding (**Connectiviteit**) vereist, die niet verstrekt wordt bij de service of het systeem en die de klant beschikbaar moet stellen.

Met betrekking tot de connectiviteit kan ondanks dat MEHITS binnen haar systeem alle mogelijke veiligheidsmaatregelen neemt om cyberaanvallen uit te sluiten, de volledige uitsluiting ervan niet gegarandeerd worden. De koper vrijwaart MEHITS nu reeds van elke aansprakelijkheid voor deze aanvallen en zet zich in om veiligheidsmaatregelen te nemen (firewalls en andere veiligheidsinstrumenten) die geschikt zijn om eventuele ongewenste verbindingen met het systeem door anderen te vermijden en indien nodig een geschikt veiligheidsniveau te verzekeren met betrekking tot de verzonden of verzendbare gegevens van het systeem (veilige verbindingen).

De service kan beïnvloed worden (zonder aansprakelijkheid van MEHITS) door internetstoringen, gebrek aan aanpassing aan de minimum vereisten/vereiste kenmerken, onvermogen van de koper om een verbinding met het draadloze of bedrade netwerk te garanderen, zoals hieronder nader toegelicht.

**Toestemming.** Verbinding op afstand wordt alleen tot stand gebracht na voorafgaande schriftelijke toestemming van de klant.

## 6 AFDANKEN EN VERWIJDEREN



### WEGGOOIEN VAN HET VERPAKKINGSMATERIAAL

Het verpakkingsmateriaal (karton, plastic enz.) kan samen met het gewone huisvuil weggegooid worden en kan zonder problemen verwerkt worden, door het afval eenvoudig gescheiden in te leveren voor hergebruik.

Alvorens hiertoe over te gaan is het altijd raadzaam om de specifieke voorschriften die op de plaats van installatie gelden te controleren.

NIET IN HET MILIEU DUMPEN!



### WEGGOOIEN VAN HET PRODUCT

Onze producten zijn gemaakt van verschillende materialen. De meeste daarvan (plastic en eventuele elektrische kabels) kunnen samen met vast en gewoon afval weggegooid worden. Zij kunnen gerecycled worden via de gescheiden afvalinzameling en afvalverwerking door goedgekeurde instanties.



Andere onderdelen (elektronische printplaten) kunnen daarentegen milieuverontreinigende stoffen bevatten. Deze moeten dus verwijderd worden en ingeleverd worden bij bevoegde bedrijven voor de inzameling en verwerking ervan.

Alvorens hiertoe over te gaan is het altijd raadzaam om de specifieke voorschriften die op de plaats van de verwijdering gelden te controleren.

NIET IN HET MILIEU DUMPEN!



**Przed przystąpieniem do wykonywania wszelkich czynności  
na urządzeniu, przeczytać uważnie niniejszy podręcznik  
obsługi i upewnić się czy wszystkie wskazówki i informacje  
w nim zawarte są w pełni zrozumiałe**

**Niniejszy dokument należy przechowywać  
w bezpiecznym i łatwo dostępnym miejscu przez cały  
okres eksploatacji urządzenia.**

Podręcznik został zredagowany przez MEHITS S.p.A.: powielanie, w tym częściowe jest zabronione.  
Oryginalna wersja podręcznika jest przechowywana w siedzibie MEHITS S.p.A.  
Jakiegolwiek użycie podręcznika, odmienne od zwykłej konsultacji, musi być wcześniej autoryzowane przez firmę MEHITS S.p.A.  
Mając na celu polepszenie jakości swoich wyrobów, firma MEHITS S.p.A. zastrzega sobie prawo do zmiany, bez wcześniejszego powiadomienia, danych oraz zawartości niniejszego Podręcznika.

Informacje zawarte w niniejszym dokumencie mogą być zmienione bez obowiązku wcześniejszego powiadomienia.  
Powielanie i/lub ujawnianie, także częściowe, niniejszego dokumentu jest zabronione, chyba że MEHITS SpA wyrazi na to wyraźną zgodę na piśmie.

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**OSTRZEŻENIE:**

Program kontrolera W3000+ jest zabezpieczony podpisem cyfrowym. Oznacza to, że zainstalowane oprogramowanie funkcjonuje wyłącznie na kartach dostarczonych przez MEHITS S.p.A. i nie może funkcjonować na kartach zakupionych u innych sprzedawców. Zamontowane tabliczki plastikowe i nadruki są wyłączną własnością MEHITS S.p.A.

**SYMBOLE:**

W celu wyszczególnienia tekstu o dużym znaczeniu, zostały zastosowane odpowiednie symbole, których znaczenie opisujemy poniżej.

**OSTRZEŻENIE:**

Wskazówki odnoszące się do sytuacji/operacji, które w przypadku ich zlekceważenia/nieprawidłowego podejścia do ich rozwiązania, mogą narazić na poważne ryzyko funkcjonowanie Software, różnych części elektronicznych, nie tylko tych związanych z agregatem.

**OBOWIĄZEK:**

Wskazuje obowiązek przedsięwzięcia odpowiednich środków ostrożności lub wykonania określonych czynności w celu umożliwienia dostępu do urządzenia wyłącznie operatorom upoważnionym i/lub będącym w stanie zagwarantować należyłą pracę agregatu.

**INFORMACJA:**

Wskazuje szczególnie ważne informacje techniczne/funkcjonalne, których nie należy lekceważyć.

**POWIADOMIENIE:**

Dotyczy zasad postępowania w sytuacjach, które nie są związane z urazami fizycznymi.

# 1 Wstęp

## 1.1 Zasady użytkowania

Oprogramowanie aplikacyjne opisane w tym dokumencie jest przeznaczone do stosowania w urządzeniach do produkcji wody systemowej przy różnych setpoint temperatury (nawet jednoczesnych) dla obszarów Comfort, Process i IT Cooling.

Oprogramowanie aplikacyjne jest używane w systemie sterowania W3000+ z terminalem użytkownika z odpowiednim interfejsem graficznym.

Szczegółową listę dostępnych interfejsów użytkownika i kompatybilnego sprzętu można znaleźć w kolejnych rozdziałach.



### INFORMACJA:

Program kontrolera W3000+ jest zabezpieczony podpisem cyfrowym.

Oznacza to, że zainstalowane oprogramowanie działa wyłącznie na kartach dostarczonych przez MEHITS i nie może działać na kartach zakupionych od innych sprzedawców.

## 1.2 Główne funkcje

Poniżej została załączona lista funkcji (niewyczerpująca) wykonywanych przez program:

- Regulacja temperatury wody w instalacji zgodnie z setpoint ustawionymi na terminalu użytkownika.
- Zarządzanie różnymi rodzajami jednostek, takimi jak agregaty chłodnicze, pompy ciepła, pompy wielofunkcyjne i pompy ciepła z całkowitym odzyskiem.
- Kompatybilność z różnymi technologiami sprężarek, takimi jak hermetyczne, śrubowe i odśrodkowe.
- Kompletna wizualizacja stanu funkcjonowania agregatu.
- Możliwe ustawienie parametrów regulacji. Możliwe jest ustawienie zarówno podstawowych, za pomocą hasła typu „User” (Użytkownik), jak i bardziej zaawansowanych, za pomocą haseł „Service” (Serwis) i „Factory” (Producent).
- Zarządzanie i raportowanie anomalii (alarmy), zdarzeń i konserwacji. Można w nim zapisać do 200 zdarzeń.
- Możliwość kontroli i zarządzania drogą szeregową.
- Możliwość obsługi do 4 jednostek połączonych ze sobą w lokalnej sieci LAN poprzez system Master-Client.

### 1.3 Zarządzanie funkcjami objętymi licencją

Zarządzanie funkcjami objętymi licencją umożliwia włączanie i wyłączanie funkcji zabezpieczonych hasłem. Hasła są niepowtarzalne i generowane przez system zgodnie z numerem seryjnym agregatu i kodem funkcji.

Zakupione licencje można aktywować za pośrednictwem menu użytkownika, wprowadzając kod funkcji, która ma być aktywowana, oraz odpowiednie hasło na ekranie zarządzania licencjami.

Aktywacja licencji nie powoduje automatycznego włączenia danej funkcji, natomiast jej dezaktywacja powoduje wyłączenie danej funkcji.

|             |            |
|-------------|------------|
| Zarządzanie | licencjami |
| Func. Code: | 1234       |
| Hasło:      | 12345678   |
| Funkcja     | aktywna    |

Istnieje również możliwość jednorazowego, bezpłatnego udostępnienia funkcji chronionych hasłem na okres **trzech miesięcy**.

Jeśli licencja tymczasowa nie została nigdy aktywowana, można ją aktywować, wprowadzając kod funkcji **9999** i hasło **00001234**.

Podczas okresu próbnego istnieje możliwość zakupu licencji funkcji. Status licencji dla tej funkcji zmienia się z tymczasowej na aktywną.

|             |            |
|-------------|------------|
| Zarządzanie | licencjami |
| Func. Code: | 9999       |
| Hasło:      | 00001234   |
| Rozpoczęcie | licencji   |
| czasowych   |            |

Status licencji widoczny jest w menu Licencje, gdzie można również sprawdzić koniec okresu próbnego.

|          |          |
|----------|----------|
| Stan     | Licencji |
| Funkcja: | 6461     |
| Stan:    | aktywna  |

|            |            |
|------------|------------|
| Stan       | Licencji   |
| Funkcja:   | 1234       |
| Stan:      | tymczasowa |
| Termin     | ważności:  |
| 31/12/2021 |            |

Dostępne funkcje licencjonowane zostały przedstawione w poniższej tabeli:

| Kod funkcji | Nazwa funkcji             |
|-------------|---------------------------|
| 6461        | HPC dla LAN Multi Manager |



#### INFORMACJA:

Zmiana daty i godziny pracy agregatu w okresie próbnym powoduje anulowanie okresu próbnego i dezaktywację wszystkich funkcji, na które nie została zakupiona licencja.

Wprowadzenie nieprawidłowego hasła dla funkcji licencjonowanej powoduje jej dezaktywację.



## 1.4 Ustawienie typów regulacji

W zależności od rodzaju sprężarki możliwe jest wybranie wśród różnych typów regulacji.

| Sprężarka                                                                                          | Typ agregatu                       | Dostępna regulacja                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hermetyczna                                                                                        | Pompa Ciepła woda/woda             | <ul style="list-style-type: none"> <li>Quick Mind na sondzie na wyjściu (*).</li> <li>Quick Mind na sondzie na wejściu.</li> <li>Proporcjonalnie do stopni na sondzie na wejściu.</li> <li>Proporcjonalnie do stopni na sondzie na wejściu + integralnie na sondzie na wejściu.</li> </ul>                |
|                                                                                                    | Agregat chłodniczy woda/woda       |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Systemy bezpośredniego odparowania |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa ciepła woda/powietrze        |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy woda/powietrze  |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy z Odzyskiem     |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy z Free-Cooling  |                                                                                                                                                                                                                                                                                                           |
| Hermetyczna z inwerterem na wszystkich obwodach                                                    | Poliwalentne                       | <ul style="list-style-type: none"> <li>Proporcjonalna z elastycznymi stopniami na sondzie na wejściu + PID na sondzie na wejściu.</li> <li>Strefa neutralna na sondzie na wyjściu + PID na sondzie na wyjściu (*).</li> <li>Sekwencyjna na sondzie na wyjściu + PID na sondzie na wyjściu (*).</li> </ul> |
|                                                                                                    | Pompa Ciepła z Odzyskiem           |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy woda/powietrze  |                                                                                                                                                                                                                                                                                                           |
| Hermetyczny z inwerterem na jednym obwodzie + hermetyczny o stałej prędkości na tym samym obwodzie | Pompa ciepła woda/powietrze        | <ul style="list-style-type: none"> <li>Sekwencyjna na sondzie na wyjściu + PID na sondzie na wyjściu (*).</li> </ul>                                                                                                                                                                                      |
|                                                                                                    | Jednostka wielofunkcyjna           |                                                                                                                                                                                                                                                                                                           |
| Alternatywna                                                                                       | Agregat chłodniczy woda/powietrze  | <ul style="list-style-type: none"> <li>Proporcjonalnie do stopni na sondzie na wyjściu.</li> <li>Proporcjonalnie do stopni na sondzie na wejściu + integralnie na sondzie na wejściu.</li> </ul>                                                                                                          |
|                                                                                                    | Pompa ciepła woda/woda             |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy z Odzyskiem     |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa Ciepła z Odzyskiem           |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy woda/woda       |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Systemy bezpośredniego odparowania |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa ciepła woda/powietrze        |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy woda/powietrze  |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa Ciepła woda/woda             |                                                                                                                                                                                                                                                                                                           |
| Śruba                                                                                              | Agregat chłodniczy woda/woda       | <ul style="list-style-type: none"> <li>Modulacyjna na sondzie na wyjściu + PID na sondzie na wyjściu (*).</li> <li>Proporcjonalnie do stopni na sondzie na wejściu.</li> <li>Proporcjonalnie do stopni na sondzie na wejściu + integralnie na sondzie na wejściu.</li> </ul>                              |
|                                                                                                    | Systemy bezpośredniego odparowania |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa ciepła woda/powietrze        |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy woda/powietrze  |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy z Odzyskiem     |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy z Free-Cooling  |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Poliwalentne                       |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa Ciepła z Odzyskiem           |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa Ciepła z Odzyskiem           |                                                                                                                                                                                                                                                                                                           |
| Śruba z inwerterem na wszystkich obwodach                                                          | Agregat chłodniczy woda/woda       | <ul style="list-style-type: none"> <li>Proporcjonalna z elastycznymi stopniami na sondzie na wejściu + PID na sondzie na wejściu.</li> <li>Strefa neutralna na sondzie na wyjściu + PID na sondzie na wyjściu (*).</li> <li>Sekwencyjna na sondzie na wyjściu + PID na sondzie na wyjściu (*).</li> </ul> |
|                                                                                                    | Agregat chłodniczy woda/powietrze  |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Agregat chłodniczy z Odzyskiem     |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Poliwalentne                       |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa Ciepła z Odzyskiem           |                                                                                                                                                                                                                                                                                                           |
| Śruba z inwerterem na jednym obwodzie + Śruba o stałej prędkości na innych obwodach                | Agregat chłodniczy woda/powietrze  | <ul style="list-style-type: none"> <li>Sekwencyjna na sondzie na wyjściu + PID na sondzie na wyjściu (*).</li> </ul>                                                                                                                                                                                      |
|                                                                                                    | Agregat chłodniczy woda/woda       |                                                                                                                                                                                                                                                                                                           |
| Odśrodkowa                                                                                         | Agregat chłodniczy woda/woda       | <ul style="list-style-type: none"> <li>Proporcjonalna z elastycznymi stopniami na sondzie na wejściu + PID na sondzie na wejściu.</li> <li>Strefa neutralna na sondzie na wyjściu + PID na sondzie na wyjściu (*).</li> </ul>                                                                             |
|                                                                                                    | Agregat chłodniczy woda/powietrze  |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Pompa Ciepła woda/woda             |                                                                                                                                                                                                                                                                                                           |
|                                                                                                    | Systemy bezpośredniego odparowania |                                                                                                                                                                                                                                                                                                           |

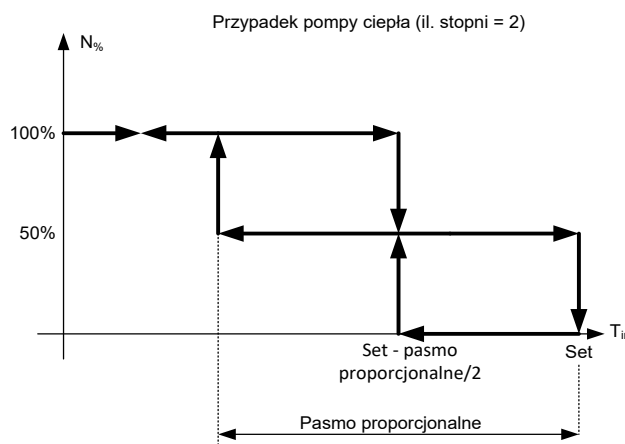
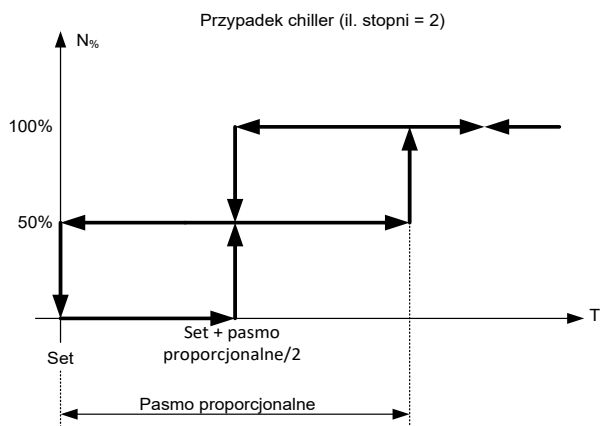
**Tabela1:** rodzaje możliwych do ustawienia trybów regulacji temperatury w oparciu o typ sprężarki.

(\*): regulacja konieczna dla agregatów ze sterowaniem prędkością pompy.

Odmienne tryby termoregulacji będą zilustrowane w następnych paragrafach.

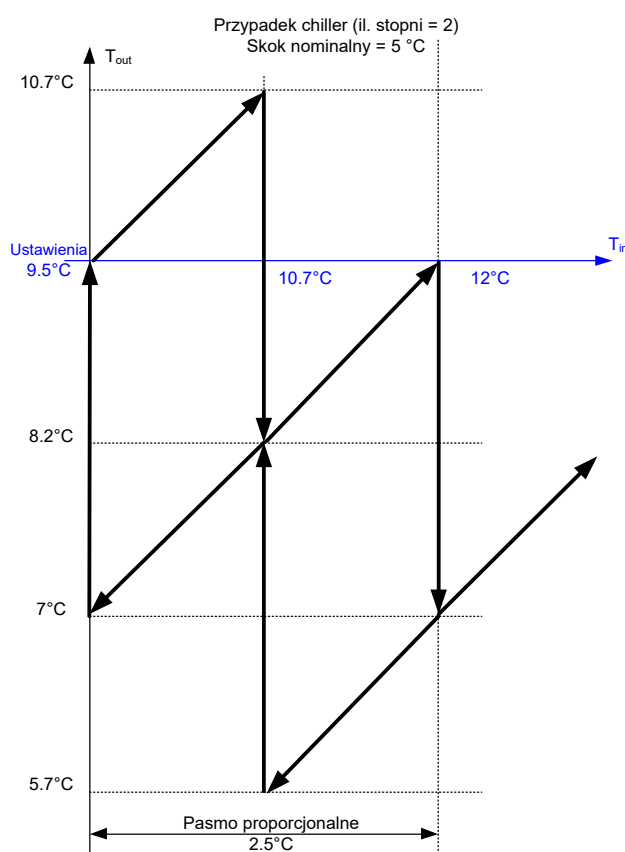
### 1.4.1 Regulacja proporcjonalna stopniowa na sondzie na wejściu

Poniżej zostały przedstawione niektóre przykłady regulacji proporcjonalnej „stopniowej” na sondzie temperatury na wejściu.

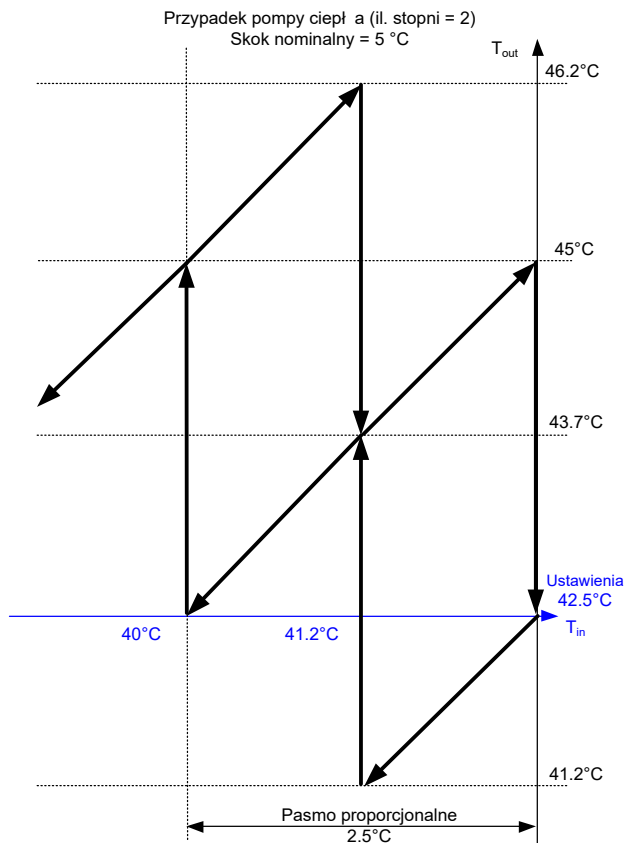


**Rysunek 1-1:**  $T_{in}$  jest zmienną na wejściu,  $N_{\%}$  jest liczbą aktywnych stopni wyrażoną w % (przypadek agregatu chłodniczego).

**Rysunek 1-2:**  $T_{in}$  jest zmienną na wejściu,  $N_{\%}$  jest liczbą aktywnych stopni wyrażoną w % (przypadek pompy ciepła).



**Rysunek 1-3:** Stosunek między  $T_{in}$  a  $T_{out}$  przy 2 stopniach (przypadek agregatu chłodniczego).



**Rysunek 1-4:** Stosunek między  $T_{in}$  a  $T_{out}$  przy 2 stopniach (przypadek pompy ciepła).

W poniższych tabelach zostały przedstawione niektóre typowe wartości dla danych wielkości. Należy zauważyć, że minimalne i maksymalne wartości teoretyczne temperatury na wyjściu odnoszą się do pracy z nominalnym natężeniem przepływu (to znaczy z różnicą temperatur w parowniku równą 5,0°C przy zawartości wody w instalacji gwarantującej stosunek litrów/kW większy lub równy 7).

| Liczba stopni | Setpoint (°C) | Pasma proporcjonalne (°C) | Teoretyczna T min. na wyjściu (°C) | Teoretyczna T max na wyjściu (°C) |
|---------------|---------------|---------------------------|------------------------------------|-----------------------------------|
| 1             | 9,5           | 2,5                       | 4,5                                | 12,0                              |
| 2             | 9,5           | 2,5                       | 5,7                                | 10,8                              |
| 4             | 7,0           | 5,0                       | 5,7                                | 8,3                               |
| 5             | 7,0           | 5,0                       | 6,0                                | 8,0                               |
| 6             | 7,0           | 5,0                       | 6,2                                | 7,8                               |
| 8             | 7,0           | 5,0                       | 6,4                                | 7,6                               |

**Tabela2:** stosowane zwyczajowo wartości zadanej i pasma proporcjonalnego w zależności od liczby stopni (przypadek agregatu chłodniczego).

| Liczba stopni | Setpoint (°C) | Pasma proporcjonalne (°C) | Teoretyczna T min. na wyjściu (°C) | Teoretyczna T max na wyjściu (°C) |
|---------------|---------------|---------------------------|------------------------------------|-----------------------------------|
| 1             | 42,5          | 2,5                       | 40,0                               | 47,5                              |
| 2             | 42,5          | 2,5                       | 41,2                               | 46,3                              |
| 4             | 45,0          | 5,0                       | 43,7                               | 46,3                              |
| 5             | 45,0          | 5,0                       | 44,0                               | 46,0                              |
| 6             | 45,0          | 5,0                       | 44,2                               | 45,8                              |
| 8             | 45,0          | 5,0                       | 44,4                               | 45,6                              |

**Tabela3:** stosowane zwyczajowo wartości zadanej i pasma proporcjonalnego w zależności od liczby stopni (przypadek pompy ciepła).

### 1.4.2 Regulacja proporcjonalnie do stopni na wejściu + integralnie na sondzie na wejściu

Ten typ regulacji uzyskuje się jako sumę dwóch komponentów: proporcjonalną i integralną.

Komponent proporcjonalny powoduje żądanie procentowe dla aktywacji/dezaktywacji stopni jak zostało zilustrowane w poprzednim paragrafie "Regulacja proporcjonalnie do stopni na sondzie na wejściu".

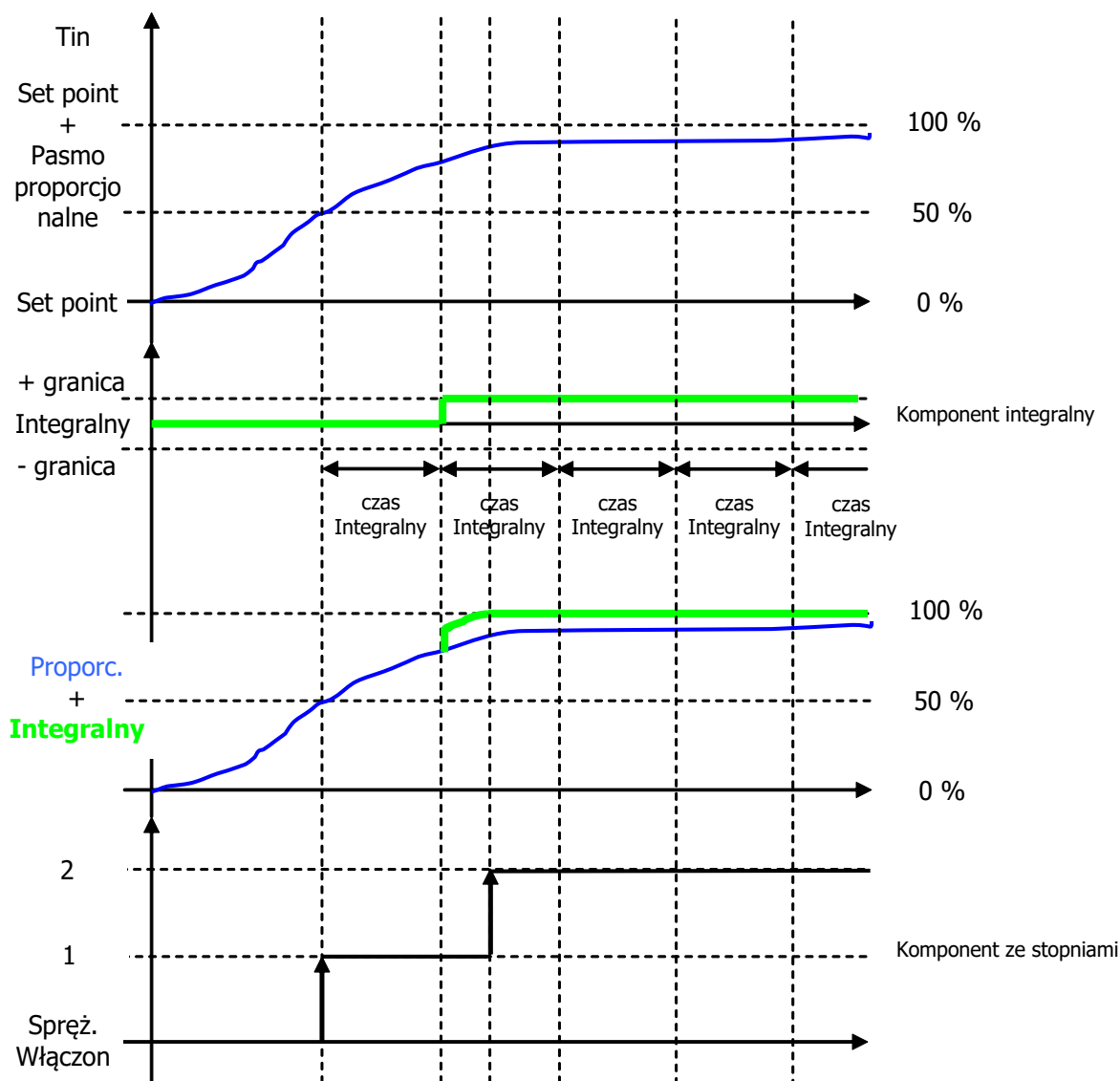
Komponent kompletny sumuje do komponentu proporcjonalnego, w regularnych odstępach czasu (czas ogółem) błąd kompletny obliczony według wzoru:

$$\text{Błąd Integralny} = \frac{\text{Temperatura wejścia} - \text{Set point}}{\text{Pasma proporcjonalne}} \times 100 \quad [\%]$$

Komponent integralny jest w każdym razie ograniczony (ograniczenie integralne) w celu uniknięcia niestabilności w regulacji.

Jeżeli temperatura wejścia zmienia się o wartość większą lub równą 5% w ciągu jednej sekundy, komponent kompletny nie zostanie obliczony ze względu na gwałtowne zmiany.

Czas integralny jest liczony od momentu, gdy żądanie termoregulatora jest stabilne.

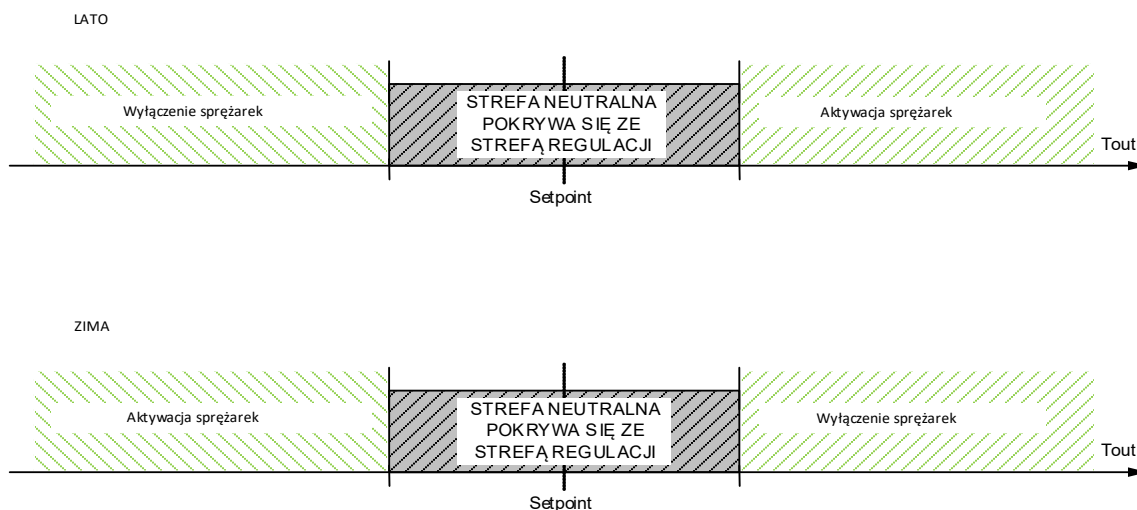


Rysunek 1-5: przykład regulacji w agregacie chłodniczym z 2 stopniami.

### 1.4.3 Regulacja quick mind

Użytkownik musi ustawić tylko i wyłącznie wymagany set point, wszystkie inne parametry zostaną przystosowane do instalacji z algorytmu Quick Mind.

QUICK MIND jest algorytmem auto-adaptacyjnym do regulacji temperatury wody przetwarzanej przez agregat termochłodniczy. Model regulacji jest zilustrowany na poniższym rysunku, w przypadku regulacji na sondzie na wyjściu:



**Rysunek 1-6:** model regulacji QUICK MIND (przypadek agregatu chłodniczego i przypadek pompy ciepła).

Setpoint znajduje się wewnątrz strefy neutralnej. Jeżeli temperatura przybiera wartość wewnątrz tej strefy, liczba aktywnych sprężarek nie ulega zmianie.

Gdy temperatura, z powodu zmian obciążenia instalacji, przybiera wartości zewnętrzne w strefie neutralnej, zostają włączone lub wyłączone sprężarki, aby wartość temperatury znalazła się w strefie neutralnej.

Zakres strefy neutralnej zależy od charakterystyki dynamicznej instalacji, a w szczególności od objętości wody w niej zawartej i od obciążenia. Algorytm auto-adaptacyjny jest w stanie „zmierzyć” dynamikę instalacji i obliczyć minimalną strefę neutralną w taki sposób, aby były przestrzegane czasy załączania sprężarek oraz maksymalna liczba rozruchów godzinowych.

Regulacja może być wykonana zarówno na temperaturze powrotu z instalacji jak i na temperaturze doprowadzenia.

Ponadto występują specjalne funkcje, które pozwalają na zredukowanie ilości rozruchów sprężarek w przypadku bardzo niskiego obciążenia lub przy rozruchu agregatu w temperaturach znacznie odbiegających od setpoint.

| 2 sprężarek – z maksymalnie dopuszczalną ilością rozruchów godzinowych 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litry / kW                                                                | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                             | 3,2  | 3,3 | 3,4 | 3,5 | 3,6 | 3,8 | 4,1 | 4,5 | 5,3 |

| 4 sprężarek – z maksymalnie dopuszczalną ilością rozruchów godzinowych 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litry / kW                                                                | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                             | 1,6  | 1,6 | 1,7 | 1,7 | 1,8 | 1,9 | 2,0 | 2,2 | 2,6 |

| 5 sprężarek – z maksymalnie dopuszczalną ilością rozruchów godzinowych 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litry / kW                                                                | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                             | 1,3  | 1,3 | 1,3 | 1,4 | 1,5 | 1,5 | 1,6 | 1,9 | 2,1 |

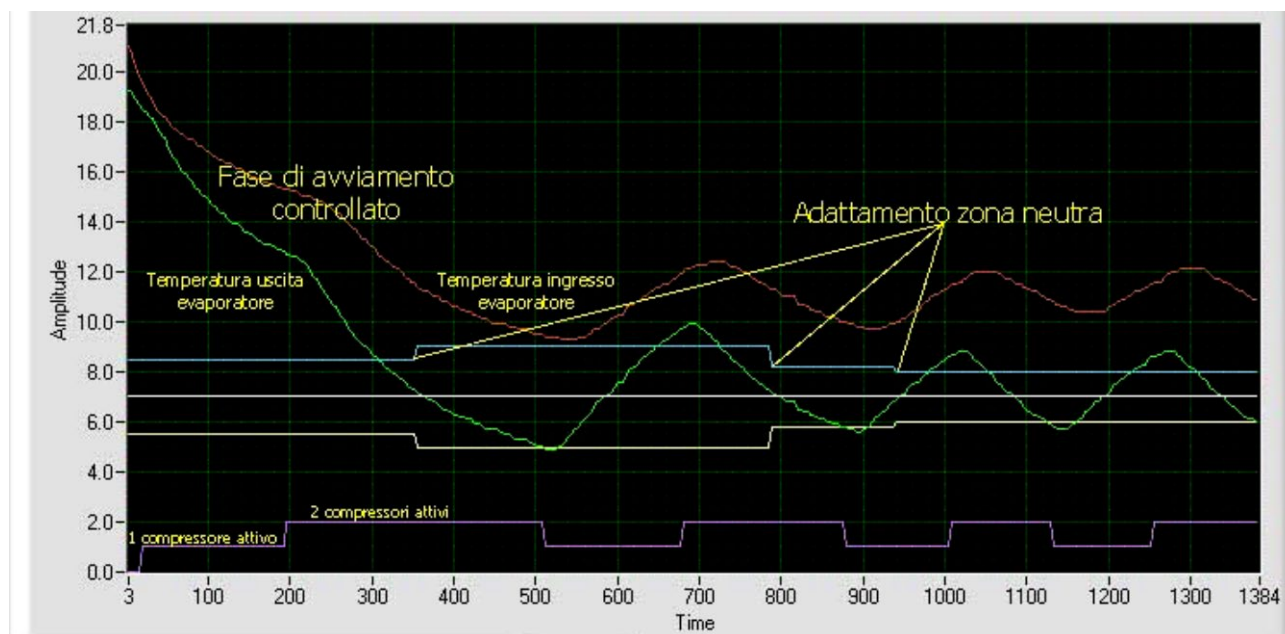
| 6 sprężarek – z maksymalnie dopuszczalną ilością rozruchów godzinowych 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litry / kW                                                                | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                             | 1,1  | 1,1 | 1,1 | 1,2 | 1,2 | 1,3 | 1,4 | 1,5 | 1,8 |

| 8 sprężarek – z maksymalnie dopuszczalną ilością rozruchów godzinowych 10 |      |     |     |     |     |     |     |     |     |
|---------------------------------------------------------------------------|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Litry / kW                                                                | 10,5 | 9,5 | 8,5 | 7,5 | 6,5 | 5,5 | 4,5 | 3,5 | 2,5 |
| $\Delta$ Tout                                                             | 0,8  | 0,8 | 0,8 | 0,9 | 0,9 | 0,9 | 1,0 | 1,1 | 1,3 |

**Tabela4:** maksymalne teoretyczne wychylenie temperatury zasilania przy stałym obciążeniu częściowym (zależnym od zawartości wody w systemie) z regulacją wyjścia Quick Mind.

Przedstawiamy przykład rzeczywistych danych nabytych podczas funkcjonowania z regulatorem Quick Mind na wyjściu. Odnieśmy się do poniższego rysunku:



**Rysunek 1-7:** przykład rzeczywistych danych z regulacją quick-mind na wyjściu (w odciętej czas w [s], w rzędnej Tout w [°C]).

Jest to przykład rozruchu z bardzo wysoką temperaturą początkową w stosunku do wartości zadanej (7°C). Po około 10 sekundach od początku przyswajania następuje włączenie jednej sprężarki. Włączenie drugiej sprężarki nie następuje natychmiast: algorytm, który zarządza fazą rozruchu sprawdza czy jedna sprężarka wystarczy do zbliżenia temperatury doprowadzania do set point i czy można uniknąć niepotrzebnych rozruchów. Ponieważ po około 200 sekundach temperatura doprowadzenia wynosi jeszcze 12 °C, zostaje włączona również druga sprężarka, w przeciwnym razie czas doprowadzenia do pełnych obrotów byłby zbyt wydłużony.

Po zakończeniu fazy kontrolowanego rozruchu, temperatura doprowadzenia spada aż do "wejścia" do neutralnej strefy. Algorytm (a t=350 s) zaczyna dopasowywać zakres neutralnej strefy w taki sposób, aby respektować czasy bezpieczeństwa sprężarek. Jak można zauważyć, neutralna strefa zostaje następnie zredukowana (t=780 s, 950 s) do minimalnej wartości pozwalającej na respektowanie czasów bezpieczeństwa. Ponadto widać jak wygląda aktywacja i dezaktywacja sprężarek, gdy temperatura wyjścia osiągnie górne lub dolne granice neutralnej strefy. W przykładzie, na pełnych obrotach, zmiana temperatury wyjścia wynosi około 3.5 °C.

#### 1.4.4 Regulacja modulatoryjna na sondzie wyjścia + PID na sondzie wyjścia dla sprężarek śrubowych

Ta regulacja jest wykonywana z udziałem dwóch regulatorów, które działają w skoordynowany sposób:

- Strefa neutralna** (regulator stopniowy) na sondzie wyjścia;
- PID** (modulacja) na sondzie wyjścia.

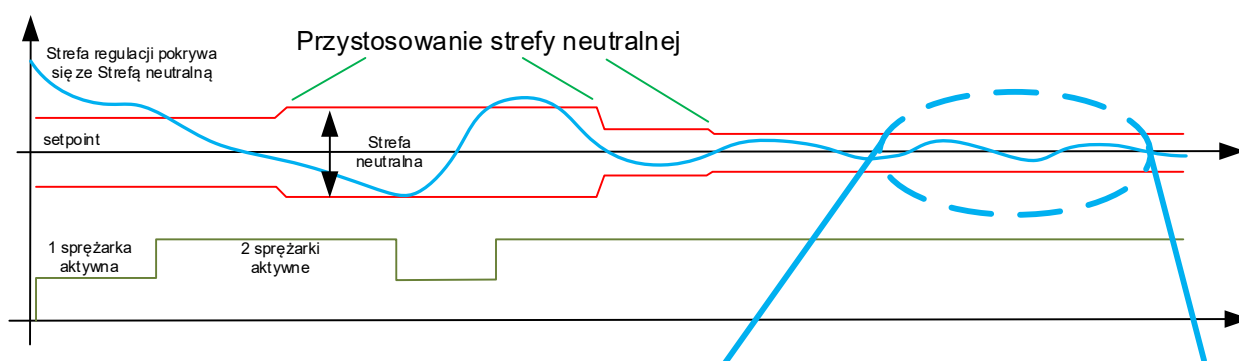
Setpoint jest jednakowy dla obu regulatorów.

a) Jest regulatorem stopniowym ze strefą neutralną, gdzie zmienną kontrolowaną jest temperatura wyjścia z agregatu **Tout**, a zmienną zależną jest liczba załączanych stopni (sprężarki).

Setpoint znajduje się wewnątrz strefy neutralnej. Jeżeli temperatura przybiera wartość wewnątrz tej strefy, liczba aktywnych sprężarek nie ulega zmianie.

Gdy temperatura, z powodu zmian obciążenia instalacji, przybiera wartości wychodzące poza strefę neutralną, następuje włączenie lub wyłączenie sprężarek, aby wartość temperatury na powrót znalazła się w strefie neutralnej (patrz rysunek poniżej).

Zakres strefy neutralnej zależy od charakterystyki dynamicznej instalacji. Algorytm auto-adaptacyjny jest w stanie „zmierzyć” dynamikę instalacji i obliczyć minimalną strefę neutralną w taki sposób, aby były przestrzegane czasy załączania sprężarek oraz maksymalna liczba rozruchów godzinowych.



Rysunek 1-8: regulacja modulatoryjna na sondzie wyjścia.

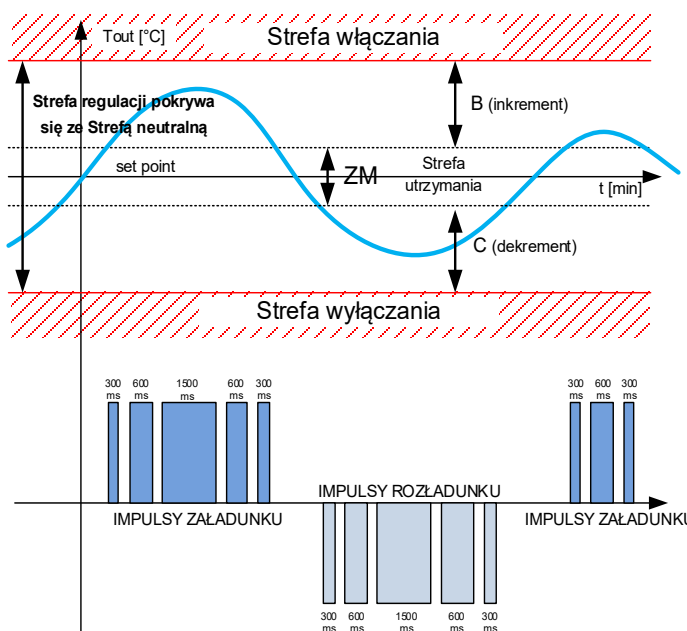
b) Odniesmy się do rysunku obok:

Setpoint znajduje się w strefie utrzymania (ZM). Jeżeli temperatura wyjścia przybiera wartość wewnętrzną w tej strefie, nie jest wprowadzana żadna modyfikacja w liczbie aktywnych sprężarek lub ich procencie obciążenia (pozycja skrzynki modulatoryjnej).

Gdy temperatura wyjścia, z powodu zmian obciążenia w instalacji, przybiera wartości wyższe w strefie B, zostają włączone sprężarki w tym celu, aby wartość temperatury znalazła się w strefie regulacji.

Wewnątrz strefy B, jeżeli pochodna temperatury wyjścia jest większa lub równa 0, zostaje zwiększona potencjalność sprężarek w taki sposób, aby doprowadzić temperaturę do środka strefy utrzymania (ZM). Wartość wzrostu jest obliczana przez regulator PID w oparciu o temperaturę wyjścia.

Gdy temperatura wyjścia, z powodu zmian obciążenia w instalacji, przybiera wartości niższe w strefie C, zostają wyłączone sprężarki, aby wartość temperatury znalazła się w strefie regulacji.



Rysunek 1-9: regulacja modulatoryjna dla sprężarek śrubowych.

Wewnątrz strefy C, jeżeli pochodna temperatury wyjścia jest mniejsza lub równa 0, zostaje zmniejszona potencjalność sprężarek w taki sposób, aby przywrócić temperaturę w strefie utrzymywania (ZM). Wartość zmniejszenia jest obliczana przez regulator PID w oparciu o temperaturę wyjścia.

Zakres strefy regulacji zależy od charakterystyki dynamicznej instalacji, a w szczególności od objętości wody w niej zawartej i od obciążenia. Algorytm auto-adaptacyjny jest w stanie „zmierzyć” dynamikę instalacji i obliczyć minimalną strefę

neutralną w taki sposób, aby były przestrzegane czasy załączania sprężarek oraz maksymalna liczba rozruchów godzinowych.  
Przy rozruchu następnych sprężarek po tej pierwszej, te włączone zostają sforsowane do minimum, i następne inkrementy/dekrementy mocy zostają zastosowane na wszystkich sprężarkach.

#### 1.4.5 Regulacja proporcjonalnie do stopni swobodnych na wejściu + PID na sondzie na wejściu

Ta regulacja jest wykonywana z udziałem dwóch regulatorów, które działają w skoordynowany sposób:

- Proporcjonalnie do stopni** (regulator stopniowy) na sondzie wejścia;
- PID** (modulacja) na sondzie wyjścia.

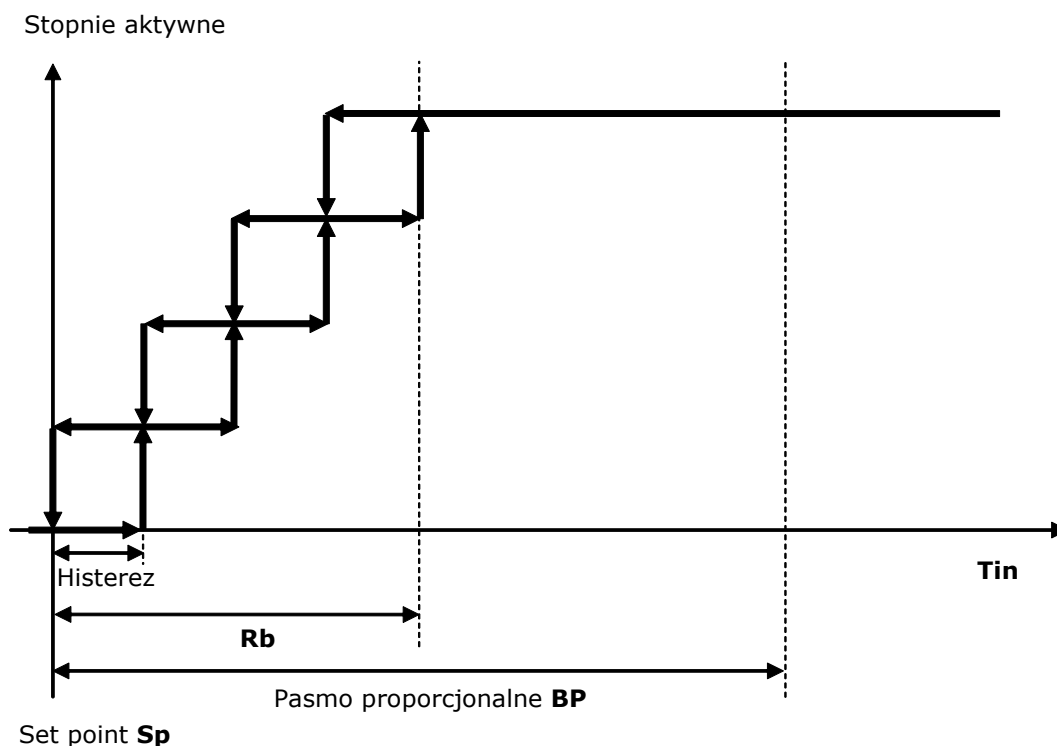
Setpoint jest jednakowy dla obu regulatorów.

a) Chodzi tu o regulator stopniowy typu proporcjonalnego, którego zmienną kontrolną jest temperatura wejścia do agregatu **Tin** a zmienną kontrolowaną jest ilość stopni do aktywacji (sprężarki).

W stosunku do tradycyjnego regulatora stopniowego, zostały dodane 2 dodatkowe parametry.

**Rb**: oznacza procent pasma proporcjonalnego **BP**, i pozwala na ściśnięcie stopni w tej części pasma proporcjonalnego.

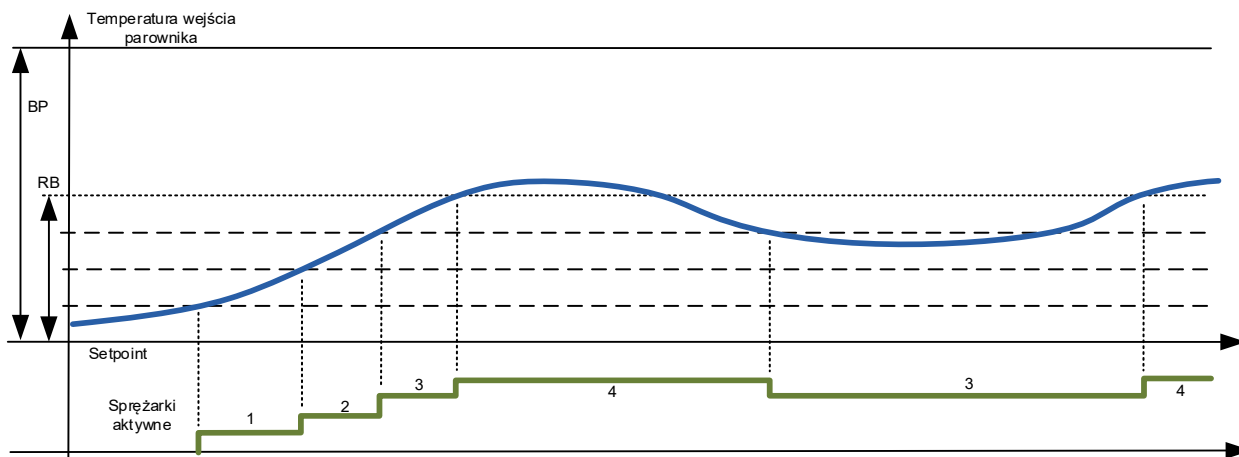
Przykład funkcjonowania 4 stopni w chłodzeniu i **Rb < BP**



**Rysunek 1-10:** regulator proporcjonalny stopniowy z  $\text{offset} > 0$  i  $Rb = 50\%$ .

Histereza każdego stopnia jest pasmem proporcjonalnym odniesienia **Rb** podzielonym przez liczbę stopni do zarządzania.

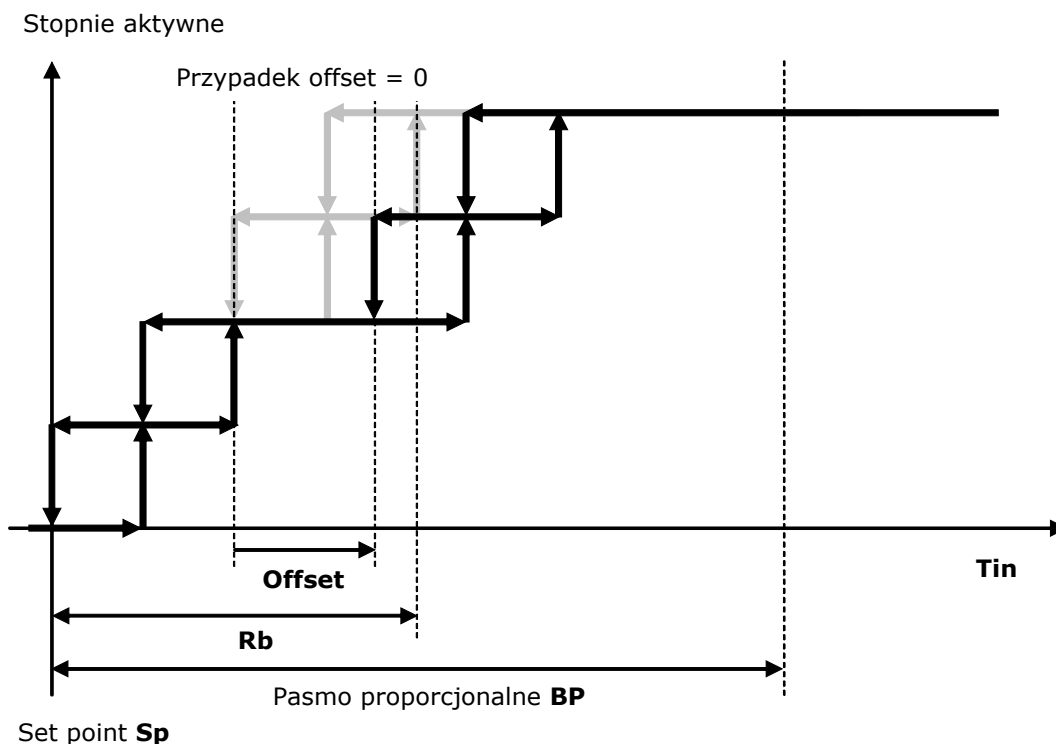




**Rysunek 1-11:** elastyczna regulacja proporcjonalna stopniowa na sondzie wejściowej z  $\text{offset} = 0$  i  $R_b = 50\%$ .

**Offset** przedstawia aktywację/deaktywację drugiej połowy stopni do wyższej wartości w stosunku do przypadku z  $\text{offset}=0$  i odnosi się do pasma proporcjonalnego BP.

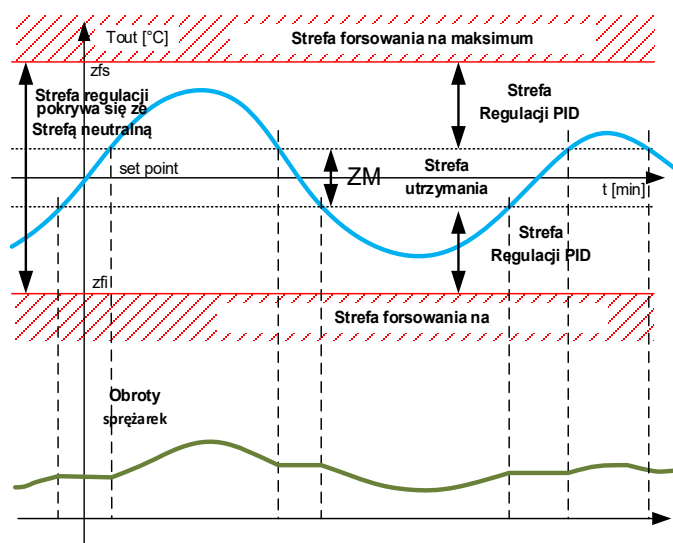
Przykład funkcjonowania 4 stopni w chłodzeniu i  $\text{Offset} > 0$



**Rysunek 1-12:** regulator proporcjonalny stopniowy z  $\text{offset} > 0$  i  $R_b = 50\%$ .

b) **PID** (regulator Proporcjonalno-całkująco-różniczkujący), którego zmienną kontrolną jest temperatura na wyjściu, włącza się przy rozruchu pierwszej sprężarki i wyłącza się przy wyłączeniu ostatniej sprężarki. Zmienna kontrolowana jest liczbą obrotów sprężarek (moc pobierana dla agregatu ze sprężarkami odśrodkowymi), zmieniając je z minimum do maksimum ustawialnych, wykonując w ten sposób ciągłą regulację temperatury na wyjściu agregatu. Ponadto istnieje możliwość ustawienia następujących parametrów:  $k_p$  (współczynnik członu proporcjonalnego) i  $t_i$  (czas całkowania). Czas różniczkowania został ustawiony fabrycznie na stałą wartość.

Gdy temperatura wyjścia przyjmuje wartość wewnątrz *strefy utrzymania*, nie zostaje wprowadzona żadna modyfikacja w wartości obrotów sprężarek.  
Gdy temperatura wyjścia znajduje się na wartości wewnątrz *strefy regulacji PID*, zostaje zmodyfikowana wartość obrotów sprężarek w celu doprowadzenia tej samej temperatury do wartości wewnętrznej w *strefie utrzymania*. Parametry zfi, strefa utrzymania i zfs zostały ustawione na stałe wartości fabryczne.



Rysunek 1-13: wykres działania regulatora PID na wyjściu.

#### 1.4.6 Regulacja ze strefą neutralną na sondzie na wyjściu + PID na sondzie na wyjściu

Ta regulacja jest wykonywana z udziałem dwóch regulatorów, które działają w skoordynowany sposób:

- Strefa neutralna** (regulator stopniowy) na sondzie wyjścia;
- PID** (modulacja) na sondzie wyjścia.

Setpoint jest jednakowy dla obu regulatorów.

a) Jest regulatorem stopniowym ze strefą neutralną, gdzie zmienną kontrolowaną jest temperatura wyjścia z agregatu **Tout**, a zmienną zależną jest liczba załączanych stopni (sprężarki).

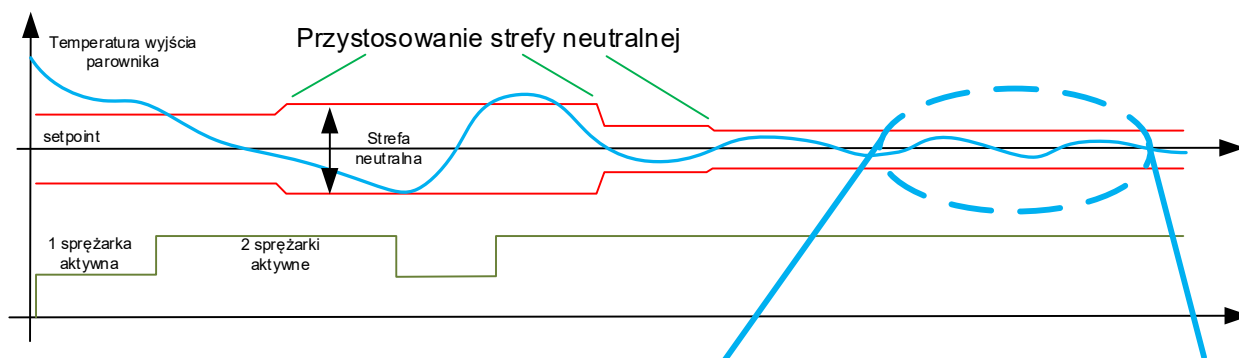
Setpoint znajduje się wewnątrz strefy neutralnej. Jeżeli temperatura przybiera wartość wewnątrz tej strefy, liczba aktywnych sprężarek nie ulega zmianie.

Gdy temperatura, z powodu zmian obciążenia instalacji, przybiera wartości wychodzące poza strefę neutralną, następuje włączenie lub wyłączenie sprężarek, aby wartość temperatury na powrót znalazła się w strefie neutralnej (patrz rysunek poniżej). Zakres strefy neutralnej zależy od charakterystyki dynamicznej instalacji. Algorytm auto-adaptacyjny jest w stanie „zmierzyć” dynamikę instalacji i obliczyć minimalną strefę neutralną w taki sposób, aby były przestrzegane czasy załączania sprężarek oraz maksymalna liczba rozruchów godzinowych.

b) **PID** (regulator proporcjonalno-całkująco-różniczkujący), którego zmienną kontrolowaną jest temperaturą na wyjściu, włącza się po uruchomieniu pierwszej sprężarki i wyłącza się przy wyłączeniu ostatniej sprężarki.

Zmienną zależną jest liczba obrotów sprężarek (pobór mocy przez agregat ze sprężarkami odśrodkowymi), zmieniająca się od minimalnych do maksymalnych możliwych do ustawienia wartości, wykonując w ten sposób dokładną regulację temperatury na wyjściu z agregatu.

Ponadto istnieje możliwość ustawienia następujących parametrów: kp (współczynnik członu proporcjonalnego) i ti (czas całkowania). Czas różniczkowania został ustawiony fabrycznie na stałą wartość.



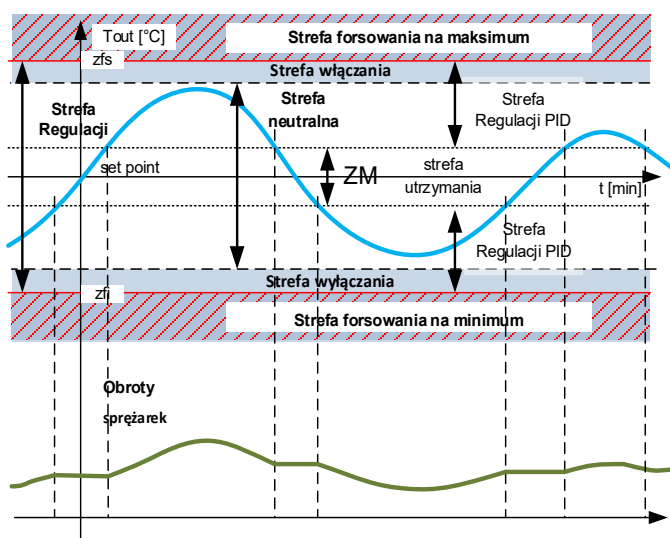
Rysunek 1-14: regulacja ze strefą neutralną na sondzie na wyjściu.

Wykres działania regulatora PID:

Gdy temperatura wyjścia przyjmuje wartość wewnątrz *strefy utrzymania*, nie zostaje wprowadzona żadna modyfikacja w wartości obrotów sprężarek.

Gdy temperatura wyjścia przyjmuje wartość wewnątrz *strefy regulacji PID*, następuje modyfikacja wartości obrotów sprężarek w celu przywrócenia temperatury do wartości wewnątrz *strefy utrzymania*.

Parametry zfi, *strefa utrzymania* i zfs zostały ustawione na stałe wartości offset w stosunku do strefy neutralnej.



Rysunek 1-15: wykres działania regulatora PID na wyjściu.

### 1.4.7 Regulacja sekwencyjna na sondzie na wyjściu + PID na sondzie na wyjściu

Ta regulacja jest dostępna w agregatach posiadających sprężarkę z inwerterem i jedną lub kilka sprężarek o stałej prędkości lub w agregatach, w których wszystkie sprężarki wyposażone są w inwertery.

#### 1.4.7.1 Regulacja sekwencyjna w agregatach posiadających sprężarkę z inwerterem i jedną lub kilka sprężarek o stałej prędkości

Regulacja jest wykonywana przy pomocy dwóch regulatorów działających w skoordynowany sposób:

- Sekwencyjny** (regulator stopniowy) na sondzie wyjścia;
- PID** (modulacja) na sondzie wyjścia.

Setpoint jest jednakowy dla obu regulatorów.

a) Jest regulatorem stopniowym ze strefą neutralną, gdzie zmiennymi kontrolowanymi są temperatura na wyjściu z agregatu **Tout** oraz liczba obrotów sprężarki z inwerterem, natomiast zmienną zależną jest liczba załączanych stopni (sprężarki i/lub częściowe zmniejszenie wydajności sprężarek o stałej prędkości).

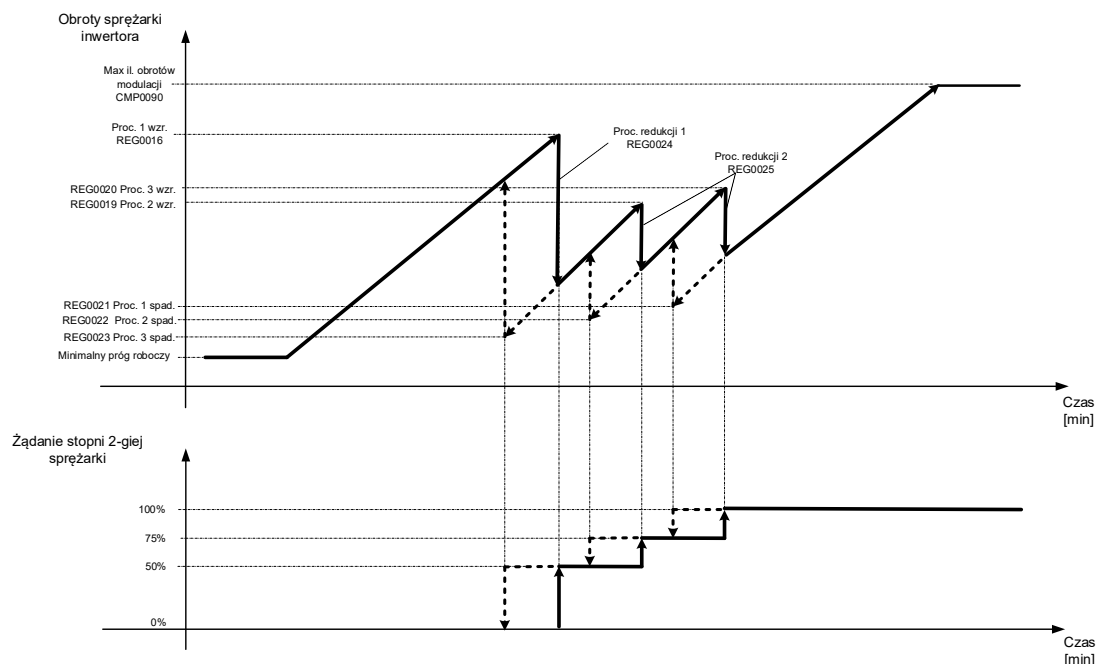
Opisy działania podane poniżej odnoszą się do trybu pracy agregatu chłodniczego.

Setpoint znajduje się wewnątrz strefy neutralnej. Jeżeli agregat nie ma żadnej uruchomionej sprężarki, regulator czeka, aż temperatura na wyjściu przekroczy górną granicę strefy neutralnej, po czym pojawia się żądanie aktywacji pierwszego stopnia. Powoduje to uruchomienie sprężarki z inwerterem: sprężarka jest utrzymywana na liczbie obrotów przy uruchomieniu (CMP0091) przez czas włączenia sprężarek (lub start na pusto, parametr CMP0028). Następnie regulator rozpoczyna monitorowanie obrotów sprężarki z inwerterem i żąda dodatkowych stopni (które zostaną przypisane sprężarkom ze stałą prędkością, patrz Rysunek 1-16 i Rysunek 1-17) w oparciu o pewne progi procentowe ustawione w parametrze i odnoszące się do maksymalnej liczby obrotów, w celu modulacji sprężarki z inwerterem. Zwiększeniu liczby aktywnych stopni sprężarek ze stałą prędkością odpowiada stosowna redukcja procentowa liczby obrotów sprężarki z inwerterem, w celu utrzymania równomiernej dostawy mocy chłodniczej.

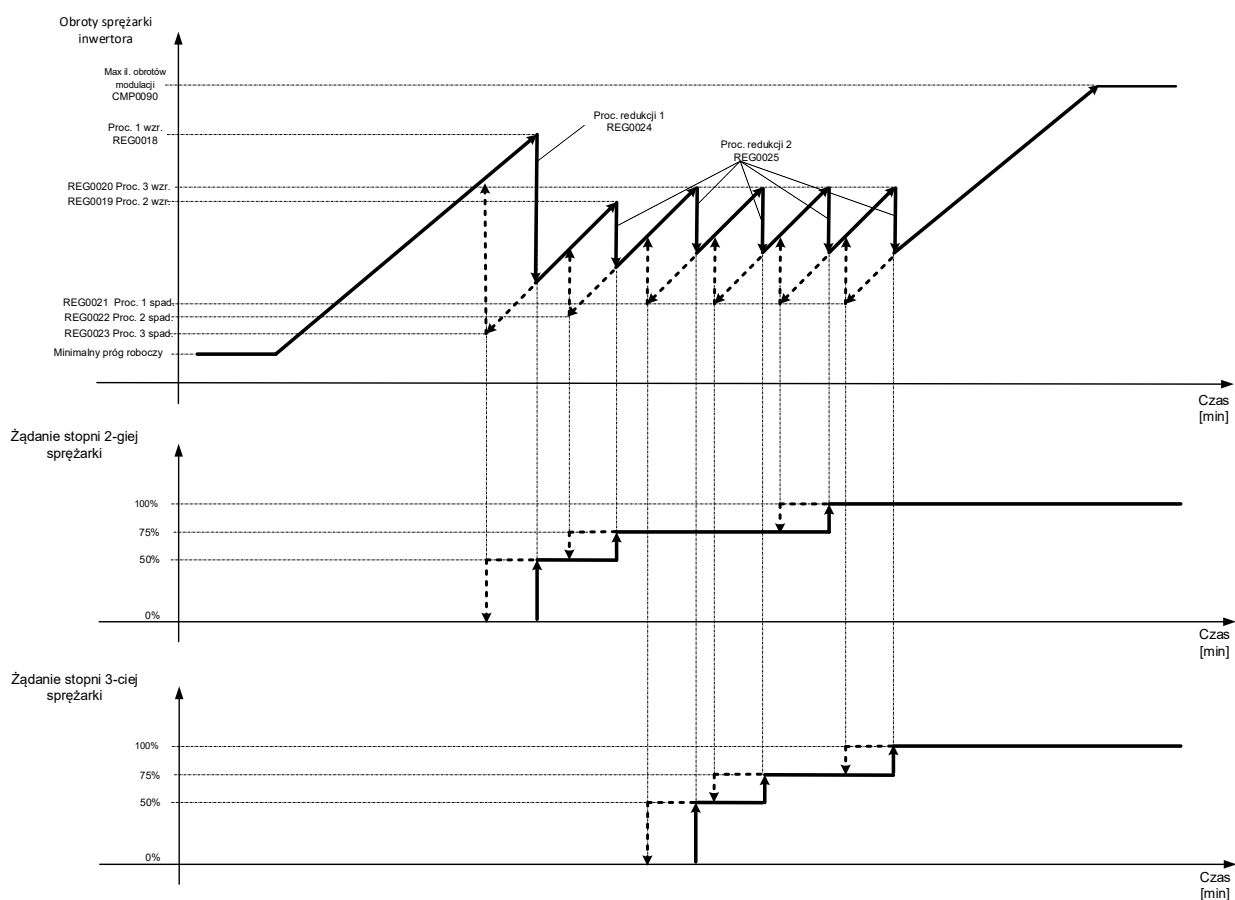
Jeżeli zapotrzebowanie instalacji zmniejsza się, regulator, nadal w oparciu o pewne progi liczby obrotów sprężarki z inwerterem ustawione w parametrze, zmniejsza liczbę stopni przypisanych sprężarkom o stałej prędkości.

Wyłączenie zasobów, niezależnie czy są to sprężarki o stałej prędkości czy sprężarka z inwerterem, może nastąpić wyłącznie, gdy temperatura na wyjściu spada poniżej dolnej granicy strefy neutralnej.

Zakres strefy neutralnej zależy od charakterystyki dynamicznej instalacji. Algorytm auto-adaptacyjny jest w stanie „zmierzyć” dynamikę instalacji i obliczyć minimalną strefę neutralną w taki sposób, aby były przestrzegane czasy załączania sprężarek oraz maksymalna liczba rozruchów godzinowych.

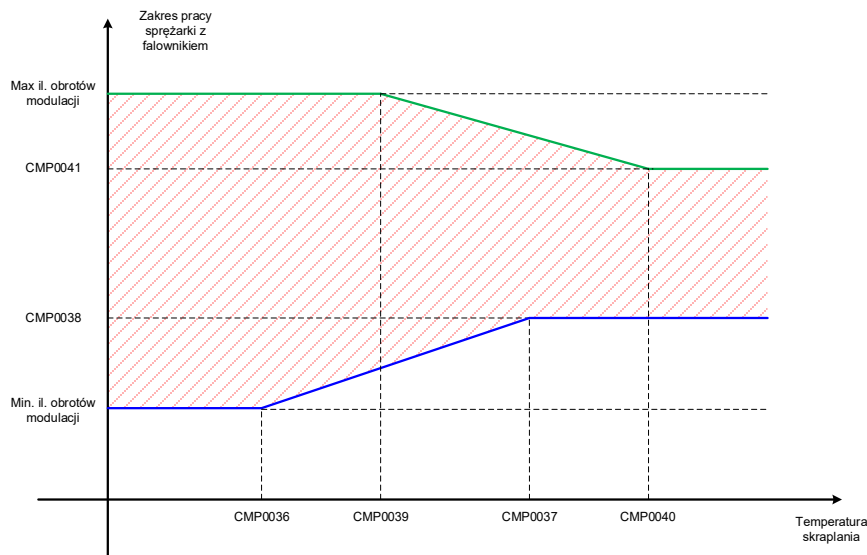


**Rysunek 1-16:** wykres działania regulatora sekwencyjnego dla agregatów z 2 sprężarkami śrubowymi, z których jedna jest sterowana przez inwerter.



**Rysunek 1-17:** wykres działania regulatora sekwencyjnego dla agregatów z 3 sprężarkami śrubowymi, z których jedna jest sterowana przez inwerter.

b) **PID** (regulator proporcjonalno-całkująco-różniczkujący), którego zmienną kontrolowaną jest temperatura na wyjściu, włącza się po uruchomieniu sprężarki z inwerterem i wyłącza się przy jej wyłączeniu. Zmienną zależną jest liczba obrotów sprężarki z inwerterem. Może być ona modulowana w zakresie obrotów zawierających się między minimalną wartością (Rysunek 1-18) a maksymalną wartością (Rysunek 1-19), które są określane w oparciu o temperaturę skraplania obwodu:



**Rysunek 1-18:** obliczanie minimalnego i maksymalnego progu pracy sprężarki z inwerterem.

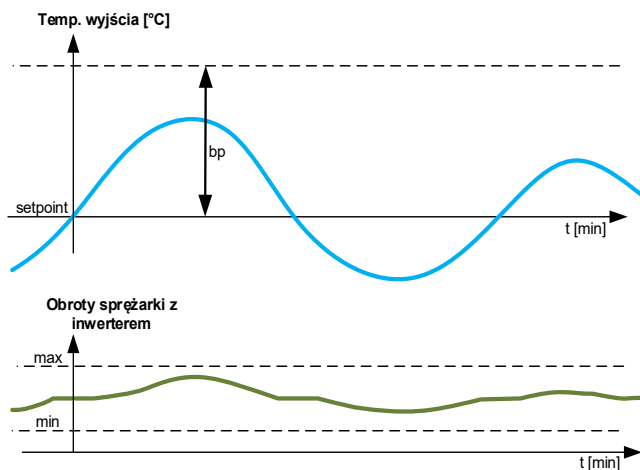
Dla regulatora PID można ustawić dodatkowo poniższe parametry: pasmo proporcjonalne (współczynnik członu proporcjonalnego) oraz  $T_i$  (czas całkowania). Czas różniczkowania został ustawiony fabrycznie na stałą wartość.

Obok:

Wykres działania regulatora PID:

temperatura zasilania jest cały czas monitorowana, realizując w ten sposób ciągłą kontrolę liczby obrotów sprężarki.

Strefa regulacji PID odnosi się do bp (pasmo proporcjonalne) ponad setpoint.



**Rysunek 1-19:** szczegóły PID dla temperatury na wyjściu.

### 1.4.7.2 Regulacja sekwencyjna w agregatach posiadających wszystkie sprężarki z inwerterem

Regulacja jest wykonywana przy pomocy dwóch regulatorów działających w skoordynowany sposób:

- Sekwencyjny** (regulator stopniowy) na sondzie wyjścia;
- PID** (modulacja) na sondzie wyjścia.

Setpoint jest jednakowy dla obu regulatorów.

a) Jest regulatorem stopniowym ze strefą neutralną, gdzie zmiennymi kontrolowanymi są temperatura na wyjściu z agregatu **Tout** oraz liczba obrotów sprężarek z inwerterem, natomiast zmienną zależną jest liczba załączanych sprężarek.

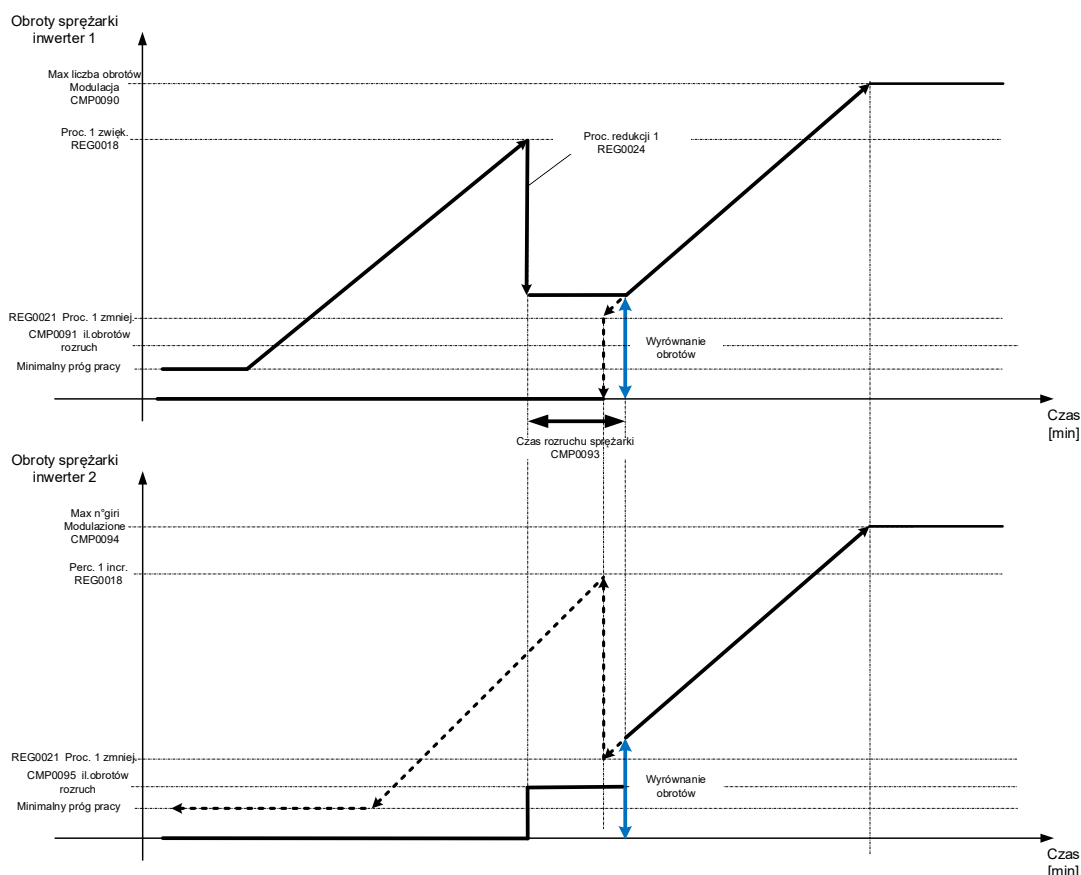
Opisy działania podane poniżej odnoszą się do trybu pracy agregatu chłodniczego dla agregatów z dwiema sprężarkami z inwerterem.

Setpoint znajduje się wewnątrz strefy neutralnej. Jeżeli agregat nie ma żadnej uruchomionej sprężarki, regulator czeka aż temperatura na wyjściu przekroczy górną granicę strefy neutralnej, po czym pojawia się żądanie załączenia pierwszej sprężarki. Powoduje to uruchomienie pierwszej sprężarki z inwerterem: sprężarka jest utrzymywana na liczbie obrotów przy uruchomieniu (CMP0091 i CMP0095) przez czas włączenia sprężarek (lub start na pusto, CMP0028). Następnie regulator rozpoczyna monitorowanie obrotów sprężarki z inwerterem i żąda włączenia drugiej sprężarki z inwerterem w oparciu o pewne progi procentowe ustawione w parametrze i odnoszące się do maksymalnej liczby obrotów, w celu modulacji sprężarki z inwerterem. Włączeniu drugiej sprężarki odpowiada stosowne zmniejszenie procentowe liczby obrotów pierwszej sprężarki z inwerterem, w celu utrzymania równomiernej dostawy mocy chłodniczej. Druga sprężarka, w stanie rozruchu, jest utrzymywana na poziomie liczby obrotów przy rozruchu przez czas rozruchu sprężarek (lub przy starcie na pusto), na zakończenie którego obroty drugiej sprężarki zostają wyrównane z obrotami pierwszej.

Jeżeli zapotrzebowanie instalacji zmniejsza się, regulator, w oparciu o pewne progi liczby obrotów sprężarki z inwerterem ustawione w parametrze, zmniejsza liczbę zasobów, powodując wyłączenie sprężarki.

Wyłączenie zasobów może nastąpić wyłącznie wtedy, gdy temperatura wyjścia spada poniżej dolnej granicy strefy neutralnej.

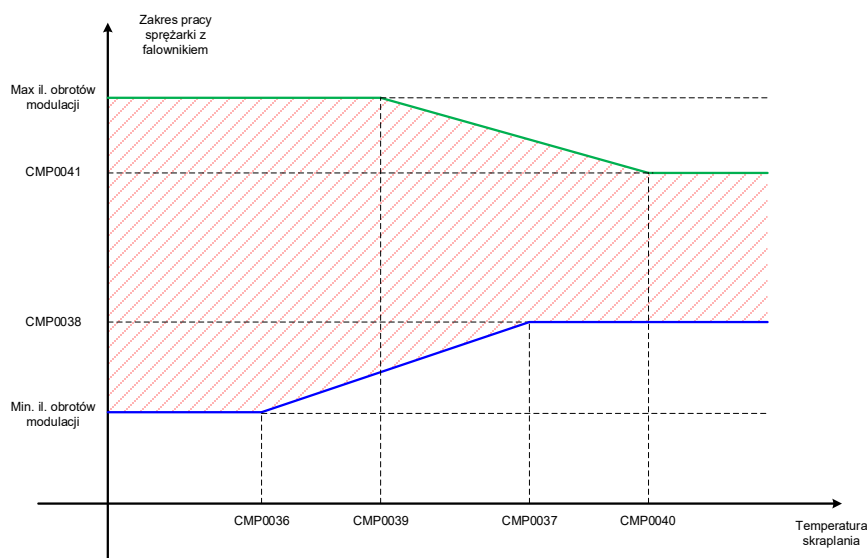
Zakres strefy neutralnej zależy od charakterystyki dynamicznej instalacji. Algorytm auto-adaptacyjny jest w stanie „zmierzyć” dynamikę instalacji i obliczyć minimalną strefę neutralną w taki sposób, aby były przestrzegane czasy załączania sprężarek oraz maksymalna liczba rozruchów godzinowych.



Rysunek 1-20: wykres działania regulatora sekwencyjnego dla agregatów z 2 sprężarkami z falownikiem.

Logika regulacji jest stosowana w agregatach full inverter, do maksymalnie 4 różnych sprężarek z inwerterem (prędkości konfigurowane oddzielnie dla każdej sprężarki). Redukcja obrotów aktywnych sprężarek przy włączeniu trzeciej i czwartej sprężarki równa się 2/3 procentowej redukcji ustawionej w parametrze REG0021.

b) **PID** (regulator proporcjonalno-całkująco-różniczkujący), którego zmienną kontrolowaną jest temperatura na wyjściu, włącza się po uruchomieniu sprężarki z inwerterem i wyłącza się przy jej wyłączeniu. Zmienną zależną jest liczba obrotów sprężarek z inwerterem. Może być ona modulowana w zakresie obrotów zawierających się między minimalną wartością (Rysunek 1-21) a maksymalną wartością (Rysunek 1-22), które są określane w oparciu o temperaturę skraplania obwodu:



**Rysunek 1-21:** obliczanie minimalnego i maksymalnego progu pracy sprężarek z inwerterem.

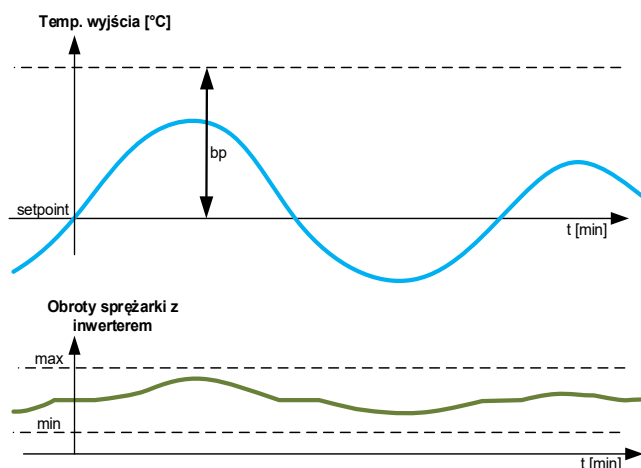
Dla regulatora PID można ustawić dodatkowo poniższe parametry: pasmo proporcjonalne (współczynnik członu proporcjonalnego) oraz  $T_i$  (czas całkowania). Czas różniczkowania został ustawiony fabrycznie na stałą wartość.

Obok:

Wykres działania regulatora PID:

temperatura zasilania jest cały czas monitorowana, realizując w ten sposób ciągłą kontrolę liczby obrotów sprężarki.

Strefa regulacji PID odnosi się do bp (pasmo proporcjonalne) ponad setpoint.



**Rysunek 1-22:** szczegół PID dla temperatury na wyjściu.

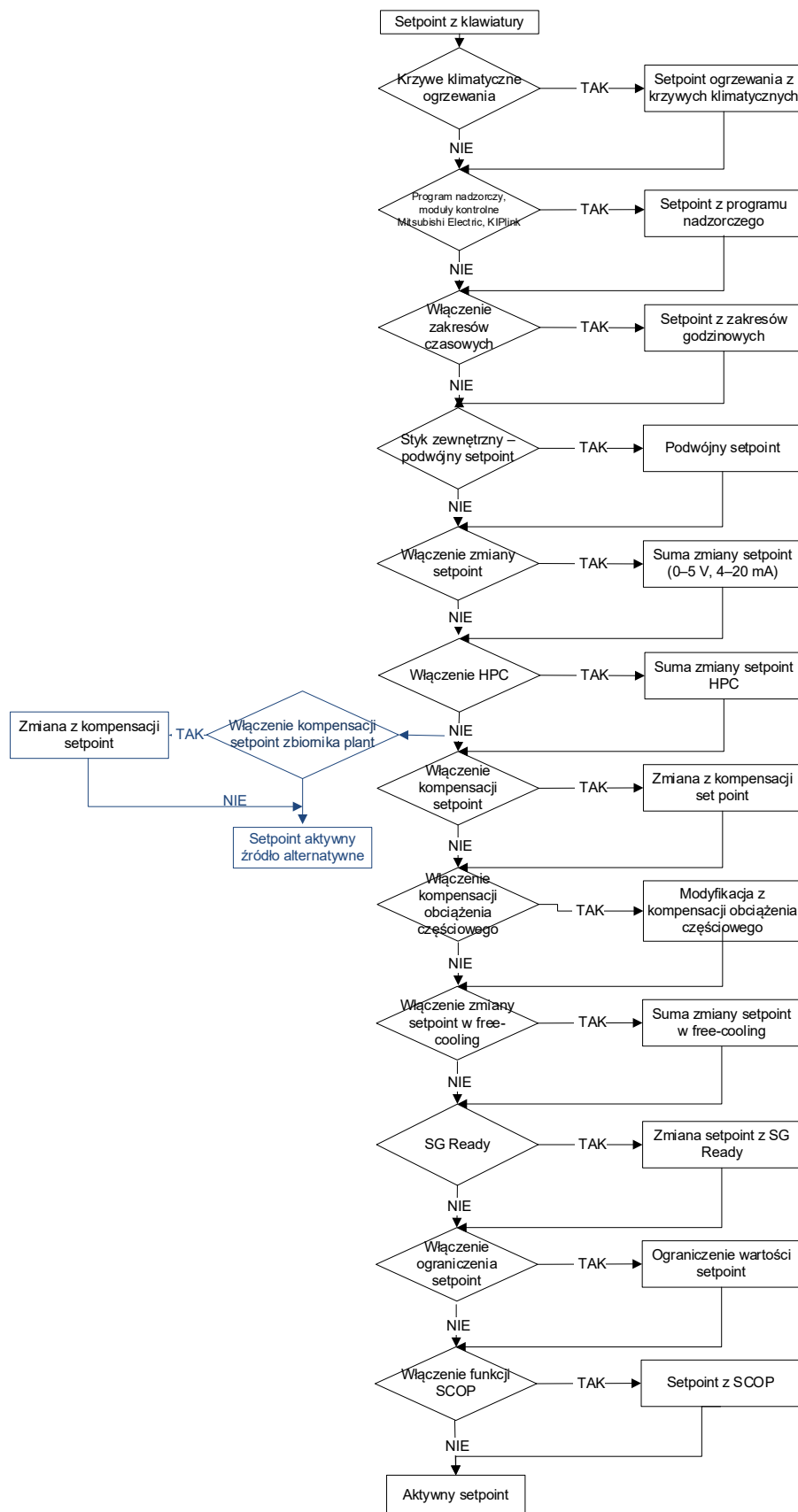


## **1.5 Ustawienie wartości zadanej**

Istnieje kilka procedur do ustawienia setpoint:

1. setpoint z klawiatury W3000compact/W3000large/W3000+touch;
2. setpoint z programu nadzorczego lub ze zdalnych sterowników systemu Mitsubishi Electric;
3. setpoint z KIPlink;
4. setpoint z zakresów godzinowych;
5. styk zewnętrzny – podwójny setpoint.

Setpoint ustawiony za pomocą klawiatury, lub wybrany przez styk zewnętrzny w przypadku podwójnego setpoint, jest modyfikowany przez wszystkie włączone funkcje i przekształcany w aktywny setpoint przekazywany do regulatorów.



Rysunek 1-23: kolejność funkcji modyfikacji ustawionej wartości zadanej, aż do uzyskania wartości zadanej aktywnej.

Przykład:

Setpoint z klawiatury: 7,0°C  
 Podwójny set point: 10,0°C  
 Zmiana setpoint na 50%, co odpowiada 2,5°C  
 Setpoint aktywny z otwartym stykiem:  $7,0 + 2,5 = 9,5^{\circ}\text{C}$   
 Setpoint aktywny z zamkniętym stykiem:  $10,0 + 2,5 = 12,5^{\circ}\text{C}$

#### Adnotacja:

Sygnał wywołany przez zmianę setpoint jest zawsze sumowany, niezależnie od trybu pracy agregatu.

#### Adnotacja:

jeżeli zostanie włączone sterowanie z Managera lub Sekwensera, funkcje: zakresy godzinowe, podwójny setpoint i zmiana setpoint zostaną przymusowo wyłączone.

#### Adnotacja:

Funkcje ograniczenia i kompensacji setpoint są dostępne tylko jeżeli występuje sonda zewnętrznej temperatury powietrza. Sonda ta nie jest dostępna w agregatach chłodzonych wodą.

#### Adnotacja:

Funkcja SCOP wyłącza funkcje kompensacji i ograniczenia setpoint pompy ciepła.

W menu setpoint jest widoczny aktywny setpoint temperatury (zarówno setpoint obwodu głównego, jak i setpoint obwodu odzysku/DHW).

Jeżeli jest aktywna funkcja Sterowania Instalacją, jest widoczny aktywny setpoint temperatury zespołu.

Poniżej przedstawione jest znaczenie migających symboli wskazujących aktywne funkcje dla setpoint oraz trybu pracy:

- R:** funkcja zmiany przez styk wyniesiony lub temperaturę zewnętrzną.
- V:** funkcja zmiany przez sygnał zewnętrzny.
- B:** funkcja modyfikacji z zakresów godzinowych.
- C:** funkcja kompensacji w oparciu o temperaturę zewnętrzną.
- L:** funkcja ograniczenia w oparciu o temperaturę zewnętrzną.
- P:** funkcja kompensacji przy obciążeniach częściowych.
- S:** wartość uzyskana z Sekwensera.
- M:** wartość uzyskana z Managera 3000.
- Q:** wartość zmodyfikowana przez funkcję Pasma Mobilnego.
- F:** funkcja zmiany w free-cooling.
- A:** wartość uzyskana z ClimaPRO.
- E:** funkcja SCOP.
- D:** funkcja adaptive setpoint zespołu.
- O:** funkcja HPC.

Setpoint aktywny:  
  
 Główny 07,0°C **B**  
 Odzysk/DHW 42,5°C **R**

Typ agregatu:  
 Agregat chłodniczy  
 Tryb pracy:  
 auto **R**  
 Regulacja aktywna:  
 Quick Mind  
 na wyjściu

Setpoint grupy  
 aktywny: 07,0 °C **D**

Jeżeli są włączone jednocześnie:

- Konfiguracja linii szeregowej USR0002 = 5 Nadzór z watchdog.
- Aktywne zezwolenie na autonomiczną pracę w przypadku rozłączenia nadzoru (tylko dla linii szeregowej skonfigurowanej w trybie „Nadzór z watchdog”) (protokoły coil15 Modbus, Modbus over IP i Bacnet).
- Przywrócenie ustawień lokalnych w stand-alone USR0010 = 1: aktywne.

Program nadzorczy nie może zmienić setpoint ustawionego z klawiatury, ponieważ jest on używany w przypadku rozłączenia (stan agregatu U.ALONE).

## 1.6 Funkcje dodatkowe

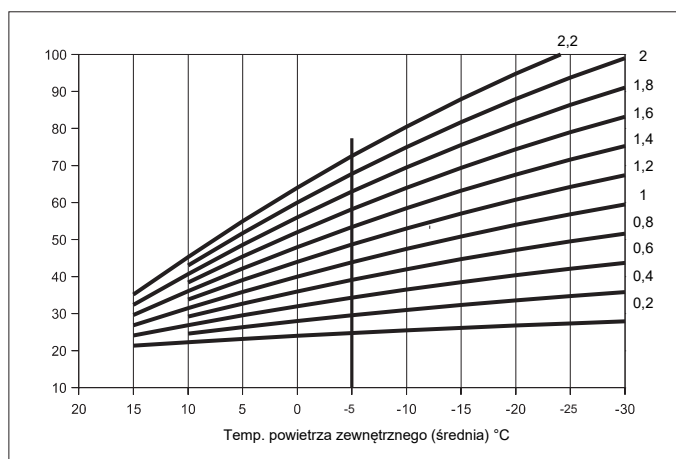
Temperatura wody w obwodzie grzewczym lub chłodniczym jest wartością obliczaną przez sterownik i zależy od następujących czynników:

- A) Kompensacja setpoint wody w instalacji w trybie grzania lub chłodzenia.
- B) Wpływ temperatury otoczenia.
- C) Ustawiony setpoint temperatury pomieszczenia.

### A) Kompensacja setpoint temperatury wody w instalacji

Setpoint temperatury wody w trybie grzania lub chłodzenia jest obliczany poprzez śledzenie przebiegu krzywej temperatury zewnętrznej zgodnie z ustawionymi krzywymi.

Wykres kompensacji setpoint wody grzewczej:



Krzywa klimatyczna w trybie ogrzewania może zostać zmodyfikowana, aby umożliwić prawidłową pracę pompy ciepła w zależności od instalacji grzewczej (panele radiacyjne, grzejniki, klimakonwektory).

Przykład: wybór krzywej grzewczej 1.4 przy temperaturze powietrza zewnętrznego  $-5^{\circ}\text{C}$  daje temperaturę wody ok.  $+53^{\circ}\text{C}$ .

Zbyt wysoka krzywa grzewcza przekłada się na zbyt wysokie temperatury zasilania, zbyt niska krzywa może spowodować, że żądana temperatura pomieszczenia nie zostanie osiągnięta.

Dane wejściowe do krzywej klimatycznej, określone przez różnicę między setpoint pomieszczenia a temperaturą pomieszczenia są dostępne tylko w przypadku interfejsu Touch Room HMI.

Sugeruje się następujące krzywe kompensacji:

| Typ terminalu     | Współczynnik |
|-------------------|--------------|
| Panele radiacyjne | 0,2–0,7      |
| Klimakonwektory   | 0,9–1,1      |
| Grzejniki         | 1,2–1,5      |

### Krzywe klimatyczne w ogrzewnictwie dzielą się na:

- Krzywa instalacji (strefa HT): określa wartość setpoint pracy pompy ciepła i wszelkich ewentualnych stref wysokiej temperatury. Obliczony setpoint odnosi się do temperatury wody zasilającej z pompy ciepła. Sprawdzić, czy delta temperatury mieści się w wymaganych przez producenta granicach.
- Krzywa strefy LT: określa wartość temperatury wody zasilającej z obwodu mieszanego. W przypadku instalacji skonfigurowanych ze strefami mieszanymi należy wybrać krzywą instalacji i krzywą strefy.

Krzywe instalacji i strefy działają kaskadowo, krzywa klimatyczna strefy mieszanej nie może zatem żądać wyższej wartości niż zapewniana przez krzywą instalacji. Krzywe klimatyczne odnoszą się do setpoint pomieszczenia 20°C, ustawionego na panelu sterowania Touch Room HMI.

| Nr par. | Opis parametru                                                              | Default | J.M. | Min. | Maks. | Menu           | Podmenu        |
|---------|-----------------------------------------------------------------------------|---------|------|------|-------|----------------|----------------|
| SET0034 | Włączenie strefowych krzywych klimatycznych (0:Nie - 1:HT - 2:LT - 3:HT+LT) | 0       | -    | 0    | 3     | Wartość zadana | Wartość zadana |
| SET0035 | Współczynnik krzywej klimatycznej strefy HT                                 | 1,0     | -    | 0    | 2     | Wartość zadana | Wartość zadana |
| SET0036 | Offset krzywej klimatycznej strefy HT                                       | 0,0     | °C   | -9,9 | 9,9   | Wartość zadana | Wartość zadana |
| SET0037 | Offset przy 20°C krzywej klimatycznej strefy HT                             | 0,0     | °C   | -9,9 | 9,9   | Wartość zadana | Wartość zadana |
| SET0039 | Współczynnik krzywej klimatycznej strefy LT                                 | 1,0     | -    | 0    | 2     | Wartość zadana | Wartość zadana |
| SET0040 | Offset krzywej klimatycznej strefy LT                                       | 0,0     | °C   | -9,9 | 9,9   | Wartość zadana | Wartość zadana |
| SET0041 | Offset przy 20°C krzywej klimatycznej strefy LT                             | 0,0     | °C   | -9,9 | 9,9   | Wartość zadana | Wartość zadana |

### B) Wpływ temperatury pomieszczenia na ogrzewanie



#### POWIADOMIENIE:

Funkcja aktywna tylko wtedy, gdy obecne są regulatory pokojowe Touch Room HMI.

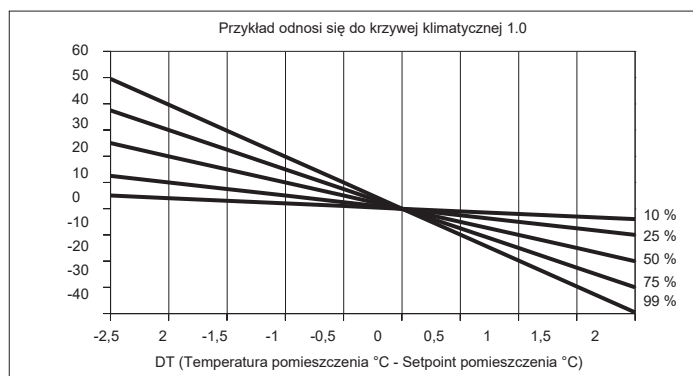
Krzywa klimatyczna określa wartość temperatury wody w trybie ogrzewania, którą można skorygować w oparciu o różnicę między żądanym setpointem w pomieszczeniu a rzeczywistą temperaturą pomieszczenia. Korekta wprowadzona do temperatury wody zależy od współczynnika „wpływu temperatury pomieszczenia instalacji”. Im większa wartość współczynnika „wpływu temperatury pomieszczenia instalacji”, tym większa korekta temperatury wody w instalacji i odwrotnie.

Pozwala szybko dostosować temperaturę wody do zmienności kombinacji środowiskowych panujących w pomieszczeniach.

Ustawić wartości wpływu temperatury pomieszczenia instalacji na równe lub większe od stref LT.

Ustawić odpowiednią wartość wpływu temperatury pomieszczenia instalacji, aby uzyskać obliczone przesunięcie setpoint temperatury wody powrotnej do pompy ciepła.

Analogicznie do wpływu temperatury pomieszczenia w strefie LT uzyskuje się odchylenie obliczonego setpoint temperatury wody zasilającej instalację, regulowanej przez zawór mieszający.

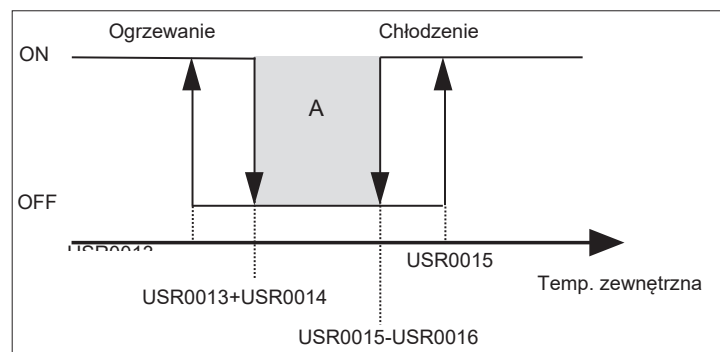


| Nr par. | Opis parametru                                          | Default | J.M. | Min. | Maks. | Menu           | Podmenu        |
|---------|---------------------------------------------------------|---------|------|------|-------|----------------|----------------|
| SET0038 | Procentowy wpływ temperatury pomieszczenia w strefie HT | 0       | %    | 0    | 99    | Wartość zadana | Wartość zadana |
| SET0042 | Procentowy wpływ temperatury pomieszczenia w strefie LT | 0       | %    | 0    | 99    | Wartość zadana | Wartość zadana |

### Automatyczna zmiana trybu pracy w zależności od temperatury zewnętrznej

W trybie automatycznym zmiana sezonu (grzanie/chłodzenie) następuje automatycznie, bez ręcznej interwencji użytkownika.

Zmianę sezonu przedstawia schemat na rysunku:



Strefa centralna A odpowiada fazie beczynności, ponieważ zewnętrzne warunki klimatyczne nie wymagają ani ogrzewania, ani chłodzenia.

| Nr par. | Opis parametru                                             | Default | J.M. | Min   | Maks. | Menu       | Podmenu    |
|---------|------------------------------------------------------------|---------|------|-------|-------|------------|------------|
| USR0012 | Automatyczna zmiana trybu pracy (0:wylączona - 1:włączona) | 0       | -    | 0     | 1     | Użytkownik | Użytkownik |
| USR0013 | Setpoint ogrzewania dla automatycznej zmiany trybu pracy   | 16,0    | °C   | -99,9 | 99,9  | Użytkownik | Użytkownik |
| USR0015 | Setpoint chłodzenia dla automatycznej zmiany trybu pracy   | 24,0    | °C   | -99,9 | 99,9  | Użytkownik | Użytkownik |
| USR0014 | Różnica ogrzewania dla automatycznej zmiany trybu pracy    | 2,0     | °C   | -99,9 | 99,9  | Użytkownik | Użytkownik |
| USR0016 | Różnica chłodzenia dla automatycznej zmiany trybu pracy    | 2,0     | °C   | -99,9 | 99,9  | Użytkownik | Użytkownik |

## 1.7 Zastosowane symbole

Poniżej przedstawiamy niektóre symbole użyte na ekranach W3000+ i W3000 compact.

| Migające elementy ekranu głównego | Opis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BANDS                             | Są aktywne zakresy czasowe.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| FCOOL                             | Agregat przeprowadza free-cooling.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| LIMIT                             | Jest aktywne ograniczenie mocy (demand limit), ograniczenie wysokiej temperatury otoczenia lub ograniczenie prądu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| NIGHT ON                          | Aktywna funkcja nocna.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| FREEZE                            | Temperatura na wyjściu zbliża się do setpoint ochrony przed zamarzaniem lub temperatura otoczenia poniżej setpoint ochrony przed zamarzaniem i aktywacja ochrony przed zamarzaniem w pomieszczeniu.                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| PUMP ON                           | Pompa aktywna z powodu niskiej temperatury wody / powietrza na zewnątrz.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| FULL LOAD                         | Aktywne wymuszenie maksymalnej pracy co najmniej jednego obwodu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| U.ALONE                           | Agregat pracuje samodzielnie po odłączeniu od Manager3000, Sekwensera lub ClimaPRO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| HPTC                              | Aktywne ograniczenie obwodów spowodowane wysokim ciśnieniem skraplania.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DEFR                              | Aktywne odszranianie na jednym lub kilku obwodach agregatu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| DRIP                              | Aktywne odsączanie na jednym lub kilku obwodach agregatu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| STORAGE                           | Aktywna funkcja akumulacji energii.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| MIN LOAD                          | Aktywne wymuszenie minimalnej pracy co najmniej jednego obwodu lub wyłączenie w celu odzyskania oleju.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| DHW COMPR                         | Agregat wytwarza ciepłą wodę użytkową DHW, używając sprężarek.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| DHW BOILER                        | Agregat wytwarza ciepłą wodę użytkową DHW z wykorzystaniem grzałek lub kotła.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| DHW BOOST                         | Agregat wytwarza ciepłą wodę użytkową DHW na set overboost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| PLT COMPR                         | Agregat podgrzewa nagromadzoną wodę w układzie, wykorzystując sprężarki.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| PLT BOILER                        | Agregat podgrzewa wodę nagromadzoną w układzie, wykorzystując grzałki lub kocioł.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ANTILEG                           | Aktywna funkcja ochrony przed zakażeniem bakteriami legionelli.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| OFF SNIFF.                        | Przy aktywacji funkcji Sniffer pompy są zatrzymane lub, jeżeli są włączone, następuje aktualizacja temperatur zasilania/powrotu z instalacji przed ponownym włączeniem termoregulatorów.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| OFF STOR.                         | Agregat jest wyłączony z powodu osiągnięcia wartości setpoint temperatury zbiornika magazynującego.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| POWER-ON                          | Agregat jest w stanie oczekiwania na opóźnienie rozruchu po zaniku napięcia.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| WAIT                              | Agregat jest włączony i termoregulatory czekają na bieżące regulacje czasowe.<br>Przyczyny migającego komunikatu „WAIT” mogą być następujące: <ul style="list-style-type: none"> <li>- Oczekiwanie na ustabilizowanie wymiany baterii (jednostki z Free-cooling).</li> <li>- Partycjonowanie podczas rozruchu (agregaty hybrydowe ze sprężarkami hermetycznymi).</li> <li>- Blokada uruchomienia agregatu w przypadku wysokiej temperatury na wejściu wymiennika ciepła.</li> <li>- Zwiększenie liczby włączonych sprężarek.</li> <li>- Aktywne czasy bezpieczeństwa między sprężarkami (również między oddzielnymi obwodami).</li> </ul> |
| FAST                              | Jest aktywna funkcja szybkiego rozruchu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| PUMPDOWN ON                       | Jest aktywna funkcja pumpdwn w co najmniej jednym obwodzie agregatu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| +2P ENABLED                       | Aktywny moduł +2P.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| KIPLink FOUND                     | Wykryto moduł KIPLink.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| OIL T. LOW                        | Niska temperatura oleju silnika.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| SG READY                          | SG Ready aktywny.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| NO REG                            | Przy aktywnej automatycznej zmianie trybu pracy, zewnętrzne warunki klimatyczne nie wymagają włączenia sprężarek (ani grzanie, ani chłodzenie).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| PLANT OFF                         | Żądanie produkcji ciepłej lub zimnej wody po stronie instalacji jest wyłączona z powodu braku zapotrzebowania ze stref systemu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| BOOST                             | Aktywna funkcja Boost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CIRC 1 LOCK                       | Obwód 1 w trybie blokady.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CIRC 2 LOCK                       | Obwód 2 w trybie blokady.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CIRC 3 LOCK                       | Obwód 3 w trybie blokady.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CIRC 4 LOCK                       | Obwód 4 w trybie blokady.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| CHDT                              | Wymuszone wyłączenie sprężarek w przypadku wysokiej temperatury tłoczenia jest aktywne.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Miganie BANDS, LIMIT, NIGHT ON, NO REG, PLANT OFF, BOOST są aktywne tylko z agregatem ustawionym na ON.

| Symbol menu Grupy | Opis                                                                                    |
|-------------------|-----------------------------------------------------------------------------------------|
| GRP FCOOL         | Co najmniej jeden agregat w grupie wykonuje Free-Cooling.                               |
| GRP LIMIT         | Jest aktywne ograniczenie mocy zespołu (demand limit zespołu).                          |
| GRP FAST          | Jest aktywna funkcja szybkiego rozruchu zespołu.                                        |
| WAIT LAN          | Anomalia połączenia między agregatami w zespole. Polecenie On/Off zespołu niedozwolone. |

Migające symbole GRP FCOOL, GRP LIMIT i GRP FAST są aktywne wyłącznie, gdy instalacja jest ON.

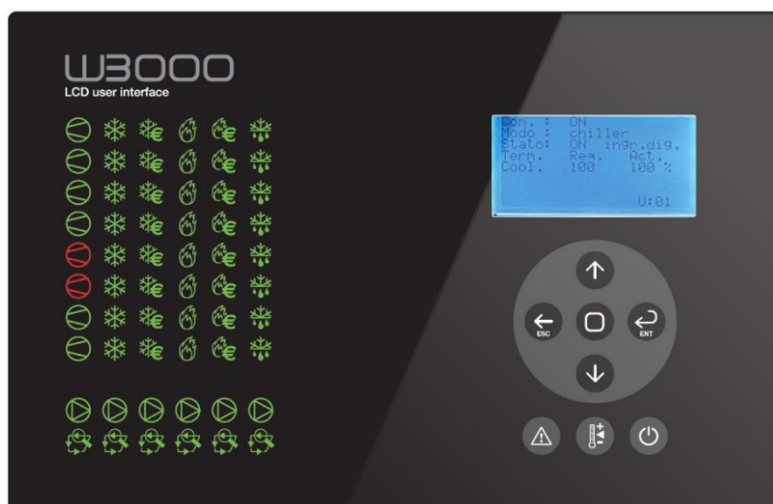
| Symbol menu agregatu | Opis                                                                   |
|----------------------|------------------------------------------------------------------------|
| Off                  | Agregat/obwód wyłączony.                                               |
| Ch nr                | Obwód agregatu chłodniczego niewymagany przez termoregulator.          |
| Ch                   | Obwód agregatu chłodniczego wymagany przez termoregulator.             |
| Ch+R                 | Obwód agregatu chłodniczego z odzyskiem wymagany przez termoregulator. |
| Hp nr                | Obwód pompy ciepła niewymagany przez termoregulator.                   |
| Hp                   | Obwód pompy ciepła wymagany przez termoregulator.                      |
| R nr                 | Obwód samego odzysku niewymagany przez termoregulator.                 |
| R                    | Obwód samego odzysku wymagany przez termoregulator.                    |
| Pd                   | Obwód w Pumpdown.                                                      |
| Defr                 | Obwód w toku odszraniania.                                             |
| Drip                 | Obwód w toku odsączania.                                               |



## 2 INTERFEJS UŻYTKOWNIKA

### 2.1 Terminal użytkownika

Są dostępne trzy rodzaje interfejsu użytkownika:



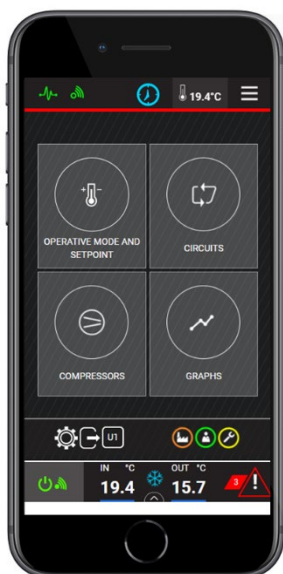
W3000 large



W3000 compact



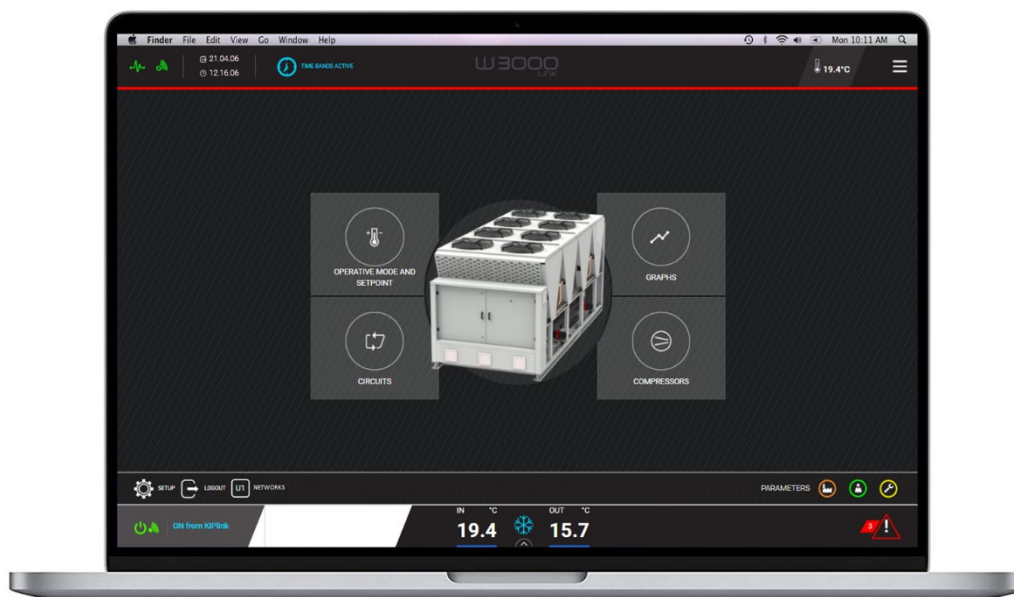
W3000Touch+



Rysunek 2-1: wersja mobilna.



Rysunek 2-2: wersja z tabletem.



Rysunek 2-3: wersja na Notebook (na użycie Local Monitoring).

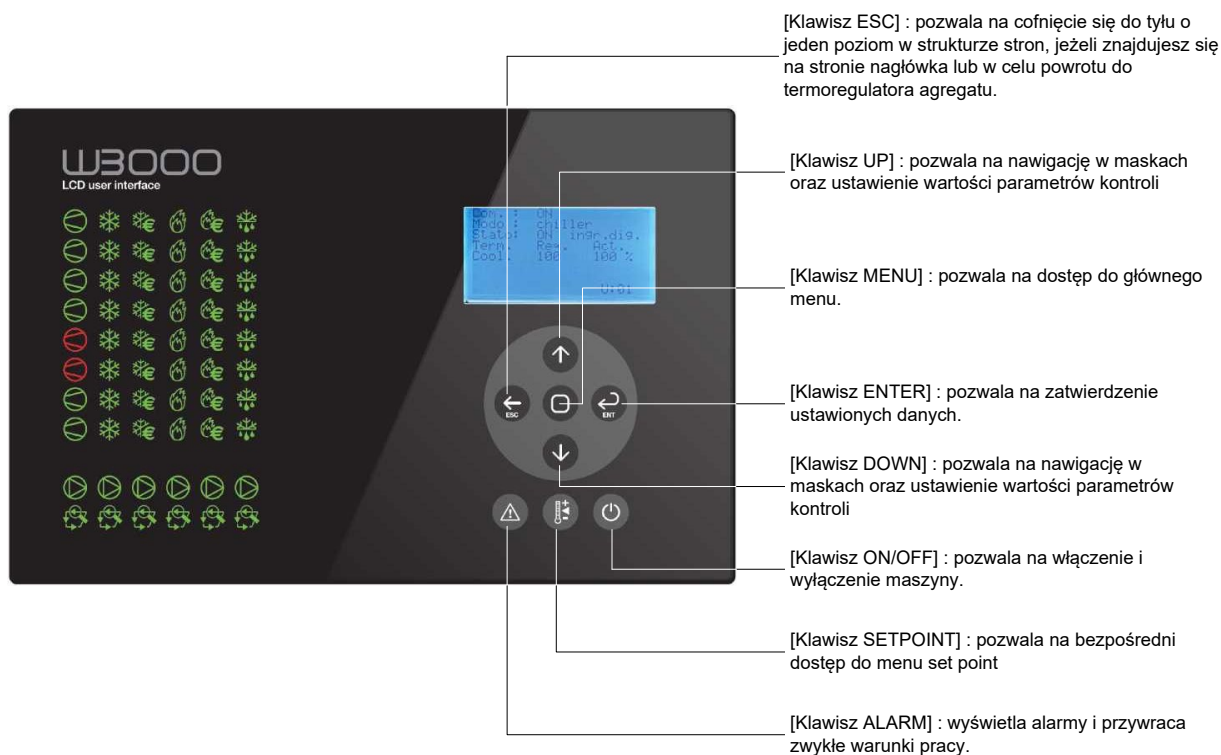


#### INFORMACJA:

Obraz głównego rysunku schematycznego pokazany na rysunkach w tym podręczniku jest przykładem pewnego typu maszyny. Może zatem nie być zgodny z tym, co jest wyświetlane w interfejsie użytkownika sterowania agregatu.

### 2.1.1 Klawiatura W3000 large

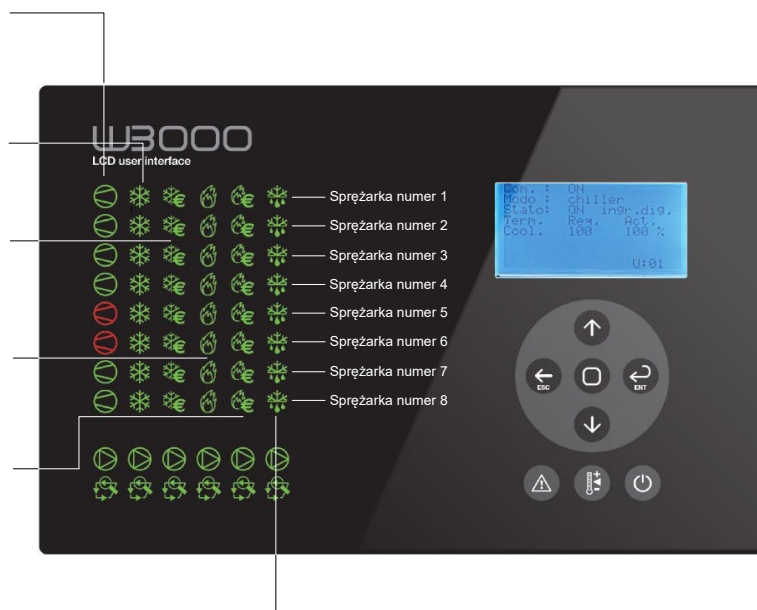
Znaczenie klawiszy:



**Rysunek 2-4:** Znaczenie klawiszy na klawiaturze W3000 large.

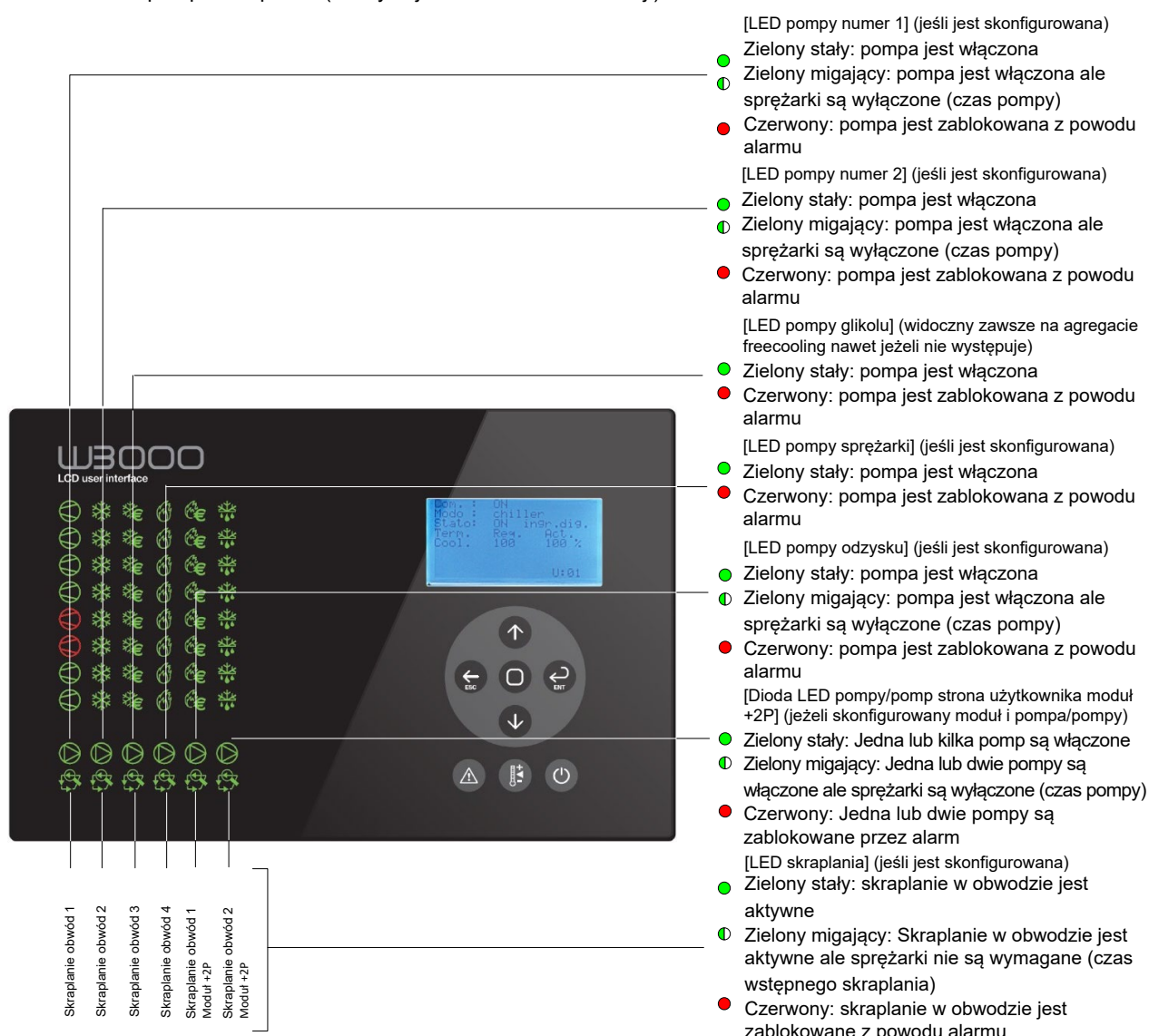
## Znaczenie led sprężarek:

- [LED sprężarki]
  - Zielony stały: sprężarka jest włączona
  - ⦿ Zielony migający: wymagana sprężarka
  - Czerwony: Sprężarka jest zablokowana z powodu alarmu sprężarki lub obwodu
- [LED chiller]
  - Zielony stały: Sprężarka jest w trybie funkcjonowania "chiller"
- [LED freecooling]
  - Zielony stały: jest aktywny "freecooling"
- [LED pompa ciepła]
  - Zielony stały: sprężarka jest w trybie funkcjonowania "pompa ciepła"
- [LED odzysku]
  - Zielony stały: sprężarka jest w trybie funkcjonowania "odzysk"
  - ⦿ Zielony migający: sprężarka jest w "alarmie odzysku"
- [LED odmrażania]
  - Zielony stały: sprężarka jest w trybie "odmrażania"
  - ⦿ Zielony migający: sprężarka jest w trybie "kapania"



**Rysunek 2-5:** Znaczenie led Sprężarek na klawiaturze W3000 large.

Znaczenie led pomp i skraplania (wentylacja lub zawór kondensacji):



**Rysunek 2-6: Znaczenie led Pomp i Skraplania na klawiaturze W3000 large**

## Uwagi:

- Gdy podłącza się napięcie do agregatu i następnie do klawiatury, przez kilka sekund sprawdzane jest działanie wszystkich diod LED przez jednoczesne włączenie ich wszystkich (w przypadku diod LED dwukolorowych, najpierw czerwona i następnie zielona).
- Przykład na rysunku pokazuje agregat z 8 sprężarkami, włączenie linii sprężarek zależy od ilości występujących sprężarek.
- LED skraplania mogą włączyć się jednocześnie w kilku obwodach jeżeli skraplanie jest wspólne dla dwóch lub kilku obwodów.
- Podświetlenie klawiatury wyłącza się, jeżeli w ciągu 2 minut nie zostanie naciśnięty żaden przycisk.
- Podświetlenie klawiatury zaczyna migać w przypadku wystąpienia alarmu w agregacie oraz w przypadku braku współpracy z klawiaturą.

## Adnotacje dla agregatów wyposażonych w moduł +2P:

- Możliwe jest wyświetlenie danych i parametrów modułu +2P z kombinacją klawiszy (ESC+UP), powtarzając tę kombinację klawiszy powraca się do głównego interfejsu użytkownika.
- Włączenie/wyłączenie agregatu nie może nastąpić jeżeli interfejs użytkownika jest ustawiony na kontroli modułu +2P, w tym wypadku przejść za pomocą kombinacji klawiszy (ESC+UP) do głównego interfejsu w celu wykonania odpowiedniego polecenia.
- Diody LED właściwe dla sprężarek 5, 6, 7, 8 w tym wypadku przedstawiają stan sprężarek 1, 2, 3, 4 modułu +2P.

### 2.1.2 Klawiatura W3000 compact

[Klawisz ALARM] : wyświetla alarmy i przywraca zwykłe warunki pracy. Jeżeli świeci się na czerwono, występuje co najmniej jeden alarm/sygnał.

[Klawisz MENU] : pozwala na dostęp do głównego menu. Jeżeli świeci się na żółto, jest się wewnątrz menu.

[Klawisz ESC] : pozwala na cofnięcie się do tyłu o jeden poziom w strukturze stron, jeżeli znajdujesz się na stronie nagłówka lub w celu powrotu do termoregulatora agregatu.



[Klawisz UP] : pozwala na nawigację w maskach oraz ustawienie wartości parametrów kontroli

[Klawisz ENTER] : pozwala na zatwierdzenie ustawionych danych.

[Klawisz DOWN] : pozwala na nawigację w maskach oraz ustawienie wartości parametrów kontroli

#### Uwagi:

- Podświetlenie klawiatury wyłącza się, jeżeli w ciągu 2 minut nie zostanie naciśnięty żaden przycisk.
- Podświetlenie klawiatury zaczyna migać w przypadku wystąpienia alarmu w agregacie oraz w przypadku braku współpracy z klawiaturą.

**Rysunek 2-7:** Znaczenie klawiszy i LED na klawiaturze W3000 compact.

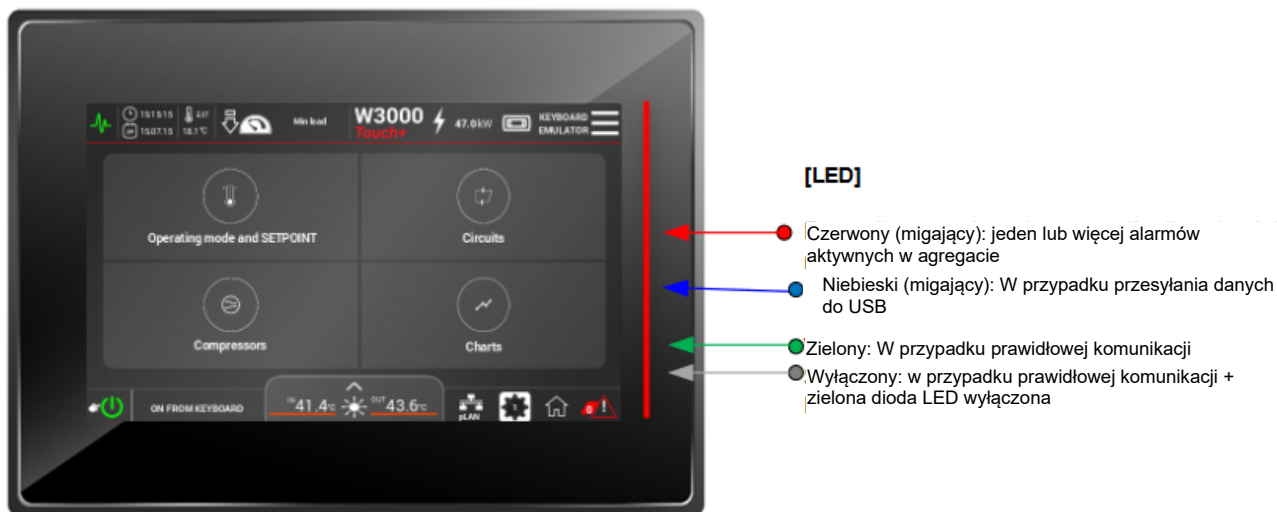
Za pomocą niektórych kombinacji przycisków można uaktywnić specjalne funkcje:

| Klawisz                                                                                                                                                                                                                                                         | Opis                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  +  +     | <b>[Klawisz PRG + ALARM + UP]:</b><br>Pozwala na zwiększenie kontrastu displayu.                                                                               |
|  +  +  | <b>[Klawisz PRG + ALARM + DOWN]:</b><br>Pozwala na zmniejszenie kontrastu displayu                                                                             |
|  +                                                                                        | <b>[Klawisz ESC + ALARM]:</b><br>Dzięki klawiaturze współdzielonej umożliwia przełączanie widoku ekranów i parametrów dla urządzeń podłączonych do sieci pLAN. |
|  +  +  | <b>[Klawisz UP + DOWN + ENTER]:</b><br>Gdy jest wciśnięty przez 5 sekund, pozwala na ustawienie adresu pLAN terminalu użytkownika.                             |
|  +                                                                                        | <b>[Klawisz ALARM + UP]:</b><br>Pozwala na skonfigurowanie adresu pLAN płyty sterującej, gdy terminal użytkownika ustawiony jest na 0.                         |

Te kombinacje klawiszy (mimo że z odmiennymi symbolami) obowiązują również dla klawiatury W3000 large.

### 2.1.3 Klawiatura W3000Touch+

Wersja z ekranem 7”:



**Rysunek 2-8:** Znaczenie poszczególnych elementów na klawiaturze W3000Touch+ 7”.

W celu uzyskania informacji odnośnie klawiatury, odnieść się do specjalnego podręcznika, odpowiedniego dla wersji oprogramowania W3000+.



### 2.1.4 Dostęp przez aplikację

Aby uzyskać dostęp do urządzenia i sterować nim, należy:

- Najpierw zainstalować aplikację KIPLink na urządzeniu, jeśli jeszcze nie została zainstalowana.
- Potem pobrać aplikację KIPLink na urządzenie mobilne ze strony melcohit.com.

Można zainstalować aplikację na urządzeniach mobilnych za pomocą S.O. System operacyjny Android 5 lub wyższy / IOS 8 lub wyższy.

Aby uzyskać dostęp do aplikacji należy:

- Odczytać kod QR umieszczony na urządzeniu.
- Postępować zgodnie z instrukcjami wyświetlanymi na ekranie, aby uzyskać dostęp do KIPLink urządzenia przez sieć Wi-Fi.
- W celu sterowania urządzeniem należy użyć przyciski znajdujące się w aplikacji.



#### INFORMACJA:

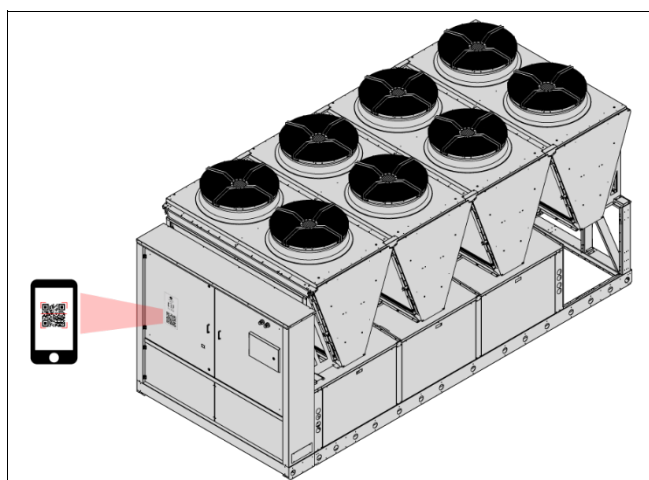
Aby móc sterować urządzeniem, należy uwierzytelnić się przy pierwszym logowaniu.



#### INFORMACJA:

Etykieta KIPLink jest przymocowana do rozdzielnic elektrycznej urządzenia. Etykieta to zaszyfrowany kod QR, który można odczytać tylko za pomocą aplikacji. Oprócz kodu QR, etykieta zawiera:

- numer seryjny urządzenia, w którym zainstalowano KIPLink.
- jeśli KIPLink jest urządzeniem głównym sieci w przypadku wielu sieci KIPLink.



#### INFORMACJA:

Jeśli kod QR jest uszkodzony lub go brakuje, należy skontaktować się z obsługą klienta i poprosić o nowy kod QR.



#### INFORMACJA:

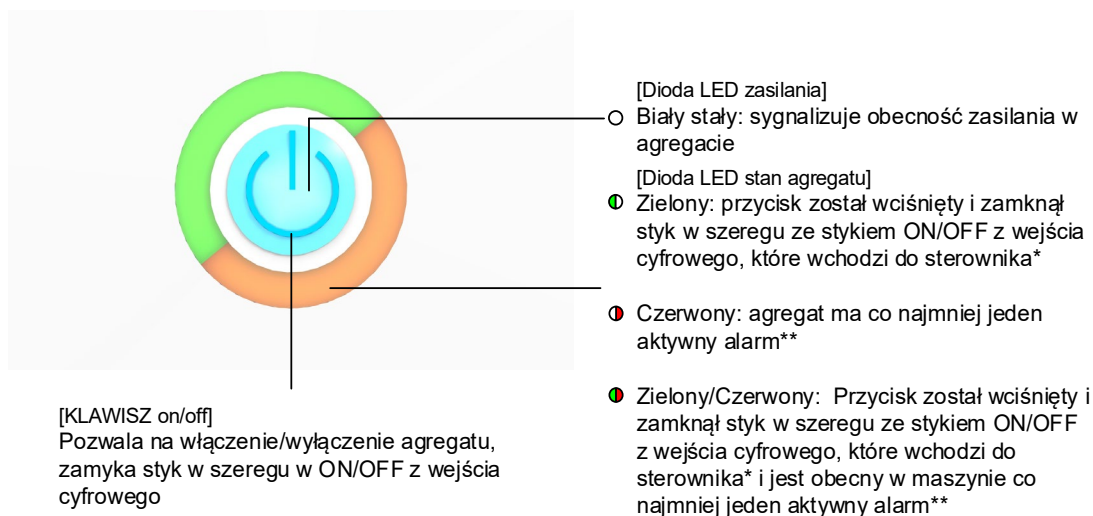
Aby uzyskać więcej informacji na temat korzystania z aplikacji i jej funkcji, należy zapoznać się z samouczkiem dołączonym do aplikacji.



Dodatkowe informacje odnoszące się do urządzenia KIPLink są dostępne w specjalnych podręcznikach z poniższymi kodami.

| Urządzenie KIPLink | Kod Podręcznika Użytkownika KIPLink                                                                         |
|--------------------|-------------------------------------------------------------------------------------------------------------|
| W3000+link         | C024456140-IT, C024456141-EN, C024456142-FR<br>C024456143-DE, C024456144-ES, C024456145-RU<br>C024456146-ML |

W agregatach skonfigurowanych z KIPLink bez użycia fizycznej klawiatury na agregacie, jest zainstalowany przycisk funkcjonalny, zilustrowany poniżej, który pozwala na włączenie-wyłączenie agregatu, wyświetlenie obecności zasilania i stanu alarmów agregatu.



**Rysunek 2-9:** Przycisk ON/OFF dla agregatów wyposażonych tylko w interfejs użytkownika KIPLink.



#### INFORMACJA:

\* Styk zamykający się w przycisku jest ustawiony szeregowo ze stykiem cyfrowym ON/OFF. Jeżeli zielona dioda jest zapalona, ale urządzenie NIE włącza się, oznacza to, że jakiś inny element, który wpływa na włączenie, ustawia urządzenie w stan OFF; w takiej sytuacji należy sprawdzić czy wszystkie elementy (zakresy czasowe, program nadzorczy, zdalny on/off, KIPLink itp.) dokonały włączenia (ON).  
Żeby zrozumieć, który z elementów blokuje włączenie urządzenia, wystarczy sprawdzić „stan agregatu” pokazany na stronie KIPLink lub na stronie głównej każdej innej dowolnej klawiatury.



#### INFORMACJA:

\*\* Czerwona dioda zależy od wyjścia cyfrowego w sterowniku, który wyraża „alarmy łącznie”. Sygnały nie pokazują zapalanej czerwonej diody.

## 2.2 Ogólna charakterystyka interfejsu

### 2.2.1 Wybór języka

Nowy hardware dysponuje dodatkową pamięcią, obejmującą wszystkie obsługiwane języki.

W fazie programowania wszystkie języki są wprowadzone do sterownika i zadaniem użytkownika końcowego jest wybranie języka displayu za pomocą prostej procedury.

|             |           |           |             |           |            |           |           |           |           |
|-------------|-----------|-----------|-------------|-----------|------------|-----------|-----------|-----------|-----------|
| Włoski      | Duński    | Niemiecki | Grecki      | Angielski | Hiszpański | Fiński    | Francuski | Chorwacki | Węgierski |
| <b>IT</b>   | <b>DA</b> | <b>DE</b> | <b>EL</b>   | <b>EN</b> | <b>ES</b>  | <b>FI</b> | <b>FR</b> | <b>HR</b> | <b>HU</b> |
| Holenderski | Norweski  | Polski    | Portugalski | Rumuński  | Rosyjski   | Szwedzki  | Turecki   | Chiński   |           |
| <b>NL</b>   | <b>NO</b> | <b>PL</b> | <b>PT</b>   | <b>RO</b> | <b>RU</b>  | <b>SV</b> | <b>TR</b> | <b>ZH</b> |           |

**Tabela 5:** tabela zgodności między językiem a międzynarodowym kodem języków.

Można wybrać dowolny język spośród dostępnych, przeprowadzając poniższą procedurę:

|    |                                                                                                                                                                                                                                                                                                                         |                                                                                                                                           |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 0) | Upewnić się, że agregat jest OFF.<br>Sprawdzić na stronie głównego menu czy wyświetlony jest napis „OFF” w pierwszej linii (lub czy jest wskazany stan OFF z klawiatury, OFF z wejścia cyfrowego...).                                                                                                                   | 09:26 ON ALXXX<br>Tryb: agregat<br>chłodniczy<br>Stan: ON klaw.<br>Term. Req. Act.<br>Cool. 050 050 %<br>Hot 000 000 %<br>Czas pompy 000s |
| 1) | Nacisnąć jednocześnie przyciski <b>[ALARM]</b> i <b>[ENTER]</b> ; trzymać przyciski wciśnięte do momentu pojawienia się ekranu obok.                                                                                                                                                                                    | > SYSTEM INFORMATION<br>LOG DATA<br>OTHER INFORMATION<br>FLASH NAND FILES                                                                 |
| 2) | Za pomocą klawiszy <b>[UP]</b> i <b>[DOWN]</b> ustawić kursor „>” na linii „FLASH NAND FILES” i wybrać naciskając <b>[ENTER]</b> .                                                                                                                                                                                      | SYSTEM INFORMATION<br>LOG DATA<br>OTHER INFORMATION<br>> FLASH NAND FILES                                                                 |
| 3) | Pojawienie się ekranu obok oznacza uzyskanie dostępu do menu „FLASH NAND FILES”. Naciskając klawisz <b>[ESC]</b> wychodzi się z menu bez zmiany języka.                                                                                                                                                                 | [ ]<br>TA001_PGD1_IT.iup                                                                                                                  |
| 4) | Teraz należy wybrać plik dla żadanego języka. Naciśnięcie przycisku <b>[ENTER]</b> powoduje wybór języka i pojawienie się „X” w nawiasie kwadratowym; ponowne naciśnięcie <b>[ENTER]</b> powoduje anulowanie wyboru języka.                                                                                             | [X]<br>TA001_PGD1_IT.iup                                                                                                                  |
| 5) | Po naciśnięciu przycisków <b>[UP]</b> i <b>[DOWN]</b> zostaną wyświetlone inne pliki. Pliki z rozszerzeniem „.iup” są plikami odnoszącymi się do języka. Plik z rozszerzeniem „.bin” jest plikiem odnoszącym się do programu użytkowego. Plik z rozszerzeniem „.grp” jest plikiem odnoszącym się do źródeł graficznych. | [ ]<br>TA.grp                                                                                                                             |
| 6) | Należy wybrać <b>wyłącznie plik „.iup”</b> dla języka, który ma być wyświetlany (patrz tabela zestawienia języków z międzynarodowymi kodami języków).                                                                                                                                                                   | [X]<br>TA001_PGD1_IT.iup                                                                                                                  |
| 7) | Należy wybrać plik z rozszerzeniem „.bin”.                                                                                                                                                                                                                                                                              | [X]<br>TA.bin                                                                                                                             |
| 8) | Należy wybrać plik z rozszerzeniem „.grp”.                                                                                                                                                                                                                                                                              | [X]<br>TA.grp                                                                                                                             |
| 9) | Po dokonaniu wyboru pliku „.iup”, pliku „.bin”, pliku „.grp”, ustawić się na ekranie obok i nacisnąć <b>[ENTER]</b> .                                                                                                                                                                                                   | Press Enter<br>to start copying                                                                                                           |

|     |                                                                                                                                                                                                                       |                                                  |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| 9b) | Po wyświetleniu żądania z ekranu obok nacisnąć <b>[ENTER]</b> , pozostawiając zaznaczoną odpowiedź „NIE”. Ten ekran pojawia się w wersjach programu użytkowego o dużych wymiarach; może wcale nie zostać wyświetlony. | Erase Log data?<br>NO<br>press<br>ENTER to conf. |
| 10) | Wyświetlił się ekran pokazany obok, który wskazuje, że trwa kopiowanie plików.                                                                                                                                        | copy process<br>is running                       |
| 11) | Na koniec procesu instalacji wyświetlił się ekran.                                                                                                                                                                    | ok, copy completed.<br>wait for restart          |
| 12) | Podczas procesu mogą pojawić się napisy „I/O BOARD FAULT” lub „NO LINK”. Jest to spowodowane restartem programu użytkowego; po krótkim czasie komunikaty znikną.                                                      | I/O BOARD FAULT                                  |
| 13) | Na zakończenie operacji wyświetlą się ekrany w wybranym języku. W menu „Agregat” można sprawdzić zainstalowany język.                                                                                                 | W 3000 +<br>Cod. TA 22.00 IT                     |

Konieczne jest wykonanie wszystkich faz procedury, ponieważ pominięcie choćby jednego z plików może spowodować nieprawidłowości opisane poniżej:

|                                                                                                                                                                                                                                                                             |                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Jeżeli nie zostanie wybrany żaden plik „iup” oznacza to, że nie został wybrany żaden język i wynikiem jest pusty ekran! W tym przypadku będzie konieczne powtórzenie czynności, pamiętając o wybraniu pliku „iup”.                                                          | Select one iup file                       |
| Jeżeli nie zostanie wybrany plik „bin” oznacza to, że nie został wybrany plik programu użytkowego i wyświetlił się ekran pokazany obok. Należy nacisnąć klawisz [ESC] i powtórzyć czynność, pamiętając o wybraniu pliku „bin”.                                              | ERROR : press menu<br>select one blb file |
| Jeżeli nie zostanie wybrany plik „grp” oznacza to, że nie został wybrany plik części graficznej. Język i program użytkowy zostały zainstalowane ale obrazy nie będą obsługiwane. W tym przypadku będzie konieczne powtórzenie czynności, pamiętając o wybraniu pliku „grp”. | Select one blb file                       |
| Nie został wybrany żaden plik.                                                                                                                                                                                                                                              | No files selected                         |
| Wykryto błąd podczas kopiowania w pamięci NOR                                                                                                                                                                                                                               | Error copying files                       |
| Wykryto błąd podczas odczytu pliku z pamięci NAND                                                                                                                                                                                                                           | Error reading file (11)                   |
| CRC nieobliczony prawidłowo podczas kopiowania w pamięci NOR                                                                                                                                                                                                                | Error reading file (12)                   |
| Wykryto błąd podczas odczytu pliku z pamięci NAND                                                                                                                                                                                                                           | Error reading file (13)                   |
| Wykryto błąd podczas zapisu w pamięci NOR                                                                                                                                                                                                                                   | Writing error (14)                        |
| Wielkość pliku zbyt duża żeby był prawidłowym plikiem DEV.                                                                                                                                                                                                                  | DEV file not valid                        |
| Plik nie jest prawidłowym DEV (nagłówek nie rozpoznany).                                                                                                                                                                                                                    | Code error 9                              |
| Wszystkie inne sytuacje.                                                                                                                                                                                                                                                    | Code error X                              |



- W „Menu zegara”, jeżeli występuje karta zegara, możliwe jest: ustawienie i wyświetlenie daty i godziny; wykonanie ustawień zakresów godzinowych.
- W „Menu historii” (dostępnym tylko jeżeli jest zainstalowana karta zegara) możliwe jest wyświetlenie listy zdarzeń zarejestrowanych przez agregat.
- W „Menu użytkownika” możliwe jest wyświetlenie i ustawienie parametrów odnoszących się do zaprogramowania użytkownika agregatu.
- W „Menu serwisowe” można wyświetlać i ustawiać parametry serwisowe.
- W „Menu producenta” można przeglądać i ustawiać parametry służące do konfiguracji agregatu.
- W „Menu licencji” można przeglądać licencjonowane funkcje i zarządzać nimi.

### 3 TABELA EKRAŃÓW

W celu przejścia z jednego ekranu do drugiego w tym samym menu, użyć przycisków [UP] lub [DOWN].

W celu uzyskania dostępu do parametru nacisnąć przycisk [ENTER], w celu zmodyfikowania wartości parametru nacisnąć przycisk [UP] lub [DOWN].

| Maska podręcznika                                                                                                                                                | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ID parametru |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 09:26 ON ALXXXX<br>Tryb: agregat<br>chłodniczy<br>Stan: ON klaw.<br>Term. Req. Act.<br>Cool. 050 050 %<br>Rek. 000 000 %<br>Czas pompy 000s<br>LIMIT ID:011 U:01 | Główna wyświetlana maska. Wskazuje tryb i stan pracy.<br>Umożliwia włączenie lub wyłączenie agregatu za pomocą polecenia „On/Off”: nacisnąć przycisk [ENTER], aby ustawić się na „ON/OFF”, użyć przycisków [UP] lub [DOWN], aby wybrać polecenie i potwierdzić ponownie, naciskając [ENTER].<br><b>W agregatach z parowaniem powietrznym polecenie on/off jest wydawane przez sterownik zespołu uzdatniania powietrza.</b><br>Pozwala również na wyświetlenie ewentualnych komunikatów:<br>„ALxxx” : jest aktywny jeden alarm,<br>„Sxxx” : jest aktywny sygnał,<br>„U:xx” : wskazuje adres konfiguracji agregatu,<br>„ID:xxx” : wskazuje adres programu nadzorczego agregatu,<br>Ponadto wyświetlają się niektóre z symboli opisujących stan agregatu.<br>Niektóre pola mogą być niewidoczne w zależności od właściwości agregatu.<br>Jeżeli w linii "stan" jest wyświetlony "Standby", oznacza to, że niektóre z organów mechanicznych agregatu mogą być aktywne również jeżeli agregat znajduje się w stanie OFF. |              |
| STAN ZESPOŁU<br>15:19 OFF ALXXXX<br>Tryb: agregat<br>chłodniczy<br>Stan: ON klaw.<br>Term. Req. Act.<br>Cool. 100 100 %<br>ID:00                                 | Ekran główny stanu zespołu agregatu LAN Multi Manager.<br>Możliwe jest wydanie polecenia ON/OFF instalacji za pomocą sterowania On/Off: nacisnąć klawisz [ENTER], użyć klawiszy [UP] lub [DOWN] w celu wybrania polecenia i zatwierdzić naciskając ponownie [ENTER].<br>Pozwala również na wyświetlenie ewentualnych komunikatów:<br>„ID:xxx” : wskazuje adres agregatu w sieci LAN Multi Manager,<br>Niektóre pola mogą być niewidoczne w zależności od właściwości agregatu.<br>Jeżeli w linii "stan" jest wyświetlony "Standby", oznacza to, że niektóre z organów mechanicznych agregatu mogą być aktywne również jeżeli agregat znajduje się w stanie OFF.                                                                                                                                                                                                                                                                                                                                                     |              |
| STATUS Master-Client<br>15:19 ON<br>Tryb :Chłodzenie + CWU<br>Stan: ON klaw.<br>Plant 100 %<br>DHW 000 %                                                         | Główny ekran do wyświetlania stanu zespołu agregatów Master-Client.<br>Możliwe jest wydanie polecenia ON/OFF instalacji za pomocą sterowania On/Off: nacisnąć klawisz [ENTER], użyć klawiszy [UP] lub [DOWN] w celu wybrania polecenia i zatwierdzić, naciskając ponownie [ENTER].<br>Niektóre pola mogą być niewidoczne w zależności od właściwości agregatu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |
| Master-Client<br>Status Act.<br>1:ON Plant 100 %<br>2:OFF --- %<br>3:ON Plant 100 %<br>4:Offline --- %                                                           | Maska do wyświetlania stanu agregatów w zespole wraz z ich aktywną wartością procentową.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |
| Temp. In. Out.<br>Parow. 12,5 07,0 °C<br>Rek. 35,6 40,5 °C<br>Skr. 38,0 42,5 °C<br><br>Zb.DHW 59,8 °C<br>Zb.PLANT 44,0 °C                                        | Wyświetla temperaturę wody na wejściu i wyjściu agregatu.<br>(Parownik, rekuperator, skraplacz, zbiornik DHW i zbiornik Plant widoczne tylko jeśli występują).<br>W agregatach z większą liczbą parowników, jeżeli sonda wspólnego wyjścia jest wyłączona, wyświetlana jest średnia temperatura dwóch sond wyjścia pojedynczych parowników.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |

| Maska podręcznika                                                                                                                                                        | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                | ID parametru |
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| Temp. In. Out.<br>Parow. 12.5 07,0°C<br>Parow.1 07,2°C<br>Parow.2 06,9°C                                                                                                 | (Jeżeli występuje większa liczba parowaczy) wyświetla temperaturę na wejściu i na wyjściu parowacza lub skraplacza (w zależności od trybu pracy: agregat chłodniczy lub pompa ciepła) i temperatury na wyjściu z parowaczy.                                                                                                                                                                               |              |
| Temp. In. Out.<br>Skr. 24,3 22,4°C<br>Skr.1 22,3°C<br>Skr.2 22,4°C                                                                                                       | (Jeżeli występują 2 skraplacze) wyświetla temperaturę wejścia i wyjścia parownika lub skraplacza (w zależności od trybu pracy) i temperatury na wyjściu obu skraplaczy.                                                                                                                                                                                                                                   |              |
| Temp. In. Out.<br>Parow. 45.0 40,0°C<br>Parow.1 38,0°C<br>Parow.2 42,0°C<br>Skr. 70,0 75,0°C<br><br>MODUŁ +2P                                                            | (Jeżeli występuje moduł +2P) wyświetla temperaturę wejścia i wyjścia parownika i temperatury na wyjściu ze skraplacza.                                                                                                                                                                                                                                                                                    |              |
| Temp.<br>Freecooling 12,3°C<br>Pow. na zewn. 15,4°C<br>Optional 19,6°C<br>Zbiorn. instalacji 12,5°C<br>Zbiorn. odzysku 40,5°C<br>Drycooler 10,0°C<br>Wnęka spręż. 32,7°C | (Dla agregatów chłodzonych powietrzem) wyświetla temperatury Free Cooling (w agregatach chłodniczych + Free Cooling), temperaturę powietrza na zewnątrz i temperaturę opcjonalną (jeżeli sondy są włączone).<br>Wyświetlanie temperatur przechowywania i odzyskiwania systemu (jeśli sondy są włączone), temperatury Drycoolera (jeśli są włączone) i przedziału sprężarek (jeśli sonda jest zarządzana). |              |

| Maska podręcznika                                                                                   | Opis maski                                                                                                                                                                                                                                                                                                                                           | ID parametru                  |
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| <p>Użytkownik</p> <p>Hasło: 0000</p>                                                                | Ekran dostępu do menu użytkownika. W celu wejścia konieczne jest ustawienie hasła użytkownika.                                                                                                                                                                                                                                                       |                               |
| <p>↑</p> <p>Użytkownik</p> <p>← ↓</p>                                                               | Ekran wejścia do menu użytkownika. Naciśnąć klawisze <b>[UP]</b> lub <b>[DOWN]</b> , aby przewijać pozostałe ekrany; <b>[ESC]</b> aby powrócić do podmenu.                                                                                                                                                                                           |                               |
| <p>Uaktywnienie zakresów godzinowych :</p> <p>Wyłączone</p>                                         | Pozwala na aktywację/dezaktywację zastosowania zakresów godzinowych. Jeżeli jest uaktywniony set point zewnętrzny nie jest możliwe uaktywnienie zakresów godzinowych.                                                                                                                                                                                | USR0001                       |
| <p>Konfiguracja linii szeregowej:</p> <p>Wyłączona</p>                                              | Umożliwia włączanie i wybieranie urządzeń podłączonych do płyty interfejsu szeregowego ("0":Wyłączony - "1":Nadzór - "2":Sekwenser - "3":Manager 3000 - "4":ClimaPRO - "5":Nadzór z Watchdog - "6":LAN Multi Manager - "7":Manager 3000+ - "8":W3000-NET - "9":Data Center Manager+).<br>Adnotacja: program Service nie wymaga żadnego uaktywnienia. | USR0002                       |
| <p>Włączenie sterowania Master-Client dla wielu agregatów:</p> <p>Wyłączony</p>                     | Pozwala na uaktywnienie kontroli Master-Klient dla wielu agregatów.                                                                                                                                                                                                                                                                                  | USR0018                       |
| <p>Uakt. z pr.nadz.: On/Off: N</p> <p>Tryb pracy: N</p>                                             | Daje możliwość wybrania stanu włączenia/wyłączenia agregatu za pomocą systemu programu nadzorczego. Ponadto pozwala na wykonanie przełączenia trybu funkcjonowania (w celu zmodyfikowania trybu, agregat musi być wyłączony).                                                                                                                        | USR0003<br>USR0004            |
| <p>Przywrócenie ustawień lokalnych w Stand-Alone:</p> <p>Wyłączony</p>                              | Umożliwia takie ustawienie, żeby agregat w trybie stand-alone powrócił do ustawień z klawiatury, jeśli jest ustawiony program nadzorczy z watch-dog.<br>Ta funkcja obowiązuje tylko dla setpoint agregatu chłodniczego ustawionego przez BMS i dla ograniczenia mocy ustawionej przez BMS.                                                           | USR0010                       |
| <p>Ustawienie szeregowo Protokół Modbus</p> <p>Prędkość 9600 baud</p> <p>Nr identyfikacyjny 011</p> | Pozwala na określenie parametrów połączenia z programem nadzorczym: typ protokołu, prędkość komunikacji i numer identyfikacyjny agregatu.                                                                                                                                                                                                            | USR0005<br>USR0006<br>USR0007 |



| Maska podręcznika                                                                                               | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ID parametru                  |
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| Uakt. z wej. cyfr.:<br>On/Off: S<br>Tryb pracy: N<br>Plant/DHW: N                                               | Pozwala na uaktywnienie sterowania agregatu za pomocą zezwoleń zewnętrznych.<br>Możliwa jest aktywacja polecenia ON/OFF w celu włączenia lub wyłączenia agregatu za pomocą wejścia cyfrowego.<br>Możliwe jest wykonanie zmiany trybu pracy (w agregatach pomp ciepła, w agregatach chłodniczych z odzyskiem, w agregatach chłodniczych z Free-Cooling wystarczy jedno wejście cyfrowe. W agregatach wielofunkcyjnych lub w agregatach pomp ciepła z odzyskiem są wymagane trzy wejścia cyfrowe).<br>Możliwe jest wykonanie zmiany między trybami Plant i DHW. | USR0008<br>USR0009<br>USR0017 |
| Automatyczna zmiana trybu pracy<br>Aktywowany<br><br>Set ogrzewania:<br>16,0 °C<br>Różn. ogrzewania:<br>02,0 °C | Umożliwia włączenie automatycznej zmiany trybu pracy w zależności od temperatury zewnętrznej.<br>Możliwe jest ustawienie wartości zadanej dla przełączenia na ogrzewanie (pompa ciepła) oraz odnośnej różnicy. Powyżej wartości zadanej + różnica, sprężarki są wyłączane.                                                                                                                                                                                                                                                                                    | USR0012<br>USR0013<br>USR0015 |
| Automatyczna zmiana trybu pracy<br><br>Set chłodzenia:<br>24,0 °C<br>Różn. chłodzenia:<br>02,0 °C               | Możliwe jest ustawienie setpoint dla przełączenia na chłodzenie (agregat chłodniczy) oraz odnośnej różnicy.<br>Poniżej setpoint - różnica, sprężarki są wyłączane.                                                                                                                                                                                                                                                                                                                                                                                            | USR0014<br>USR0016            |
| Włącz. z KIPlink:<br>On/Off: N                                                                                  | Umożliwia sterowanie on/off urządzenia poprzez KIPlink.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | USR0011                       |
| Przywrócenie default hasło onlyread<br>KIPlink Local<br>Monitoring: N<br>Proszę czekać ...                      | Ustawiając na "TAK" pole po kilku sekundach zostaje ustawione na "NIE", w ten sposób, hasło profilu OR (only read) login dla funkcji local monitoring KIPlink zostaje zresetowane do wartości default: 1234                                                                                                                                                                                                                                                                                                                                                   |                               |
| Przywrócenie default password read/write<br>touchscreen: N                                                      | Umożliwia przywrócenie wartości default password read/write touchscreen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |
| Zarządzanie licencjami<br><br>Func. Code: 0000<br><br>Hasło: 00000000                                           | Zarządzanie funkcjami objętymi licencją umożliwia włączanie i wyłączanie funkcji zabezpieczonych hasłem. Hasła są niepowtarzalne i generowane przez system zgodnie z numerem seryjnym agregatu i kodem funkcji.                                                                                                                                                                                                                                                                                                                                               |                               |
| Wpisać inne hasło użytkownika<br><br>0000                                                                       | Pozwala na personalizację hasła chroniąc hasło, które zamieni hasło default.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |

| Maska podręcznika                                                                                                                                                                                                               | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ID parametru |
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| W 3000 +<br><br>Kod TA 22.00 PL <br>Instr. C024456220<br>HW pCO5+ L NAND 50 MB<br>Flash 2 MB + 7MB + 4MB<br>Ram 2048 KB<br>Boot 5.01 Bios 6.52 | <p>Na tym ekranie są podawane informacje odnoszące się do programu użytkowego [Kod TA 22 00 PL] oraz odnośnej instrukcji dla użytkownika [Instr. C024456220-PL].</p> <p>Dodatkowo za pomocą symbolu zamkniętej kłódki oznaczono fakt, że płytką jest oznaczona sygnaturą oprogramowania; dwie kłódki pojawiają się tylko w agregatach z 3 lub 4 obwodami.</p> <p>W drugiej części ekranu znajdują się informacje o hardware, dokładniej rozmiar (M, L, XL), pamięciach (NAND 50 MB, flash 2+7+4 MB, ram 2048 KB) oraz wersje zainstalowanego systemu operacyjnego (boot i bios).</p> |              |

| Maska podręcznika                                                                                                                     | Opis maski                                                                                                                                                                                 | ID parametru |
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| <div> <div>↑</div> <div>Licencje</div> <div>← ↓</div> </div>                                                                          | Ekran wejścia do menu Licencje. Nacisnąć klawisze <b>[UP]</b> lub <b>[DOWN]</b> , aby przewijać pozostałe ekrany; <b>[ESC]</b> aby powrócić do podmenu.                                    |              |
| <div> <div>Stan Licencji</div> <div>Funkcja: 1234</div> <div>Stan: tymczasowa</div> <div>Termin ważności:<br/>31/12/2021</div> </div> | Ekran wyświetlania stanu licencji. Kod funkcji jest przypisany do stanu aktywnego, nieaktywnego lub tymczasowego. W przypadku włączenia tymczasowego dostępna jest data ważności licencji. |              |

| Maska podręcznika                                                                                                                                                                                | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ID parametru |
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| <div> <div>↑</div> <div>Historia</div> <div>← ↓</div> </div>                                                                                                                                     | Ekran wejścia do menu Historii Zdarzeń Naciskać przyciski <b>[UP]</b> lub <b>[DOWN]</b> , aby przewijać następne ekrany; <b>[ESC]</b> , aby powrócić do podmenu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |
| <div> <div>10:36:04 01/05/08</div> <div>Nr 001 S A0711 A - 032</div> <div>Alarm zasilania inwertera 1</div> <div>Reset : Auto</div> <div>Pozycja: Spręż.</div> <div>Blokada: Spręż.</div> </div> | <p>Maska wyświetlania historii zdarzeń (widoczna tylko jeżeli występuje karta zegara). Dla każdego zarejestrowanego zdarzenia są podane następujące szczegóły:</p> <ul style="list-style-type: none"> <li>• Data i godzina.</li> <li>• Zdarzenie aktywacji lub dezaktywacji (S = set, R = reset).</li> <li>• Kod alarmu lub sygnalizacji.</li> <li>• Numer zdarzenia.</li> <li>• Typu reset (Automatyczny lub Ręczny).</li> <li>• Opis zdarzenia.</li> <li>• Pozycji zależnej od alarmu i typu blokady.</li> </ul> <p>W przypadku alarmów dotyczących niektórych typów inwerterów sprężarek, podane jest specyficzne kodowanie alarmu generowanego przez inwerter.</p> |              |

| Maska podręcznika                                                                                                                                                                                           | Opis maski                                                                                                                                                                                                                                                                 | ID parametru                                                                                                                     |
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| <div> <div>↑</div> <div>Zegar</div> <div>← ↓</div> </div>                                                                                                                                                   | Ekran wejścia do menu zegara. Naciśnięcie klawisze <b>[UP]</b> lub <b>[DOWN]</b> , aby przewijać pozostałe ekrany; <b>[ESC]</b> aby powrócić do podmenu.                                                                                                                   |                                                                                                                                  |
| Karta zegara<br>niezainstalowana                                                                                                                                                                            | Ekran wskazujący nieobecność lub uszkodzenie karty zegara.                                                                                                                                                                                                                 |                                                                                                                                  |
| Konfiguracja zegara:<br>Data            Godzina<br>01/05/08    10:40                                                                                                                                        | Ustawienie aktualnej daty i godziny.                                                                                                                                                                                                                                       |                                                                                                                                  |
| Zakresy godzinowe<br>nie uaktywnione.<br><br>Patrz menu użytkownika                                                                                                                                         | Wskazuje, że zakresy czasowe są ustawione prawidłowo, ale nie są uaktywnione. W celu ich włączenia, patrz menu użytkownika.                                                                                                                                                |                                                                                                                                  |
| Programowanie<br>zakresów dziennych:<br>zaawansowane                                                                                                                                                        | Programowanie zaawansowane zakresów daje możliwość zarządzania dzień po dniu czterema różnymi rodzajami zakresów, typu A i typu B, które mają godziny personalizowane i niezależne jeden od drugiego. Programowanie standardowe pozwala tylko na używanie zakresów typu A. | BND0001                                                                                                                          |
| Godziny tygodniowe<br>poniedziałek    typ A<br>wtorek           typ B<br>środa            typ B<br>czwartek        typ B<br>piątek            typ B<br>sobota           typ C<br>niedziela        wyłączone | Ustawienie programowania tygodniowego.                                                                                                                                                                                                                                     | BND0002<br>BND0003<br>BND0004<br>BND0005<br>BND0006<br>BND0007<br>BND0008                                                        |
| Zakres 1A Wyłączony<br>Godziny 00.00 / 06.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 2A Regulac.<br>Godziny 06.00 / 20.00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C                                   | Ustawienie zakresu A, pierwszego i drugiego zakresu tygodniowego.                                                                                                                                                                                                          | BND0009<br>BND0010<br>BND0011<br>BND0012<br>BND0013<br>BND0014<br>BND0015<br>BND0016<br>BND0017<br>BND0018<br>BND0019<br>BND0020 |

| Maska podręcznika                                                                                                                                                           | Opis maski                                                            | ID parametru                                                                                                                                           |
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| Zakres 3A Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 4A Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu A, trzeciego i czwartego zakresu tygodniowego.     | BND0021<br>BND0022<br>BND0023<br>BND0024<br>BND0025<br>BND0026<br>BND0027<br>BND0022<br>BND0023<br>BND0028<br>BND0029<br>BND0030<br>BND0031<br>BND0032 |
| Zakres 5A Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 6A Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu A, piątego i szóstego zakresu tygodniowego.        | BND0033<br>BND0034<br>BND0035<br>BND0036<br>BND0037<br>BND0038<br>BND0039<br>BND0034<br>BND0035<br>BND0040<br>BND0041<br>BND0042<br>BND0043<br>BND0044 |
| Zakres 7A Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 8A Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu A, siódmego i ósmego zakresu tygodniowego.         | BND0045<br>BND0046<br>BND0047<br>BND0048<br>BND0049<br>BND0050<br>BND0051<br>BND0046<br>BND0047<br>BND0052<br>BND0053<br>BND0054<br>BND0055<br>BND0056 |
| Zakres 9A Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 10A Wyłączony<br>Godziny 20.00 / 23.59<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C | Ustawienie zakresu A, dziewiątego i dziesiątego zakresu tygodniowego. | BND0057<br>BND0058<br>BND0059<br>BND0060<br>BND0061<br>BND0062<br>BND0063<br>BND0058<br>BND0059<br>BND0064<br>BND0065<br>BND0066                       |
| Zakres 1B Wyłączony<br>Godziny 00.00 / 07.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 2B Regulac.<br>Godziny 07.00 / 12.00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C   | Ustawienie zakresu B, pierwszego i drugiego zakresu tygodniowego.     | BND0067<br>BND0068<br>BND0069<br>BND0070<br>BND0071<br>BND0072<br>BND0073<br>BND0068<br>BND0069<br>BND0074<br>BND0075<br>BND0076<br>BND0077<br>BND0078 |

| Maska podręcznika                                                                                                                                                           | Opis maski                                                            | ID parametru                                                                                                                                           |
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| Zakres 3B Wyłączony<br>Godziny 12.00 / 14.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 4B Regulac.<br>Godziny 14.00 / 20.00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C   | Ustawienie zakresu B, trzeciego i czwartego zakresu tygodniowego.     | BND0079<br>BND0080<br>BND0081<br>BND0082<br>BND0083<br>BND0084<br>BND0085<br>BND0080<br>BND0081<br>BND0086<br>BND0087<br>BND0088<br>BND0089<br>BND0090 |
| Zakres 5B Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 6B Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu B, piątego i szóstego zakresu tygodniowego.        | BND0091<br>BND0092<br>BND0093<br>BND0094<br>BND0095<br>BND0096<br>BND0097<br>BND0092<br>BND0093<br>BND0098<br>BND0099<br>BND0100<br>BND0101<br>BND0102 |
| Zakres 7B Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 8B Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu B, siódmego i ósmego zakresu tygodniowego.         | BND0103<br>BND0104<br>BND0105<br>BND0106<br>BND0107<br>BND0108<br>BND0109<br>BND0104<br>BND0105<br>BND0110<br>BND0111<br>BND0112<br>BND0113<br>BND0114 |
| Zakres 9B Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 10B Wyłączony<br>Godziny 20.00 / 23.59<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C | Ustawienie zakresu B, dziewiątego i dziesiątego zakresu tygodniowego. | BND0115<br>BND0116<br>BND0117<br>BND0118<br>BND0119<br>BND0120<br>BND0121<br>BND0116<br>BND0117<br>BND0122<br>BND0123<br>BND0124                       |
| Zakres 1C Wyłączony<br>Godziny 00.00 / 07.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 2C Regulac.<br>Godziny 07.00 / 12.00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C   | Ustawienie zakresu C, pierwszego i drugiego zakresu tygodniowego.     | BND0125<br>BND0126<br>BND0127<br>BND0128<br>BND0129<br>BND0130<br>BND0131<br>BND0126<br>BND0127<br>BND0132<br>BND0133<br>BND0134<br>BND0135<br>BND0136 |

| Maska podręcznika                                                                                                                                                           | Opis maski                                                            | ID parametru                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Zakres 3C Wyłączony<br>Godziny 12.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 4C Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu C, trzeciego i czwartego zakresu tygodniowego.     | BND0137<br>BND0138<br>BND0139<br>BND0140<br>BND0141<br>BND0142<br>BND0143<br>BND0138<br>BND0139<br>BND0144<br>BND0145<br>BND0146<br>BND0147<br>BND0148 |
| Zakres 5C Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 6C Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu C, piątego i szóstego zakresu tygodniowego.        | BND0149<br>BND0150<br>BND0151<br>BND0152<br>BND0153<br>BND0154<br>BND0155<br>BND0150<br>BND0151<br>BND0156<br>BND0157<br>BND0158<br>BND0159<br>BND0160 |
| Zakres 7C Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 8C Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu C, siódmego i ósmego zakresu tygodniowego.         | BND0161<br>BND0162<br>BND0163<br>BND0164<br>BND0165<br>BND0166<br>BND0167<br>BND0162<br>BND0163<br>BND0168<br>BND0169<br>BND0170<br>BND0171<br>BND0172 |
| Zakres 9C Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 10C Wyłączony<br>Godziny 20.00 / 23.59<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C | Ustawienie zakresu C, dziewiątego i dziesiątego zakresu tygodniowego. | BND0173<br>BND0174<br>BND0175<br>BND0176<br>BND0177<br>BND0178<br>BND0179<br>BND0174<br>BND0175<br>BND0180<br>BND0181<br>BND0182                       |
| Zakres 1D Wyłączony<br>Godziny 00.00 / 07.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 2D Regulac.<br>Godziny 07.00 / 12.00<br>Sp E 07,0°C I 42,0°C<br>Sp R 42,0°C   | Ustawienie zakresu D, pierwszego i drugiego zakresu tygodniowego.     | BND0183<br>BND0184<br>BND0185<br>BND0186<br>BND0187<br>BND0188<br>BND0189<br>BND0184<br>BND0185<br>BND0190<br>BND0191<br>BND0192<br>BND0193<br>BND0194 |

| Maska podręcznika                                                                                                                                                           | Opis maski                                                            | ID parametru                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Zakres 3D Wyłączony<br>Godziny 12.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 4D Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu D, trzeciego i czwartego zakresu tygodniowego.     | BND0195<br>BND0196<br>BND0197<br>BND0198<br>BND0199<br>BND0200<br>BND0201<br>BND0196<br>BND0197<br>BND0202<br>BND0203<br>BND0204<br>BND0205<br>BND0206 |
| Zakres 5D Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 6D Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu D, piątego i szóstego zakresu tygodniowego.        | BND0207<br>BND0208<br>BND0209<br>BND0210<br>BND0211<br>BND0212<br>BND0213<br>BND0208<br>BND0209<br>BND0214<br>BND0215<br>BND0216<br>BND0217<br>BND0218 |
| Zakres 7D Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 8D Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C  | Ustawienie zakresu D, siódmego i ósmego zakresu tygodniowego.         | BND0219<br>BND0220<br>BND0221<br>BND0222<br>BND0223<br>BND0224<br>BND0225<br>BND0220<br>BND0221<br>BND0226<br>BND0227<br>BND0228<br>BND0229<br>BND0230 |
| Zakres 9D Wyłączony<br>Godziny 20.00 / 20.00<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C<br>Zakres 10D Wyłączony<br>Godziny 20.00 / 23.59<br>Sp E 09,0°C I 40,0°C<br>Sp R 40,0°C | Ustawienie zakresu D, dziewiątego i dziesiątego zakresu tygodniowego. | BND0231<br>BND0232<br>BND0233<br>BND0234<br>BND0235<br>BND0236<br>BND0237<br>BND0232<br>BND0233<br>BND0238<br>BND0239<br>BND0240                       |



| Maska podręcznika                                                                                                                                                                                                                                                               | Opis maski                                                                                                                                                                                                                                                                                                                                                                      | ID parametru |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <div>↑</div> <div>In/Out</div> <div>←                      ↓</div>                                                                                                                                                                                                              | Maska dokonanego dostępu do menu In/Out. Naciśnąć klawisze <b>[UP]</b> lub <b>[DOWN]</b> , aby przewijać pozostałe ekrany; <b>[ESC]</b> aby powrócić do podmenu.                                                                                                                                                                                                                |              |
| <div>Cyfr. In. 12345 67890</div> <div>master CCCCC CCCCC</div> <div>CCCCC CCC</div> <div>Cyfr. Out. 12345 67890</div> <div>master CCCCC CCCCC</div> <div>CCCCC CCCCC</div> <div>CCCCC CCCC</div>                                                                                | Wyświetla stan wejść i wyjść cyfrowych i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty<br>Liczba wyświetlonych wejść i wyjść zależy od typu agregatu.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                                                               |              |
| <div>An. In. master</div> <div>Nr              Wartość</div> <div>1                07,3 bar</div> <div>2                12,3 °C</div> <div>3                12,3 °C</div> <div>4                12,3 °C</div> <div>5                12,3 °C</div>                               | Wyświetlanie wejść analogowych 1, 2, 3, 4, 5.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                                                                                                                                                                                   |              |
| <div>An. In. master</div> <div>Nr              Wartość</div> <div>6                15,2 °C</div> <div>7                27,6 °C</div> <div>8                04,0 °C</div> <div>9                15,3 °C</div> <div>10               C</div>                                      | Wyświetlanie wejść analogowych 6, 7, 8, 9 i 10.<br>C: Styk zamknięty<br>A: Styk otwarty<br>(w przypadku, gdy wejścia analogowe są skonfigurowane jako cyfrowe).<br>Liczba wyświetlanych wejść analogowych zależy od rodzaju agregatu.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                           |              |
| <div>An. In. master</div> <div>Nr              Wartość</div> <div>11               02,1 bar</div> <div>12               15,1 °C</div>                                                                                                                                           | Wyświetlanie wejść analogowych 11, 12.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                                                                                                                                                                                          |              |
| <div>An. Out. master</div> <div>Nr              Wartość</div> <div>1                00,0 V</div> <div>2                00,0 V</div> <div>3                00,0 V</div> <div>4                00,0 V</div> <div>5                00,0 V</div> <div>6                00,0 V</div> | Napięcie na wyjściach analogowych.<br>Liczba wyświetlonych wyjść analogowych zależy od typu agregatu.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                                                                                                                           |              |
| <div>Wymagane master</div> <div>Exp.1: S</div> <div>Exp.2: N</div> <div>Exp.3: S    Exp.4: N</div> <div>Exp.5: N</div> <div>On-line master</div> <div>Exp.1: S    Exp.2: N</div> <div>Exp.3: S    Exp.4: N</div> <div>Exp.5: N</div>                                            | Ekran, który służy do wskazania adresu, który muszą mieć karty rozszerzenia. To się zmienia w zależności od ustawionych parametrów.<br>Ponadto, w drugiej części ekranu wyświetlone jest połączenie z kartami rozszerzenia. Litera N oznacza, że nie występuje połączenie z rozszerzeniem ze wskazanym adresem.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami. |              |
| <div>Cyfr.In. 12345 67890</div> <div>expl CCCC</div> <div>master</div> <div>Cyfr.Out. 12345 67890</div> <div>expl ACAA</div> <div>master</div>                                                                                                                                  | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 1 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                                                                                            |              |

| Maska podręcznika                                                                                                                                                                              | Opis maski                                                                                                                                                                                                                                                        | ID parametru |
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| An. In. master exp1<br>Nr            Wartość<br>1            35,6 °C<br>2            40,5 °C<br>3            37,2 °C<br>4            37,2 °C                                                   | Wyświetlenie wejść analogowych 1, 2, 3 i 4 rozszerzenia 1 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                                     |              |
| An. Out. master exp1<br>Nr            Wartość<br>1            00,0 V<br>2            00,0 V<br>3            00,0 V                                                                             | Napięcie na wyjściach analogowych rozszerzenia 1.<br>Liczba wyświetlonych wyjść analogowych zależy od typu agregatu.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                              |              |
| Cyfr.In.    12345 67890<br>exp2        CCCC<br>master<br><br>Cyfr.Out.   12345 67890<br>exp2        ACAA<br>master                                                                             | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 2 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                              |              |
| An. In. master exp2<br>Nr            Wartość<br>1            04,2 bar<br>2            03,9 bar<br>3            35,6 °C<br>4            40,5 °C<br>5            22,3 °C<br>6            24,2 °C | Wyświetlenie wejść analogowych 1, 2, 3, 4, 5 i 6 rozszerzenia 2 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                               |              |
| An. In. master exp2<br>Nr            Wartość<br>7            22,4 °C<br>8            - °C                                                                                                      | Wyświetlenie wejść analogowych 7 i 8 rozszerzenia 2 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                                           |              |
| An. Out. master exp2<br>Nr            Wartość<br>1            00,0 V<br>2            00,0 V<br>3            00,0 V<br>4            00,0 V                                                      | Napięcie na wyjściach analogowych rozszerzenia 2.<br>Liczba wyświetlonych wyjść analogowych zależy od typu agregatu.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                              |              |
| Cyfr.In.    12345 67890<br>exp3        CCCC<br>master<br><br>Cyfr.Out.   12345 67890<br>exp3        ACAA<br>master                                                                             | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 3 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                              |              |
| An. In. master exp3<br>Nr            Wartość<br>1            06,0 °C<br>2            00,0 °C<br>3            00,0 °C<br>4            00,0 °C<br>5            A<br>6            A               | Wyświetlenie wejść analogowych 1, 2, 3 i 4 rozszerzenia 3 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.<br><br>C: Styk zamknięty<br>A: Styk otwarty<br>(w przypadku, gdy wejścia analogowe są skonfigurowane jako cyfrowe). |              |

| Maska podręcznika                                                                                                                                                                       | Opis maski                                                                                                                                                                                                                                                       | ID parametru |
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| An. Out. master exp3<br>Nr            Wartość<br>1            05,0 V<br>2            06,1 V<br>3            04,5 V                                                                      | Napięcie zastosowane na wyjściach analogowych 1, 2 i 3 rozszerzenia 3 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                        |              |
| Cyfr.In.    12345 67890<br>exp4        CCCC<br>master<br><br>Cyfr.Out.   12345 67890<br>exp4        ACAA<br>master                                                                      | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 4 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                             |              |
| An. In.    master exp4<br>Nr            Wartość<br>1            058,2 °C<br>2            067,3 °C<br>3            04,2 bar<br>4            03,9 bar<br>5            C<br>6            A | Wyświetlenie wejść analogowych 1, 2, 3 i 4 rozszerzenia 4 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.<br><br>C: Styk zamknięty<br>A: Styk otwarty<br>(w przypadku, gdy wejścia analogowe są skonfigurowane jako cyfrowe) |              |
| An. Out. master exp4<br>Nr            Wartość<br>1            05,0 V<br>2            06,1 V<br>3            04,5 V                                                                      | Napięcie zastosowane na wyjściach analogowych 1, 2 i 3 rozszerzenia 4 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                        |              |
| Cyfr.In.    12345 67890<br>exp5        CCCC<br>master<br><br>Cyfr.Out.   12345 67890<br>exp5        ACAA<br>master                                                                      | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 5 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                             |              |
| An. In.    master exp5<br>Nr            Wartość<br>1            00,0 °C<br>2            00,0 °C<br>3            00,0 °C<br>4            00,0 °C                                         | Wyświetlenie wejść analogowych 1, 2, 3 i 4 rozszerzenia 5 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                                                                    |              |
| An. In.    master exp5<br>Nr            Wartość<br>7            055,3 kPa<br>8            -<br>9            12,0 mA<br>10          14,0 mA                                              | Wyświetlenie wejść analogowych 7, 8, 9 i 10 rozszerzenia 5 (jeżeli występuje).<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.<br>(pojawia się tylko z rozszerzeniem 5 typu M).                                                                  |              |
| An. Out. master exp5<br>Nr            Wartość<br>1            00,0 V<br>2            00,0 V<br>3            00,0 V                                                                      | Napięcie na wyjściach analogowych rozszerzenia 5.<br>Liczba wyświetlonych wyjść analogowych zależy od typu agregatu.<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami.                                                                             |              |

| Maska podręcznika                                                                                                                           | Opis maski                                                                                                                                                                                                                                                                                                      | ID parametru |
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| Cyfr. In. 12345 67890<br>slave CCCCC CCCCC<br>CCCCC CCC<br><br>Cyfr. Out. 12345 67890<br>slave CCCCC CCCCC<br>CCCCC CCCCC<br>CCCCC CCCC     | Wyświetla stan wejść i wyjść cyfrowych i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty<br>Liczba wyświetlonych wejść i wyjść zależy od typu agregatu.                                                                                                                                               |              |
| An. In. slave<br>Nr Wartość<br>1 07,3 bar<br>2 12,3 °C<br>3 12,3 °C<br>4 12,3 °C<br>5 12,3 °C                                               | Wyświetlenie wejść analogowych 1, 2, 3, 4 i 5 slave (dla agregatów z 3 lub 4 obwodami).                                                                                                                                                                                                                         |              |
| An. In. slave<br>Nr Wartość<br>6 07,3 bar<br>7 27,6 °C<br>8 04,0 °C<br>9 -<br>10 -                                                          | Wyświetlenie wejść analogowych 6, 7, 8, 9 i 10 slave (dla agregatów z 3 lub 4 obwodami).<br>C: Styk zamknięty<br>A: Styk otwarty<br>(w przypadku, gdy wejścia analogowe są skonfigurowane jako cyfrowe).<br>Liczba wyświetlanych wejść analogowych zależy od rodzaju agregatu.                                  |              |
| An. Out. slave<br>Nr Wartość<br>1 00,0 V<br>2 00,0 V<br>3 00,0 V<br>4 00,0 V<br>5 00,0 V<br>6 00,0 V                                        | Napięcie na wyjściach analogowych slave (dla agregatów z 3 lub 4 obwodami).<br>Liczba wyświetlonych wyjść analogowych zależy od typu agregatu.                                                                                                                                                                  |              |
| Wymagane slave<br>Exp.1: N Exp.2: N<br>Exp.3: N Exp.4: N<br>Exp.5: N<br>On-line slave<br>Exp.1: N Exp.2: N<br>Exp.3: N Exp.4: N<br>Exp.5: N | Ekran, który służy do wskazania adresu, który muszą mieć karty rozszerzenia. To się zmienia w zależności od ustawionych parametrów.<br>Ponadto, w drugiej części ekranu wyświetlone jest połączenie z kartami rozszerzenia. Litera N oznacza, że nie występuje połączenie z rozszerzeniem ze wskazanym adresem. |              |
| Cyfr.In. 12345 67890<br>expl CCCC<br>slave<br><br>Cyfr.Out. 12345 67890<br>expl ACAA<br>slave                                               | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 1 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty                                                                                                                                                                            |              |
| An. In. slave expl<br>Nr Wartość<br>1 35,6 °C<br>2 40,5 °C<br>3 37,2 °C<br>4 37,2 °C                                                        | Wyświetlenie wejść analogowych 1, 2, 3 i 4 rozszerzenia 1 slave (jeżeli występuje, dla agregatów z 3 lub 4 obwodami).                                                                                                                                                                                           |              |
| An. Out. slave expl<br>Nr Wartość<br>1 00,0 V                                                                                               | Napięcie na wyjściach analogowych rozszerzenia 1 slave (dla agregatów z 3 lub 4 obwodami).<br>Liczba wyświetlonych wyjść analogowych zależy od typu agregatu.                                                                                                                                                   |              |

| Maska podręcznika                                                                                                      | Opis maski                                                                                                                                                                                           | ID parametru |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Cyfr.In. 12345 67890<br>exp2 CCCCC CCCCC<br>master CCCC<br><br>Cyfr.Out. 12345 67890<br>exp2 CCCCC CCCCC<br>master CCC | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 2 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty<br>Master jest określony tylko w agregatach z 3 lub 4 obwodami. |              |
| An. In. slave exp2<br>Nr Wartość<br>1 04,2 bar<br>2 03,9 bar<br>3 35,6 °C<br>4 40,5 °C<br>5 22,3 °C<br>6 24,2 °C       | Wyświetlenie wejść analogowych 1, 2, 3, 4, 5 i 6 rozszerzenia 2 slave (jeżeli występuje, dla agregatów z 3 lub 4 obwodami).                                                                          |              |
| An. In. slave exp2<br>Nr Wartość<br>7 22,4 °C<br>8 - °C                                                                | Wyświetlenie wejść analogowych 7 i 8 rozszerzenia 2 (jeżeli występuje).                                                                                                                              |              |
| An. Out. slave exp2<br>Nr Wartość<br>1 00,0 V<br>2 00,0 V<br>3 00,0 V<br>4 00,0 V                                      | Napięcie na wyjściach analogowych rozszerzenia 2 slave (dla agregatów z 3 lub 4 obwodami).<br>Liczba wyświetlonych wyjść analogowych zależy od typu agregatu.                                        |              |
| Cyfr.In. 12345 67890<br>exp3 CCCC<br>slave<br><br>Cyfr.Out. 12345 67890<br>exp3 ACAA<br>slave                          | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 3 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty                                                                 |              |
| An. In. slave exp3<br>Nr Wartość<br>1 06,0 °C<br>2 00,0 °C<br>3 00,0 °C<br>4 00,0 °C                                   | Wyświetlenie wejść analogowych 1, 2, 3 i 4 rozszerzenia 3 slave (jeżeli występuje, dla agregatów z 3 lub 4 obwodami).                                                                                |              |
| An. Out. slave exp3<br>Nr Wartość<br>1 00,0 V                                                                          | Napięcie na wyjściu analogowym 1 rozszerzenia 3 (jeżeli występuje).                                                                                                                                  |              |
| Cyfr.In. 12345 67890<br>exp4 CCCC<br>slave<br><br>Cyfr.Out. 12345 67890<br>exp4 ACAA<br>slave                          | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 4 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty                                                                 |              |

| Maska podręcznika                                                                             | Opis maski                                                                                                                           | ID parametru |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------|
| An. In. slave exp4<br>Nr Wartość<br>1 A<br>2 A<br>3 A<br>4 A                                  | Wyświetlenie wejść analogowych 1, 2, 3 i 4 rozszerzenia 4 slave (jeżeli występuje, dla agregatów z 3 lub 4 obwodami).                |              |
| Cyfr.In. 12345 67890<br>exp5 CCCC<br>slave<br><br>Cyfr.Out. 12345 67890<br>exp5 ACAA<br>slave | Wyświetla stan wejść i wyjść cyfrowych rozszerzenia 5 (jeżeli występuje) i określa ich stan.<br>C: Styk zamknięty<br>A: Styk otwarty |              |
| An. In. slave exp5<br>Nr Wartość<br>1 00,0 °C<br>2 00,0 °C<br>3 00,0 °C<br>4 00,0 °C          | Wyświetlenie wejść analogowych 1, 2, 3 i 4 rozszerzenia 5 slave (jeżeli występuje, dla agregatów z 3 lub 4 obwodami).                |              |
| An. Out. slave exp5<br>Nr Wartość<br>1 00,0 V                                                 | Napięcie na wyjściu analogowym 1 rozszerzenia 5 (jeżeli występuje).                                                                  |              |

| Maska podręcznika                                                                                                                              | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ID parametru                             |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <p>↑</p> <p>Wartość<br/>zadana</p> <p>← ↓</p>                                                                                                  | <p>Ekran wejścia do menu setpoint. Nacisnąć klawisze [UP] lub [DOWN], aby przewijać pozostałe ekrany; [ESC] aby powrócić do podmenu.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                          |
| <p>Typ agregatu:<br/>Agregat chłodniczy<br/>Tryb pracy:<br/>auto<br/>Regulacja aktywna:<br/>Quick Mind<br/>na wyjściu</p>                      | <p>Ekran umożliwiający wyświetlenie rodzaju agregatu i ustawienie trybu pracy. Wyświetla ponadto aktywny tryb regulacji. Jeżeli z prawej strony trybu pracy wyświetla się litera R, tryb pracy jest sterowany zdalnie za pomocą wejść cyfrowych.<br/>Wyjaśnienie symboli: patrz podręcznik.</p>                                                                                                                                                                                                                                                                                                       | SET0001                                  |
| <p>PLANT<br/>Tryb: ZIMA<br/>Ogrzewanie zbiornika:<br/>HeatPump<br/>DHW<br/>Tryb: OFF<br/>Ogrzewanie zbiornika:<br/>HeatPump+Kocioł w zast.</p> | <p>Pozwala na ustawienie typu regulacji dla instalacji (OFF / ZIMA / LATO) oraz sposobu ogrzewania zbiornika instalacji, jeżeli występuje (Heatpump, HeatP+Kocioł w zast., HeatP+Kocioł w uzup., Tylko Kocioł).<br/>Umożliwia sterowanie temperaturą zbiornika DHW (OFF / ON) (jeżeli występuje). Umożliwia również ustawienie typu obciążenia zasobnika DHW (HeatPump, HeatPump+Kocioł w zast., Tylko Kocioł), czyli możliwości doprowadzenia zbiornika DHW do wartości zadanej DHW z tylko jednym agregatem w trybie pompy ciepła lub z pompą ciepła i kotłem w zastępstwie lub z samym kotłem.</p> | SET0002<br>SET0003<br>SET0004<br>SET0005 |
| <p>Stan instalacji:<br/><br/>OFF<br/><br/>Stan DHW:<br/><br/>OFF</p>                                                                           | <p>Umożliwia wyświetlenie stanu instalacji i działania DHW (jeżeli są włączone).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                          |
| <p>Setpoint aktywny:<br/>Principale 07,0 °C<br/><br/>Odzysk/DHW 42,5 °C<br/>Moduł +2P 75,0 °C<br/>Zbiorn.Plant 45,0 °C</p>                     | <p>Ekran wyświetlania aktualnego setpoint obwodu głównego, odzysku, DHW (jeżeli występuje) i modułu +2P (jeżeli występuje) oraz zbiornika plant (jeżeli występuje). Jeżeli po prawej stronie wartości jest wyświetlona litera R, aktywnym setpoint jest setpoint dodatkowy.<br/>Wyjaśnienie symboli: patrz podręcznik.</p>                                                                                                                                                                                                                                                                            |                                          |
| <p>Ustawiony setpoint:<br/>Chiller 07,0 °C<br/>Heatpump 42,5 °C<br/>Odzysk/DHW 42,5 °C<br/>Overboost 80,0 °C</p>                               | <p>Ekran ustawiania setpoint agregatu chłodniczego, pompy ciepła i odzysku (DHW jeżeli występuje). Jeżeli występuje zbiornik DHW istnieje możliwość ustawienia również setpoint overboost (jeżeli jest aktywny).</p>                                                                                                                                                                                                                                                                                                                                                                                  | SET0006<br>SET0007<br>SET0008<br>SET0009 |
| <p>Str.neutr. aktywna:<br/>Obw. główny<br/>górną 01,6°C<br/>dolną 05,5°C<br/><br/>Odzysk<br/>górną 02,0°C<br/>dolną 05,5°C</p>                 | <p>Umożliwia wyświetlenie granic strefy neutralnej dla termoregulatora obwodu głównego i termoregulatora obwodu odzysku.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                          |
| <p>Wymuszenie DHW<br/>No</p>                                                                                                                   | <p>Ekran do ręcznego wymuszenia agregatu, aby spełnił żądanie DHW.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                          |

| Maska podręcznika                                                                                                                       | Opis maski                                                                                                                                                                                                                                               | ID parametru                  |
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| Podwójny set point:<br>Chiller 07,0 °C<br>Heatpump 45,0 °C<br>Odzysk/DHW 45,0 °C                                                        | Ekran do ustawiania drugiego setpoint (widoczny tylko jeżeli jest aktywna funkcja podwójnego setpoint).                                                                                                                                                  | SET0010<br>SET0011<br>SET0012 |
| Setpoint modułu +2P<br>75,0 °C<br><br>Włączenie +2P ON                                                                                  | Ekran do ustawiania setpoint modułu +2P i do włączenia modułu                                                                                                                                                                                            | SET0013<br>SET0014            |
| Setpoint grupy<br>aktywny: 07,0 °C                                                                                                      | Ekran wyświetlania aktualnego głównego setpoint zespołu.                                                                                                                                                                                                 |                               |
| Parametry zespołu<br>Ustawiony setpoint:<br>Agregat chłodniczy<br>7,0°C<br>Heatpump 43,5°C                                              | Ekran ustawiania setpoint zespołu.                                                                                                                                                                                                                       | SET0015<br>SET0023            |
| Parametry zespołu:<br>Pasma regulacji:<br>Agregat chłodniczy:<br>05,0 °C<br>Heatpump: 05,0 °C<br>DHW: 05,0 °C                           | Ekran do ustawiania pasma regulacji grupowej (CWU obecne, jeśli jest uaktywniony z Master-Client).                                                                                                                                                       | SET0016<br>SET0024<br>SET0045 |
| Parametry zespołu<br>Podwójny set point:<br>Agregat chłodniczy<br>5,0°C<br>Heatpump 45,0°C                                              | Ekran do ustawiania podwójnego setpoint (widoczny tylko jeżeli jest aktywna funkcja podwójnego setpoint).                                                                                                                                                | SET0017<br>SET0025            |
| Tryb pracy<br>grupy:<br>agregat chłodniczy                                                                                              | Ekran ustawiania trybu pracy zespołu.                                                                                                                                                                                                                    | SET0021                       |
| Ograniczenie prądu<br>Setpoint aktywny:<br>0100 A<br>Ustawiony setpoint:<br>0100 A<br>Granice setpoint<br>min.: 0060 A<br>maks.: 0100 A | Ekran do wyświetlania aktywnego setpoint i do wyświetlania setpoint ustawionego z klawiatury lub przez BMS dla funkcji „Ograniczenie prądu”.<br>Ponadto wyświetla granice możliwego poboru prądu przypisane do wejścia analogowego (jeśli jest aktywne). | SET0022<br>SET0026<br>SET0027 |



| Maska podręcznika                                                                                                                                                  | Opis maski                                                                                                                                                                 | ID parametru                             |
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| Demand Limit<br><br>Aktywna wartość procentowa:<br><br>Agregat chłodniczy 050%<br>Pompa ciepła 050%<br>Odzysk 050%                                                 | Ekran wyświetlania wartości procentowej ograniczenia mocy czynnej. Wyświetla się w przypadku agregatu z Demand Limit włączonym przez wejście analogowe.                    |                                          |
| Offset SG Ready<br>Boost pośredni:<br><br>Agregat chłodniczy: -1,0 °C<br><br>Heatpump: 2,0 °C<br><br>Odzysk/DHW: 1,0 °C                                            | Umożliwia określenie offsetów, które mają być zastosowane do setpoint poszczególnych trybów pracy agregatu przy włączeniu pattern 2 (pośredni) funkcji Smart Grid Ready.   | SET0028<br>SET0030<br>SET0032            |
| Offset SG Ready<br>Boost maksymalny:<br><br>Agregat chłodniczy: -1,5 °C<br><br>Heatpump: 2,0 °C<br><br>Odzysk/DHW: 2,0 °C                                          | Umożliwia określenie offsetów, które mają być zastosowane do setpoint poszczególnych trybów pracy agregatu przy włączeniu pattern 3 (maksymalny) funkcji Smart Grid Ready. | SET0029<br>SET0031<br>SET0033            |
| Włączenie krzywe klimatyczne ogrzewania:<br>Tak                                                                                                                    | Umożliwia włączenie krzywych klimatycznych w trybie ogrzewania, które wpływają na setpoint stref.                                                                          | SET0034                                  |
| Krzywa klimatyczna HT<br>Set pomieszczenia: 25,0 °C<br>Współczynnik: 1,0<br>Offset: 0,0 °C<br>Offset przy 20°C: 0,0 °C<br><br>Proc. wpływu temp.pomieszczenia: 25% | Umożliwia wyświetlenie setpoint dla pomieszczenia w strefie HT oraz ustawienie szczegółowych parametrów krzywej klimatycznej strefy HT.                                    | SET0035<br>SET0036<br>SET0037<br>SET0038 |
| Krzywa klimatyczna LT<br>Set pomieszczenia: 20,0 °C<br>Współczynnik: 1,0<br>Offset: 0,0 °C<br>Offset przy 20°C: 0,0 °C<br><br>Proc. wpływu temp.pomieszczenia: 25% | Umożliwia wyświetlenie setpoint dla pomieszczenia w strefie LT oraz ustawienie szczegółowych parametrów krzywej klimatycznej strefy LT.                                    | SET0039<br>SET0040<br>SET0041<br>SET0042 |
| Set pomieszczenia stref<br><br>Set aktywny HT: 25,0 °C<br>Róż. Na HT: 0,5 °C<br><br>Set aktywny LT: 18,0 °C<br>Róż. Na LT: 0,5 °C                                  | Umożliwia wyświetlenie aktywnych setpoint i ustawienie odnośnych różnic dla stref HT i LT.                                                                                 | SET0043<br>SET0044                       |
| Setpoint aktywny woda strefa LT:<br><br>018,0 °C                                                                                                                   | Wyświetla aktywny setpoint wody w strefie LT.                                                                                                                              |                                          |

| Maska podręcznika  | Opis maski                        | ID parametru |
|--------------------|-----------------------------------|--------------|
| Aktywacja Boost: N | Służy do włączania funkcji Boost. |              |

| Maska podręcznika                                                                                                                                                                                                                                        | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                  | ID parametru |
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| <div style="text-align: center;"> <span>↑</span><br/> <b>Agregat</b><br/> <span>←</span>      <span>↓</span> </div>                                                                                                                                      | Maska dokonania dostępu do menu agregatu. Nacisnąć klawisze <b>[UP]</b> lub <b>[DOWN]</b> , aby przewijać pozostałe ekrany; <b>[ESC]</b> aby powrócić do podmenu.                                                                                                                                                                                                                                           |              |
| Temp.    In.    Out.<br>Parow.    12,5    07,0 °C<br>Rek.        35,6    40,5 °C<br>Skr.        38,0    42,5 °C<br><br>A.Plant    38,2       °C<br>A.DHW     59,8       °C                                                                               | Wyświetla temperaturę wody na wejściu i wyjściu agregatu. (Parownik, rekuperator, skraplacz oraz zbiornik instalacji i zbiornik DHW widoczne tylko, jeśli występują). W agregatach z większą liczbą parowników, jeżeli sonda wspólnego wyjścia jest wyłączona, wyświetlana jest średnia temperatura dwóch sond wyjścia pojedynczych parowników.                                                             |              |
| Temp.    In.    Out.<br>Parow. 12,5    07,0 °C<br>Parow.1        07,2 °C<br>Parow.2        06,9 °C                                                                                                                                                       | (jeżeli występuje większa liczba parowaczy) Wyświetla temperaturę na wejściu i na wyjściu parowacza lub skraplacza (w zależności od trybu pracy: agregat chłodniczy lub pompa ciepła) i temperatury na wyjściu z parowaczy.                                                                                                                                                                                 |              |
| Temp.    In.    Out.<br>Skr.        24,3    22,4 °C<br>Skr.1        22,3 °C<br>Skr.2        22,4 °C                                                                                                                                                      | (jeżeli występują 2 skraplacze) Wyświetla temperaturę na wejściu i na wyjściu parownika lub skraplacza (w zależności od trybu pracy agregat chłodniczy lub pompa ciepła) i temperatury na wyjściu z obu skraplaczy.                                                                                                                                                                                         |              |
| Temp.                    12,3 °C<br>Freecooling<br>Pow. zewn.            15,4 °C<br>Optional                19,6 °C<br>Zbiorn.systemu        12,5 °C<br>Zbiorn.odzysku        40,5 °C<br>Drycooler                08,6 °C<br>Wnęka spręż.        35,7 °C | (dla agregatów chłodzonych powietrzem) Wyświetla temperaturę freecooling (w agregatach chłodniczych+freecooling), temperaturę powietrza na zewnątrz i temperaturę opcjonalną (jeżeli sondy są włączone). Wyświetla temperaturę zbiornika instalacji i odzysku (jeżeli sondy są włączone). Wyświetla temperaturę Drycooler (jeżeli występuje) i komory sprężarki (jeżeli zarządzana jest odpowiednia sonda). |              |
| Obw        hp        lp    st<br>1        07,3    04,2   Off<br>2        07,3    03,9   Off<br>3        07,3    04,2   Off<br>4        07,3    03,9   Off<br>bar        bar                                                                              | Wyświetlanie wartości wysokiego i niskiego ciśnienia (jeżeli występują przetworniki) i kodyfikowanie trybu pracy obwodów 1, 2, 3 i 4.                                                                                                                                                                                                                                                                       |              |
| Spręż        hp        lp<br>1        07,3    04,2 bar<br>2        07,3    03,9 bar<br><br>Stan obwodów<br>1: Ch                                                                                                                                         | Wyświetlanie wartości wysokiego i niskiego ciśnienia (jeżeli występują przetworniki) w przypadku umieszczenia przetworników w sprężarce, zamiast w obwodzie. Kodyfikacja trybu pracy obwodów.                                                                                                                                                                                                               |              |
| Obw        tc        tl        prze<br>1        07,3    00,0    00,0<br>2        07,3    00,0    00,0<br>3        07,3    00,0    00,0<br>4        07,3    00,0    00,0<br>°C        °C        °C                                                        | (w agregatach chłodniczych z odzyskiem) Wyświetlanie wartości ciśnienia przeliczonego na temperaturę, temperatury cieczy i obliczanie przechłodzenia obwodów 1, 2, 3 i 4.                                                                                                                                                                                                                                   |              |

| Maska podręcznika                                                                                                                      | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ID parametru |
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| Timer tuning defrost<br>Range 1200 - 03600 s<br><br>Free Defrost 0370 s                                                                | Wyświetla, dla timer tuning defrost, zakres zmiany czasu opóźnienia odszraniania obliczony w oparciu o temperaturę zewnętrzną.<br>Wyświetla ponadto maksymalny czas trwania free defrost obliczony w oparciu o temperaturę zewnętrzną.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |
| Obw. Time<br>1 02700<br>2 02700<br>3 02700<br>4 02700<br>s<br>Timer tuning defrost                                                     | Wyświetlanie czasu opóźnienia odszraniania obliczonego z algorytmu timer tuning defrost.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |
| Obw Time Max<br>1 0188 0125<br>2 0125 0270<br>3 0188 0125<br>4 0125 0270<br>s       s<br>Free Defrost                                  | Wyświetlanie czasu włączenia free defrost i czasu maksymalnego obliczonego w oparciu o obliczony czas opóźnienia.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |
| Obw defr opóź. trw.<br>1 N 0904 0000<br>2 N 0000 0028<br>3 N 0904 0000<br>4 N 0000 0028<br>s       s                                   | Wyświetlanie stanu odszraniania, czasu opóźnienia do rozpoczęcia odszraniania i czasu, jaki był potrzebny do odszraniania.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |
| Temperatury na wylocie ze sprężarek<br>C1:105,9 C2:058,2<br>C3:098,4 C4:067,3<br>C5:105,3 C6:104,9<br>C7:098,4 C8:068,2<br>°C       °C | Wyświetlanie temperatur na wylocie ze sprężarek (jeżeli występują sondy).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |
| Przetw. różnicowy<br><br>parownika: 060,1 kPa<br>odzysku: 055.3 kPa<br>skraplacza: 050,4 kPa                                           | Wyświetlanie wartości ciśnienia różnicowego (jeżeli występują przetworniki) obwodu wodnego parownika, rekuperatora i skraplacza.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |
| Regulacja wentylat.:<br>Obw1: 060 %<br>Obw2: 043 %<br>Obw3: 056 %<br>Obw4: 092 %<br>Obw1-2: 060 %<br>Obw3-4: 092 %                     | Wyświetlenie wartości procentowej wentylacji (lub otwarcia zaworu skraplania dla agregatów chłodzonych wodą) dla każdego obwodu. Ten żądany procent nie odpowiada napięciu dostarczanemu w V dla urządzeń nieliniowych (wentylatory lub zawory).<br>W przypadku, gdy wyjście steruje wentylatorami AC lub zaworami, wskazywana wartość jest wynikiem zapotrzebowania regulatora skraplania. To zapotrzebowanie jest linearyzowane (przekształcane) przed wysłaniem do wentylatora lub zaworu tak, aby zapotrzebowanie 60% odpowiadało 60% maksymalnej dopuszczalnej wartości (natężenie przepływu wentylatora lub otwarcie zaworu).<br>Natomiast w przypadku wentylatorów EC wyjście odpowiada dokładnie wartości zapotrzebowania regulatora. Tak więc przy odczycie 60% na wyjściu będzie 6 V DC. Dzieje się tak dlatego, że linearyzację sygnału wykonuje inwerter wentylatora.<br>Pojawia się Obw1-2: w przypadku agregatu ze sprężarkami hermetycznymi z oddzielnym skraplaniem i jego wartość odpowiada większej spośród wartości procentowych obwodu 1 i 2 (analogicznie ta sama zasada obowiązuje dla agregatów z 4 obwodami dla Obw3-4). |              |

| Maska podręcznika                                                                                          | Opis maski                                                                                                                                                                                                      | ID parametru |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Wyjścia analogowe:<br>Reg.Skrap. 1:000 %<br>Reg.Skrap. 2:000 %<br>Reg.Skrap. 3:000 %<br>Reg.Skrap. 4:000 % | Wyświetlanie wartości procentowych skraplania dla HW pCOEM.<br>Wskazuje procentowe żądanie podłączonych do nich urządzeń (dla urządzeń nieliniowych nie ma zastosowania zgodność z napięciem dostarczonym w V). |              |
| Wyjścia analogowe: 5<br><br>Prędkość pompy instalacja: 000%<br><br>Regulacja zaworu instalacji: 000%       | Wyświetlanie wyjść analogowych rozszerzenia 5.                                                                                                                                                                  |              |
| Wyjścia analogowe: 1<br><br>Prędkość pompy odzysku: 000%<br><br>Prędkość pompy odzysku: 000%               | Wyświetlanie wyjść analogowych rozszerzenia 1.                                                                                                                                                                  |              |
| Wyjścia analogowe: 2<br><br>Prędkość pompy odzysku: 000%<br><br>Prędkość pompy odzysku: 000%               | Wyświetlanie wyjść analogowych rozszerzenia 2.                                                                                                                                                                  |              |
| Wyjścia analogowe: 3<br>Freecooling :000 %                                                                 | Wyświetlanie wyjść analogowych rozszerzenia 3.                                                                                                                                                                  |              |
| Wyjścia analogowe: 3<br>Freecooling :000 %                                                                 | Wyświetlanie wyjść analogowych rozszerzenia 3 slave.                                                                                                                                                            |              |
| Licznik godzinowy<br><br>Pompa 1 001010<br>Pompa 2 000982<br>Pompa odz 000450<br>Pompa skr 000625          | Umożliwia wyświetlenie godzin pracy pomp obiegowych (nie jest tożsame z włączeniem pompy).                                                                                                                      |              |
| P3 - parownik<br>Pompa 1<br>Stan: OFF<br>Godziny: 000000<br><br>Pompa 2<br>Stan: OFF<br>Godziny: 000000    | Wyświetla informacje dotyczące pomp po stronie parownika, przypisanych do modułu P3 (jeśli jest włączony).                                                                                                      |              |

| Maska podręcznika                                                                                                               | Opis maski                                                                                                                                                                                                                                    | ID parametru |
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| P3 - rekuperator<br>Pompa 1<br>Stan: OFF<br>Godziny: 000000<br><br>Pompa 2<br>Stan: OFF<br>Godziny: 000000                      | Wyświetla informacje dotyczące pomp po stronie rekuperatora (lub skraplacza) przypisanych do modułu P3 (jeśli jest włączony).                                                                                                                 |              |
| Licznik godzinowy<br>sprężarek<br>Średnia godzin<br>000000<br>C1 000000 C2 000000<br>C3 000000 C4 000000<br>C5 000000 C6 000000 | Pozwala na wyświetlenie średniej godzin sprężarek.<br>Pozwala na wyświetlenie godzin pracy sprężarek.                                                                                                                                         |              |
| Work<br>Act << 082%<br><br>RPM 32450<br>CR 2,8<br>lp 03,9bar<br>temp na wylocie 78,5°C                                          | Pozwala na wyświetlenie stanu pracy sprężarek Turbocor, aktualnej wartości procentowej, liczby obrotów oraz wartości procentowej wydatku. Ponadto pozwala na wyświetlenie innych danych, takich jak temperatura na wylocie i ciśnienie ssania |              |
| Work<br>Act << 080%<br><br>RPM 29500<br>CR 2,8<br>lp 03,9bar<br>temp na wylocie 78,5°C                                          | Pozwala na wyświetlenie stanu pracy sprężarek Turbocor, aktualnej wartości procentowej, liczby obrotów oraz wartości procentowej wydatku. Ponadto pozwala na wyświetlenie innych danych, takich jak temperatura na wylocie i ciśnienie ssania |              |
| Work<br>Act << 082%<br><br>RPM 32450<br>CR 2,8<br>lp 03,9bar<br>temp na wylocie 78,5°C                                          | Pozwala na wyświetlenie stanu pracy sprężarek Turbocor, aktualnej wartości procentowej, liczby obrotów oraz wartości procentowej wydatku. Ponadto pozwala na wyświetlenie innych danych, takich jak temperatura na wylocie i ciśnienie ssania |              |
| Work<br>Act << 080%<br><br>RPM 29500<br>CR 2,8<br>lp 03,9bar<br>temp na wylocie 78,5°C                                          | Pozwala na wyświetlenie stanu pracy sprężarek Turbocor, aktualnej wartości procentowej, liczby obrotów oraz wartości procentowej wydatku. Ponadto pozwala na wyświetlenie innych danych, takich jak temperatura na wylocie i ciśnienie ssania |              |
| Work<br>Act << 081%<br><br>RPM 32120<br>CR 2,8<br>lp 03,9bar<br>temp na wylocie 78,5°C                                          | Pozwala na wyświetlenie stanu pracy sprężarek Turbocor, aktualnej wartości procentowej, liczby obrotów oraz wartości procentowej wydatku. Ponadto pozwala na wyświetlenie innych danych, takich jak temperatura na wylocie i ciśnienie ssania |              |
| Work<br>Act << 078%<br><br>RPM 34550<br>CR 2,3<br>lp 03,1bar<br>temp na wylocie 76,5°C                                          | Pozwala na wyświetlenie stanu pracy sprężarek Turbocor, aktualnej wartości procentowej, liczby obrotów oraz wartości procentowej wydatku. Ponadto pozwala na wyświetlenie innych danych, takich jak temperatura na wylocie i ciśnienie ssania |              |

| Maska podręcznika                                                                                                                          | Opis maski                                                                                                                                                                                                                                    | ID parametru |
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| Work<br>Act << 081%<br><br>RPM 31450<br>CR 2,8<br>lp 03,2bar<br>temp na wylocie 78,5°C                                                     | Pozwala na wyświetlenie stanu pracy sprężarek Turbocor, aktualnej wartości procentowej, liczby obrotów oraz wartości procentowej wydatku. Ponadto pozwala na wyświetlenie innych danych, takich jak temperatura na wylocie i ciśnienie ssania |              |
| Work<br>Act << 080%<br><br>RPM 14500<br>CR 2,6<br>lp 03,7bar<br>temp na wylocie 78,2°C                                                     | Pozwala na wyświetlenie stanu pracy sprężarek Turbocor, aktualnej wartości procentowej, liczby obrotów oraz wartości procentowej wydatku. Ponadto pozwala na wyświetlenie innych danych, takich jak temperatura na wylocie i ciśnienie ssania |              |
| subc 03,8 03,6 °C<br>st Reg Reg<br>step 1824 1630                                                                                          | Pozwala na wyświetlenie wartości przechłodzenia obwodów, stanu driverów elektronicznych zaworów termostatycznych oraz liczby skoków otwierania zaworów.                                                                                       |              |
| Obw SH % st<br>1 05,9 80 Ok<br>2 06,1 70 Ok<br>3 06,0 60 Ok<br>4 05,7 85 Ok<br>°C<br>Temp. ssania: 000,0 °C                                | Pozwala na wyświetlenie wartości przegrzania obwodów, stanu elektronicznych driverów zaworów termostatycznych, liczby kroków otwarcia zaworów w procentach oraz temperatury ssania ze zintegrowanym driverem.                                 |              |
| Szczegóły obwodu 1 EEV<br>Stan otwarcia zaworu<br>SH<br>1 02.0 0032 OK<br>2 05.7 0012 Alarm<br>3 01.1 0040 OK<br>4 01.2 0041 OK<br>°C %    | Pozwala na wyświetlenie dla obwodu 1: wartości przegrzania, statusu i liczby stopni otwarcia w procentach zaworów termostatycznych.                                                                                                           |              |
| Szczegóły obwodu 2 EEV<br>Stan otwarcia zaworu<br>SH<br>1 03.0 0075 OK<br>2 02.9 0071 OK<br>3 02.9 0082 OK<br>4 03.1 0091 OK<br>°C %       | Pozwala na wyświetlenie dla obwodu 2: wartości przegrzania, statusu i liczby stopni otwarcia w procentach zaworów termostatycznych.                                                                                                           |              |
| Szczegóły obwodu 3 EEV<br>Stan otwarcia zaworu<br>SH<br>1 11.0 0100 Alarm<br>2 03.0 0080 Alarm<br>3 03.0 0087 OK<br>4 02.2 0081 OK<br>°C % | Pozwala na wyświetlenie dla obwodu 3: wartości przegrzania, statusu i liczby stopni otwarcia w procentach zaworów termostatycznych.                                                                                                           |              |
| Szczegóły obwodu 4 EEV<br>Stan otwarcia zaworu<br>SH<br>1 01.0 0050 OK<br>2 01.7 0051 OK<br>3 03.3 0100 Alarm<br>4 02.1 0053 Alarm<br>°C % | Pozwala na wyświetlenie dla obwodu 4: wartości przegrzania, statusu i liczby stopni otwarcia w procentach zaworów termostatycznych.                                                                                                           |              |

| Maska podręcznika                                                   | Opis maski                                                                                                                                                 | ID parametru |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Inwerter 1: Online<br>Nastawa 1200 obr./min<br>Obroty 1200 obr./min | Pozwala na wyświetlenie, czy inwerter 1 jest online ze sterownikiem. Ponadto jest wskazana zadana i rzeczywista prędkość obrotowa sprężarki z inwerterem.  |              |
| Inwerter 2: Online<br>Nastawa 1400 obr./min<br>Obroty 1400 obr./min | Pozwala na wyświetlenie, czy inwerter 2 jest online ze sterownikiem. Ponadto jest wskazana zadana i rzeczywista prędkość obrotowa sprężarki z inwerterem.  |              |
| Inwerter 3: Online<br>Nastawa 1200 obr./min<br>Obroty 1200 obr./min | Pozwala na wyświetlenie, czy inwerter 3 jest online ze sterownikiem. Ponadto jest wskazana zadana i rzeczywista prędkość obrotowa sprężarki z inwerterem.  |              |
| Inwerter 4: Online<br>Nastawa 1400 obr./min<br>Obroty 1400 obr./min | Pozwala na wyświetlenie, czy inwerter 4 jest online ze sterownikiem. Ponadto jest wskazana zadana i rzeczywista prędkość obrotowa sprężarki z inwerterem.  |              |
| Spręż. 1: Online<br>Nastawa 060%<br>Proc. aktywny 060%              | Pozwala na wyświetlenie, czy inwerter 1 jest online ze sterownikiem. Ponadto wskazana jest nastawa i aktywny procent wydajności sprężarki śrubowej CSW105. |              |
| Spręż. 2: Online<br>Nastawa 080%<br>Proc. aktywny 080%              | Pozwala na wyświetlenie, czy inwerter 2 jest online ze sterownikiem. Ponadto wskazana jest nastawa i aktywny procent wydajności sprężarki śrubowej CSW105. |              |
| Spręż. 3: Online<br>Nastawa 055%<br>Proc. aktywny 055%              | Pozwala na wyświetlenie, czy inwerter 3 jest online ze sterownikiem. Ponadto wskazana jest nastawa i aktywny procent wydajności sprężarki śrubowej CSW105. |              |
| Spręż. 4: Online<br>Nastawa 070%<br>Proc. aktywny 070%              | Pozwala na wyświetlenie, czy inwerter 4 jest online ze sterownikiem. Ponadto wskazana jest nastawa i aktywny procent wydajności sprężarki śrubowej CSW105. |              |



| Maska podręcznika                                                                                                                                                                                                                                 | Opis maski                                                                                                                                                                                                                                       | ID parametru |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Spręż.1                      Work<br>IGV                            063,0%<br><br>Frequency                50,0Hz<br>CR                            2,2<br>Temp oleju                47,0°C<br>Temp na wylocie 52,0°C                              | Umożliwia wyświetlenie stanu pracy sprężarek odśrodkowych Hanbell, wartości procentowej IGV i częstotliwości pracy. Ponadto umożliwia wyświetlenie innych danych, takich jak temperatura rozładowania, temperatura oleju oraz stopień sprężania. |              |
| Miernik energii<br>Napięcie (V)<br>L1-L2                        400<br>L2-L3                        401<br>L3-L1                        403<br>Neutralny 1                233<br>Neutralny 2                231<br>Neutralny 3                230 | Pozwala wyświetlić wielkości odczytane przez miernik energii.                                                                                                                                                                                    |              |
| Miernik energii<br>Prąd (A)<br>L1                            0030,0<br>L2                            0035,0<br>L3                            0028,0                                                                                               | Pozwala wyświetlić wielkości odczytane przez miernik energii.                                                                                                                                                                                    |              |
| Miernik energii<br>Moc czynna (kW)<br>L1                            0017,2<br>L2                            0021,4<br>L3                            0019,0<br>Ogółem                    0057,6                                                    | Pozwala wyświetlić wielkości odczytane przez miernik energii.                                                                                                                                                                                    |              |
| Miernik energii<br>Moc bierna<br>(kVar)<br>L1                            0014,2<br>L2                            0028,4<br>L3                            0012,0<br>Ogółem                    0054,6                                               | Pozwala wyświetlić wielkości odczytane przez miernik energii.                                                                                                                                                                                    |              |
| Miernik energii<br>Moc pozorna<br>(kVA)<br>L1                            0024,2<br>L2                            0018,4<br>L3                            0021,1<br>Ogółem                    0063,7                                               | Pozwala wyświetlić wielkości odczytane przez miernik energii.                                                                                                                                                                                    |              |
| Miernik energii<br><br>Energia                    0000009kWh<br><br>Czas                        0000002h                                                                                                                                          | Pozwala wyświetlić wielkości odczytane przez miernik energii.                                                                                                                                                                                    |              |
| Miernik mocy<br>cieplnej<br><br>Nat.przep. 0015,6 m3/h<br>T1                            012,3°C<br>T2                            007,2°C<br>Delta T                    005,1°C<br>Moc                        00092 kW                             | Umożliwia wyświetlenie zmierzonych danych i mocy cieplnej obliczonej przez miernik mocy cieplnej.                                                                                                                                                |              |

| Maska podręcznika                                                                                                                               | Opis maski                                                                                                                                                                                                                                                                                  | ID parametru                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Sprawność chwilowa<br>4,50                                                                                                                      | Sprawność obliczana jako stosunek mocy chłodniczej/ciepłej do mocy pobieranej. Jest dostępna w następujących warunkach: <ul style="list-style-type: none"> <li>• Oba mierniki (miernik ciepła i miernik zużycia energii) są obecne i działają.</li> <li>• Agregat jest włączony.</li> </ul> |                                                                                                                                  |
| Miernik mocy<br>ciepłej odzysku<br><br>Natężenie przepływu<br>0015,0 m3/h<br>T1 032,4 °C<br>T2 039,0 °C<br>Delta T 006,6 °C<br>Moc 00078 kW     | Umożliwia przeglądanie danych pomiarowych i mocy ciepłej obliczonej przez licznik mocy ciepłej w gałęzi odzysku.                                                                                                                                                                            |                                                                                                                                  |
| Sprawność chwilowa<br>odzysku<br>03.65                                                                                                          | Umożliwia przeglądanie sprawności chwilowej gałęzi odzysku.                                                                                                                                                                                                                                 |                                                                                                                                  |
| Przełącznik linii<br>zasilania<br>elektrycznego<br>Zasilanie 1:<br>Brak<br>Odłączone<br>Zasilanie 2:<br>Brak<br>Odłączone                       | Umożliwia wyświetlenie stanu przełącznika linii zasilania elektrycznego.                                                                                                                                                                                                                    |                                                                                                                                  |
| Włączenie<br>obwodów<br>Obw1: T Obw2: S<br>Obw3: N Obw4: N<br><br>sprężarki<br>C1:S C2:S C3:S C4:S<br>C5:S C6:S C7:N C8:N                       | Pozwala na zaznaczenie/odznaczenie obwodów i sprężarek.                                                                                                                                                                                                                                     | UNT0001<br>UNT0002<br>UNT0003<br>UNT0004<br>UNT0005<br>UNT0006<br>UNT0007<br>UNT0008<br>UNT0009<br>UNT0010<br>UNT0011<br>UNT0012 |
| KIPlink<br>Stan: online<br>Sieć Wifi SSID:<br>KIPlink_032078434<br><br>Adres IP:<br>192 168 030 001                                             | Ekran wyświetlania stanu i głównych informacji dot. modułu KIPlink.                                                                                                                                                                                                                         |                                                                                                                                  |
| KIPlink<br>Typ modułu:<br>Master-EthOFF-WifiON<br>Kanał aktywny: WIFI<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000 000 000 000 | Ekran wyświetlania stanu i głównych informacji dot. modułu KIPlink.                                                                                                                                                                                                                         |                                                                                                                                  |
| KIPlink<br>Kanał ETHERNET<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000 000 000 000                                             | Ekran wyświetlania informacji dotyczących sieci Ethernet KIPlink.                                                                                                                                                                                                                           |                                                                                                                                  |

| Maska podręcznika                                                                                                                      | Opis maski                                                                                                                                                                                                                                            | ID parametru |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| KIPlink<br>Kanał WIFI<br><br>Ip: 192.168.030.001<br>Sub: 255.255.255.000<br>Gw: 000 000 000 000                                        | Ekran do wyświetlania informacji dotyczących sieci Wifi KIPlink.                                                                                                                                                                                      |              |
| Sieć kilku KIPlink<br>Nazwa sieci Wifi<br>master<br>KIPlink_032078434<br><br>IP master sieci:<br>192.168.030.001<br><br>Id w sieci: 01 | Ekran wyświetlania głównych informacji modułu master sieci KIPlink.                                                                                                                                                                                   |              |
| Czujnik wycieku gazu<br>Online<br><br>Liczba dni do<br>kalibracji: 0400 g<br><br>Okres użytkowania:<br>1800 g                          | Umożliwia wyświetlanie informacji związanych z czujnikiem wykrywania wycieków gazu chłodniczego: <ul style="list-style-type: none"> <li>Dni pozostałe do najbliższej konserwacji.</li> <li>Pozostały gwarantowany czas działania czujnika.</li> </ul> |              |
| Moc chłodnicza:<br>000000.0 kW<br><br>Moc pobierana:<br>000000.0 kW<br><br>EER: 00,00                                                  | Wyświetla wydajność chłodniczą i grzewczą oraz moc pobieraną. Wyświetlana jest także wartość efektywności (EER/COP/COP DHW).                                                                                                                          |              |
| Energia wytworzona<br>bieżący dzień<br>Ch: 000000,0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000,0 kWh<br><br>Tot: 000000,0 kWh              | Wyświetla energię wyprodukowaną w bieżącym dniu.                                                                                                                                                                                                      |              |
| Energia pochłonięta<br>bieżący dzień<br>Ch: 000000,0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000,0 kWh<br><br>Tot: 000000,0 kWh             | Wyświetla energię pobieraną w bieżącym dniu.                                                                                                                                                                                                          |              |
| Energia wytworzona<br>poprzedni dzień<br>Ch: 000000,0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000,0 kWh<br><br>Tot: 000000,0 kWh            | Wyświetla energię wyprodukowaną poprzedniego dnia.                                                                                                                                                                                                    |              |
| Energia pochłonięta<br>poprzedni dzień<br>Ch: 000000,0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000,0 kWh<br><br>Tot: 000000,0 kWh           | Wyświetla energię pobieraną poprzedniego dnia.                                                                                                                                                                                                        |              |

| Maska podręcznika                                                                                                                                            | Opis maski                                                                            | ID parametru |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------|
| Efektywność energetyczna zintegrowana dzień bieżący   poprzedni<br> <br>Ch: 00.00   00.00<br>Hp: 00.00   00.00<br>DHW: 00.00   00.00<br>Tot: 00,00   00:00   | Wyświetl zintegrowaną efektywność energetyczną dla dnia bieżącego i poprzedniego.     |              |
| Energia wytworzona obecny miesiąc<br>Ch: 000000,0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000,0 kWh<br>Tot: 000000,0 kWh                                          | Wyświetl energię wyprodukowaną w bieżącym miesiącu.                                   |              |
| Energia pochłonięta obecny miesiąc<br>Ch: 000000,0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000,0 kWh<br>Tot: 000000,0 kWh                                         | Wyświetla energię pobieraną w bieżącym miesiącu.                                      |              |
| Energia wytworzona poprzedni miesiąc<br>Ch: 000000,0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000,0 kWh<br>Tot: 000000,0 kWh                                       | Wyświetl energię wyprodukowaną w poprzednim miesiącu.                                 |              |
| Energia pochłonięta poprzedni miesiąc<br>Ch: 000000,0 kWh<br>Hp: 000000,0 kWh<br>DHW: 000000,0 kWh<br>Tot: 000000,0 kWh                                      | Wyświetl energię pobieraną w poprzednim miesiącu.                                     |              |
| Efektywność energetyczna zintegrowana miesiąc bieżący   poprzedni<br> <br>Ch: 00.00   00.00<br>Hp: 00.00   00.00<br>DHW: 00.00   00.00<br>Tot: 00,00   00:00 | Wyświetl zintegrowaną efektywność energetyczną dla miesiąca bieżącego i poprzedniego. |              |
| Energia wytworzona rok bieżący<br>Ch: 000000000,0 kWh<br>Hp: 000000000,0 kWh<br>DHW: 000000000,0 kWh<br>Tot: 000000000,0 kWh                                 | Wyświetl energię wyprodukowaną w roku bieżącym.                                       |              |
| Energia pochłonięta rok bieżący<br>Ch: 000000000,0 kWh<br>Hp: 000000000,0 kWh<br>DHW: 000000000,0 kWh<br>Tot: 000000000,0 kWh                                | Wyświetla energię pobieraną w bieżącym roku.                                          |              |

| Maska podręcznika                                                                                                                                                         | Opis maski                                                                                                                                                       | ID parametru |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Energia wytworzona ostatni rok<br>Ch: 000000000,0 kWh<br>Hp: 000000000,0 kWh<br>DHW: 000000000,0 kWh<br><br>Tot: 000000000,0 kWh                                          | Wyświetl energię wyprodukowaną w roku poprzednim.                                                                                                                |              |
| Energia pochłonięta ostatni rok<br>Ch: 000000000,0 kWh<br>Hp: 000000000,0 kWh<br>DHW: 000000000,0 kWh<br><br>Tot: 000000000,0 kWh                                         | Wyświetl energię pobieraną w poprzednim roku.                                                                                                                    |              |
| Energia wytworzona rok -2<br>Ch: 000000000,0 kWh<br>Hp: 000000000,0 kWh<br>DHW: 000000000,0 kWh<br><br>Tot: 000000000,0 kWh                                               | Wyświetl energię wyprodukowaną 2 lata temu.                                                                                                                      |              |
| Energia pochłonięta rok -2<br>Ch: 000000000,0 kWh<br>Hp: 000000000,0 kWh<br>DHW: 000000000,0 kWh<br><br>Tot: 000000000,0 kWh                                              | Wyświetl energię pobieraną przez 2 lata temu.                                                                                                                    |              |
| Efektywność energetyczna zintegrowana rok bieżący   poprzednia   -2<br>Ch: 00.00 00.00 00.00<br>Hp: 00.00 00.00 00.00<br>DHW: 00.00 00.00 00.00<br>Tot: 00,00 00,00 00,00 | Wyświetl zintegrowaną efektywność energetyczną za rok bieżący, poprzedni i 2 lata temu.                                                                          |              |
| Moc chłodnicza:<br>000 000.0 kW<br>Moc grzewcza:<br>000.0 kW<br><br>Moc pobierana:<br>000000.0 kW<br><br>GRZEW: 00 -00                                                    | Wyświetla wydajność chłodniczą i grzewczą oraz moc pobieraną. Wyświetlana jest także wartość efektywności (EER/COP/COP TER). Widoczne dla agregatów z odzyskiem. |              |
| Energia wytworzona bieżący dzień<br>Ch:<br>000000,0 kWh<br>Grzewcza:<br><br>Ogółem:<br>000000,0 kWh<br><br>Ogółem:<br>000000,0 kWh                                        | Wyświetla energię wyprodukowaną w bieżącym dniu. Widoczne dla agregatów z odzyskiem.                                                                             |              |
| Energia pobierana bieżący dzień<br>000000.0 kWh                                                                                                                           | Wyświetla energię pobieraną w bieżącym dniu. Widoczne dla agregatów z odzyskiem.                                                                                 |              |

| Maska podręcznika                                                                                                               | Opis maski                                                                                                                 | ID parametru |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------|
| Energia wytworzona<br>poprzedni dzień<br>Ch:<br>000000,0 kWh<br>Grzewcza:<br>Ogółem:<br>000000,0 kWh<br>Ogółem:<br>000000,0 kWh | Wyświetl energię wyprodukowaną poprzedniego dnia. Widoczne dla agregatów z odzyskiem.                                      |              |
| Energia pobierana<br>poprzedni dzień<br>000000.0 kWh                                                                            | Wyświetla energię pobieraną poprzedniego dnia. Widoczne dla agregatów z odzyskiem.                                         |              |
| Efektywność<br>energetyczna<br>zintegrowana<br>dzień bieżący  <br>poprzedni<br> <br>GRZ.: 00,00   00:00                         | Wyświetla zintegrowaną efektywność energetyczną dla dnia bieżącego i poprzedniego. Widoczne dla agregatów z odzyskiem.     |              |
| Energia wytworzona<br>obecny miesiąc<br>Ch:<br>000000,0 kWh<br>Grzewcza:<br>000000,0 kWh<br>Ogółem:<br>000000,0 kWh             | Wyświetl energię wyprodukowaną w bieżącym miesiącu. Widoczne dla agregatów z odzyskiem.                                    |              |
| Energia pobierana<br>bieżący dzień<br>000000.0 kWh                                                                              | Wyświetla energię pobieraną w bieżącym miesiącu. Widoczne dla agregatów z odzyskiem.                                       |              |
| Energia wytworzona<br>poprzedni miesiąc<br>Ch:<br>000000,0 kWh<br>Grzewcza:<br>000000,0 kWh<br>Ogółem:<br>000000,0 kWh          | Wyświetl energię wyprodukowaną w poprzednim miesiącu. Widoczne dla agregatów z odzyskiem.                                  |              |
| Energia pobierana<br>poprzedni miesiąc<br>000000.0 kWh                                                                          | Wyświetla energię pobieraną w poprzednim miesiącu. Widoczne dla agregatów z odzyskiem.                                     |              |
| Efektywność<br>energetyczna<br>zintegrowana<br>miesiąc bieżący  <br>poprzedni<br> <br>Ch: 00,00   00:00                         | Wyświetla zintegrowaną efektywność energetyczną dla miesiąca bieżącego i poprzedniego. Widoczne dla agregatów z odzyskiem. |              |

| Maska podręcznika                                                                                                           | Opis maski                                                                                                                                                                                                    | ID parametru |
|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Energia wytworzona<br>rok bieżący<br>Ch:<br>000000000,0 kWh<br>Grzewcza:<br>000000000,0 kWh<br>Ogółem:<br>000000000,0 kWh   | Wyświetla energię wyprodukowaną w roku bieżącym. Widoczne dla agregatów z odzyskiem.                                                                                                                          |              |
| Energia pobierana<br>bieżący rok<br>000000000.0 kWh                                                                         | Wyświetla energię pobieraną w bieżącym roku. Widoczne dla agregatów z odzyskiem.                                                                                                                              |              |
| Energia wytworzona<br>poprzedni rok<br>Ch:<br>000000000,0 kWh<br>Grzewcza:<br>000000000,0 kWh<br>Ogółem:<br>000000000,0 kWh | Wyświetla energię wyprodukowaną w roku poprzednim. Widoczne dla agregatów z odzyskiem.                                                                                                                        |              |
| Energia pobierana<br>rok poprzedni<br>000000000.0 kWh                                                                       | Wyświetla energię pobieraną w poprzednim roku. Widoczne dla agregatów z odzyskiem.                                                                                                                            |              |
| Energia wytworzona<br>rok -2<br>Ch:<br>000000000,0 kWh<br>Grzewcza:<br>000000000,0 kWh<br>Ogółem:<br>000000000,0 kWh        | Wyświetla energię wyprodukowaną 2 lata temu. Widoczne dla agregatów z odzyskiem.                                                                                                                              |              |
| Energia pobierana<br>rok -2<br>000000000.0 kWh                                                                              | Wyświetla energię pobieraną 2 lata temu. Widoczne dla agregatów z odzyskiem.                                                                                                                                  |              |
| Efektywność<br>energetyczna<br>zintegrowana<br>rok bieżący   poprzedni<br> -2<br> <br>GRZ.:00,00 00,00 00,00                | Wyświetla zintegrowaną efektywność energetyczną odnośnie: <ul style="list-style-type: none"> <li>• Rok bieżący</li> <li>• Rok poprzedni</li> <li>• 2 lata temu</li> </ul> Widoczne dla agregatów z odzyskiem. |              |
| Podejścia wymienników<br><br>Wymiennik 1: 02.0°C<br>Wymiennik 2: 01.6°C<br>Wymiennik 3: 01.5°C<br>Wymiennik 4: 03,9°C       | Wyświetla podejścia do głównych wymienników obecnych po stronie użytkownika.                                                                                                                                  |              |

| Maska podręcznika                                                                                                                                                                                                            | Opis maski                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ID parametru |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p>Podejścia utylizatora</p> <p>Utylizator 1: 01.0°C<br/> Utylizator 2: 02.6°C<br/> Utylizator 3: 02.5°C<br/> Utylizator 4: ---</p>                                                                                          | Wyświetla podejścia do wymienników obecnych po stronie utylizatora.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |
| <p>Podejścia rekuperatorów</p> <p>Rekuperator 1:04,0°C<br/> Rekuperator 2:03,6°C<br/> Rekuperator 3:---<br/> Rekuperator 4:---</p>                                                                                           | Wyświetla podejścia do wymienników obecnych po stronie rekuperatora.                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |
| <p>Numer seryjny agregatu:<br/> 032078434</p>                                                                                                                                                                                | Maska wizualizacji numeru seryjnego agregatu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |
| <p>W 3000 +</p> <p>Kod TA 22.00 PL </p> <p>HW pCO5+ L NAND 50 MB<br/> Flash 2 MB + 7 MB + 4MB<br/> Ram 2048 KB<br/> Boot 5.01 Bios 6.52</p> | <p>Na tym ekranie są podawane informacje odnoszące się do programu użytkowego [Kod TA 22.00 PL]</p> <p>Dodatkowo za pomocą symbolu zamkniętej kłódki oznaczono fakt, że płytką jest oznaczona sygnaturą oprogramowania; dwie kłódki pojawiają się tylko w agregatach z 3 lub 4 obwodami.</p> <p>W drugiej części ekranu znajdują się informacje o hardware, dokładniej rozmiar (M, L, XL), pamięciach (NAND 50 MB, flash 2+7+4 MB, ram 2048 KB) oraz wersje zainstalowanego systemu operacyjnego (boot i bios).</p> |              |



| Maska podręcznika                                                                                                                                                                                                                   | Opis maski                                                                                                                                                    | ID parametru                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <div>Instalacja</div> <div>← ↓</div>                                                                                                                                                                                                | Ekran wejścia do menu instalacji. Naciśnięcie klawisze <b>[UP]</b> lub <b>[DOWN]</b> , aby przewijać pozostałe ekrany; <b>[ESC]</b> aby powrócić do podmenu.  |                                                                                      |
| Temp. In. Out.<br>Instalacja 10.3 6,5 °C<br><br>Pow. na zewn. 27,4 °C                                                                                                                                                               | Ekran wyświetlania temperatury węzła wodnego instalacji i powietrza na zewnątrz instalacji (wartość średnia sond agregatów lub pojedynczej sondy instalacji). |                                                                                      |
| Demand limit z wej.<br>analogowego: 040%                                                                                                                                                                                            | Ekran wyświetlania wartości demand limit pozyskanej z wejścia analogowego.                                                                                    |                                                                                      |
| Włączenie agregatów<br>zewnętrznych<br><br>1:S 2:N 3:S 4:S<br><br>5:N 6:N 7:N 8:N                                                                                                                                                   | Pozwala na włączenie i/lub wyłączenie skonfigurowanych agregatów zewnętrznych.                                                                                | GRO0001<br>GRO0002<br>GRO0003<br>GRO0004<br>GRO0005<br>GRO0006<br>GRO0007<br>GRO0008 |
| Stan agregatów<br>zewnętrznych<br><br>1:On 5:Alarm<br>2:On 6:On<br>3:On 7:Offline<br>4:Off 8:Offline                                                                                                                                | Ekran wyświetlania stanu agregatów zewnętrznych.                                                                                                              |                                                                                      |
| Tryb pracy agregatu<br>zewnętrznego<br>1:agregat chłodniczy<br>5:agregat chłodniczy<br>2:agregat chłodniczy<br>6:agregat chłodniczy<br>3:agregat chłodniczy<br>7:agregat chłodniczy<br>4:agregat chłodniczy<br>8:agregat chłodniczy | Ekran wyświetlania trybu pracy agregatów zewnętrznych.                                                                                                        |                                                                                      |
| Proc. aktywny agregatu<br><br>1:030% 5:060%<br>2:050% 6:060%<br>3:100% 7:000%<br>4:100% 8:000%                                                                                                                                      | Wyświetlanie aktywnych wartości procentowych mocy agregatów zewnętrznych.                                                                                     |                                                                                      |
| Stan zespołów<br>wewnętrznych<br><br>1:ON 6:OFFLINE<br>2:-- 7:OFFLINE<br>3:ON 8:ON<br>4:-- 9:--<br>5:OFF 10:OFFLINE                                                                                                                 | Ekran wyświetlania stanu zespołów wewnętrznych.                                                                                                               |                                                                                      |

| Maska podręcznika                                                                                                                                                                                            | Opis maski                                                                                                                                                                                         | ID parametru |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Stan zespołów wewnętrznych<br><br>11:ON        16:OFF<br>12:ON        17:OFFLINE<br>13:--        18:ON<br>14:--        19:ON<br>15:OFF       20:--                                                           | Ekran wyświetlania stanu zespołów wewnętrznych.                                                                                                                                                    |              |
| Adaptive set point zespołów wewnętrznych<br>01: 03,0°C 06: ----°C<br>02: ----°C 07: ----°C<br>03: 00,6°C 08: 00,2°C<br>04: ----°C 09: ----°C<br>05: ----°C 10: ----°C                                        | Ekran wyświetlania żądania adaptive setpoint otrzymanego z zespołów agregatów wewnętrznych.                                                                                                        |              |
| Adaptive set point zespołów wewnętrznych<br>11: 01,0°C 16: ----°C<br>12: 00,6°C 17: ----°C<br>13: ----°C 18: 00,9°C<br>14: ----°C 19: 00,2°C<br>15: ----°C 20: ----°C                                        | Ekran wyświetlania żądania adaptive setpoint otrzymanego z zespołów agregatów wewnętrznych.                                                                                                        |              |
| Żądanie zmiany setpoint zespołów wewnętrznych<br>01:ok        06:-----<br>02:optymiz.07:ok<br>03:----- 08:reset<br>04:zreduk. 09:ok<br>05:----- 10:-----                                                     | Ekran wyświetlania żądania dynamicznego setpoint w trybie HPC otrzymanego z zespołów agregatów wewnętrznych.                                                                                       |              |
| Żądanie zmiany setpoint zespołów wewnętrznych<br>11:----- 16:ok<br>12:ok        17:reset<br>13:----- 18:-----<br>14:----- 19:-----<br>15:zreduk. 20:ok                                                       | Ekran wyświetlania żądania dynamicznego setpoint w trybie HPC otrzymanego z zespołów agregatów wewnętrznych.                                                                                       |              |
| Dynamiczna wartość zadana:<br><br>02,3°C                                                                                                                                                                     | Ekran wyświetlający setpoint dynamiczny, który jest przekazywany do agregatów zewnętrznych jako wartość dodawana do ustawionego setpoint.                                                          |              |
| ID agregatu master w zespole:        02<br><br>ID agregatu KIPlink master:        03                                                                                                                         | Ekran, który wskazuje ID agregatu z KIPlink master wewnątrz KIPlan i agregatu zewnętrznego master wewnątrz sieci LAN Multi Manager.                                                                |              |
| Temperatura w pomieszczeniu<br>Strefa HT:        20,0 °C<br>Strefa LT:        18,0 °C<br><br>Wilgotność względna pomieszczenia<br>Strefa HT:        060 %<br>Strefa LT:        045 %<br>Odwilżanie:       On | Widoczny tylko w przypadku termostatu pokojowego touch. Umożliwia wyświetlanie temperatury i wilgotności w pomieszczeniu dla stref HT i LT oraz, jeśli skonfigurowano, stanu włączenia odwilżacza. |              |

| Maska podręcznika                                                                           | Opis maski                                                                                                                                                                                                                                        | ID parametru |
|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Stan stref<br>HT: Żądanie aktywne<br>LT: Nieobecne<br>Obieg DHW: On                         | Umożliwia wyświetlenie stanu żądania z termostatu pokojowego touch, w zależności od strefy, w której jest on włączony. Widoczny jest również stan włączenia obiegu CWU, jeśli został skonfigurowany.                                              |              |
| Obwód mieszany LT<br>Temp. wody: 035,0 °C<br>Stan pompy: On<br>Proc. otwarcia zaworu: 045 % | Umożliwia wyświetlenie temperatury wody w obwodzie mieszanym, stanu pompy i procentu otwarcia zaworu.                                                                                                                                             |              |
| LAN Multi Manager<br>Kod TG 03.00 IT<br>HW pCO5+ S<br>Boot 5.01 Bios 6.52                   | Na tym ekranie są podawane informacje odnoszące się do programu użytkowego [Kod TG 03.00 IT]<br>W drugiej części ekranu podawane są informacje o hardware, dokładniej rozmiar (S) oraz wersje zainstalowanego systemu operacyjnego (boot i bios). |              |

## 4 ALARMY

Naciskając jeden raz na klawisz **[ALARM]** wchodzi się do „menu alarmu”, gdzie jest wyświetlany komunikat alarmowy z odpowiednim kodem, datą i godziną alarmu, treść komunikatu alarmowego, rodzaj reset (automatyczny lub ręczny), pozycja, w której wystąpił alarm oraz rodzaj blokady. W przypadku alarmów dotyczących niektórych typów inwerterów sprężarek, podane jest specyficzne kodowanie alarmu generowanego przez inwerter.

Powyższe informacje są przedstawione na ekranie, którego przykład zaprezentowano poniżej:

```
10:36:04      01/05/23
              A0721-0032
Alarm zasilania
inwerter 1

Reset       : Auto
Pozycja: Spręż.
Blok.      : Spręż.
```

Jeżeli występuje kilka alarmów, przewijanie menu odbywa się za pomocą przycisku **[UP]** lub przycisku **[DOWN]**.

W celu wyjścia z tego menu, nacisnąć dowolny inny klawisz.

**W celu zresetowania alarmu** należy nacisnąć drugi raz klawisz **[ALARM]** i przytrzymać go, dopóki nie wyświetli się komunikat „Brak aktywnych alarmów”. Jeżeli komunikat nie pojawia się, oznacza, że są jeszcze aktywne warunki alarmu.

### 4.1 Historia zdarzeń na displayu

Funkcja ta rejestruje i wyświetla zdarzenia alarmowe, wskazując datę i godzinę zdarzenia, numer zdarzenia, zdarzenie aktywacji lub dezaktywacji, kod alarmu lub ostrzeżenia, opis zdarzenia, typ resetu (automatyczny lub ręczny), lokalizację, której dotyczy alarm oraz typ blokady. W przypadku alarmów dotyczących niektórych typów inwerterów sprężarek, podane jest specyficzne kodowanie alarmu generowanego przez inwerter. Powyższe informacje są przedstawione na ekranie, którego przykład zaprezentowano poniżej. Do prawidłowego wyświetlenia historii zdarzeń konieczna jest karta zegara.

```
10:36:04      01/05/23
Nr 001 S A0711 A - 0032
Alarm zasilania
inwertera 1

Reset       : Auto
Pozycja: Spręż.
Blokada: Spręż.
```

Te same informacje dotyczące historii zdarzeń, pobrane z kontroli W3000+, są również wyświetlane na klawiaturze W3000+ touch, na specjalnej stronie.

## 4.2 Tabela alarmów W3000+

### Legenda kolumny „Reset”:

|                |                                                                                                                                                                                                                                       |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>M</b>       | Alarm z resetowaniem ręcznym (jeżeli ustaje stan, który spowodował alarm, należy zresetować alarm z klawiatury); wliczany do „całkowitej liczby alarmów”.                                                                             |
| <b>A</b>       | Alarm z resetowaniem automatycznym (jeżeli ustaje stan, który spowodował alarm, alarm resetuje się automatycznie); wliczany do „całkowitej liczby alarmów”.                                                                           |
| <b>A/M</b>     | Alarm z automatycznym resetowaniem pierwszych „n” zdarzeń, następnie resetowanie ręczne; ustawia „całkowitą liczbę alarmów” (*: specyficzny dla modelu sprężarki PSD. Więcej informacji można znaleźć w odpowiedniej tabeli alarmów). |
| <b>S</b>       | Powiadomienie na wyświetlaczu (nie ustawia „całkowitej liczby alarmów”)                                                                                                                                                               |
| <b>S-A</b>     | Powiadomienie (które nie blokuje maszyny) lub alarm z resetowaniem automatycznym. Jeden lub drugi tryb można ustawić jako parametr.                                                                                                   |
| <b>S-M</b>     | Powiadomienie (które nie blokuje maszyny) lub alarm z resetowaniem ręcznym. Jeden lub drugi tryb można ustawić jako parametr.                                                                                                         |
| <b>S-M</b>     | Powiadomienie (które nie blokuje urządzenia) z resetowaniem ręcznym.                                                                                                                                                                  |
| <b>M - A/M</b> | Alarm z resetowaniem ręcznym (w sprężarkach hermetycznych, tłokowych, śrubowych), automatycznym przy pierwszych „n” zadziałaniach, następnie reset ręczny (w sprężarkach Turbocor).                                                   |
| <b>B</b>       | Blokada której nie można zresetować na displayu; wliczana do „całkowitej liczby alarmów”. W celu usunięcia alarmu konieczne jest odłączenie i ponowne podłączenie napięcia do sprężarki w stanie alarmu.                              |

### Legenda kolumny „Działanie”:

|            |                                                                                                                                                                                        |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>-</b>   | Brak blokady.                                                                                                                                                                          |
| <b>U</b>   | Blokada agregatu.                                                                                                                                                                      |
| <b>-/U</b> | Brak blokady lub blokada agregatu. Rodzaj działania zależy od parametru ustawionego w celu zresetowania.                                                                               |
| <b>U*</b>  | Blokada agregatu w wymuszonych trybach pracy. W trybie pracy automatycznej agregat nie blokuje się tylko ustawia w dostępnych trybach roboczych.                                       |
| <b>CI</b>  | Blokada obwodu, w którym wystąpiło zdarzenie.                                                                                                                                          |
| <b>CO</b>  | Blokada sprężarki związanej ze zdarzeniem.                                                                                                                                             |
| <b>FC*</b> | Blokada funkcji freecooling, agregat ustawi się w dostępnych trybach roboczych.                                                                                                        |
| <b>*</b>   | W zależności od tego, który czujnik jest w stanie alarmu, może wystąpić sytuacja, w której nie występuje żadna blokada lub zostały zablokowane sprężarki, obwody lub cały agregat.     |
| <b>PR</b>  | Pre-alarm: brak blokady agregatu, powiadomienie (aktywowane z parametru), że monitorowana wielkość przekroczyła próg (ustawiony przez parametr) tuż przy rzeczywistym progu alarmowym. |
| <b>GR</b>  | Alarmy, które ograniczają działanie instalacji.                                                                                                                                        |

| Kod | Opis                                     | Szczegóły                                                                                                                                                                                                                                         | Reset | Działanie | Próg    |
|-----|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|---------|
| 002 | Kolejność faz / Napięcie poza zakresem   | Sygnalizuje błędne połączenie faz. Blokuje kompletnie agregat (widoczne tylko jeżeli występuje wejście, które to wykrywa).                                                                                                                        | A     | U         |         |
| 003 | Brak przepływu wody w parowniku          | Sygnalizuje brak przepływu w parowniku. Alarm jest resetowany automatycznie 3 razy w tej samej godzinie, w przypadku, gdy zresetowanie ma miejsce w ciągu maksymalnego czasu funkcjonowania pomp z małą ilością wody, w przeciwnym razie ręcznie. | A/M   | U         |         |
| 005 | Niska temperatura na wejściu             | Aktywny tylko w trybie pracy „pompa ciepła”. Sygnalizuje, że na wejściu do wymiennika po stronie ciepłej temperatura wody jest niska.                                                                                                             | S-A   | -/U       | STG0085 |
| 006 | Wysoka temperatura na wejściu            | Aktywny tylko w trybie pracy „Agregat chłodniczy”. Sygnalizuje, że na wejściu do parownika temperatura wody jest wysoka.                                                                                                                          | S-A   | -/U       | STG0084 |
| 007 | Blokada alternatywnego źródła instalacji | Sygnalizuje zablokowanie działania alternatywnego źródła używanego do ogrzewania zbiornika instalacji.                                                                                                                                            | S     | -         |         |
| 008 | Blokada alternatywnego źródła DHW        | Sygnalizuje zablokowanie działania alternatywnego źródła używanego do ogrzewania zbiornika DHW.                                                                                                                                                   | S     | -         |         |
| 010 | Ochrona parownika przed zamarzaniem      | Niska temperatura wody na wyjściu z parownika. Wskazuje ponadto, którego parownika (jeżeli więcej niż jeden) dotyczy stan alarmowy.                                                                                                               | M     | CI        | STG0073 |

| Kod | Opis                                            | Szczegóły                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Reset | Działanie | Próg               |
|-----|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|--------------------|
|     |                                                 | Alarm pojawia się również, jeśli ochrona przed zamarzaniem załączy się więcej niż 5 razy w ciągu 8 godzin pracy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |           |                    |
| 014 | Brak ciśnienia w instalacji                     | Widoczny tylko, jeżeli jest obecne odpowiednie wejście (patrz menu I/O). Sygnalizuje zatrzymanie agregatu przez zewnętrzny presostat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | S/M   | -/U       |                    |
| 017 | Niska temperatura powietrza na zewnątrz         | Sygnalizuje, że temperatura powietrza na zewnątrz spadła poniżej ustawionej granicy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | S-A   | -         | STG0071            |
| 021 | Niska zawartość wody w instalacji               | Temperatura na wejściu do parownika (skraplacza w przypadku pompy ciepła) zmienia się zbyt szybko ze względu na niską zawartość wody w systemie.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | S     | -         |                    |
| 022 | Niskie natężenie przepływu wody w instalacji    | Sygnalizuje, że jest zbyt duża różnica temperatur między wejściem a wyjściem z wymiennika podłączonego do instalacji lub natężenie przepływu wody w tym elemencie jest za niskie.<br>W szczególności alarm jest generowany, jeśli różnica temperatur jest większa niż określona wartość zadana (PMP0065 lub PMP0083) przez czas co najmniej równy PMP0066 lub PMP0084.<br>Alarm z automatycznym resetowaniem przez liczbę razy ustawioną w par. SFT0014 w ciągu tej samej godziny, jeżeli reset następuje w zakresie maksymalnego czasu ustawionego w par. STG0081; w przeciwnym razie jest resetowany ręcznie. Podczas odszraniania lub skraplania z włączonymi sprężarkami, sterowanie jest natychmiastowe i nie czeka na upływ czasu STG0081.<br>W pompach ciepła z inwersją po stronie wodnej aktywacja alarmu następuje poprzez kontrolę sond regulacji (parownik w ustawieniu agregatu chłodniczego, skraplacz w ustawieniu pompy ciepła). | A/M   | U*        | PMP0065<br>PMP0083 |
| 023 | Zbyt duże natężenie przepływu wody w instalacji | Sygnalizuje, że natężenie przepływu wody w parowniku jest za wysokie.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | M     | U*        | PMP0058            |
| 041 | Niska temperatura na wejściu do skraplacza      | Aktywny tylko w trybie pracy „pompa ciepła” i odzysk. Sygnalizuje, że temperatura wody na wejściu do skraplacza jest niska.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | S-A   | -/U       | STG0112            |
| 042 | Wysoka temperatura na wyjściu ze skraplacza     | Aktywny tylko w trybie pracy „Agregat chłodniczy”. Sygnalizuje, że temperatura wody na wyjściu ze skraplacza jest wysoka.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | S-A   | -/U       | STG0111            |
| 043 | Niskie natężenie przepływu wody w skraplaczu    | Sygnalizuje, że jest zbyt duża różnica temperatur między wejściem a wyjściem ze skraplacza lub natężenie przepływu wody w tym elemencie jest za niskie. Alarm resetowany automatycznie przez liczbę razy określoną par. SFT0014 w ciągu tej samej godziny, jeżeli reset następuje w zakresie maksymalnego czasu ustawionego przez par. SFT0020; w przeciwnym razie jest resetowany ręcznie.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | A/M   | U         | PMP0063            |
| 044 | Nadmierne natężenie przepływu wody w skraplaczu | Sygnalizuje za wysokie natężenie przepływu wody w skraplaczu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | M     | U         | PMP0062            |
| 045 | Brak przepływu wody w skraplaczu                | Jak w przypadku „Brak przepływu wody w parowniku” (tylko dla agregatu woda/woda z inwersją freonu).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | A/M   | U         |                    |
| 046 | Brak przepływu wody w rekuperatorze             | Sygnalizuje brak przepływu wody w rekuperatorze.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A/M   | U*        |                    |
| 051 | Konserwacja pompy 1                             | Przekroczona granica godzin konserwacji pompy (w agregatach z tylko jedną pompą, pompa 1 jest pompą parownika).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | S     | -         | STG0001            |
| 052 | Konserwacja pompy 2                             | (w agregatach z więcej niż jedną pompą) Przekroczona granica godzin konserwacji pompy 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | S     | -         | STG0004            |

| Kod | Opis                                                  | Szczegóły                                                                                                                                                                                                                                                                                                                                                                                                        | Reset | Działanie | Próg    |
|-----|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|---------|
| 057 | Konserwacja pompy rekuperatora/DHW                    | (w agregatach z pompą rekuperatora)<br>Przekroczona granica godzin konserwacji pompy rekuperatora.                                                                                                                                                                                                                                                                                                               | S     | -         | STG0007 |
| 058 | Konserwacja pompy skraplacza                          | (w agregatach z pompą skraplacza)<br>Przekroczona granica godzin konserwacji pompy skraplacza.                                                                                                                                                                                                                                                                                                                   | S     | -         | STG0010 |
| 060 | Konserwacja skraplaczy na zasilaniu                   | (tylko w agregatach ze sprężarkami Turbocor)<br>Przekroczona granica godzin konserwacji skraplaczy na zasilaniu.                                                                                                                                                                                                                                                                                                 | S     | -         | STG0053 |
| 061 | Offline drivera przechłodzenia/ pierwszy stopień nr 1 | Sygnalizuje odłączenie drivera w celu sterowania przechłodzeniem obwodu 1 / zawór pierwszego stopnia sprężarki 1 (tylko w agregatach ze sprężarkami Turbocor).                                                                                                                                                                                                                                                   | A     | CI        |         |
| 062 | Offline drivera przechłodzenia/ pierwszy stopień nr 2 | „jak wyżej, dla obwodu nr 2” / zawór pierwszego stopnia sprężarki 2.                                                                                                                                                                                                                                                                                                                                             | A     | CI        |         |
| 063 | Offline drivera przechłodzenia/ pierwszy stopień nr 3 | „jak wyżej, dla obwodu nr 1” / zawór pierwszego stopnia sprężarki 3.                                                                                                                                                                                                                                                                                                                                             | A     | CI        |         |
| 064 | Offline drivera przechłodzenia/ pierwszy stopień nr 4 | „jak wyżej, dla obwodu nr 2” / zawór pierwszego stopnia sprężarki 4.                                                                                                                                                                                                                                                                                                                                             | A     | CI        |         |
| 065 | Niska zawartość wody w obwodzie odzysku               | Temperatura na wejściu do rekuperatora zmienia się zbyt szybko, przyczyną jest niska zawartość wody w obwodzie odzysku.                                                                                                                                                                                                                                                                                          | S     | -         |         |
| 066 | Niskie natężenie przepływu wody w obwodzie odzysku    | Sygnalizuje, że różnica temperatury między wejściem a wyjściem z rekuperatora jest za duża lub natężenie przepływu wody w rekuperatorze jest zbyt niskie. Alarm z 3-krotnym resetem automatycznym w tej samej godzinie, jeżeli reset następuje w zakresie maksymalnego ustawionego czasu; w przeciwnym razie reset ręczny. Podczas odszraniania lub odsączania przy włączonych sprężarkach od razu reset ręczny. | A/M   | U*        | PMP0061 |
| 067 | Alarm antylegionella                                  | Funkcja antylegionella przekroczyła maksymalny ustawiony czas (DHW0022) dla maksymalnej liczby dozwolonych cykli (DHW0021).                                                                                                                                                                                                                                                                                      | S     | -         | DHW0021 |
| 068 | Anomalia ze sterowania po stronie chłodzenia          | Sygnalizuje alarm pochodzący z głównego sterownika w agregatach z modulem +2P. W celu wyświetlenia szczegółów alarmu i zresetowania go należy przejść do interfejsu sterownika głównego za pomocą kombinacji przycisków <b>[ESC+UP]</b> .                                                                                                                                                                        | S     | -         |         |
| 069 | Anomalia ze sterowania po stronie powietrza           | Sygnalizuje alarm pochodzący ze sterownika po stronie powietrza w agregatach rooftop. W celu wyświetlenia szczegółów alarmu i zresetowania go należy przejść do interfejsu sterownika głównego za pomocą kombinacji przycisków <b>[ESC+UP]</b> .                                                                                                                                                                 | S     | -         |         |
| 070 | Anomalia ze sterowania modulem +2P                    | Sygnalizuje alarm pochodzący ze sterownika modułu +2P. W celu wyświetlenia szczegółów alarmu i zresetowania go należy przejść do interfejsu sterownika +2P za pomocą kombinacji przycisków <b>[ESC+UP]</b> .                                                                                                                                                                                                     | S     | -         |         |
| 072 | Wysokie natężenie przepływu wody w obwodzie odzysku   | Sygnalizuje, że natężenie przepływu wody w rekuperatorze jest za duże.                                                                                                                                                                                                                                                                                                                                           | M     | U*        | PMP0060 |
| 075 | Antyfriz skraplacza                                   | Niska temperatura wody na wyjściu ze skraplacza. Za wyjątkiem W3000+ w podstawowej wersji, jest ponadto określone, którego skraplacza (jeżeli więcej niż jeden) dotyczy alarm.<br>Alarm pojawia się również w przypadku, gdy ochrona przed zamarzaniem łączy się więcej niż 5 razy w ciągu 8 godzin pracy (tylko dla agregatów z inwersją freonu).                                                               | M     | U*        | STG0077 |
| 076 | Ochrona przed zamarzaniem – rekuperator               | Niska temperatura wody na wyjściu z rekuperatora.                                                                                                                                                                                                                                                                                                                                                                | A     | U*        | STG0079 |
| 079 | Odłączenie modułu sterowania instalacją VPF           | Rozłączenie modułu, który zajmuje się regulacją natężenia przepływu wody w głównym obwodzie.                                                                                                                                                                                                                                                                                                                     | A     | -         |         |

| Kod | Opis                                        | Szczegóły                                                                                                                                                                                                 | Reset   | Działanie | Próg    |
|-----|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|---------|
| 080 | Anomalia modułu sterowania instalacją VPF   | Anomalia modułu, który zajmuje się regulacją natężenia przepływu wody w głównym obwodzie. Sprawdzić anomalię na interfejsie użytkownika modułu.                                                           | A       | -         |         |
| 081 | Zabezpieczenie termiczne pompy 1            | Sygnalizuje przegrzanie pompy 1. (w agregatach z jedną pompą, pompa 1 = pompa parownika).                                                                                                                 | M       | U*        |         |
| 082 | Zabezpieczenie termiczne pompy 2            | (w agregatach z większą liczbą pomp) sygnalizuje przegrzanie pompy 2.                                                                                                                                     | M       | U*        |         |
| 085 | Zabezpieczenie termiczne pompy skraplacza   | Sygnalizuje przegrzanie pompy skraplacza (tylko dla agregatów chłodzonych wodą).                                                                                                                          | M       | U         |         |
| 086 | Zabezpieczenie termiczne pompy rekuperatora | Sygnalizuje przegrzanie pompy rekuperatora.                                                                                                                                                               | M       | U*        |         |
| 087 | Zabezpieczenie termiczne pompy glikolu      | Sygnalizuje przegrzanie pompy glikolu (w agregatach freecooling).                                                                                                                                         | A       | FC*       |         |
| 090 | Odlączenie slave                            | Sygnalizuje odlączenie karty slave (tylko dla agregatów z 3 lub 4 obwodami). Jeżeli agregat jest wyposażony w moduł +2P sygnalizuje rozłączenie modułu.                                                   | A       | U         |         |
| 091 | Odlączenie rozszerzenia 1                   | Sygnalizuje, że rozszerzenie nr 1 master jest odlączone, pojawia się napis master w agregatach z 3 lub 4 obwodami.                                                                                        | A       | U         |         |
| 092 | Odlączenie rozszerzenia 2                   | „jak wyżej, dla rozszerzenia nr 2”.                                                                                                                                                                       | A       | U         |         |
| 093 | Odlączenie rozszerzenia 3                   | „jak wyżej, dla rozszerzenia nr 3”.                                                                                                                                                                       | A       | U         |         |
| 094 | Odlączenie rozszerzenia 4                   | „jak wyżej, dla rozszerzenia nr 4”.                                                                                                                                                                       | A       | U         |         |
| 095 | Odlączenie rozszerzenia 5                   | „jak wyżej, dla rozszerzenia nr 5”.                                                                                                                                                                       | A       | U         |         |
| 100 | Odlączenie energy meter                     | Sygnalizuje, że energy meter jest odlączony.                                                                                                                                                              | S       | -         |         |
| 101 | Odlączenie rozszerzenia 1 slave             | Sygnalizuje, że rozszerzenie nr 1 slave jest odlączone.                                                                                                                                                   | A       | U         |         |
| 102 | Odlączenie rozszerzenia 2 slave             | „jak wyżej, dla rozszerzenia nr 2”.                                                                                                                                                                       | A       | U         |         |
| 103 | Odlączenie rozszerzenia 3 slave             | „jak wyżej, dla rozszerzenia nr 3”.                                                                                                                                                                       | A       | U         |         |
| 104 | Odlączenie rozszerzenia 4 slave             | „jak wyżej, dla rozszerzenia nr 4”.                                                                                                                                                                       | A       | U         |         |
| 105 | Odlączenie rozszerzenia 5 slave             | „jak wyżej, dla rozszerzenia nr 5”.                                                                                                                                                                       | A       | U         |         |
| 106 | Odlączenie modułu P3                        | Wskazuje, że moduł P3 do sterowania więcej niż 2 pompami jest odlączony.                                                                                                                                  | A       | -         |         |
| 111 | Olej w sprężarce 1                          | Sygnalizuje brak oleju w sprężarce nr 1 z powodu niskiego poziomu lub niskiego ciśnienia oleju w sprężarce.                                                                                               | A/M     | CO        |         |
| 112 | Olej w sprężarce 2                          | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                                          | A/M     | CO        |         |
| 113 | Olej w sprężarce 3                          | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                                          | A/M     | CO        |         |
| 114 | Olej w sprężarce 4                          | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                                          | A/M     | CO        |         |
| 121 | Wysoka temperatura rozładowania sprężarki 1 | Sygnalizuje, że temperatura na wylocie sprężarki nr 1 jest powyżej ustawionej granicy.                                                                                                                    | A/M     | CO        | SFT0009 |
| 122 | Wysoka temperatura rozładowania sprężarki 2 | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                                          | A/M     | CO        |         |
| 123 | Wysoka temperatura rozładowania sprężarki 3 | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                                          | A/M     | CO        |         |
| 124 | Wysoka temperatura rozładowania sprężarki 4 | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                                          | A/M     | CO        |         |
| 125 | Wysoka temperatura rozładowania sprężarki 5 | „jak wyżej, dla sprężarki nr 5”.                                                                                                                                                                          | A/M     | CO        |         |
| 126 | Wysoka temperatura rozładowania sprężarki 6 | „jak wyżej, dla sprężarki nr 6”.                                                                                                                                                                          | A/M     | CO        |         |
| 127 | Wysoka temperatura rozładowania sprężarki 7 | „jak wyżej, dla sprężarki nr 7”.                                                                                                                                                                          | A/M     | CO        |         |
| 128 | Wysoka temperatura rozładowania sprężarki 8 | „jak wyżej, dla sprężarki nr 8”.                                                                                                                                                                          | A/M     | CO        |         |
| 131 | Anomalia sprężarki 1                        | Sygnalizuje przegrzanie silnika elektrycznego sprężarki nr 1 lub jakąkolwiek inną anomalię. W przypadku agregatów ze sprężarkami odśrodkowymi Turbocor może sygnalizować przegrzanie wzbudnika sprężarki. | M - A/M | CO        |         |
| 132 | Anomalia sprężarki 2                        | „jak wyżej, dla sprężarki pompy o niskim wzroście nr 2”.                                                                                                                                                  | M - A/M | CO        |         |
| 133 | Anomalia sprężarki 3                        | „jak wyżej, dla sprężarki pompy o niskim wzroście nr 3”.                                                                                                                                                  | M - A/M | CO        |         |
| 134 | Anomalia sprężarki 4                        | „jak wyżej, dla sprężarki pompy o niskim wzroście nr 4”.                                                                                                                                                  | M - A/M | CO        |         |
| 135 | Anomalia sprężarki 5                        | „jak wyżej, dla sprężarki pompy o niskim wzroście nr 5”.                                                                                                                                                  | M - A/M | CO        |         |
| 136 | Anomalia sprężarki 6                        | „jak wyżej, dla sprężarki pompy o niskim wzroście nr 6”.                                                                                                                                                  | M - A/M | CO        |         |
| 137 | Anomalia sprężarki 7                        | „jak wyżej, dla sprężarki pompy o niskim wzroście nr 7”.                                                                                                                                                  | M - A/M | CO        |         |



| Kod | Opis                          | Szczegóły                                                                                                                                                                                  | Reset                                 | Działanie | Próg                |
|-----|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------|---------------------|
| 138 | Anomalia sprężarki 8          | „jak wyżej, dla sprężarki pompy o niskim wzroście nr 8”.                                                                                                                                   | M - A/M                               | CO        |                     |
| 141 | Sprężarka 1 offline           | Sygnalizuje brak komunikacji ze sprężarką nr 1 (tylko dla agregatów ze sprężarkami odśrodkowymi).                                                                                          | A                                     | CO        |                     |
| 142 | Sprężarka 2 offline           | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                           | A                                     | CO        |                     |
| 143 | Sprężarka 3 offline           | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                           | A                                     | CO        |                     |
| 144 | Sprężarka 4 offline           | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                           | A                                     | CO        |                     |
| 151 | Konserwacja sprężarki 1       | Przekroczona granica godzin konserwacji sprężarki nr 1.                                                                                                                                    | S                                     | -         | STG0013             |
| 152 | Konserwacja sprężarki 2       | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                           | S                                     | -         | STG0018             |
| 153 | Konserwacja sprężarki 3       | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                           | S                                     | -         | STG0023             |
| 154 | Konserwacja sprężarki 4       | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                           | S                                     | -         | STG0028             |
| 155 | Konserwacja sprężarki 5       | „jak wyżej, dla sprężarki nr 5”.                                                                                                                                                           | S                                     | -         | STG0033             |
| 156 | Konserwacja sprężarki 6       | „jak wyżej, dla sprężarki nr 6”.                                                                                                                                                           | S                                     | -         | STG0038             |
| 157 | Konserwacja sprężarki 7       | „jak wyżej, dla sprężarki nr 7”.                                                                                                                                                           | S                                     | -         | STG0043             |
| 158 | Konserwacja sprężarki 8       | „jak wyżej, dla sprężarki nr 8”.                                                                                                                                                           | S                                     | -         | STG0048             |
| 161 | Zasilanie silnika sprężarki 1 | Alarm silnika sprężarki 1 (tylko w agregatach ze sprężarkami Turbocor).                                                                                                                    | A/B                                   | CO        |                     |
| 162 | Zasilanie silnika sprężarki 2 | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                           | A/B                                   | CO        |                     |
| 163 | Zasilanie silnika sprężarki 3 | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                           | A/B                                   | CO        |                     |
| 164 | Zasilanie silnika sprężarki 4 | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                           | A/B                                   | CO        |                     |
| 165 | Zasilanie silnika sprężarki 5 | „jak wyżej, dla sprężarki nr 5”.                                                                                                                                                           | A/B                                   | CO        |                     |
| 166 | Zasilanie silnika sprężarki 6 | „jak wyżej, dla sprężarki nr 6”.                                                                                                                                                           | A/B                                   | CO        |                     |
| 167 | Zasilanie silnika sprężarki 7 | „jak wyżej, dla sprężarki nr 7”.                                                                                                                                                           | A/B                                   | CO        |                     |
| 168 | Zasilanie silnika sprężarki 8 | „jak wyżej, dla sprężarki nr 8”.                                                                                                                                                           | A/B                                   | CO        |                     |
| 171 | Timeout rozruchu sprężarki 1  | W przypadku sprężarek Turbocor: sprężarka 1 nie została uruchomiona w ustawionym limicie czasu.<br><br>Dla sprężarek śrubowych: możliwa próba włączenia przy braku freonu, sprężarka nr 1. | Turbocor:<br>A/M<br><br>śrubowa:<br>A | CO        | 180s<br><br>SFT0003 |
| 172 | Timeout rozruchu sprężarki 2  | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                           | Turbocor:<br>A/M<br><br>śrubowa:<br>A | CO        | 180s<br><br>SFT0003 |
| 173 | Timeout rozruchu sprężarki 3  | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                           | Turbocor:<br>A/M<br><br>śrubowa:<br>A | CO        |                     |
| 174 | Timeout rozruchu sprężarki 4  | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                           | Turbocor:<br>A/M<br><br>śrubowa:<br>A | CO        |                     |
| 175 | Timeout rozruchu sprężarki 5  | „jak wyżej, dla sprężarki nr 5”.                                                                                                                                                           | Turbocor:<br>A/M                      | CO        |                     |
| 176 | Timeout rozruchu sprężarki 6  | „jak wyżej, dla sprężarki nr 6”.                                                                                                                                                           | Turbocor:<br>A/M                      | CO        |                     |
| 177 | Timeout rozruchu sprężarki 7  | „jak wyżej, dla sprężarki nr 7”.                                                                                                                                                           | Turbocor:<br>A/M                      | CO        |                     |
| 178 | Timeout rozruchu sprężarki 8  | „jak wyżej, dla sprężarki nr 8”.                                                                                                                                                           | Turbocor:<br>A/M                      | CO        |                     |
| 191 | Ekonomizer sprężarki 1        | Sygnalizuje wysoki poziom płynu chłodzącego w ekonomizerze sprężarki nr 1.                                                                                                                 | A                                     | CO        |                     |
| 192 | Ekonomizer sprężarki 2        | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                           | A                                     | CO        |                     |
| 193 | Ekonomizer sprężarki 3        | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                           | A                                     | CO        |                     |
| 194 | Ekonomizer sprężarki 4        | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                           | A                                     | CO        |                     |
| 201 | Anomalia obwodu 1             | Sygnalizuje anomalię w regulacji wentylacji obwodu chłodzenia nr 1.<br><b>Skontaktować się z najbliższym centrum serwisowym.</b>                                                           | S                                     | -         |                     |
| 202 | Anomalia obwodu 2             | „jak wyżej, dla obwodu nr 2”.                                                                                                                                                              | S                                     | -         |                     |
| 203 | Anomalia obwodu 3             | „jak wyżej, dla obwodu nr 3”.                                                                                                                                                              | S                                     | -         |                     |
| 204 | Anomalia obwodu 4             | „jak wyżej, dla obwodu nr 4”.                                                                                                                                                              | S                                     | -         |                     |
| 211 | Wysokie ciśnienie obwodu 1    | Sygnalizuje wysokie ciśnienie obwodu chłodzenia nr 1                                                                                                                                       | A/M                                   | CI        |                     |

| Kod | Opis                                               | Szczegóły                                                                                                          | Reset | Działanie | Próg                          |
|-----|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------|-----------|-------------------------------|
| 212 | Wysokie ciśnienie obwodu 2                         | „jak wyżej, dla obwodu nr 2”.                                                                                      | A/M   | CI        |                               |
| 213 | Wysokie ciśnienie obwodu 3                         | „jak wyżej, dla obwodu nr 3”.                                                                                      | A/M   | CI        |                               |
| 214 | Wysokie ciśnienie obwodu 4                         | „jak wyżej, dla obwodu nr 4”.                                                                                      | A/M   | CI        |                               |
| 221 | Anomalia wentylatorów obwodu 1                     | Sygnalizuje nieprawidłowe działanie wentylatora skraplacza obwodu 1, a w konsekwencji jego wyłączenie.             | M     | CI        |                               |
| 222 | Anomalia wentylatorów obwodu 2                     | „jak wyżej, dla obwodu nr 2”.                                                                                      | M     | CI        |                               |
| 223 | Anomalia wentylatorów obwodu 3                     | „jak wyżej, dla obwodu nr 3”.                                                                                      | M     | CI        |                               |
| 224 | Anomalia wentylatorów obwodu 4                     | „jak wyżej, dla obwodu nr 4”.                                                                                      | M     | CI        |                               |
| 231 | Niskie ciśnienie obwodu 1                          | Sygnalizuje wykrycie niskiego ciśnienia przez przetwornik/presostat w obwodzie nr 1.                               | A/M   | CI        | SFT0002<br>SFT0003            |
| 232 | Niskie ciśnienie obwodu 2                          | „jak wyżej, dla obwodu nr 2”.                                                                                      | A/M   | CI        |                               |
| 233 | Niskie ciśnienie obwodu 3                          | „jak wyżej, dla obwodu nr 3”.                                                                                      | A/M   | CI        |                               |
| 234 | Niskie ciśnienie obwodu 4                          | „jak wyżej, dla obwodu nr 4”.                                                                                      | A/M   | CI        |                               |
| 241 | Wysokie ciśnienie z przetwornika 1                 | Sygnalizuje wykrycie wysokiego ciśnienia przez przetwornik w obwodzie chłodzenia nr 1                              | A/M   | CI        | STG0057                       |
| 242 | Wysokie ciśnienie z przetwornika 2                 | „jak wyżej, dla obwodu nr 2”.                                                                                      | A/M   | CI        |                               |
| 243 | Wysokie ciśnienie z przetwornika 3                 | „jak wyżej, dla obwodu nr 3”.                                                                                      | A/M   | CI        |                               |
| 244 | Wysokie ciśnienie z przetwornika 4                 | „jak wyżej, dla obwodu nr 4”.                                                                                      | A/M   | CI        |                               |
| 251 | Timeout rozruchu obwodu 1                          | Możliwa próba rozruchu przy braku freonu w obwodzie nr 1                                                           | A     | CI        | SFT0003                       |
| 252 | Timeout rozruchu obwodu 2                          | „jak wyżej, dla obwodu nr 2”.                                                                                      | A     | CI        |                               |
| 253 | Timeout rozruchu obwodu 3                          | „jak wyżej, dla obwodu nr 3”.                                                                                      | A     | CI        |                               |
| 254 | Timeout rozruchu obwodu 4                          | „jak wyżej, dla obwodu nr 4”.                                                                                      | A     | CI        |                               |
| 261 | Brak freonu w obwodzie 1                           | Możliwe, że obwód 1 jest pozbawiony freonu ponieważ alarm „Timeout rozruchu” trwa przez co najmniej 8 godzin.      | A     | CI        |                               |
| 262 | Brak freonu w obwodzie 2                           | „jak wyżej, dla obwodu nr 2”.                                                                                      | A     | CI        |                               |
| 263 | Brak freonu w obwodzie 3                           | „jak wyżej, dla obwodu nr 3”.                                                                                      | A     | CI        |                               |
| 264 | Brak freonu w obwodzie 4                           | „jak wyżej, dla obwodu nr 4”.                                                                                      | A     | CI        |                               |
| 271 | Skrapłacz lamelowy obwodu 1                        | Sygnalizuje, że skraplacz lamelowy obwodu nr 1 jest zapchany podczas odszraniania.                                 | S-M   | CI        | DFR0011                       |
| 272 | Skrapłacz lamelowy obwodu 2                        | „jak wyżej, dla obwodu nr 2”.                                                                                      | S-M   | CI        |                               |
| 273 | Skrapłacz lamelowy obwodu 3                        | „jak wyżej, dla obwodu nr 3”.                                                                                      | S-M   | CI        |                               |
| 274 | Skrapłacz lamelowy obwodu 4                        | „jak wyżej, dla obwodu nr 4”.                                                                                      | S-M   | CI        |                               |
| 281 | Niedostateczne ciśnienie parowania w obwodzie nr 1 | Możliwe, że obwód nr 1 jest pozbawiony freonu ponieważ pracuje przy ciśnieniu parowania poniżej ustawionego progu. | M     | CI        | STG0068<br>STG0167<br>STG0168 |
| 282 | Niedostateczne ciśnienie parowania w obwodzie nr 2 | „jak wyżej, dla obwodu nr 2”.                                                                                      | M     | CI        |                               |
| 283 | Niedostateczne ciśnienie parowania w obwodzie nr 3 | „jak wyżej, dla obwodu nr 3”.                                                                                      | M     | CI        |                               |
| 284 | Niedostateczne ciśnienie parowania w obwodzie nr 4 | „jak wyżej, dla obwodu nr 4”.                                                                                      | M     | CI        |                               |
| 291 | Niedostateczna zawartość freonu w obwodzie nr 1    | Zawartość freonu w obwodzie nr 1 jest niedostateczna ponieważ agregat pracował poniżej progu approach.             | A/M   | CI        | SFT0022                       |
| 292 | Niedostateczna zawartość freonu w obwodzie nr 2    | „jak wyżej, dla obwodu nr 2”.                                                                                      | A/M   | CI        |                               |
| 293 | Niedostateczna zawartość freonu w obwodzie nr 3    | „jak wyżej, dla obwodu nr 3”.                                                                                      | A/M   | CI        |                               |
| 294 | Niedostateczna zawartość freonu w obwodzie nr 4    | „jak wyżej, dla obwodu nr 4”.                                                                                      | A/M   | CI        |                               |
| 301 | Temperatura inwertera sprężarki 1                  | Przegrzanie inwertera sprężarki nr 1 (tylko w agregatach ze sprężarkami Turbocor).                                 | A/M/B | CO        |                               |
| 302 | Temperatura inwertera sprężarki 2                  | „jak wyżej, dla sprężarki nr 2”.                                                                                   | A/M/B | CO        |                               |
| 303 | Temperatura inwertera sprężarki 3                  | „jak wyżej, dla sprężarki nr 3”.                                                                                   | A/M/B | CO        |                               |
| 304 | Temperatura inwertera sprężarki 4                  | „jak wyżej, dla sprężarki nr 4”.                                                                                   | A/M/B | CO        |                               |
| 305 | Temperatura inwertera sprężarki 5                  | „jak wyżej, dla sprężarki nr 5”.                                                                                   | A/M/B | CO        |                               |
| 306 | Temperatura inwertera sprężarki 6                  | „jak wyżej, dla sprężarki nr 6”.                                                                                   | A/M/B | CO        |                               |
| 307 | Temperatura inwertera sprężarki 7                  | „jak wyżej, dla sprężarki nr 7”.                                                                                   | A/M/B | CO        |                               |
| 308 | Temperatura inwertera sprężarki 8                  | „jak wyżej, dla sprężarki nr 8”.                                                                                   | A/M/B | CO        |                               |
| 311 | Temperatura spustu ze sprężarki 1                  | Przegrzanie na wylocie ze sprężarki nr 1 (tylko w agregatach ze sprężarkami Turbocor).                             | A/M/B | CO        |                               |
| 312 | Temperatura spustu ze sprężarki 2                  | „jak wyżej, dla sprężarki nr 2”.                                                                                   | A/M/B | CO        |                               |
| 313 | Temperatura spustu ze sprężarki 3                  | „jak wyżej, dla sprężarki nr 3”.                                                                                   | A/M/B | CO        |                               |
| 314 | Temperatura spustu ze sprężarki 4                  | „jak wyżej, dla sprężarki nr 4”.                                                                                   | A/M/B | CO        |                               |

| Kod | Opis                              | Szczegóły                                                                                                                                                                                            | Reset                                     | Działanie | Próg |
|-----|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------|------|
| 315 | Temperatura spustu ze sprężarki 5 | „jak wyżej, dla sprężarki nr 5”.                                                                                                                                                                     | A/M/B                                     | CO        |      |
| 316 | Temperatura spustu ze sprężarki 6 | „jak wyżej, dla sprężarki nr 6”.                                                                                                                                                                     | A/M/B                                     | CO        |      |
| 317 | Temperatura spustu ze sprężarki 7 | „jak wyżej, dla sprężarki nr 7”.                                                                                                                                                                     | A/M/B                                     | CO        |      |
| 318 | Temperatura spustu ze sprężarki 8 | „jak wyżej, dla sprężarki nr 8”.                                                                                                                                                                     | A/M/B                                     | CO        |      |
| 321 | Niskie ciśnienie sprężarki 1      | Dla sprężarek Turbocor: ciśnienie ssania poniżej minimalnej granicy sprężarki nr 1<br><br>Dla sprężarek śrubowych: sygnalizuje niskie ciśnienie wykryte przez przetwornik/presostat w sprężarce nr 1 | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 322 | Niskie ciśnienie sprężarki 2      | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 323 | Niskie ciśnienie sprężarki 3      | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 324 | Niskie ciśnienie sprężarki 4      | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 325 | Niskie ciśnienie sprężarki 5      | „jak wyżej, dla sprężarki nr 5”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 326 | Niskie ciśnienie sprężarki 6      | „jak wyżej, dla sprężarki nr 6”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 327 | Niskie ciśnienie sprężarki 7      | „jak wyżej, dla sprężarki nr 7”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 328 | Niskie ciśnienie sprężarki 8      | „jak wyżej, dla sprężarki nr 8”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 331 | Wysokie ciśnienie sprężarki 1     | W przypadku sprężarek Turbocor: ciśnienie sprężania ssania powyżej maksymalnej granicy, dla sprężarki nr 1<br><br>W przypadku sprężarek śrubowych: sygnalizuje wysokie ciśnienie sprężarki nr 1      | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 332 | Wysokie ciśnienie sprężarki 2     | „jak wyżej, dla sprężarki nr 2”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 333 | Wysokie ciśnienie sprężarki 3     | „jak wyżej, dla sprężarki nr 3”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 334 | Wysokie ciśnienie sprężarki 4     | „jak wyżej, dla sprężarki nr 4”.                                                                                                                                                                     | Turbocor:<br>A/M/B<br><br>Śrubowa:<br>A/M | CO        |      |
| 335 | Wysokie ciśnienie sprężarki 5     | „jak wyżej, dla sprężarki nr 5”.                                                                                                                                                                     | Turbocor:<br>A/M/B                        | CO        |      |
| 336 | Wysokie ciśnienie sprężarki 6     | „jak wyżej, dla sprężarki nr 6”.                                                                                                                                                                     | Turbocor:<br>A/M/B                        | CO        |      |

| Kod | Opis                            | Szczegóły                                                                                                       | Reset              | Działanie | Próg |
|-----|---------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------|-----------|------|
| 337 | Wysokie ciśnienie sprężarki 7   | „jak wyżej, dla sprężarki nr 7”.                                                                                | Turbocor:<br>A/M/B | CO        |      |
| 338 | Wysokie ciśnienie sprężarki 8   | „jak wyżej, dla sprężarki nr 8”.                                                                                | Turbocor:<br>A/M/B | CO        |      |
| 341 | Prąd zasilania sprężarki 1      | Prąd pobierany przez sprężarkę nr 1 przekracza maksymalną granicę (tylko w agregatach ze sprężarkami Turbocor). | A/M/B              | CO        |      |
| 342 | Prąd zasilania sprężarki 2      | „jak wyżej, dla sprężarki nr 2”.                                                                                | A/M/B              | CO        |      |
| 343 | Prąd zasilania sprężarki 3      | „jak wyżej, dla sprężarki nr 3”.                                                                                | A/M/B              | CO        |      |
| 344 | Prąd zasilania sprężarki 4      | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 345 | Prąd zasilania sprężarki 5      | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 346 | Prąd zasilania sprężarki 6      | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 347 | Prąd zasilania sprężarki 7      | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 348 | Prąd zasilania sprężarki 8      | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 351 | Temperatura wirnika sprężarki 1 | Prąd wirnika sprężarki nr 1 przekracza maksymalną granicę (tylko w agregatach ze sprężarkami Turbocor).         | A/M/B              | CO        |      |
| 352 | Temperatura wirnika sprężarki 2 | „jak wyżej, dla sprężarki nr 2”.                                                                                | A/M/B              | CO        |      |
| 353 | Temperatura wirnika sprężarki 3 | „jak wyżej, dla sprężarki nr 3”.                                                                                | A/M/B              | CO        |      |
| 354 | Temperatura wirnika sprężarki 4 | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 355 | Temperatura wirnika sprężarki 5 | „jak wyżej, dla sprężarki nr 5”.                                                                                | A/M/B              | CO        |      |
| 356 | Temperatura wirnika sprężarki 6 | „jak wyżej, dla sprężarki nr 6”.                                                                                | A/M/B              | CO        |      |
| 357 | Temperatura wirnika sprężarki 7 | „jak wyżej, dla sprężarki nr 7”.                                                                                | A/M/B              | CO        |      |
| 358 | Temperatura wirnika sprężarki 8 | „jak wyżej, dla sprężarki nr 8”.                                                                                | A/M/B              | CO        |      |
| 361 | Stopień sprężania sprężarki 1   | Stopień sprężania sprężarki nr 1 przekracza maksymalną granicę (tylko w agregatach ze sprężarkami Turbocor).    | A/M/B              | CO        |      |
| 362 | Stopień sprężania sprężarki 2   | „jak wyżej, dla sprężarki nr 2”.                                                                                | A/M/B              | CO        |      |
| 363 | Stopień sprężania sprężarki 3   | „jak wyżej, dla sprężarki nr 3”.                                                                                | A/M/B              | CO        |      |
| 364 | Stopień sprężania sprężarki 4   | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 365 | Stopień sprężania sprężarki 5   | „jak wyżej, dla sprężarki nr 5”.                                                                                | A/M/B              | CO        |      |
| 366 | Stopień sprężania sprężarki 6   | „jak wyżej, dla sprężarki nr 6”.                                                                                | A/M/B              | CO        |      |
| 367 | Stopień sprężania sprężarki 7   | „jak wyżej, dla sprężarki nr 7”.                                                                                | A/M/B              | CO        |      |
| 368 | Stopień sprężania sprężarki 8   | „jak wyżej, dla sprężarki nr 8”.                                                                                | A/M/B              | CO        |      |
| 371 | Łożyska sprężarki 1             | Anomalia łożysk sprężarki nr 1 (tylko w agregatach ze sprężarkami Turbocor).                                    | A/M/B              | CO        |      |
| 372 | Łożyska sprężarki 2             | „jak wyżej, dla sprężarki nr 2”.                                                                                | A/M/B              | CO        |      |
| 373 | Łożyska sprężarki 3             | „jak wyżej, dla sprężarki nr 3”.                                                                                | A/M/B              | CO        |      |
| 374 | Łożyska sprężarki 4             | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 375 | Łożyska sprężarki 5             | „jak wyżej, dla sprężarki nr 5”.                                                                                | A/M/B              | CO        |      |
| 376 | Łożyska sprężarki 6             | „jak wyżej, dla sprężarki nr 6”.                                                                                | A/M/B              | CO        |      |
| 377 | Łożyska sprężarki 7             | „jak wyżej, dla sprężarki nr 7”.                                                                                | A/M/B              | CO        |      |
| 378 | Łożyska sprężarki 8             | „jak wyżej, dla sprężarki nr 8”.                                                                                | A/M/B              | CO        |      |
| 381 | Temperatura SCR sprężarki 1     | Temperatura SCR sprężarki nr 1 przekracza maksymalną granicę (tylko w agregatach ze sprężarkami Turbocor).      | A/M/B              | CO        |      |
| 382 | Temperatura SCR sprężarki 2     | „jak wyżej, dla sprężarki nr 2”.                                                                                | A/M/B              | CO        |      |
| 383 | Temperatura SCR sprężarki 3     | „jak wyżej, dla sprężarki nr 3”.                                                                                | A/M/B              | CO        |      |
| 384 | Temperatura SCR sprężarki 4     | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 385 | Temperatura SCR sprężarki 5     | „jak wyżej, dla sprężarki nr 5”.                                                                                | A/M/B              | CO        |      |
| 386 | Temperatura SCR sprężarki 6     | „jak wyżej, dla sprężarki nr 6”.                                                                                | A/M/B              | CO        |      |
| 387 | Temperatura SCR sprężarki 7     | „jak wyżej, dla sprężarki nr 7”.                                                                                | A/M/B              | CO        |      |
| 388 | Temperatura SCR sprężarki 8     | „jak wyżej, dla sprężarki nr 8”.                                                                                | A/M/B              | CO        |      |
| 391 | Blokada wirnika sprężarki 1     | Sprężarka nr 1 zablokowana (tylko w agregatach ze sprężarkami Turbocor).                                        | A/M/B              | CO        |      |
| 392 | Blokada wirnika sprężarki 2     | „jak wyżej, dla sprężarki nr 2”.                                                                                | A/M/B              | CO        |      |
| 393 | Blokada wirnika sprężarki 3     | „jak wyżej, dla sprężarki nr 3”.                                                                                | A/M/B              | CO        |      |
| 394 | Blokada wirnika sprężarki 4     | „jak wyżej, dla sprężarki nr 4”.                                                                                | A/M/B              | CO        |      |
| 395 | Blokada wirnika sprężarki 5     | „jak wyżej, dla sprężarki nr 5”.                                                                                | A/M/B              | CO        |      |
| 396 | Blokada wirnika sprężarki 6     | „jak wyżej, dla sprężarki nr 6”.                                                                                | A/M/B              | CO        |      |
| 397 | Blokada wirnika sprężarki 7     | „jak wyżej, dla sprężarki nr 7”.                                                                                | A/M/B              | CO        |      |
| 398 | Blokada wirnika sprężarki 8     | „jak wyżej, dla sprężarki nr 8”.                                                                                | A/M/B              | CO        |      |
| 400 | Błąd Sondy 10                   | Błąd sondy 10. Wartości odczytane przez sondę 10 poza granicami.                                                | A                  | *         |      |
| 401 | Błąd Sondy 1                    | „analogicznie, jak wyżej”.                                                                                      | A                  | *         |      |
| 402 | Błąd Sondy 2                    | „analogicznie, jak wyżej”.                                                                                      | A                  | *         |      |
| 403 | Błąd Sondy 3                    | „analogicznie, jak wyżej”.                                                                                      | A                  | *         |      |
| 404 | Błąd Sondy 4                    | „analogicznie, jak wyżej”.                                                                                      | A                  | *         |      |

| Kod | Opis                | Szczegóły                                                                   | Reset | Działanie | Próg |
|-----|---------------------|-----------------------------------------------------------------------------|-------|-----------|------|
| 405 | Błąd Sondy 5        | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 406 | Błąd Sondy 6        | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 407 | Błąd Sondy 7        | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 408 | Błąd Sondy 8        | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 409 | Błąd Sondy 9        | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 410 | Exp 1 Błąd Sondy 10 | Usterka sondy 10, rozszerzenie 1                                            | A     | *         |      |
| 411 | Exp 1 Błąd Sondy 1  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 412 | Exp 1 Błąd Sondy 2  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 413 | Exp 1 Błąd Sondy 3  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 414 | Exp 1 Błąd Sondy 4  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 415 | Exp 1 Błąd Sondy 5  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 416 | Exp 1 Błąd Sondy 6  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 417 | Exp 1 Błąd Sondy 7  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 418 | Exp 1 Błąd Sondy 8  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 419 | Exp 1 Błąd Sondy 9  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 420 | Exp 2 Błąd Sondy 10 | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 421 | Exp 2 Błąd Sondy 1  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 422 | Exp 2 Błąd Sondy 2  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 423 | Exp 2 Błąd Sondy 3  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 424 | Exp 2 Błąd Sondy 4  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 425 | Exp 2 Błąd Sondy 5  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 426 | Exp 2 Błąd Sondy 6  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 427 | Exp 2 Błąd Sondy 7  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 428 | Exp 2 Błąd Sondy 8  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 429 | Exp 2 Błąd Sondy 9  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 430 | Exp 3 Błąd Sondy 10 | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 431 | Exp 3 Błąd Sondy 1  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 432 | Exp 3 Błąd Sondy 2  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 433 | Exp 3 Błąd Sondy 3  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 434 | Exp 3 Błąd Sondy 4  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 435 | Exp 3 Błąd Sondy 5  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 436 | Exp 3 Błąd Sondy 6  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 437 | Exp 3 Błąd Sondy 7  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 438 | Exp 3 Błąd Sondy 8  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 439 | Exp 3 Błąd Sondy 9  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 440 | Exp 4 Błąd Sondy 10 | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 441 | Exp 4 Błąd Sondy 1  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 442 | Exp 4 Błąd Sondy 2  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 443 | Exp 4 Błąd Sondy 3  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 444 | Exp 4 Błąd Sondy 4  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 445 | Exp 4 Błąd Sondy 5  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 446 | Exp 4 Błąd Sondy 6  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 447 | Exp 4 Błąd Sondy 7  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 448 | Exp 4 Błąd Sondy 8  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 449 | Exp 4 Błąd Sondy 9  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 450 | Exp 5 Błąd Sondy 10 | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 451 | Exp 5 Błąd Sondy 1  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 452 | Exp 5 Błąd Sondy 2  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 453 | Exp 5 Błąd Sondy 3  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 454 | Exp 5 Błąd Sondy 4  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 455 | Exp 5 Błąd Sondy 5  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 456 | Exp 5 Błąd Sondy 6  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 457 | Exp 5 Błąd Sondy 7  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 458 | Exp 5 Błąd Sondy 8  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 459 | Exp 5 Błąd Sondy 9  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 460 | Błąd Sondy 11       | Usterka sondy 11                                                            | A     | *         |      |
| 461 | Błąd Sondy 12       | Usterka sondy 12                                                            | A     | *         |      |
| 500 | Slave Błąd Sondy 10 | Usterka sondy 10 slave obecnego tylko w agregatach z więcej niż 2 obwodami. | A     | *         |      |
| 501 | Slave Błąd Sondy 1  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 502 | Slave Błąd Sondy 2  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 503 | Slave Błąd Sondy 3  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 504 | Slave Błąd Sondy 4  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 505 | Slave Błąd Sondy 5  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 506 | Slave Błąd Sondy 6  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 507 | Slave Błąd Sondy 7  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |
| 508 | Slave Błąd Sondy 8  | „analogicznie, jak wyżej”.                                                  | A     | *         |      |



| Kod | Opis                                                 | Szczegóły                                                                                          | Reset | Działanie | Próg    |
|-----|------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------|-----------|---------|
| 509 | Slave Błąd Sondy 9                                   | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 510 | Exp 1 Slave Błąd Sondy 10                            | Usterka sondy 10, rozszerzenie 1, podłączonej do slave.                                            | A     | *         |         |
| 511 | Exp 1 Slave Błąd Sondy 1                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 512 | Exp 1 Slave Błąd Sondy 2                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 513 | Exp 1 Slave Błąd Sondy 3                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 514 | Exp 1 Slave Błąd Sondy 4                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 515 | Exp 1 Slave Błąd Sondy 5                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 516 | Exp 1 Slave Błąd Sondy 6                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 517 | Exp 1 Slave Błąd Sondy 7                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 518 | Exp 1 Slave Błąd Sondy 8                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 519 | Exp 1 Slave Błąd Sondy 9                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 520 | Exp 2 Slave Błąd Sondy 10                            | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 521 | Exp 2 Slave Błąd Sondy 1                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 522 | Exp 2 Slave Błąd Sondy 2                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 523 | Exp 2 Slave Błąd Sondy 3                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 524 | Exp 2 Slave Błąd Sondy 4                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 525 | Exp 2 Slave Błąd Sondy 5                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 526 | Exp 2 Slave Błąd Sondy 6                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 527 | Exp 2 Slave Błąd Sondy 7                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 528 | Exp 2 Slave Błąd Sondy 8                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 529 | Exp 2 Slave Błąd Sondy 9                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 530 | Exp 3 Slave Błąd Sondy 10                            | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 531 | Exp 3 Slave Błąd Sondy 1                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 532 | Exp 3 Slave Błąd Sondy 2                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 533 | Exp 3 Slave Błąd Sondy 3                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 534 | Exp 3 Slave Błąd Sondy 4                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 535 | Exp 3 Slave Błąd Sondy 5                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 536 | Exp 3 Slave Błąd Sondy 6                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 537 | Exp 3 Slave Błąd Sondy 7                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 538 | Exp 3 Slave Błąd Sondy 8                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 539 | Exp 3 Slave Błąd Sondy 9                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 540 | Exp 4 Slave Błąd Sondy 10                            | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 541 | Exp 4 Slave Błąd Sondy 1                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 542 | Exp 4 Slave Błąd Sondy 2                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 543 | Exp 4 Slave Błąd Sondy 3                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 544 | Exp 4 Slave Błąd Sondy 4                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 545 | Exp 4 Slave Błąd Sondy 5                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 546 | Exp 4 Slave Błąd Sondy 6                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 547 | Exp 4 Slave Błąd Sondy 7                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 548 | Exp 4 Slave Błąd Sondy 8                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 549 | Exp 4 Slave Błąd Sondy 9                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 550 | Exp 5 Slave Błąd Sondy 10                            | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 551 | Exp 5 Slave Błąd Sondy 1                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 552 | Exp 5 Slave Błąd Sondy 2                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 553 | Exp 5 Slave Błąd Sondy 3                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 554 | Exp 5 Slave Błąd Sondy 4                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 555 | Exp 5 Slave Błąd Sondy 5                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 556 | Exp 5 Slave Błąd Sondy 6                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 557 | Exp 5 Slave Błąd Sondy 7                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 558 | Exp 5 Slave Błąd Sondy 8                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 559 | Exp 5 Slave Błąd Sondy 9                             | „analogicznie, jak wyżej”.                                                                         | A     | *         |         |
| 580 | Błąd sondy temperatury strefy HT                     | Wskazuje na błąd w sondzie temperatury strefy HT.                                                  | A     | GR        |         |
| 581 | Błąd sondy temperatury strefy LT                     | Wskazuje na błąd w sondzie temperatury strefy LT.                                                  | A     | GR        |         |
| 582 | Błąd sondy wilgotności strefy HT                     | Wskazuje na błąd w sondzie wilgotności strefy HT.                                                  | A     | GR        |         |
| 583 | Błąd sondy wilgotności strefy LT                     | Wskazuje na błąd w sondzie wilgotności strefy LT.                                                  | A     | GR        |         |
| 590 | Maksymalna temperatura obwodu mieszanego             | Wskazuje, że temperatura wody w obwodzie mieszanym (LT) przekroczyła ustawioną wartość maksymalną. | A     | GR        | STG0185 |
| 602 | Rozłączenie szeregowo BMS2                           | Sygnalizuje utratę komunikacji z urządzeniem podłączonym do portu szeregowego BMS2.                | S     | -         |         |
| 611 | Alarm wstępny: Ochrona przed zamarzaniem parownika 1 | Alarm wstępny, który sygnalizuje niską temperaturę wody na wyjściu z parownika.                    | S     | PR        |         |

| Kod | Opis                                                                         | Szczegóły                                                                                                                    | Reset | Działanie | Próg |
|-----|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------|-----------|------|
|     |                                                                              | Wskazuje ponadto, którego parownika (jeżeli więcej niż jeden) dotyczy stan alarmowy.                                         |       |           |      |
| 612 | Alarm wstępny: Ochrona przed zamarzaniem parownika 2                         | „jak wyżej, dla parownika nr 2”.                                                                                             | S     | PR        |      |
| 613 | Alarm wstępny: Ochrona przed zamarzaniem parownika 3                         | „jak wyżej, dla parownika nr 3”.                                                                                             | S     | PR        |      |
| 614 | Alarm wstępny: Ochrona przed zamarzaniem parownika 4                         | „jak wyżej, dla parownika nr 4”.                                                                                             | S     | PR        |      |
| 631 | Alarm wstępny: Niskie ciśnienie w obwodzie 1                                 | Alarm wstępny, który sygnalizuje niskie ciśnienie wykryte przez przetwornik w obwodzie nr 1.                                 | S     | PR        |      |
| 632 | Alarm wstępny: Niskie ciśnienie w obwodzie 2                                 | „jak wyżej, dla obwodu nr 2”.                                                                                                | S     | PR        |      |
| 633 | Alarm wstępny: Niskie ciśnienie w obwodzie 3                                 | „jak wyżej, dla obwodu nr 3”.                                                                                                | S     | PR        |      |
| 634 | Alarm wstępny: Niskie ciśnienie w obwodzie 4                                 | „jak wyżej, dla obwodu nr 4”.                                                                                                | S     | PR        |      |
| 641 | Alarm wstępny: Wysokie ciśnienie obwodu 1                                    | Alarm wstępny, który sygnalizuje wysokie ciśnienie wykryte przez przetwornik w obwodzie nr 1.                                | S     | PR        |      |
| 642 | Alarm wstępny: Wysokie ciśnienie obwodu 2                                    | „jak wyżej, dla obwodu nr 2”.                                                                                                | S     | PR        |      |
| 643 | Alarm wstępny: Wysokie ciśnienie obwodu 3                                    | „jak wyżej, dla obwodu nr 3”.                                                                                                | S     | PR        |      |
| 644 | Alarm wstępny: Wysokie ciśnienie obwodu 4                                    | „jak wyżej, dla obwodu nr 4”.                                                                                                | S     | PR        |      |
| 651 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarek obwodu 1   | Sygnalizuje, że sprężarki w obwodzie 1 pracują ze zbyt niską wartością przegrzania (w oparciu o aktualny stopień sprężania). | M     | CI        |      |
| 652 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarek obwodu 2   | „jak wyżej, dla obwodu nr 2”.                                                                                                | M     | CI        |      |
| 653 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarek obwodu 3   | „jak wyżej, dla obwodu nr 3”.                                                                                                | M     | CI        |      |
| 654 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarek obwodu 4   | „jak wyżej, dla obwodu nr 4”.                                                                                                | M     | CI        |      |
| 661 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarek obwodu 1  | Sygnalizuje, że sprężarki w obwodzie 1 pracują ze zbyt wysoką wartością przegrzania (w oparciu o aktywny stopień sprężania). | M     | CI        |      |
| 662 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarek obwodu 2  | „jak wyżej, dla obwodu nr 2”.                                                                                                | M     | CI        |      |
| 663 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarek obwodu 3  | „jak wyżej, dla obwodu nr 3”.                                                                                                | M     | CI        |      |
| 664 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarek obwodu 4  | „jak wyżej, dla obwodu nr 4”.                                                                                                | M     | CI        |      |
| 671 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarek obwodu 1 | Sygnalizuje, że sprężarki w obwodzie chłodzącym nr 1 pracują poza dozwolonym zakresem.                                       | M     | CI        |      |
| 672 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarek obwodu 2 | „jak wyżej, dla obwodu nr 2”.                                                                                                | M     | CI        |      |
| 673 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarek obwodu 3 | „jak wyżej, dla obwodu nr 3”.                                                                                                | M     | CI        |      |
| 674 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarek obwodu 4 | „jak wyżej, dla obwodu nr 4”.                                                                                                | M     | CI        |      |
| 681 | Alarm obwiedni sprężarki 1                                                   | Sygnalizuje, że sprężarka nr 1 pracuje poza dozwoloną granicą                                                                | A/M   | CO        |      |
| 682 | Alarm obwiedni sprężarki 2                                                   | „jak wyżej, dla sprężarki nr 2”.                                                                                             | A/M   | CO        |      |
| 683 | Alarm obwiedni sprężarki 3                                                   | „jak wyżej, dla sprężarki nr 3”.                                                                                             | A/M   | CO        |      |
| 684 | Alarm obwiedni sprężarki 4                                                   | „jak wyżej, dla sprężarki nr 4”.                                                                                             | A/M   | CO        |      |
| 701 | Inwerter 1 offline                                                           | Sygnalizuje brak komunikacji z inwerterem sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem)                   | A     | CO        |      |
| 702 | Inwerter 2 offline                                                           | „jak wyżej, dla sprężarki nr 2”.                                                                                             | A     | CO        |      |
| 703 | Inwerter 3 offline                                                           | „jak wyżej, dla sprężarki nr 3”.                                                                                             | A     | CO        |      |
| 704 | Inwerter 4 offline                                                           | „jak wyżej, dla sprężarki nr 4”.                                                                                             | A     | CO        |      |
| 711 | Alarm zasilanie inwertera 1 (**)                                             | Anomalia w zasilaniu inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).                             | A/M*  | CO        |      |
| 712 | Alarm zasilanie inwertera 2 (**)                                             | „jak wyżej, dla sprężarki nr 2”.                                                                                             | A/M*  | CO        |      |
| 713 | Alarm zasilanie inwertera 3 (**)                                             | „jak wyżej, dla sprężarki nr 3”.                                                                                             | A/M*  | CO        |      |
| 714 | Alarm zasilanie inwertera 4 (**)                                             | „jak wyżej, dla sprężarki nr 4”.                                                                                             | A/M*  | CO        |      |
| 721 | Alarm zasilanie silnika inwertera 1 (**)                                     | Anomalia w zasilaniu silnika sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).                               | A/M*  | CO        |      |
| 722 | Alarm zasilanie silnika inwertera 2 (**)                                     | „jak wyżej, dla sprężarki nr 2”.                                                                                             | A/M*  | CO        |      |
| 723 | Alarm zasilanie silnika inwertera 3 (**)                                     | „jak wyżej, dla sprężarki nr 3”.                                                                                             | A/M*  | CO        |      |

| Kod | Opis                                           | Szczegóły                                                                                                        | Reset | Działanie | Próg |
|-----|------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------|-----------|------|
| 724 | Alarm zasilanie silnika inwertera 4 (**)       | „jak wyżej, dla sprężarki nr 4”.                                                                                 | A/M*  | CO        |      |
| 731 | Alarm prąd zasilania inwertera 1 (**)          | Przeciążenie wariatora inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).               | M     | CO        |      |
| 732 | Alarm prąd zasilania inwertera 2 (**)          | „jak wyżej, dla sprężarki nr 2”.                                                                                 | M     | CO        |      |
| 733 | Alarm prąd zasilania inwertera 3 (**)          | „jak wyżej, dla sprężarki nr 3”.                                                                                 | M     | CO        |      |
| 734 | Alarm prąd zasilania inwertera 4 (**)          | „jak wyżej, dla sprężarki nr 4”.                                                                                 | M     | CO        |      |
| 741 | Alarm termiki prostownika inwertera 1 (**)     | Przeciążenie prostownika inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).             | M     | CO        |      |
| 742 | Alarm termiki prostownika inwertera 2 (**)     | „jak wyżej, dla sprężarki nr 2”.                                                                                 | M     | CO        |      |
| 743 | Alarm termiki prostownika inwertera 3 (**)     | „jak wyżej, dla sprężarki nr 3”.                                                                                 | M     | CO        |      |
| 744 | Alarm termiki prostownika inwertera 4 (**)     | „jak wyżej, dla sprężarki nr 4”.                                                                                 | M     | CO        |      |
| 751 | Alarm termiki silnika inwertera 1 (**)         | Zabezpieczenie termiczne silnika sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).               | M     | CO        |      |
| 752 | Alarm termiki silnika inwertera 2 (**)         | „jak wyżej, dla sprężarki nr 2”.                                                                                 | M     | CO        |      |
| 753 | Alarm termiki silnika inwertera 3 (**)         | „jak wyżej, dla sprężarki nr 3”.                                                                                 | M     | CO        |      |
| 754 | Alarm termiki silnika inwertera 4 (**)         | „jak wyżej, dla sprężarki nr 4”.                                                                                 | M     | CO        |      |
| 761 | Alarm termiki wariatora inwertera 1 (**)       | Zabezpieczenie termiczne wariatora inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).   | M     | CO        |      |
| 762 | Alarm termiki wariatora inwertera 2 (**)       | „jak wyżej, dla sprężarki nr 2”.                                                                                 | M     | CO        |      |
| 763 | Alarm termiki wariatora inwertera 3 (**)       | „jak wyżej, dla sprężarki nr 3”.                                                                                 | M     | CO        |      |
| 764 | Alarm termiki wariatora inwertera 4 (**)       | „jak wyżej, dla sprężarki nr 4”.                                                                                 | M     | CO        |      |
| 771 | Alarm IGBT inwertera 1 (**)                    | Anomalia IGBT inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).                        | M     | CO        |      |
| 772 | Alarm IGBT inwertera 2 (**)                    | „jak wyżej, dla sprężarki nr 2”.                                                                                 | M     | CO        |      |
| 773 | Alarm IGBT inwertera 3 (**)                    | „jak wyżej, dla sprężarki nr 3”.                                                                                 | M     | CO        |      |
| 774 | Alarm IGBT inwertera 4 (**)                    | „jak wyżej, dla sprężarki nr 4”.                                                                                 | M     | CO        |      |
| 781 | Alarm nagrzewnicy nastawnej inwertera 1 (**)   | Anomalia wytrzymałości stojana inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).       | M     | CO        |      |
| 782 | Alarm nagrzewnicy nastawnej inwertera 2 (**)   | „jak wyżej, dla sprężarki nr 2”.                                                                                 | M     | CO        |      |
| 783 | Alarm nagrzewnicy nastawnej inwertera 3 (**)   | „jak wyżej, dla sprężarki nr 3”.                                                                                 | M     | CO        |      |
| 784 | Alarm nagrzewnicy nastawnej inwertera 4 (**)   | „jak wyżej, dla sprężarki nr 4”.                                                                                 | M     | CO        |      |
| 791 | Alarm przekroczenie prędkości inwertera 1 (**) | Anomalia nadmiernej prędkości inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).        | M     | CO        |      |
| 792 | Alarm przekroczenie prędkości inwertera 2 (**) | „jak wyżej, dla sprężarki nr 2”.                                                                                 | M     | CO        |      |
| 793 | Alarm przekroczenie prędkości inwertera 3 (**) | „jak wyżej, dla sprężarki nr 3”.                                                                                 | M     | CO        |      |
| 794 | Alarm przekroczenie prędkości inwertera 4 (**) | „jak wyżej, dla sprężarki nr 4”.                                                                                 | M     | CO        |      |
| 801 | Alarm bus pola inwertera 1 (**)                | Anomalia magistrali polowej inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).          | A/M*  | CO        |      |
| 802 | Alarm bus pola inwertera 2 (**)                | „jak wyżej, dla sprężarki nr 2”.                                                                                 | A/M*  | CO        |      |
| 803 | Alarm bus pola inwertera 3 (**)                | „jak wyżej, dla sprężarki nr 3”.                                                                                 | A/M*  | CO        |      |
| 804 | Alarm bus pola inwertera 4 (**)                | „jak wyżej, dla sprężarki nr 4”.                                                                                 | A/M*  | CO        |      |
| 811 | Alarm komunikacji inwertera 1 (**)             | Anomalia komunikacji wewnętrznej inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).     | A/M*  | CO        |      |
| 812 | Alarm komunikacji inwertera 2 (**)             | „jak wyżej, dla sprężarki nr 2”.                                                                                 | A/M*  | CO        |      |
| 813 | Alarm komunikacji inwertera 3 (**)             | „jak wyżej, dla sprężarki nr 3”.                                                                                 | A/M*  | CO        |      |
| 814 | Alarm komunikacji inwertera 4 (**)             | „jak wyżej, dla sprężarki nr 4”.                                                                                 | A/M*  | CO        |      |
| 821 | Alarm wejście bezpieczeństwa inwertera 1 (**)  | Anomalia wejścia bezpieczeństwa inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).      | A/M*  | CO        |      |
| 822 | Alarm wejście bezpieczeństwa inwertera 2 (**)  | „jak wyżej, dla sprężarki nr 2”.                                                                                 | A/M*  | CO        |      |
| 823 | Alarm wejście bezpieczeństwa inwertera 3 (**)  | „jak wyżej, dla sprężarki nr 3”.                                                                                 | A/M*  | CO        |      |
| 824 | Alarm wejście bezpieczeństwa inwertera 4 (**)  | „jak wyżej, dla sprężarki nr 4”.                                                                                 | A/M*  | CO        |      |
| 831 | Alarm autokalibracji inwertera 1 (**)          | Anomalia autokalibracji inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).              | M     | CO        |      |
| 832 | Alarm autokalibracji inwertera 2 (**)          | „jak wyżej, dla sprężarki nr 2”.                                                                                 | M     | CO        |      |
| 833 | Alarm autokalibracji inwertera 3 (**)          | „jak wyżej, dla sprężarki nr 3”.                                                                                 | M     | CO        |      |
| 834 | Alarm autokalibracji inwertera 4 (**)          | „jak wyżej, dla sprężarki nr 4”.                                                                                 | M     | CO        |      |
| 841 | Alarm przeciwwrotacji inwertera 1 (**)         | Anomalia pracy w odwrotnym kierunku – inwerter sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem). | M     | CO        |      |



| Kod | Opis                                                                 | Szczegóły                                                                                                                     | Reset | Działanie | Próg    |
|-----|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------|-----------|---------|
| 842 | Alarm przeciwwrotacji inwertera 2 (**)                               | „jak wyżej, dla sprężarki nr 2”.                                                                                              | M     | CO        |         |
| 843 | Alarm przeciwwrotacji inwertera 3 (**)                               | „jak wyżej, dla sprężarki nr 3”.                                                                                              | M     | CO        |         |
| 844 | Alarm przeciwwrotacji inwertera 4 (**)                               | „jak wyżej, dla sprężarki nr 4”.                                                                                              | M     | CO        |         |
| 851 | Alarm ogólny inwertera 1 (**)                                        | Alarm ogólny inwertera sprężarki nr 1 (tylko dla agregatów ze sprężarkami z inwerterem).                                      | A/M*  | CO        |         |
| 852 | Alarm ogólny inwertera 2 (**)                                        | „jak wyżej, dla sprężarki nr 2”.                                                                                              | A/M*  | CO        |         |
| 853 | Alarm ogólny inwertera 3 (**)                                        | „jak wyżej, dla sprężarki nr 3”.                                                                                              | A/M*  | CO        |         |
| 854 | Alarm ogólny inwertera 4 (**)                                        | „jak wyżej, dla sprężarki nr 4”.                                                                                              | A/M*  | CO        |         |
| 871 | Wysokie ciśnienie przetwornika sprężarki 1                           | Sygnalizuje wysokie ciśnienie sprężarki nr 1                                                                                  | A/M   | CO        | STG0057 |
| 872 | Wysokie ciśnienie przetwornika sprężarki 2                           | „jak wyżej, dla sprężarki nr 2”.                                                                                              | A/M   | CO        |         |
| 873 | Wysokie ciśnienie przetwornika sprężarki 3                           | „jak wyżej, dla sprężarki nr 3”.                                                                                              | A/M   | CO        |         |
| 874 | Wysokie ciśnienie przetwornika sprężarki 4                           | „jak wyżej, dla sprężarki nr 4”.                                                                                              | A/M   | CO        |         |
| 875 | Wysokie ciśnienie przetwornika sprężarki 5                           | „jak wyżej, dla sprężarki nr 5”.                                                                                              | A/M   | CO        |         |
| 876 | Wysokie ciśnienie przetwornika sprężarki 6                           | „jak wyżej, dla sprężarki nr 6”.                                                                                              | A/M   | CO        |         |
| 877 | Wysokie ciśnienie przetwornika sprężarki 7                           | „jak wyżej, dla sprężarki nr 7”.                                                                                              | A/M   | CO        |         |
| 878 | Wysokie ciśnienie przetwornika sprężarki 8                           | „jak wyżej, dla sprężarki nr 8”.                                                                                              | A/M   | CO        |         |
| 881 | Brak freonu w sprężarce 1                                            | Możliwe, że sprężarka nr 1 jest pozbawiona freonu ponieważ alarm „Timeout rozruchu” utrzymuje się przez co najmniej 8 godzin. | A     | CO        |         |
| 882 | Brak freonu w sprężarce 2                                            | „jak wyżej, dla sprężarki nr 2”.                                                                                              | A     | CO        |         |
| 883 | Brak freonu w sprężarce 3                                            | „jak wyżej, dla sprężarki nr 3”.                                                                                              | A     | CO        |         |
| 884 | Brak freonu w sprężarce 4                                            | „jak wyżej, dla sprężarki nr 4”.                                                                                              | A     | CO        |         |
| 885 | Brak freonu w sprężarce 5                                            | „jak wyżej, dla sprężarki nr 5”.                                                                                              | A     | CO        |         |
| 886 | Brak freonu w sprężarce 6                                            | „jak wyżej, dla sprężarki nr 6”.                                                                                              | A     | CO        |         |
| 887 | Brak freonu w sprężarce 7                                            | „jak wyżej, dla sprężarki nr 7”.                                                                                              | A     | CO        |         |
| 888 | Brak freonu w sprężarce 8                                            | „jak wyżej, dla sprężarki nr 8”.                                                                                              | A     | CO        |         |
| 891 | Alarm wstępny: Niskie ciśnienie sprężarki 1                          | Alarm wstępny, który sygnalizuje wykrycie niskiego ciśnienia przez przetwornik w sprężarce nr 1                               | S     | PR        |         |
| 892 | Alarm wstępny: Niskie ciśnienie sprężarki 2                          | „jak wyżej, dla sprężarki nr 2”.                                                                                              | S     | PR        |         |
| 893 | Alarm wstępny: Niskie ciśnienie sprężarki 3                          | „jak wyżej, dla sprężarki nr 3”.                                                                                              | S     | PR        |         |
| 894 | Alarm wstępny: Niskie ciśnienie sprężarki 4                          | „jak wyżej, dla sprężarki nr 4”.                                                                                              | S     | PR        |         |
| 895 | Alarm wstępny: Niskie ciśnienie sprężarki 5                          | „jak wyżej, dla sprężarki nr 5”.                                                                                              | S     | PR        |         |
| 896 | Alarm wstępny: Niskie ciśnienie sprężarki 6                          | „jak wyżej, dla sprężarki nr 6”.                                                                                              | S     | PR        |         |
| 897 | Alarm wstępny: Niskie ciśnienie sprężarki 7                          | „jak wyżej, dla sprężarki nr 7”.                                                                                              | S     | PR        |         |
| 898 | Alarm wstępny: Niskie ciśnienie sprężarki 8                          | „jak wyżej, dla sprężarki nr 8”.                                                                                              | S     | PR        |         |
| 901 | Alarm wstępny: Wysokie ciśnienie sprężarki 1                         | Alarm wstępny, który sygnalizuje wykrycie wysokiego ciśnienia przez przetwornik w sprężarce nr 1.                             | S     | PR        |         |
| 902 | Alarm wstępny: Wysokie ciśnienie sprężarki 2                         | „jak wyżej, dla sprężarki nr 2”.                                                                                              | S     | PR        |         |
| 903 | Alarm wstępny: Wysokie ciśnienie sprężarki 3                         | „jak wyżej, dla sprężarki nr 3”.                                                                                              | S     | PR        |         |
| 904 | Alarm wstępny: Wysokie ciśnienie sprężarki 4                         | „jak wyżej, dla sprężarki nr 4”.                                                                                              | S     | PR        |         |
| 905 | Alarm wstępny: Wysokie ciśnienie sprężarki 5                         | „jak wyżej, dla sprężarki nr 5”.                                                                                              | S     | PR        |         |
| 906 | Alarm wstępny: Wysokie ciśnienie sprężarki 6                         | „jak wyżej, dla sprężarki nr 6”.                                                                                              | S     | PR        |         |
| 907 | Alarm wstępny: Wysokie ciśnienie sprężarki 7                         | „jak wyżej, dla sprężarki nr 7”.                                                                                              | S     | PR        |         |
| 908 | Alarm wstępny: Wysokie ciśnienie sprężarki 8                         | „jak wyżej, dla sprężarki nr 8”.                                                                                              | S     | PR        |         |
| 911 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarki 1  | Sygnalizuje, że sprężarka 1 pracuje ze zbyt niską wartością przegrzania (w oparciu o aktualny stopień sprężania).             | M     | CO        |         |
| 912 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarki 2  | „jak wyżej, dla sprężarki nr 2”.                                                                                              | M     | CO        |         |
| 913 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarki 3  | „jak wyżej, dla sprężarki nr 3”.                                                                                              | M     | CO        |         |
| 914 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarki 4  | „jak wyżej, dla sprężarki nr 4”.                                                                                              | M     | CO        |         |
| 915 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarki 5  | „jak wyżej, dla sprężarki nr 5”.                                                                                              | M     | CO        |         |
| 916 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarki 6  | „jak wyżej, dla sprężarki nr 6”.                                                                                              | M     | CO        |         |
| 917 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarki 7  | „jak wyżej, dla sprężarki nr 7”.                                                                                              | M     | CO        |         |
| 918 | Sterowanie obwiedniowe: niskie przegrzanie na wlocie do sprężarki 8  | „jak wyżej, dla sprężarki nr 8”.                                                                                              | M     | CO        |         |
| 921 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarki 1 | Sygnalizuje, że sprężarka 1 pracuje ze zbyt wysoką wartością przegrzania (w oparciu o aktualny stopień sprężania).            | M     | CO        |         |
| 922 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarki 2 | „jak wyżej, dla sprężarki nr 2”.                                                                                              | M     | CO        |         |

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| 923 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarki 3  | „jak wyżej, dla sprężarki nr 3”.                                                                                                                      | M     | CO        |         |
| 924 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarki 4  | „jak wyżej, dla sprężarki nr 4”.                                                                                                                      | M     | CO        |         |
| 925 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarki 5  | „jak wyżej, dla sprężarki nr 5”.                                                                                                                      | M     | CO        |         |
| 926 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarki 6  | „jak wyżej, dla sprężarki nr 6”.                                                                                                                      | M     | CO        |         |
| 927 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarki 7  | „jak wyżej, dla sprężarki nr 7”.                                                                                                                      | M     | CO        |         |
| 928 | Sterowanie obwiedniowe: wysokie przegrzanie na wlocie do sprężarki 8  | „jak wyżej, dla sprężarki nr 8”.                                                                                                                      | M     | CO        |         |
| 931 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarki 1 | Sygnalizuje, że sprężarka 1 pracuje poza dozwoloną granicą.                                                                                           | M     | CO        |         |
| 932 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarki 2 | „jak wyżej, dla sprężarki nr 2”.                                                                                                                      | M     | CO        |         |
| 933 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarki 3 | „jak wyżej, dla sprężarki nr 3”.                                                                                                                      | M     | CO        |         |
| 934 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarki 4 | „jak wyżej, dla sprężarki nr 4”.                                                                                                                      | M     | CO        |         |
| 935 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarki 5 | „jak wyżej, dla sprężarki nr 5”.                                                                                                                      | M     | CO        |         |
| 936 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarki 6 | „jak wyżej, dla sprężarki nr 6”.                                                                                                                      | M     | CO        |         |
| 937 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarki 7 | „jak wyżej, dla sprężarki nr 7”.                                                                                                                      | M     | CO        |         |
| 938 | Sterowanie obwiedniowe: dolna granica wysokiego ciśnienia sprężarki 8 | „jak wyżej, dla sprężarki nr 8”.                                                                                                                      | M     | CO        |         |
| 941 | Minimalny stopień sprężania po włączeniu sprężarki 1                  | Sygnalizuje, że sprężarka 1 pracuje z niskim stopniem sprężania.                                                                                      | M     | CO        | ENV0096 |
| 942 | Minimalny stopień sprężania po włączeniu sprężarki 2                  | „jak wyżej, dla sprężarki nr 2”.                                                                                                                      | M     | CO        |         |
| 943 | Minimalny stopień sprężania po włączeniu sprężarki 3                  | „jak wyżej, dla sprężarki nr 3”.                                                                                                                      | M     | CO        |         |
| 944 | Minimalny stopień sprężania po włączeniu sprężarki 4                  | „jak wyżej, dla sprężarki nr 4”.                                                                                                                      | M     | CO        |         |
| 945 | Minimalny stopień sprężania po włączeniu sprężarki 5                  | „jak wyżej, dla sprężarki nr 5”.                                                                                                                      | M     | CO        |         |
| 946 | Minimalny stopień sprężania po włączeniu sprężarki 6                  | „jak wyżej, dla sprężarki nr 6”.                                                                                                                      | M     | CO        |         |
| 947 | Minimalny stopień sprężania po włączeniu sprężarki 7                  | „jak wyżej, dla sprężarki nr 7”.                                                                                                                      | M     | CO        |         |
| 948 | Minimalny stopień sprężania po włączeniu sprężarki 8                  | „jak wyżej, dla sprężarki nr 8”.                                                                                                                      | M     | CO        |         |
| 951 | Rozłączenie zaworu HGBP sprężarki 1                                   | Sygnalizuje rozłączenie drivera zaworu obejściowego sprężarki 1                                                                                       | S     | CO        |         |
| 952 | Rozłączenie zaworu HGBP sprężarki 2                                   | „jak wyżej, dla sprężarki nr 2”.                                                                                                                      | S     | CO        |         |
| 953 | Rozłączenie zaworu HGBP sprężarki 3                                   | „jak wyżej, dla sprężarki nr 3”.                                                                                                                      | S     | CO        |         |
| 954 | Rozłączenie zaworu HGBP sprężarki 4                                   | „jak wyżej, dla sprężarki nr 4”.                                                                                                                      | S     | CO        |         |
| 960 | Rozłączenie thermal meter                                             | Sygnalizuje rozłączenie analizatora energii cieplnej.                                                                                                 | S     | -         |         |
| 961 | Driver pierwszego stopnia nr 5 offline                                | Sygnalizuje odłączenie drivera sterowania zaworem pierwszego stopnia sprężarki 5 (tylko w agregatach ze sprężarkami Turbocor).                        | A     | CI        |         |
| 962 | Driver pierwszego stopnia nr 6 offline                                | „jak wyżej, dla sprężarki nr 6”.                                                                                                                      | A     | CI        |         |
| 963 | Driver pierwszego stopnia nr 7 offline                                | „jak wyżej, dla sprężarki nr 7”.                                                                                                                      | A     | CI        |         |
| 964 | Driver pierwszego stopnia nr 8 offline                                | „jak wyżej, dla sprężarki nr 8”.                                                                                                                      | A     | CI        |         |
| 965 | Odłączenie ATS                                                        | Sygnalizuje rozłączenie przełącznika ATS.                                                                                                             | A     | -         |         |
| 966 | Rozłączenie touch strefy HT                                           | Wskazuje odłączenie termostatu dotykowego strefy HT.                                                                                                  | S     | GR        |         |
| 967 | Rozłączenie touch strefy LT                                           | Wskazuje odłączenie termostatu dotykowego strefy LT.                                                                                                  | S     | GR        |         |
| 968 | Zapobieganie zablokowaniu sprężarki                                   | Sygnalizuje wymuszone zatrzymanie pracy sprężarki inwerterowej i powiązanego obwodu, aby zapobiec zablokowaniu na skutek nadmiernego zużycia energii. | M     | CI        |         |
| 969 | Wysoka temperatura powietrza na zewnątrz                              | Sygnalizuje, że agregat pracuje przy za wysokiej temperaturze na zewnątrz. Kontrola                                                                   | S-M   | U         | STG0200 |

| Kod  | Opis                                       | Szczegóły                                                                                                                                                                                                                                                                     | Reset | Działanie | Próg    |
|------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|---------|
|      |                                            | jest przeprowadzana także przy wyłączonych sprężarkach.                                                                                                                                                                                                                       |       |           |         |
| 970  | Niska zawartość odzyskiwanej wody.         | Sygnalizuje brak wody w obwodzie wody odzyskiwanej. Tego typu brak powoduje nagłe przełączenie trybu pracy obwodów, co może skutkować uszkodzeniem zaworów obwodu płynu chłodzącego.                                                                                          | S-M   | U         |         |
| 971  | Konserwacja czujnika gazu                  | Powiadomienie pojawia się, gdy urządzenie wykrywające gaz jest w trybie offline lub gdy wymagana jest konserwacja czujnika.                                                                                                                                                   | M     | -         |         |
| 972  | Usterka pompy low lift 1                   | W przypadku agregatów ze sprężarkami odśrodkowymi Turbocor zgłasza usterkę pompy low lift nr 1.                                                                                                                                                                               | A/M   | -         |         |
| 973  | Usterka pompy low lift 2                   | W przypadku urządzeń ze sprężarkami odśrodkowymi firma Turbocor zgłasza anomalię w pompie low lift nr 2.                                                                                                                                                                      | A/M   | -         |         |
| 974  | Alarm niskiej temperatury Drycooler        | Sygnal pojawia się w przypadku agregatów wyposażonych w Drycooler, jeśli temperatura otoczenia, w którym zainstalowany jest Drycooler, jest niższa niż ustawiony setpoint.                                                                                                    | A     | U         |         |
| 975  | Błąd Drycooler                             | Sygnal pojawia się w przypadku agregatów wyposażonych w Drycooler, jeśli zadziałało zabezpieczenie termiczne wentylatorów lub odpowiedniej pompy (jeżeli występuje).                                                                                                          | M     | U         |         |
| 979  | Rozłączenie licznika odzysku ciepła        | Sygnalizuje rozłączenie analizatora energii cieplnej w celu odzysku.                                                                                                                                                                                                          | S     | -         |         |
| 981  | Sprężarka krótkocykliczna 1                | Sygnal ręcznego resetu pojawia się, gdy sprężarka jest włączona przez czas krótszy niż określony w parametrze CMP0004. Sygnal staje się alarmem resetu ręcznego, jeśli sprężarka zostanie wyłączona w krótkim cyklu więcej razy niż wynosi parametr CMP0151 w ciągu 4 godzin. | S-M   | CO        |         |
| 5001 | Anomalia zmiana trybu pracy                | Alarm, który sygnalizuje anomalię podczas wymuszania zmiany trybu pracy agregatu przy zmianie trybu pracy instalacji. Alarm załącza się, jeżeli wymuszenie nie następuje w ciągu maksymalnego czasu ustawionego przez parametr.                                               | M     | GR        | GRP0126 |
| 5005 | Błąd średniej sond temp. wody na wlocie    | Błąd w średniej wartości temperatur na wejściu odczytanych przez sondy wszystkich agregatów znajdujących się w zespole.                                                                                                                                                       | A     | GR        |         |
| 5006 | Błąd średniej sond temp. wody na wylocie   | Błąd w średniej wartości temperatur na wyjściu odczytanych przez sondy wszystkich agregatów znajdujących się w zespole.                                                                                                                                                       | A     | GR        |         |
| 5050 | Błąd średniej sond temperatury zewnętrznej | Błąd w średniej wartości temperatur powietrza zewnętrznego odczytanych przez sondy wszystkich agregatów znajdujących się w zespole.                                                                                                                                           | A     | GR        |         |
| 5080 | Zabezpieczenie termiczne pompy instalacji  | Sygnalizuje przegrzanie pompy instalacji.                                                                                                                                                                                                                                     | M     | GR        |         |
| 5100 | Odlączenie modułu sterowania VPF w zespole | Rozłączenie modułu, który odpowiada za regulację natężenia przepływu wody w instalacji. Sprawdzić anomalię na interfejsie użytkownika modułu.                                                                                                                                 | A     | GR        |         |
| 5101 | Anomalia modułu sterowania VPF w zespole   | Anomalia modułu, który zajmuje się regulacją natężenia przepływu wody w instalacji. Sprawdzić anomalię na interfejsie użytkownika modułu.                                                                                                                                     | A     | GR        |         |
| 5120 | Przerwanie setpoint dynamicznego           | Przerwanie dynamicznego sterowania setpoint zespołu. Sprawdzić czy nie wystąpiły rozłączenia w sieci KIPLan.                                                                                                                                                                  | A     | GR        |         |
| 5201 | Błąd sondy 1 zespołu                       | Błąd sondy 1 sterownika zespołu. Wartości odczytane przez sondę 1 poza granicami.                                                                                                                                                                                             | A     | GR        |         |
| 5202 | Błąd sondy 2 zespołu                       | „analogicznie, jak wyżej”.                                                                                                                                                                                                                                                    | A     | GR        |         |

| Kod  | Opis                   | Szczegóły                                                                                                                             | Reset | Działanie | Próg |
|------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------|-----------|------|
| 5203 | Błąd sondy 3 zespołu   | „analogicznie, jak wyżej”.                                                                                                            | A     | GR        |      |
| 5204 | Błąd sondy 4 zespołu   | „analogicznie, jak wyżej”.                                                                                                            | A     | GR        |      |
| 5205 | Błąd sondy 5 zespołu   | „analogicznie, jak wyżej”.                                                                                                            | A     | GR        |      |
| 5206 | Błąd sondy 6 zespołu   | „analogicznie, jak wyżej”.                                                                                                            | A     | GR        |      |
| 5207 | Błąd sondy 7 zespołu   | „analogicznie, jak wyżej”.                                                                                                            | A     | GR        |      |
| 5208 | Błąd sondy 8 zespołu   | „analogicznie, jak wyżej”.                                                                                                            | A     | GR        |      |
| 5209 | Błąd sondy 9 zespołu   | „analogicznie, jak wyżej”.                                                                                                            | A     | GR        |      |
| 5210 | Błąd sondy 10 zespołu  | „analogicznie, jak wyżej”.                                                                                                            | A     | GR        |      |
| 5301 | Agregat 1 offline      | Odlączenie agregatu 1 od sieci LAN Multi Manager. Sprawdzić połączenie szeregowe agregatu.                                            | A     | GR        |      |
| 5302 | Agregat 2 offline      | „analogicznie, jak wyżej dla agregatu 2”.                                                                                             | A     | GR        |      |
| 5303 | Agregat 3 offline      | „analogicznie, jak wyżej dla agregatu 3”.                                                                                             | A     | GR        |      |
| 5304 | Agregat 4 offline      | „analogicznie, jak wyżej dla agregatu 4”.                                                                                             | A     | GR        |      |
| 5305 | Agregat 5 offline      | „analogicznie, jak wyżej dla agregatu 5”.                                                                                             | A     | GR        |      |
| 5306 | Agregat 6 offline      | „analogicznie, jak wyżej dla agregatu 6”.                                                                                             | A     | GR        |      |
| 5307 | Agregat 7 offline      | „analogicznie, jak wyżej dla agregatu 7”.                                                                                             | A     | GR        |      |
| 5308 | Agregat 8 offline      | „analogicznie, jak wyżej dla agregatu 8”.                                                                                             | A     | GR        |      |
| 5350 | KIPlink master offline | Rozłączenie KIPlink odpowiedzialnego za wymianę danych między zewnętrznymi a wewnętrznymi agregatami. Sprawdzić połączenia szeregowe. | A     | GR        |      |
| 5401 | Anomalia agregatu 1    | Występują alarmy sond zespołu przypisanych do agregatu 1                                                                              | A     | GR        |      |
| 5402 | Anomalia agregatu 2    | „analogicznie, jak wyżej dla agregatu 2”.                                                                                             | A     | GR        |      |
| 5403 | Anomalia agregatu 3    | „analogicznie, jak wyżej dla agregatu 3”.                                                                                             | A     | GR        |      |
| 5404 | Anomalia agregatu 4    | „analogicznie, jak wyżej dla agregatu 4”.                                                                                             | A     | GR        |      |
| 5405 | Anomalia agregatu 5    | „analogicznie, jak wyżej dla agregatu 5”.                                                                                             | A     | GR        |      |
| 5406 | Anomalia agregatu 6    | „analogicznie, jak wyżej dla agregatu 6”.                                                                                             | A     | GR        |      |
| 5407 | Anomalia agregatu 7    | „analogicznie, jak wyżej dla agregatu 7”.                                                                                             | A     | GR        |      |
| 5408 | Anomalia agregatu 8    | „analogicznie, jak wyżej dla agregatu 8”.                                                                                             | A     | GR        |      |

(\*\*): w przypadku zdarzeń alarmowych specyficznych dla niektórych inwerterów sprężarek, w sterowniku W3000+ dostępne jest dedykowane kodowanie wyszczególniające zdarzenie pochodzące z inwertera, który wygenerował alarm. Pełna lista określonych kodów alarmów znajduje się w poniższych tabelach alarmów inwertera.

### 4.3 Tabela alarmów sondy rozszerzenia VSCM

Poniżej przedstawiono powiązania alarmów sondy i ich znaczenie w zależności od typu używanej karty i, jeśli ma to zastosowanie, w zależności od typu agregatu.

| AL  | pCO base / pCO Compact                                            |          | pCO5+                                                |    |
|-----|-------------------------------------------------------------------|----------|------------------------------------------------------|----|
| 421 | Przetwornik wysokiego ciśnienia obwód 1 / czujnik poziomu obwód 1 | B1       | Przetwornik niskiego ciśnienia obwód 1               | U1 |
| 422 | Przetwornik wysokiego ciśnienia obwód 2 / czujnik poziomu obwód 2 | B2       | Przetwornik niskiego ciśnienia obwód 2               | U2 |
| 423 | Temperatura cieczy obwód 1                                        | B3       | Temperatura cieczy obwód 1 / czujnik poziomu obwód 1 | U3 |
| 424 | Temperatura cieczy obwód 2                                        | B4       | Temperatura cieczy obwód 2 / czujnik poziomu obwód 2 | U4 |
| 425 | Przetwornik niskiego ciśnienia obwód 1                            | S1, EVO1 |                                                      |    |
| 426 | Przetwornik niskiego ciśnienia obwód 2                            | S1, EVO2 |                                                      |    |

| AL  | uPC                                                               |          | uPC MECH/MEHP-iS                                                                                |          |
|-----|-------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------|----------|
| 421 | Przetwornik wysokiego ciśnienia obwód 1 / czujnik poziomu obwód 1 | B5       | Przetwornik niskiego ciśnienia obwód 1                                                          | B5       |
| 422 | Przetwornik wysokiego ciśnienia obwód 2 / czujnik poziomu obwód 2 | B10      |                                                                                                 |          |
| 423 | Temperatura cieczy obwód 1                                        | B3       | Temperatura cieczy obwód 1 (w heatpump)<br>Temperatura ssania obwód 1 (w agregacie chłodniczym) | B3<br>B6 |
| 424 | Temperatura cieczy obwód 2                                        | B4       |                                                                                                 |          |
| 425 | Przetwornik niskiego ciśnienia obwód 1                            | S1, EVO1 |                                                                                                 |          |
| 426 | Przetwornik niskiego ciśnienia obwód 2                            | S1, EVO2 |                                                                                                 |          |

#### 4.4 Tabela alarmów sprężarek Turbocor

Poniżej został podany szczegółowo zestaw alarmów dla sprężarek Turbocor, które są przekazywane ze sprężarki do W3000+ za pomocą połączenia szeregowego.

Zostało wskazane również ewentualne zgrupowanie większej ilości kodów alarmu sprężarki pod tym samym kodem alarmu w sterowniku W3000+.

| Alarm W3000+ |                                     |              | Alarm TURBOCOR |                                                                                                                 |
|--------------|-------------------------------------|--------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| AL           | Opis                                | Adres Modbus | Bit alarmu     | Przyczyna usterki                                                                                               |
| 141          | Offline sprężarki                   |              |                | Odłączenie turbocor                                                                                             |
| 161          | Zasilanie silnika sprężarki         | 40106        | 0x0002         | DC bus high voltage detect                                                                                      |
|              |                                     |              | 0x0010         | IGBT inverter error signal active                                                                               |
|              |                                     |              | 0x0100         | Output voltage on the motor generate no current. IGBT inverter command signals disconnected or drive coil error |
|              |                                     |              | 0x0800         | Motor back EMF is low. Shaft might be demagnetized.                                                             |
|              |                                     |              | 0x2000         | Compressor is running in generator mode.                                                                        |
|              |                                     |              | 0x4000         | SCR phase loss.                                                                                                 |
|              |                                     | 40026        | 0x1000         | Winding Temperature                                                                                             |
|              |                                     |              | 0x2000         | Super Heat                                                                                                      |
|              |                                     |              | 0x4000         | Earth Leakage                                                                                                   |
|              |                                     |              | 0x8000         | Soft Start Temperature                                                                                          |
| 301          | Temperatura inwertera sprężarki     | 40026        | 0x0001         | Inverter temperature                                                                                            |
| 311          | Temperatura na wylocie ze sprężarki |              | 0x0002         | Discharge temperature                                                                                           |
| 321          | Niskie ciśnienie sprężarki          |              | 0x0004         | Suction pressure                                                                                                |
| 331          | Wysokie ciśnienie sprężarki         |              | 0x0008         | Discharge pressure                                                                                              |
| 341          | Prąd zasilania sprężarki            |              | 0x0010         | 3 phase current trip                                                                                            |
| 351          | Temperatura wirnika sprężarki       |              | 0x0020         | Shaft cavity temperature                                                                                        |
| 361          | Stosunek sprężania sprężarki        |              | 0x0080         | Total compression ratio fault                                                                                   |
| 371          | Łożyska sprężarki                   |              | 0x0100         | Bearing motor fault                                                                                             |
| 381          | Temperatura SCR sprężarki           |              | 0x0400         | SCR temp fault                                                                                                  |
| 391          | Blokada wirnika sprężarki           | 40106        | 0x0020         | Możliwe zablokowanie wirnika                                                                                    |

## 4.5 Tabela alarmów sprężarek CSCV

Poniżej został podany szczegółowo zestaw alarmów dla sprężarek CSCV, które są przekazywane ze sprężarki do W3000+ za pomocą połączenia szeregowego.

Zostało wskazane również ewentualne zgrupowanie większej ilości kodów alarmu sprężarki pod tym samym kodem alarmu w sterowniku W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

| Alarm W3000+ |                                        | Alarmy sprężarki CSCV |                                  |                                           |
|--------------|----------------------------------------|-----------------------|----------------------------------|-------------------------------------------|
| AL           | Opis                                   | Nr                    | Konsola                          | Przyczyna usterki                         |
| 701          | Inwerter offline                       |                       |                                  | Odłączenie inwertera                      |
| 711          | Alarm zasilania                        | 1200                  | Mains failure                    | Utrata zasilania sieci przemiennej        |
|              |                                        | 5002                  | Over Voltage                     | Za duże napięcie                          |
|              |                                        | 5003                  | Under Voltage                    | Za niskie napięcie                        |
| 721          | Alarm zasilania silnika                | 4000                  | Motor Overload                   | Przeciążenie silnika                      |
| 731          | Alarm prądu zasilania inwertera        | 5001                  | Over Current                     | Przetężenie na wyjściu                    |
| 751          | Alarm termiki silnika                  | 4301                  | Motor Thermal Overload           | Wyzwolenie sondy termicznej silnika       |
| 761          | Alarmi termiki wariatora               | 5300                  | Over Temperature: Power Module   | Przegrzanie: Power Module                 |
|              |                                        | 5301                  | Over Temperature: Cold Plate     | Przegrzanie: Cold Plate                   |
|              |                                        | 5302                  | Over Temperature: Power I. Board | Przegrzanie: Power I. Board               |
|              |                                        | 6303                  | Over Temperature: Control Board  | Przegrzanie: Control Board                |
| 771          | Alarm IGBT                             | 5000                  | Inverter Output                  | Usterka inwertera                         |
|              |                                        | 5004                  | FC Overload                      | Przeciążenie inwertera                    |
|              |                                        | 5801                  | HW Fault: Power MCU              | Usterka HW: Power MCU                     |
|              |                                        | 5802                  | HW Fault: Inrush Fault           | Usterka HW: Inrush Fault                  |
|              |                                        | 5803                  | HW Fault: Inrush Supply Fault    | Usterka HW: Inrush Supply Fault           |
|              |                                        | 5810                  | HW Fault: Gate Drive U           | Usterka HW: Gate Drive U                  |
|              |                                        | 5811                  | HW Fault: Gate Drive V           | Usterka HW: Gate Drive V                  |
|              |                                        | 5812                  | HW Fault: Gate Drive W           | Usterka HW: Gate Drive W                  |
|              |                                        | 5820                  | HW Fault: Fan1 Speed Low         | Usterka HW: Fan1 Speed Low                |
|              |                                        | 5821                  | HW Fault: Fan2 Speed Low         | Usterka HW: Fan2 Speed Low                |
|              |                                        | 5851                  | HW Fault: 24 V                   | Usterka HW: 24 V                          |
|              |                                        | 5852                  | HW Fault: 15V                    | Usterka HW: 15V                           |
|              |                                        | 5853                  | HW Fault: N15V                   | Usterka HW: N15V                          |
|              |                                        | 5854                  | HW Fault: PIB 3.3V               | Usterka HW: PIB 3.3V                      |
|              |                                        | 6801                  | HW Fault: Control MCU            | Usterka HW: Control MCU                   |
|              |                                        | 6810                  | HW Fault: CB 3.3V                | Usterka HW: CB 3.3V                       |
|              |                                        | 6811                  | HW Fault: User 5V                | Usterka HW: User 5V                       |
|              |                                        | 6812                  | HW Fault: User/Pres 5V           | Usterka HW: User/Pres 5V                  |
|              |                                        | 6850                  | HW Fault: Power MCU Comm         | Usterka HW: Power MCU Comm                |
| 811          | Alarm komunikacji                      | 1100                  | Serial Control Timeout           | Utrata komunikacji połączenia szeregowego |
| 821          | Alarm wejście bezpieczeństwa inwertera | 2500                  | Safe Torque Off                  | Bezpieczny moment obrotowy wyłączony      |
|              |                                        | 6814                  | HW: STO Diagnostics              | HW: Diagnostyki STO                       |
|              |                                        | 6901                  | SW: STO Diagnostics              | SW: Diagnostyki STO                       |
| 851          | Alarm ogólny                           | 3001                  | Envelope Fault: SST Low, SDT Low | Błąd Envelope: SST Low, SDT Low           |
|              |                                        | 3002                  | Envelope Fault: SST Low, SDT OK  | Błąd Envelope: SST Low, SDT OK            |



| Alarm W3000+ |  | Alarmy sprężarki CSCV |                                                       |                                                         |
|--------------|--|-----------------------|-------------------------------------------------------|---------------------------------------------------------|
|              |  | 3003                  | Envelope Fault: SST Low, SDT High                     | Błąd Envelope: SST Low, SDT High                        |
|              |  | 3004                  | Envelope Fault: SST OK, SDT High                      | Błąd Envelope: SST OK, SDT High                         |
|              |  | 3005                  | Envelope Fault: SST High, SDT High                    | Błąd Envelope: SST High, SDT High                       |
|              |  | 3006                  | Envelope Fault: SST High, SDT OK                      | Błąd Envelope: SST High, SDT OK                         |
|              |  | 3007                  | Envelope Fault: SST High, SDT Low                     | Błąd Envelope: SST High, SDT Low                        |
|              |  | 3008                  | Envelope Fault: SST OK, SDT Low                       | Błąd Envelope: SST OK, SDT Low                          |
|              |  | 3010                  | Envelope Fault: Startup Timeout                       | Błąd Envelope: Startup Timeout                          |
|              |  | 3011                  | Envelope Fault: Configuration Failure                 | Błąd Envelope: Configuration Failure                    |
|              |  | 3300                  | High Oil Temperature                                  | Przegrzanie oleju                                       |
|              |  | 3400                  | Suction pressure low                                  | Niskie ciśnienie ssania sprężarki                       |
|              |  | 3411                  | Discharge Pressure High                               | Wysokie ciśnienie wydechu sprężarki                     |
|              |  | 5600                  | HW Configuration Fault: Power Not Supported           | Błąd konfiguracji HW: Power Not Supported               |
|              |  | 5601                  | HW config: Gate Drive Missing                         | Usterka HW: Brakujący Gate Drive                        |
|              |  | 6601                  | HW Configuration Fault: Control Not Supported         | Błąd konfiguracji HW: Control Not Supported             |
|              |  | 6602                  | HW Configuration Fault: No XB                         | Błąd konfiguracji HW: No XB                             |
|              |  | 5700                  | Configuration Data Fault: Power Data                  | Błąd danych konfiguracji: Power Data                    |
|              |  | 5701                  | Configuration Data Fault: Prod Data                   | Błąd danych konfiguracji: Prod Data                     |
|              |  | 6700                  | Configuration Data Fault: No File                     | Błąd danych konfiguracji: No File                       |
|              |  | 6701                  | Configuration Data Fault: błąd CRC                    | Błąd danych konfiguracji: błąd CRC                      |
|              |  | 6702                  | Configuration Data Fault: Wrong version               | Błąd danych konfiguracji: Wrong version                 |
|              |  | 6703                  | Configuration Data Fault: Read Only                   | Błąd danych konfiguracji: Read Only                     |
|              |  | 6900                  | Datalog error                                         | Błąd Datalogger                                         |
|              |  | 5710                  | Parameter Configuration Fault: Motor Data             | Błąd parametrów konfiguracji: Motor Data                |
|              |  | 7300                  | Temperature Sensor Fault: Power Module                | Usterka sondy temperatury: Power Module                 |
|              |  | 7301                  | Temperature Sensor Fault: Cold Plate                  | Usterka sondy temperatury: Cold Plate                   |
|              |  | 7302                  | Temperature Sensor Fault: Power I. Board              | Usterka sondy temperatury: Power I. Board               |
|              |  | 7303                  | Temperature Sensor Fault: Control Board               | Usterka sondy temperatury: Control Board                |
|              |  | 7304                  | Temperature Sensor Fault: Motor Thermistor            | Usterka sondy temperatury: Motor Thermistor             |
|              |  | 7305                  | Temperature Sensor Fault: Oil Temperature             | Usterka sondy temperatury: Oil Temperature              |
|              |  | 7403                  | Pressure Sensor Fault: Suction Pressure Signal Low    | Usterka sondy ciśnienia: sygnał ciśnienia ssania niski  |
|              |  | 7404                  | Pressure Sensor Fault: Suction Pressure Signal High   | Usterka sondy ciśnienia: sygnał ciśnienia ssania wysoki |
|              |  | 7405                  | Pressure Sensor Fault: Discharge Pressure Signal Low  | Usterka sondy ciśnienia: sygnał ciśnienia wylotu niski  |
|              |  | 7406                  | Pressure Sensor Fault: Discharge Pressure Signal High | Usterka sondy ciśnienia: sygnał ciśnienia wylotu wysoki |



#### 4.6 Tabela alarmów sprężarek CSW105

Poniżej został podany szczegółowo zestaw alarmów dla sprężarek CSW105, które są przekazywane ze sprężarki do W3000+ za pomocą połączenia szeregowego.

Zostało wskazane również ewentualne zgrupowanie większej ilości kodów alarmu sprężarki pod tym samym kodem alarmu w sterowniku W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

| Alarm W3000+ |                         | Alarmy sprężarki CSW105 |                                                      |                                                                                   |
|--------------|-------------------------|-------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------|
| AL           | Opis                    | Nr                      | Konsola                                              | Przyczyna usterki                                                                 |
| 701          | Inwerter offline        |                         |                                                      | Odłączenie inwertera                                                              |
| 711          | Alarm zasilania         | 1200                    | Mains failure                                        | Utrata zasilania sieci przemiennej                                                |
| 721          | Alarm zasilania silnika | 3900                    | Locked rotor                                         | Wirnik zablokowany                                                                |
|              |                         | 4201                    | Motor phase loss                                     | Utrata fazy zasilania                                                             |
|              |                         | 4202                    | Motor phase sequence                                 | Błąd kolejności faz                                                               |
|              |                         | 4220                    | Motor frequency low                                  | Niska częstotliwość silnika                                                       |
|              |                         | 4221                    | Motor frequency high                                 | Wysoka częstotliwość silnika                                                      |
|              |                         | 8200                    | Low output current                                   | Niski prąd wyjściowy                                                              |
|              |                         | 8201                    | High output current                                  | Wysoki prąd wyjściowy                                                             |
| 751          | Alarm termiki silnika   | 4301                    | Motor temperature high                               | Wysoka temperatura silnika                                                        |
|              |                         | 4302                    | Motor temperature cooldown                           | Chłodzenie silnika                                                                |
| 811          | Alarm komunikacji       | 1100                    | Serial Control Timeout                               | Utrata komunikacji połączenia szeregowego                                         |
| 851          | Alarm ogólny            | 1000                    | Too many identical resets in 24 hours                | Zbyt wiele identycznych resetów w ciągu 24 godzin                                 |
|              |                         | 1001                    | Too many timed resets in 1 hour                      | Zbyt wiele resetów w ciągu godziny                                                |
|              |                         | 2700                    | Setup fault                                          | Błąd konfiguracji                                                                 |
|              |                         | 3001                    | Envelope: SST low, SDT low                           | Koperta: SST niski, SDT niski                                                     |
|              |                         | 3002                    | Envelope: SST low                                    | Koperta: SST niski                                                                |
|              |                         | 3003                    | Envelope: SST low, SDT high                          | Koperta: SST niski, SDT wysoki                                                    |
|              |                         | 3004                    | Envelope: SDT high                                   | Koperta: SDT wysoki                                                               |
|              |                         | 3005                    | Envelope: SST high, SDT high                         | Koperta: SST wysoki, SDT wysoki                                                   |
|              |                         | 3006                    | Envelope: SST high                                   | Koperta: SST wysoki                                                               |
|              |                         | 3007                    | Envelope: SST high, SDT low                          | Koperta: SST wysoki, SDT niski                                                    |
|              |                         | 3008                    | Envelope: SDT low                                    | Koperta: SDT niski                                                                |
|              |                         | 3010                    | Koperta: przekroczony limit czasu uruchamiania       | Koperta: przekroczony limit czasu uruchamiania                                    |
|              |                         | 3011                    | Envelope: Configuration failure                      | Koperta: błąd konfiguracji                                                        |
|              |                         | 3022                    | Too many compressor starts                           | Zbyt wiele uruchomień sprężarki                                                   |
|              |                         | 3024                    | Minimum compressor stop time not respected           | Nieprzestrzegany minimalny czas zatrzymania sprężarki                             |
|              |                         | 3025                    | Minimum compressor run time not respected            | Brak przestrzegania minimalnego czasu pracy sprężarki                             |
|              |                         | 3026                    | Minimum compressor start to start time not respected | Brak przestrzegania minimalnego czasu pomiędzy kolejnymi uruchomieniami sprężarki |
|              |                         | 3027                    | Compressor start without being fully unloaded        | Sprężarka uruchomiona bez całkowitego rozładowania                                |
|              |                         | 3302                    | Discharge temperature high                           | Wysoka temperatura rozładowania                                                   |
|              |                         | 3400                    | Suction pressure low                                 | Niskie ciśnienie ssania                                                           |
|              |                         | 3411                    | Discharge pressure high                              | Wysokie ciśnienie rozładowania                                                    |
|              |                         | 3431                    | High pressure switch                                 | Zadziałanie presostatu                                                            |
|              |                         | 3501                    | Oil flow                                             | Przełącznik przepływu oleju                                                       |

| Alarm W3000+ |      | Alarmy sprężarki CSW105                |                                                  |
|--------------|------|----------------------------------------|--------------------------------------------------|
|              | 3502 | Oil pressure low                       | Niskie ciśnienie oleju                           |
|              | 3503 | Oil stop valve                         | Zawór odcinający olej                            |
|              | 3520 | Oil injection has no effect            | Nieskuteczny wtrysk oleju                        |
|              | 5851 | HW: 24 V                               | HW: 24 V                                         |
|              | 6700 | Config data: no file                   | Config data: no file                             |
|              | 6701 | Dane konfig.: błąd CRC                 | Dane konfig.: błąd CRC                           |
|              | 6702 | Config data: wrong version             | Dane konfiguracyjne: błędna wersja               |
|              | 6703 | Config data: read only                 | Dane konfiguracyjne: tylko do odczytu            |
|              | 6810 | HW: 3,3 V                              | HW: 3,3 V                                        |
|              | 6811 | HW: user 5 V                           | HW: 5 V użytkownik                               |
|              | 6813 | HW: 24 V                               | HW: 24 V                                         |
|              | 6900 | Datalog error                          | Błąd dziennika danych                            |
|              | 7304 | Sensor: motor thermistor               | Czujnik: termistor silnika                       |
|              | 7308 | Sensor: Discharge temperature          | Czujnik: temperatura rozładowania                |
|              | 7320 | Sensor: aux temperature                | Czujnik: temperatura pomocnicza                  |
|              | 7401 | Sensor: suction pressure               | Czujnik: ciśnienie ssania                        |
|              | 7402 | Sensor: discharge pressure             | Czujnik: ciśnienie rozładowania                  |
|              | 7403 | Sensor: suction pressure signal low    | Czujnik: niski sygnał ciśnienia ssania           |
|              | 7404 | Sensor: suction pressure signal high   | Czujnik: wysoki sygnał ciśnienia ssania          |
|              | 7405 | Sensor: discharge pressure signal low  | Czujnik: sygnał niskiego ciśnienia rozładowania  |
|              | 7406 | Sensor: discharge pressure signal high | Czujnik: sygnał wysokiego ciśnienia rozładowania |
|              | 7510 | Sensor: oil protection                 | Czujnik: ochrona oleju                           |
|              | 7511 | Sensor: oil protection 2               | Czujnik: ochrona oleju 2                         |
|              | 7580 | Slider: no sensor detected             | Suwak: nie wykryto czujnika                      |
|              | 7581 | Slider: less than 2 magnets detected   | Suwak: wykryto mniej niż 2 magnesy               |
|              | 7582 | Slider: sample data invalid            | Suwak: nieprawidłowa dana próbki                 |
|              | 7583 | Slider: more than 2 magnets detected   | Suwak: wykryto więcej niż 2 magnesy              |
|              | 7584 | Slider: position invalid               | Suwak: nieprawidłowa pozycja                     |
|              | 8202 | Output current: oil heater low         | Prąd wyjściowy: podgrzewanie oleju (niski)       |
|              | 8203 | Output current: oil heater high        | Prąd wyjściowy: podgrzewanie oleju (wysoki)      |
|              | 8204 | Output current: additional fan low     | Prąd wyjściowy: wentylator dodatkowy (niski)     |
|              | 8205 | Output current: head fan high          | Prąd wyjściowy: wentylator dodatkowy (wysoki)    |
|              | 8206 | Output current: CR-1 low               | Prąd wyjściowy: CR-1 (niski)                     |
|              | 8207 | Output current: CR-1 high              | Prąd wyjściowy: CR-1 (wysoki)                    |
|              | 8208 | Output current: CR-2 low               | Prąd wyjściowy: CR-2 (niski)                     |
|              | 8209 | Output current: CR-2 high              | Prąd wyjściowy: CR-2 (wysoki)                    |
|              | 8210 | Output current: CR-3 low               | Prąd wyjściowy: CR-3 (niski)                     |
|              | 8211 | Output current: CR-3 high              | Prąd wyjściowy: CR-3 (wysoki)                    |
|              | 8212 | Output current: unloader low           | Prąd wyjściowy: przesłona (niski)                |
|              | 8213 | Output current: unloader high          | Prąd wyjściowy: przesłona (wysoki)               |
|              | 8214 | Output current: oil inj low            | Prąd wyjściowy: wtrysk oleju (niski)             |
|              | 8215 | Output current: oil inj high           | Prąd wyjściowy: wtrysk oleju (wysoki)            |
|              | 8216 | Output current: liquid inj low         | Prąd wyjściowy: wtrysk cieczy (niski)            |

| Alarm W3000+ |  | Alarmy sprężarki CSW105 |                                 |                                        |
|--------------|--|-------------------------|---------------------------------|----------------------------------------|
|              |  | 8217                    | Output current: liquid inj high | Prąd wyjściowy: wtrysk cieczy (wysoki) |
|              |  | 8218                    | Output current: HW trip         | Prąd wyjściowy: błąd sprzętowy         |
|              |  | 8580                    | Slider: Vi position control     | Suwak: kontrola pozycji Vi             |
|              |  | 8581                    | Slider: CR position control     | Suwak: kontrola pozycji CR             |
|              |  | 8582                    | Slider: Gap between Vi and CR   | Suwak: przerwa pomiędzy Vi i CR        |
|              |  | 8583                    | Slider: Gap between Zero and Vi | Suwak: przerwa pomiędzy Zero i Vi      |

#### 4.7 Tabela alarmów sprężarek z inwerterem M35A

Poniżej został podany szczegółowo zestaw alarmów dla sprężarek z inwerterem M35A, które są przekazywane z inwertera do W3000+ za pomocą połączenia szeregowego.

Zostało wskazane również ewentualne pogrupowanie kilku kodów alarmowych inwerterem pod tym samym kodem alarmu w sterowniku W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

| Alarm W3000+ |                                 | Alarmy sprężarki z inwerterem M35A |                                                    |                                                   |
|--------------|---------------------------------|------------------------------------|----------------------------------------------------|---------------------------------------------------|
| AL           | Opis                            | Nr                                 | Opis                                               | Przyczyna usterki                                 |
| 701          | Inwerter offline                |                                    |                                                    | Odlączenie inwertera                              |
| 711          | Alarm zasilania                 | 5                                  | DC Bus under voltage (LU)                          | Przebiecie w obwodzie pośrednim DC link           |
|              |                                 | 6                                  | DC Bus over voltage (OU)                           | Za niskie napięcie w obwodzie pośrednim DC link   |
|              |                                 | 10                                 | Over current at acceleration state (Software trip) | Przetężenie inwertera podczas fazy przyspieszania |
|              |                                 | 12                                 | Over current at steady state (Software trip)       | Przetężenie inwertera podczas fazy utrzymywania   |
|              |                                 | 13                                 | Over current at deceleration state (Software trip) | Przetężenie inwertera podczas fazy zwalniania     |
| 721          | Alarm zasilania silnika         | 2                                  | Over current at acceleration state (Hardware trip) | Przetężenie silnika podczas fazy przyspieszania   |
|              |                                 | 3                                  | Over current at steady state (Hardware trip)       | Przetężenie silnika podczas fazy utrzymywania     |
|              |                                 | 4                                  | Over current at deceleration state (Hardware trip) | Przetężenie silnika podczas fazy zwalniania       |
| 731          | Alarm prądu zasilania inwertera | 11                                 | Overload trip (OL)                                 | Przekroczenie prądu nominalnego inwertera         |
| 751          | Alarm termiki silnika           | 7                                  | Compressor Overheat (Software trip)                | Przegrzanie silnika                               |
| 811          | Alarm komunikacji               | 14                                 | Compressor connected loss                          | Utrata komunikacji połączenia szeregowego         |
|              |                                 | 15                                 | Communication time out error                       | Przekroczenie czasu oczekiwania na komunikat      |
| 851          | Alarm ogólny                    | 1                                  | Fin Overheat                                       | Przegrzanie rozpraszacza inwertera                |
|              |                                 | 16                                 | Power module over temperature                      | Przegrzanie karty sterowania inwertera            |
|              |                                 | 20                                 | Driver error                                       | Ogólny błąd sterownika                            |
|              |                                 | 30                                 | Emergency switch active (HW)                       | Aktywacja zatrzymania awaryjnego (hardware)       |
|              |                                 | 31                                 | Emergency switch active (SW)                       | Aktywacja zatrzymania awaryjnego (software)       |
|              |                                 | 40                                 | Abnormal condition                                 | Warunki pracy nieoptymalne                        |
|              |                                 | 128                                | Internal memory error                              | Awaria pamięci wewnętrznej inwertera              |
|              |                                 | 129                                | Internal memory error                              | Awaria pamięci wewnętrznej inwertera              |

#### 4.8 Tabela alarmów sprężarek z inwerterem Danfoss

Poniżej został podany szczegółowo zestaw alarmów dla sprężarek z inwerterem Danfoss, które są przekazywane z inwertera do W3000+ za pomocą połączenia szeregowego.

Zostało wskazane również ewentualne pogrupowanie kilku kodów alarmowych inwerterem pod tym samym kodem alarmu w sterowniku W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

| Alarm W3000+ |                                 | Alarmy sprężarki z inwerterem Danfoss |                                   |                                                                                                                    |
|--------------|---------------------------------|---------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------|
| AL           | Opis                            | Nr                                    | Opis                              | Przyczyna usterki                                                                                                  |
| 701          | Inwerter offline                |                                       |                                   | Odlączenie inwertera                                                                                               |
| 711          | Alarm zasilania                 | 4                                     | Mains phase loss                  | Brak jednej fazy z zasilania sieciowego lub nadmierne zachwianie napięcia między fazami                            |
|              |                                 | 7                                     | DC over voltage                   | Przebieżenie w obwodzie pośrednim DC link                                                                          |
|              |                                 | 8                                     | DC under voltage                  | Za niskie napięcie w obwodzie pośrednim DC link                                                                    |
|              |                                 | 36                                    | Mains failure                     | Brak napięcia zasilania                                                                                            |
| 721          | Alarm zasilania silnika         | 13                                    | Over Current                      | Przetężenie na wyjściu                                                                                             |
|              |                                 | 14                                    | Earth Fault                       | Rozproszenie z faz wyjścia z inwertera w kierunku uziemienia (w kablu między inwerterem a silnikiem lub w silniku) |
|              |                                 | 16                                    | Short Circuit                     | Zwarcie w silniku lub końcówkach podłączeń do silnika                                                              |
|              |                                 | 30                                    | Motor phase U is missing          | Brak fazy U między inwerterem a silnikiem                                                                          |
|              |                                 | 31                                    | Motor phase V is missing          | Brak fazy V między inwerterem a silnikiem                                                                          |
|              |                                 | 32                                    | Motor phase W is missing          | Brak fazy W między inwerterem a silnikiem                                                                          |
|              |                                 | 33                                    | Inrush fault                      | Namierna ilość power-up w krótkim czasie                                                                           |
| 731          | Alarm prądu zasilania inwertera | 9                                     | Inverter overloaded               | Przekroczenie prądu nominalnego inwertera                                                                          |
| 751          | Alarm termiki silnika           | 10                                    | Motor ETR over temperature        | Przegrzanie silnika (Electronic Thermal Protection)                                                                |
|              |                                 | 11                                    | Motor thermistor over temperature | Przegrzanie silnika (termistor) lub możliwe rozłączenie termistora                                                 |
| 811          | Alarm komunikacji               | 17                                    | Control Word Timeout              | Utrata komunikacji połączenia szeregowego                                                                          |
|              |                                 | 34                                    | Fieldbus communication fault      | Karta komunikacji Fieldbus nie działa                                                                              |
| 851          | Alarm ogólny                    | 2                                     | Live zero error                   | Sygnał na końcówkach 53 lub 54 jest poniżej 50% minimum ustawionego dla tych końcówek                              |
|              |                                 | 12                                    | Torque limit                      | Moment wyjściowy przekracza maksymalną ustawioną granicę                                                           |
|              |                                 | 23                                    | Internal fans fault               | Wentylatory inwertera w awarii lub nie są zainstalowane                                                            |
|              |                                 | 24                                    | External fan fault                | Wentylatory inwertera w awarii lub nie są zainstalowane                                                            |
|              |                                 | 25                                    | Brake resistor short-circuited    | Nagrzewnica hamowania w zwarcu                                                                                     |
|              |                                 | 26                                    | Brake resistor power limit        | Moc rozpraszania z nagrzewnicy hamowania przekracza maksymalną ustawioną granicę                                   |
|              |                                 | 27                                    | Brake chopper fault               | Awaria tranzystora nagrzewnicy hamowania                                                                           |
|              |                                 | 28                                    | Brake check failed                | Awaria nagrzewnicy hamowania                                                                                       |
|              |                                 | 29                                    | Drive over temperature            | Przegrzanie inwertera (95 °C ± 5°C)                                                                                |
|              |                                 | 38                                    | Internal fault                    | Awaria wewnętrzna inwertera                                                                                        |
|              |                                 | 47                                    | 24 V supply low                   | Awaria karty sterowania inwertera                                                                                  |
|              |                                 | 48                                    | 1,8 V supply low                  | Awaria karty sterowania inwertera                                                                                  |
|              |                                 | 50–58                                 | AMA not ok                        | Błąd AMA (Automatic Motor Adaptation)                                                                              |
|              |                                 | 65                                    | Control Card Over Temperature     | Przegrzanie karty sterowania inwertera                                                                             |
|              |                                 | 67                                    | Option Configuration has Changed  | Dodanie/usunięcie modułów opcjonalnych                                                                             |

| Alarm W3000+ |  | Alarmy sprężarki z inwerterem Danfoss |                                    |                                                                   |
|--------------|--|---------------------------------------|------------------------------------|-------------------------------------------------------------------|
|              |  | 68                                    | Safe Stop                          | Funkcja Safe Stop została uaktywniona                             |
|              |  | 80                                    | Drive Initialised to Default Value | Inwerter został inicjalizowany ręcznie w ustawieniach fabrycznych |
|              |  | 95                                    | Broken Belt                        | Moment mniejszy niż minimalnego ustawionego progu                 |
|              |  | 250                                   | New Spare Part                     | Wymiana komponentu wewnętrznego inwertera                         |
|              |  | 251                                   | New Type Code                      | Inwerter ma nowy Type Code                                        |

#### 4.9 Tabela alarmów sprężarek z inwerterem Mitsubishi FR-F800

Poniżej został podany szczegółowo zestaw alarmów dla sprężarek z inwerterem Mitsubishi, które są przekazywane z inwerterem do W3000 + za pomocą połączenia szeregowego.

Zostało wskazane również ewentualne pogrupowanie kilku kodów alarmowych inwerterem pod tym samym kodem alarmu w sterowniku W3000 +. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

| Alarm W3000+ |                                          | Alarmy sprężarek z inwerterem Mitsubishi FR-F800 |     |                                                            |                                                                                    |
|--------------|------------------------------------------|--------------------------------------------------|-----|------------------------------------------------------------|------------------------------------------------------------------------------------|
| AL           | Opis                                     | Kod wyświetla<br>czy<br>inwertera                | Nr  | Opis                                                       | Przyczyna usterki                                                                  |
| 701          | Inwerter offline                         |                                                  |     |                                                            | Odlączenie inwertera                                                               |
| 711          | Alarm zasilania                          | E.OV1                                            | 32  | Regenerative overvoltage trip during acceleration          | Przebiecie w obwodzie pośrednim DC w przyspieszeniu                                |
|              |                                          | E.OV2                                            | 33  | Regenerative overvoltage trip during constant speed        | Przebiecie w obwodzie pośrednim DC ze stałą prędkością                             |
|              |                                          | E.OV3                                            | 34  | Regenerative overvoltage trip during deceleration or stop  | Przebiecie w obwodzie pośrednim DC w zwolnieniu                                    |
|              |                                          | E.IPF                                            | 80  | Instantaneous power failure                                | Brak napięcia zasilania                                                            |
|              |                                          | E.UVT                                            | 81  | Undervoltage                                               | Za niskie napięcie zasilania inwertera                                             |
|              |                                          | E.ILF                                            | 82  | Input phase loss                                           | Brak jednej fazy zasilania sieci                                                   |
|              |                                          | E.GF                                             | 128 | Output side earth (ground) fault overcurrent               | Przetężenie rozproszenia w kierunku uziemienia                                     |
|              |                                          | E.LF                                             | 129 | Output phase loss                                          | Brak jednej fazy między inwerterem a silnikiem                                     |
| 721          | Alarm zasilania silnika                  | E.IOH                                            | 197 | Inrush current limit circuit fault                         | Przegrzanie nagrzewnicy obwodu wspomagającego                                      |
|              |                                          | E.OC1                                            | 16  | Overcurrent trip during acceleration                       | Przetężenie na wyjściu w przyspieszeniu                                            |
|              |                                          | E.OC2                                            | 17  | Overcurrent trip during constant speed                     | Przetężenie na wyjściu ze stałą prędkością                                         |
|              |                                          | E.OC3                                            | 18  | Overcurrent trip during deceleration or stop               | Przetężenie na wyjściu w zwolnieniu                                                |
|              |                                          | E.THM                                            | 49  | Motor overload trip (electronic thermal relay function)    | Przegrzanie silnika (Electronic Thermal Protection)                                |
| 731          | Alarm prądu zasilania inwertera          | E.CDO                                            | 196 | Abnormal output current detection                          | Przetężenie na wyjściu                                                             |
|              |                                          | E.THT                                            | 48  | Inverter overload trip (electronic thermal relay function) | Przekroczenie prądu nominalnego inwertera                                          |
| 751          | Alarm termiki silnika                    | E.OHT                                            | 144 | External thermal relay operation                           | Przegrzanie silnika namierzone przez termistor zewnętrzny lub wewnętrzny w silniku |
| 791          | Alarm przekroczenia prędkości            | E.LUP                                            | 98  | Upper limit fault detection                                | Przebieżenie silnika                                                               |
| 811          | Alarm komunikacji                        | E.OPT                                            | 160 | Option fault                                               | Alarm określony przez parametry                                                    |
|              |                                          | E.OP1                                            | 161 | Communication option fault                                 | Utrata komunikacji połączenia szeregowego                                          |
|              |                                          | E.PUE                                            | 177 | PU disconnection                                           | Utrata komunikacji między inwerterem a jednostką mocy                              |
|              |                                          | E.SER                                            | 198 | Communication fault (inverter)                             | Utrata komunikacji połączenia szeregowego                                          |
|              |                                          | E.EHR                                            | 231 | Ethernet communication fault                               | Utrata komunikacji połączenia ethernet                                             |
| 821          | Alarm wejścia bezpieczeństwa inwertera 1 | E.SAF                                            | 201 | Safety circuit error                                       | Błąd obwodu bezpieczeństwa                                                         |
| 851          | Alarm ogólny                             | E.FIN                                            | 64  | Heatsink overheat                                          | Przegrzanie rozpraszacza inwertera                                                 |
|              |                                          | E.OLT                                            | 96  | Stall prevention stop                                      | Zatrzymanie dla funkcji zapobiegającej przeciąganiu                                |
|              |                                          | E.SOT                                            | 97  | Loss of synchronism detection                              | Utrata synchronizmu między inwerterem a silnikiem                                  |

| Alarm W3000+ |       | Alarms sprężarek z inwerterem Mitsubishi FR-F800 |                                                                                       |                                                                     |  |
|--------------|-------|--------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------|--|
|              | E.LDN | 99                                               | Lower limit fault detection                                                           | Niedociążenie silnika                                               |  |
|              | E.BE  | 112                                              | Internal circuit fault                                                                | Awaria wewnętrzna inwertera                                         |  |
|              | E.PTC | 145                                              | PTC thermistor operation                                                              | Zatrzymanie z powodu nadmiernej temperatury termistora PTC          |  |
|              | E.16  | 164                                              | User definition error by the PLC function                                             | Alarms określone przez funkcje PLC                                  |  |
|              | E.17  | 165                                              |                                                                                       |                                                                     |  |
|              | E.18  | 166                                              |                                                                                       |                                                                     |  |
|              | E.19  | 167                                              |                                                                                       |                                                                     |  |
|              | E.20  | 168                                              |                                                                                       |                                                                     |  |
|              | E.PE  | 176                                              | Parameter storage device fault                                                        | Anomalia zapisu parametrów (płyta sterująca)                        |  |
|              | E.RET | 178                                              | Retry count excess                                                                    | Przekroczenie maksymalnej liczby automatycznego resetowania alarmów |  |
|              | E.PE2 | 179                                              | Parameter storage device fault                                                        | Anomalia zapisu parametrów (główna płyta sterująca)                 |  |
|              | E.CPU | 192                                              | CPU fault                                                                             | Anomalia CPU inwertera                                              |  |
|              | E.CTE | 193                                              | Operation panel power supply short circuit/RS-485 terminal power supply short circuit | Zwarcie panelu sterowania / zwarcie terminali komunikacji RS-485    |  |
|              | E.P24 | 194                                              | 24 V DC power fault                                                                   | Zwarcie zasilanie 24 V AC/DC                                        |  |
|              | E.AIE | 199                                              | Analog input fault                                                                    | Nieprawidłowy prąd lub zasilanie na wejściu do terminala 2          |  |
|              | E.USB | 200                                              | USB communication fault                                                               | Utrata komunikacji połączenia USB                                   |  |
|              | E.PBT | 202                                              | Internal circuit fault                                                                | Awaria wewnętrzna inwertera                                         |  |
|              | E.OS  | 208                                              | Overspeed occurrence                                                                  | Nadmierna prędkość silnika                                          |  |
|              | E.LCI | 228                                              | 4 mA input fault                                                                      | Poziom prądu wejścia analogowego poniżej 2 mA                       |  |
|              | E.PCH | 229                                              | Pre-charge fault                                                                      | Anomalia operacji wstępnego ładowania                               |  |
|              | E.PID | 230                                              | PID signal fault                                                                      | Anomalia kontroli PID                                               |  |
|              | E. 1  | 241                                              | Option fault                                                                          | Anomalia podłączenia płyt opcjonalnych                              |  |
|              | E. 2  | 242                                              |                                                                                       |                                                                     |  |
|              | E. 3  | 243                                              |                                                                                       |                                                                     |  |
|              | E. 5  | 245                                              | CPU fault                                                                             | Anomalia CPU inwertera                                              |  |
|              | E.6   | 246                                              |                                                                                       |                                                                     |  |
|              | E. 7  | 247                                              |                                                                                       |                                                                     |  |
|              | E.13  | 253                                              | Internal circuit fault                                                                | Awaria wewnętrzna inwertera                                         |  |



#### 4.10 Tabela alarmów sprężarek z inwerterem STEP

Poniżej został podany szczegółowo zestaw alarmów dla sprężarek z inwerterem STEP, które są przekazywane z inwertera do W3000+ za pomocą połączenia szeregowego.

Zostało wskazane również ewentualne pogrupowanie kilku kodów alarmowych inwerterem pod tym samym kodem alarmu w sterowniku W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

| Alarm W3000+ |                         | Alarmy sprężarek z inwerterem STEP |                                    |                                                                                        |
|--------------|-------------------------|------------------------------------|------------------------------------|----------------------------------------------------------------------------------------|
| AL           | Opis                    | Nr                                 | Opis                               | Przyczyna usterki                                                                      |
| 701          | Inwerter offline        |                                    |                                    | Odłączenie inwertera                                                                   |
| 711          | Alarm zasilania         | 8                                  | Bus over voltage protection        | Abnormal input voltage                                                                 |
|              |                         |                                    |                                    | Re-rapid starting during motor in high speed rotating                                  |
|              |                         |                                    |                                    | Too high load rotational inertia                                                       |
|              |                         |                                    |                                    | Too short deceleration time                                                            |
|              |                         |                                    |                                    | Too high braking resistance or no resistor                                             |
|              |                         |                                    |                                    | Abnormal input power                                                                   |
|              |                         |                                    |                                    | Too large load rotational inertia                                                      |
|              |                         |                                    |                                    | Too high braking resistance or no resistor                                             |
|              |                         | 9                                  | Bus undervoltage                   | Power voltage lower than minimum equipment working voltage                             |
|              |                         |                                    |                                    | Instantaneous power off                                                                |
|              |                         |                                    |                                    | Too high fluctuation of input power voltage                                            |
|              |                         |                                    |                                    | Loose power connection block                                                           |
|              |                         |                                    |                                    | Internal switch power abnormal                                                         |
|              |                         | 23                                 | Input over-voltage                 | A large starting current load existing in the same power supply system                 |
|              |                         |                                    |                                    | Too high input voltage                                                                 |
|              |                         | 29                                 | Loss input phase                   | Problem by detection loop of switch voltage                                            |
|              |                         |                                    |                                    | Abnormal voltage at input side                                                         |
|              |                         |                                    |                                    | Loss input voltage phase                                                               |
|              |                         | 44                                 | The input power supply is abnormal | Input terminal block loose                                                             |
|              |                         |                                    |                                    | The input power supply changes a lot                                                   |
|              |                         |                                    |                                    | Input contactor abnormally connected                                                   |
| 721          | Alarm zasilania silnika | 10                                 | Loss of output phase               | Temporary electricity                                                                  |
|              |                         |                                    |                                    | Abnormal wiring at inverter output, missing or breaking connection                     |
|              |                         |                                    |                                    | Loose output terminal block                                                            |
|              |                         |                                    |                                    | Insufficient motor power, less than 1/20 of maximum applicable inverter motor capacity |
|              |                         | 11                                 | Motor over current at low speed    | Unbalanced three phase output                                                          |
|              |                         |                                    |                                    | Low network voltage                                                                    |
|              |                         |                                    |                                    | Improper motor parameter setting                                                       |
|              |                         |                                    |                                    | Rapid start during motor running                                                       |
|              |                         |                                    |                                    | The acceleration time for load inertia (GD2) is too short.                             |
|              |                         |                                    |                                    | Low network voltage                                                                    |
|              |                         |                                    |                                    | Too large load rotational inertia                                                      |
|              |                         |                                    |                                    | Improper motor parameter setting                                                       |
|              |                         |                                    |                                    | Too short deceleration time                                                            |

| Alarm W3000+ |                                 | Alarmy sprzężarek z inwerterem STEP |                                           |                                                                                                     |
|--------------|---------------------------------|-------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------|
|              |                                 |                                     |                                           | The deceleration time for load inertia (GD2) is too short                                           |
|              |                                 |                                     |                                           | Abrupt load change in running                                                                       |
|              |                                 |                                     |                                           | Improper motor parameter setting                                                                    |
|              |                                 | 16                                  | Wrong motor phase                         | Motor reversed connected                                                                            |
|              |                                 | 21                                  | abc over current                          | Motor single phase shorted to earth                                                                 |
|              |                                 |                                     |                                           | Encoder fault                                                                                       |
|              |                                 |                                     |                                           | Test loop of drive board fault                                                                      |
|              |                                 | 27                                  | Output over current                       | Too long time operation under overload status. The larger the load, the shorter the time is.        |
|              |                                 |                                     |                                           | Motor blocked                                                                                       |
|              |                                 |                                     |                                           | Motor coil short                                                                                    |
|              |                                 |                                     |                                           | Output short                                                                                        |
|              |                                 | 31                                  | Over current at motor high speed          | Power grid voltage too low                                                                          |
|              |                                 |                                     |                                           | Abrupt load in operation                                                                            |
|              |                                 |                                     |                                           | Incorrect motor parameter                                                                           |
|              |                                 |                                     |                                           | Wrong encoder parameter or interference                                                             |
|              |                                 | 32                                  | Grounding protection                      | Wrong wiring                                                                                        |
|              |                                 |                                     |                                           | Abnormal motor                                                                                      |
|              |                                 | 35                                  | Unbalance output                          | Large drain current to earth at inverter output side                                                |
|              |                                 |                                     |                                           | Abnormal wiring at inverter output side, missing or broking connection                              |
|              |                                 | 39                                  | Too high instantaneous current            | Motor three phase unbalance                                                                         |
|              |                                 |                                     |                                           | Three phase instantaneous current over and alarm while Ia, Ib and Ic not in operation               |
|              |                                 | 42                                  | IGBT short circuit protection             | The cause is the same as Fault 1.                                                                   |
|              |                                 | 45                                  | I2t instantaneous over current protection | Same as fault 21,27                                                                                 |
|              |                                 | 46                                  | I2t valid over current protection         |                                                                                                     |
|              |                                 | 51                                  | Abnormal running output current           | Improper parameter setting Disconnection between the inverter and the motor Inverter hardware fault |
| 731          | Alarm prądu zasilania inwertera | 1                                   | Module over-current protection            | Too high voltage at DC terminal                                                                     |
|              |                                 |                                     |                                           | Possible short connection to peripheral circuit                                                     |
|              |                                 |                                     |                                           | Losing output phase                                                                                 |
|              |                                 |                                     |                                           | Encoder fault                                                                                       |
|              |                                 |                                     |                                           | Hardware poor contact or damage                                                                     |
|              |                                 |                                     |                                           | Internal component loose                                                                            |
|              |                                 |                                     |                                           | The power circuit components overheat due to the cooling fan or cooling system problem.             |
| 811          | Alarm komunikacji               | 43                                  | Communication fault                       | Communication disconnected No communication data received within the fixed time                     |
| 851          | Alarm ogólny                    | 2                                   | 2 ADC fault                               | Current sensor damaged                                                                              |
|              |                                 |                                     |                                           | Problem of current sampling loop                                                                    |
|              |                                 | 3                                   | Heatsink overheat                         | Ambient temperature too high                                                                        |
|              |                                 |                                     |                                           | The cooling fan damaged or foreign object entered into the cooling system.                          |
|              |                                 |                                     |                                           | Cooling fan is abnormal                                                                             |
|              |                                 |                                     |                                           | Temperature detect circuit fault                                                                    |
|              |                                 | 4                                   | Braking unit failure                      | Braking unit damaged                                                                                |

| Alarm W3000+ |  | Alarmy sprzężarek z inwerterem STEP |                                                                                                         |
|--------------|--|-------------------------------------|---------------------------------------------------------------------------------------------------------|
|              |  |                                     | External braking resistor circuit short                                                                 |
|              |  | 5                                   | Blown fuse failure<br>Fuse blown by high current                                                        |
|              |  | 6                                   | Over torque output<br>Too low input voltage                                                             |
|              |  |                                     | Motor stop rotating or abrupt loading change                                                            |
|              |  |                                     | Encoder failure                                                                                         |
|              |  |                                     | Missing output phase                                                                                    |
|              |  | 7                                   | Speed deviation<br>Too short acceleration time                                                          |
|              |  |                                     | Too high load                                                                                           |
|              |  |                                     | Too low current limit                                                                                   |
|              |  | 13                                  | Current detected at stopping<br>Current keep on flowing while motor stops                               |
|              |  | 22                                  | Brake detection fault<br>Inactive output relay                                                          |
|              |  |                                     | Relay triggered, brake not released                                                                     |
|              |  |                                     | No signal detected by feedback component                                                                |
|              |  | 30                                  | Over speed protection<br>Wrong encoder parameter set or interference                                    |
|              |  |                                     | Abrupt load change                                                                                      |
|              |  |                                     | Wrong parameter for over speed protection                                                               |
|              |  | 33                                  | Capacitor aged<br>Inverter capacitor aged                                                               |
|              |  | 34                                  | External fault<br>External fault signal input                                                           |
|              |  | 36                                  | Wrong parameter setting<br>Wrong parameter setting                                                      |
|              |  | 37                                  | Current sensor fault<br>Drive board hardware fault                                                      |
|              |  | 38                                  | Brake resistor short<br>Connection of external brake resistor short                                     |
|              |  | 40                                  | KMY detection fault<br>KMY detect contactor signal and KMY control signal don't match                   |
|              |  | 41                                  | Brake switch detection fault<br>Brake switch detect contactor signal and its control signal don't match |

#### 4.11 Tabela alarmów sprężarek z inwerterem PSD

W tabeli przedstawiono kody i stany alarmowe inwertera PSD (przesyłane poprzez połączenie szeregowo do sterownika W3000+) oraz odpowiadające im kody alarmu sterownika W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

W przypadku alarmów z automatycznym resetem (patrz rozdział „Tabela alarmów W3000+”) maksymalna liczba zdarzeń wynosi 3 na minutę, po czym wymagane będzie zadziałanie ręczne.

Sterownik W3000+ będzie automatycznie podejmował próby zresetowania alarmu co 2 minuty, do maksymalnie 10 prób, po czym alarm przejdzie w tryb resetowania ręcznego.

W przypadku alarmów bezpieczeństwa (wartości większe niż 100 lub 200 w kolumnie Nr/Bit w tabeli), konieczne jest odczekanie 240 sekund przed zresetowaniem alarmu.

Kodowanie alarmów pochodzących z inwertera przedstawiono w poniższej tabeli:

1-28: podstawowy kod alarmu

100-115: stan alarmu bezpieczeństwa 1 (każdy numer odpowiada odpowiednim bitom pierwszego rejestru w kolejności sekwencyjnej. Przykład: 100 = bit 0)

200-215: stan alarmu bezpieczeństwa 2 (każdy numer odpowiada odpowiednim bitom drugiego rejestru w kolejności sekwencyjnej). Przykład: 201 = bit 1)

| Alarm W3000+ |                                      | Alarmy sprężarek z inwerterem PSD |        |                                            |
|--------------|--------------------------------------|-----------------------------------|--------|--------------------------------------------|
| AL           | Opis                                 | Zmienna                           | Nr/Bit | Opis                                       |
| 701          | Inwerter offline                     |                                   |        | Odlączenie inwertera                       |
| 711          | Alarm zasilania                      | Kod alarmu                        | 1      | Za duży prąd                               |
|              |                                      |                                   | 3      | Za duże napięcie                           |
|              |                                      |                                   | 4      | Za niskie napięcie                         |
|              |                                      |                                   | 7      | Za duży prąd HW                            |
|              |                                      |                                   | 21     | Za duże napięcie zasilania                 |
|              |                                      |                                   | 22     | Za niskie napięcie zasilania lub brak fazy |
|              |                                      |                                   | 25     | Usterka uziemienia                         |
|              |                                      |                                   | 28     | Przeciążenie napędu                        |
|              |                                      | Stan alarmu 1                     | 100    | Błąd pomiaru prądu U,V,W                   |
|              |                                      |                                   | 101    | Prądy U,V,W niezrównoważone                |
|              |                                      |                                   | 102    | Za duży prąd lub usterka uziemienia        |
|              |                                      |                                   | 105    | Brak zasilania                             |
|              |                                      |                                   | 114    | Za niskie napięcie zasilania               |
|              |                                      |                                   | 115    | Błąd pomiaru napięcia zasilającego         |
| 721          | Alarm zasilania silnika              | Kod alarmu                        | 2      | Przeciążenie silnika                       |
|              |                                      |                                   | 17     | Brak fazy silnika                          |
|              |                                      |                                   | 19     | Silnik zablokowany                         |
|              |                                      | Stan alarmu 1                     | 106    | Błąd sterowania silnika                    |
|              |                                      |                                   | 109    | Sprężarka zablokowana                      |
| 801          | Alarm magistrali polowej inwertera 1 | Kod alarmu                        | 12     | Tętnienie DC bus                           |
|              |                                      | Stan alarmu 1                     | 10     | Za duży prąd DC bus                        |
|              |                                      |                                   | 11     | Błąd pomiaru prądu DC bus                  |
|              |                                      |                                   | 12     | Napięcie DC bus poza zakresem              |
|              |                                      |                                   | 13     | Błąd pomiaru napięcia DC bus               |

| Alarm W3000+ |                                                   | Alarmy sprężarek z inwerterem PSD |     |                                        |
|--------------|---------------------------------------------------|-----------------------------------|-----|----------------------------------------|
|              |                                                   | Stan alarmu 2                     | 200 | Przeciążenie DC bus                    |
|              |                                                   |                                   | 201 | Błąd pomiaru obciążenia DC bus         |
| 811          | Alarm komunikacji                                 | Kod alarmu                        | 13  | Błąd komunikacji szeregowej            |
|              |                                                   | Stan alarmu 1                     | 108 | Błąd komunikacji szeregowej            |
| 821          | Alarm na wejściu bezpieczeństwa inwertera 1 (STO) | Stan alarmu 1                     | 103 | Wejście STO otwarte                    |
|              |                                                   |                                   | 104 | Usterka obwodu wewnętrznego STO        |
| 851          | Alarm ogólny                                      | Kod alarmu                        | 5   | Zbyt wysoka temperatura napędu         |
|              |                                                   |                                   | 6   | Zbyt niska temperatura napędu          |
|              |                                                   |                                   | 10  | Błąd CPU                               |
|              |                                                   |                                   | 11  | Parametry domyślne                     |
|              |                                                   |                                   | 14  | Usterka termistora wewnętrznego        |
|              |                                                   |                                   | 20  | Błąd modułu PFC                        |
|              |                                                   |                                   | 26  | Błąd synchronizacji 1 CPU              |
|              |                                                   |                                   | 27  | Błąd synchronizacji 2 CPU              |
|              |                                                   | Stan alarmu 2                     | 202 | Zbyt wysoka temperatura napędu         |
|              |                                                   |                                   | 203 | Zbyt niska temperatura napędu          |
|              |                                                   |                                   | 204 | Usterka termistora wewnętrznego        |
|              |                                                   |                                   | 205 | Błąd synchronizacji                    |
|              |                                                   |                                   | 206 | Nieprawidłowe parametry bezpieczeństwa |
|              |                                                   |                                   | 208 | Błąd obwodu sterowania                 |

#### 4.12 Tabela alarmów sprężarek z inwerterem ABB ACH 580

Poniżej został podany szczegółowo zestaw alarmów dla sprężarek z inwerterem ABB, które są przekazywane z inwertera do W3000+ za pomocą połączenia szeregowego.

Zostało wskazane również ewentualne pogrupowanie kilku kodów alarmowych inwerterem pod tym samym kodem alarmu w sterowniku W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

| Alarm W3000+ |                                 | Alarmy sprężarek z inwerterem ABB ACH 580 |                                                 |                                                                                                                                                                                   |
|--------------|---------------------------------|-------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AL           | Opis                            | Nr                                        | Opis                                            | Przyczyna usterki                                                                                                                                                                 |
| 701          | Inwerter offline                |                                           |                                                 | Odlączenie inwertera.                                                                                                                                                             |
| 711          | Alarm zasilania                 | 2330                                      | Rozproszenie doziemne                           | Konwerter wykrył nierównowagę obciążenia, zwykle spowodowaną zwarcie doziemnym w silniku lub kablu silnika.                                                                       |
|              |                                 | 3130                                      | Zanik fazy wejściowej                           | Napięcie prądu stałego obwodu pośredniego waha się z powodu zaniku fazy wejściowej linii zasilania lub przepalenia bezpiecznika.                                                  |
|              |                                 | 3210                                      | DC link overvoltage                             | Zbyt wysokie napięcie obwodu pośredniego.                                                                                                                                         |
|              |                                 | 3220                                      | Podnapięciowe połączenie prądu stałego          | Napięcie prądu stałego obwodu pośredniego jest niewystarczające z powodu: braku fazy zasilania, przepalonego bezpiecznika lub awarii mostka prostowniczego.                       |
| 721          | Alarm zasilania silnika         | 2340                                      | Zwarcie                                         | Zwarcie w kablach silnika lub w silniku.                                                                                                                                          |
|              |                                 | 3181                                      | Usterka okablowania lub uziemienia              | Nieprawidłowe podłączenie wejściowego kabla zasilania i kabla silnika (tj. wejściowy kabel zasilania jest podłączony do złącza silnika przetwornicy częstotliwości).              |
|              |                                 | 3381                                      | Zanik fazy wyjściowej                           | Usterka w obwodzie silnika spowodowana brakiem połączenia silnika (nie wszystkie trzy fazy są podłączone).                                                                        |
|              |                                 | 8002                                      | Usterka z powodu przeciążenia ULC               | Krzywa obciążenia użytkownika: sygnał zbyt długo znajdował się powyżej krzywej przeciążenia.                                                                                      |
| 731          | Alarm prądu zasilania inwertera | 2310                                      | Za duży prąd                                    | Prąd wyjściowy przekroczył wewnętrzny limit błędu. Oprócz rzeczywistego przekroczenia prądu, usterka ta może być również spowodowana zwarcie doziemnym lub utratą fazy zasilania. |
| 771          | Alarm IGBT                      | 2381                                      | Przeciążenie tranzystora IGBT                   | Zbyt wysoka temperatura złącza tranzystora IGBT. Usterka ta chroni tranzystor IGBT i może zostać wyzwolona przez zwarcie w kablu silnika.                                         |
|              |                                 | 4210                                      | Nadtemperatura tranzystora IGBT                 | Szacowana nadmierna temperatura tranzystora IGBT konwertera.                                                                                                                      |
|              |                                 | 4201                                      | Temperatura tranzystora IGBT                    | Nadmierna temperatura tranzystora IGBT konwertera.                                                                                                                                |
|              |                                 | 4380                                      | Nadmierna różnica temperatur                    | Nadmierna różnica temperatur między IGBT różnych faz.                                                                                                                             |
|              |                                 | 7191                                      | Zwarcie czopera                                 | Zwarcie w tranzystorach IGBT czopera hamowania.                                                                                                                                   |
|              |                                 | 7192                                      | Nadmierna temperatura tranzystorów IGBT czopera | Temperatura tranzystorów IGBT czopera hamulca przekroczyła limit błędu wewnętrznego.                                                                                              |
| 781          | Alarm nagrzewnicy stojana       | 7181                                      | Nagrzewnica hamowania                           | Nagrzewnica hamowania uszkodzona lub niepodłączona.                                                                                                                               |
|              |                                 | 7183                                      | Zbyt wysoka temperatura nagrzewnicy hamowania   | Temperatura nagrzewnicy hamowania przekroczyła limit awarii określony w parametrze 43.11 <i>Limit awarii rezystora hamowania</i> .                                                |
|              |                                 | 7184                                      | Okablowanie nagrzewnicy hamowania               | Zwarcie nagrzewnicy hamowania lub awaria sterowania czopera hamowania.                                                                                                            |

| Alarm W3000+ |                                                            | Alarmy sprężarek z inwerterem ABB ACH 580 |                                                |                                                                                                                                                                                                                                   |
|--------------|------------------------------------------------------------|-------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 791          | Alarm przekroczenia prędkości                              | 7310                                      | Przekroczenie prędkości                        | Obroty silnika przekraczają maksymalną dopuszczalną prędkość z powodu: nieprawidłowego ustawienia prędkości min/max, niewystarczającego momentu hamowania, zmian obciążenia podczas korzystania z odniesienia momentu obrotowego. |
| 801          | Alarm magistrali polowej inwertera                         | 6681                                      | Utrata komunikacji EFB                         | Przerwanie komunikacji zintegrowanej magistrali polowej (EFB).                                                                                                                                                                    |
| 811          | Alarm komunikacji                                          | 5681                                      | Komunikacja PU                                 | Wykryto błędy komunikacji między sterownikiem konwertera a zasilaczem.                                                                                                                                                            |
|              |                                                            | 5682                                      | Utrata PU                                      | Utrata połączenia między sterownikiem konwertera a zasilaczem.                                                                                                                                                                    |
|              |                                                            | 6682                                      | Plik konfiguracji EFB                          | Nie można odczytać pliku konfiguracyjnego zintegrowanej magistrali polowej (EFB).                                                                                                                                                 |
|              |                                                            | 6683                                      | Nieprawidłowe parametry EFB                    | Ustawienia parametryczne zintegrowanej magistrali polowej (EFB) są niespójne lub niekompatybilne z wybranym protokołem.                                                                                                           |
|              |                                                            | 6684                                      | Błąd obciążenia EFB                            | Nie można załadować oprogramowania sprzętowego zintegrowanej magistrali polowej (EFB).                                                                                                                                            |
|              |                                                            |                                           |                                                | Niezgodność między wersjami oprogramowania sprzętowego protokołu EFB i przetwornicy częstotliwości.                                                                                                                               |
|              |                                                            | 6685                                      | Błąd 2 EFB                                     | Błąd zarezerwowany dla aplikacji protokołu EFB.                                                                                                                                                                                   |
|              |                                                            | 6686                                      | Błąd 3 EFB                                     | Błąd zarezerwowany dla aplikacji protokołu EFB.                                                                                                                                                                                   |
|              |                                                            | 6882                                      | 32-bitowe przepełnienie zakładki tekstowej     | Błąd wewnętrzny.                                                                                                                                                                                                                  |
|              |                                                            | 6885                                      | Przepełnienie pliku tekstów                    | Błąd wewnętrzny.                                                                                                                                                                                                                  |
| 821          | Alarm wejście bezpieczeństwa inwertera (STO)               | 7510                                      | Komunikacja FBA A                              | Utrata komunikacji cyklicznej między konwerterem a modulem adaptera magistrali polowej A lub między sterownikiem PLC a modulem adaptera magistrali polowej A.                                                                     |
|              |                                                            | 5090                                      | Błąd sprzętowy STO                             | Diagnostyka sprzętowa STO wykryła błąd sprzętowy.                                                                                                                                                                                 |
|              |                                                            | 5091                                      | Safe Torque Off                                | Funkcja Safe Torque Off jest aktywna, tj. zanik sygnału (lub sygnałów) obwodu bezpieczeństwa podłączonego do złącza STO podczas rozruchu lub pracy.                                                                               |
|              |                                                            | 81                                        | Safe Torque Off 1                              | Funkcja Safe Torque Off jest aktywna, tj. obwód STO 1 jest uszkodzony.                                                                                                                                                            |
| 851          | Alarm ogólny (konkretny kod nie jest wyświetlany w W3000+) | 82                                        | Safe Torque Off 2                              | Funkcja Safe Torque Off jest aktywna, tj. obwód STO 2 jest uszkodzony.                                                                                                                                                            |
|              |                                                            | 1080                                      | Timeout tworzenia kopii zapasowej/przywracania | Panel lub narzędzie PC nie nawiązało komunikacji z konwerterem podczas wykonywania lub przywracania kopii zapasowej.                                                                                                              |
|              |                                                            | 1081                                      | Błąd ID                                        | Oprogramowanie konwertera nie mogło odczytać ID konwertera.                                                                                                                                                                       |
|              |                                                            | 4110                                      | Temperatura płyty sterowania                   | Zbyt wysoka temperatura płyty sterowania.                                                                                                                                                                                         |
|              |                                                            | 4290                                      | Chłodzenie                                     | Nadmierna temperatura modułu konwertera.                                                                                                                                                                                          |
|              |                                                            | 4310                                      | Nadmierna temperatura                          | Nadmierna temperatura modułu zasilania.                                                                                                                                                                                           |
|              |                                                            | 4981                                      | Temperatura zewnętrzna 1                       | Zmierzona temperatura 1 przekroczyła limit błędu.                                                                                                                                                                                 |
|              |                                                            | 4982                                      | Temperatura zewnętrzna 2                       | Zmierzona temperatura 2 przekroczyła limit błędu.                                                                                                                                                                                 |
|              |                                                            | 5081                                      | Usterka dodatkowego wentylatora                | Dodatkowy wentylator chłodzący (podłączony do złącza wentylatora na jednostce sterującej) jest zablokowany lub odłączony.                                                                                                         |
|              |                                                            | 5092                                      | Błąd logiczny PU                               | Pamięć jednostki zasilania została skasowana.                                                                                                                                                                                     |
|              |                                                            | 5093                                      | ID nie odpowiada                               | Sprzęt konwertera nie jest zgodny z informacjami w pamięci. Może się to zdarzyć na przykład po aktualizacji oprogramowania sprzętowego.                                                                                           |

| Alarm W3000+ |      | Alarmy sprzężarek z inwerterem ABB ACH 580 |                                                                                                                                                                                                                                                                               |
|--------------|------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | 5094 | Obwód pomiaru temperatury                  | Problem z pomiarem temperatury wewnętrznej konwertera.                                                                                                                                                                                                                        |
|              | 50A0 | Wentylator                                 | Wentylator chłodzący zablokowany lub odłączony.                                                                                                                                                                                                                               |
|              | 5690 | Komunikacja wewnętrzna zasil.              | Błąd komunikacji wewnętrznej.                                                                                                                                                                                                                                                 |
|              | 5691 | Obwód pomiaru ADC                          | Usterka obwodu pomiarowego.                                                                                                                                                                                                                                                   |
|              | 5692 | Brak zasilania w płycie zasilania          | Usterka na zasilaniu jednostki zasilania                                                                                                                                                                                                                                      |
|              | 5693 | Obwód pomiaru DFF                          | Usterka obwodu pomiarowego.                                                                                                                                                                                                                                                   |
|              | 5696 | Sprężenie zwrotne stanu PU                 | Sprężenie zwrotne stanu fazy wyjściowej nie odpowiada sygnałom sterującym.                                                                                                                                                                                                    |
|              | 5697 | Sprężenie zwrotne ładowania                | Brak sygnału zwrotnego ładowania.                                                                                                                                                                                                                                             |
|              | 6181 | Wersja FPGA niekompatybilna                | Wersje oprogramowania sprzętowego i FPGA są niekompatybilne.                                                                                                                                                                                                                  |
|              | 6306 | Plik mapowania FBA A                       | Błąd odczytu pliku mapowania adaptera magistrali połowej A.                                                                                                                                                                                                                   |
|              | 6481 | Przeciążenie task                          | Błąd wewnętrzny.                                                                                                                                                                                                                                                              |
|              | 6487 | Overflow stack                             | Błąd wewnętrzny.                                                                                                                                                                                                                                                              |
|              | 64A1 | Ładowanie pliku wewnętrznego               | Błąd odczytu pliku.                                                                                                                                                                                                                                                           |
|              | 64B2 | Błąd zestawu parametrów użytkownika        | Ładowanie zestawu parametrów użytkownika nie powiodło się, ponieważ: <ul style="list-style-type: none"> <li>• Wymagany zestaw nie istnieje</li> <li>• Zestaw nie jest kompatybilny z programem sterującym</li> <li>• Konwerter został wyłączony podczas ładowania.</li> </ul> |
|              | 64E1 | Przeciążenie kernel                        | Błąd systemu operacyjnego.                                                                                                                                                                                                                                                    |
|              | 6581 | System parametrów                          | Ładowanie lub zapisywanie parametrów nie powiodło się.                                                                                                                                                                                                                        |
|              | 65A1 | Konflikt parametrów FBA A                  | Konwerter nie posiada funkcji wymaganej przez PLC lub wymagana funkcja nie została aktywowana.                                                                                                                                                                                |
|              | 7081 | Control panel loss                         | Panel sterowania lub narzędzie PC wybrane jako aktywna stacja sterowania dla konwertera przestało się komunikować.                                                                                                                                                            |
|              | 7121 | Zahamowanie silnika                        | Silnik pracuje w obszarze przeciągnięcia, np. z powodu nadmiernego obciążenia lub niewystarczającej mocy silnika.                                                                                                                                                             |
|              | 73B0 | Rampa awaryjna nie powiodła się            | Zatrzymanie awaryjne nie zostało zakończone w określonym czasie.                                                                                                                                                                                                              |
|              | 8001 | Błąd z powodu niedociążenia ULC            | Krzywa obciążenia użytkownika: sygnał zbyt długo znajdował się poniżej krzywej niedociążenia.                                                                                                                                                                                 |
|              | 80A0 | Błąd nadzoru AI                            | Sygnał analogowy przekroczył określone limity dla wejścia analogowego.                                                                                                                                                                                                        |
|              | 80B0 | Nadzór sygnałów                            | Błąd generowany przez funkcję nadzoru sygnału 1.                                                                                                                                                                                                                              |
|              | 80B1 | Nadzór sygnałów                            | Błąd generowany przez funkcję nadzoru sygnału 2.                                                                                                                                                                                                                              |
|              | 80B2 | Nadzór sygnałów                            | Błąd generowany przez funkcję nadzoru sygnału 3.                                                                                                                                                                                                                              |
|              | 80B3 | Nadzór sygnałów                            | Błąd generowany przez funkcję nadzoru sygnału 4.                                                                                                                                                                                                                              |
|              | 80B4 | Nadzór sygnałów                            | Błąd generowany przez funkcję nadzoru sygnału 5.                                                                                                                                                                                                                              |
|              | 80B5 | Nadzór sygnałów                            | Błąd generowany przez funkcję nadzoru sygnału 6.                                                                                                                                                                                                                              |
|              | 9081 | Błąd zewnętrzny 1                          | Błąd w urządzeniu zewnętrznym 1.                                                                                                                                                                                                                                              |
|              | 9082 | Błąd zewnętrzny 2                          | Błąd w urządzeniu zewnętrznym 2.                                                                                                                                                                                                                                              |
|              | 9083 | Błąd zewnętrzny 3                          | Błąd w urządzeniu zewnętrznym 3.                                                                                                                                                                                                                                              |
|              | 9084 | Błąd zewnętrzny 4                          | Błąd w urządzeniu zewnętrznym 4.                                                                                                                                                                                                                                              |
|              | 9085 | Błąd zewnętrzny 5                          | Błąd w urządzeniu zewnętrznym 5.                                                                                                                                                                                                                                              |



| Alarm W3000+ |  | Alarmy sprężarek z inwerterem ABB ACH 580 |                           |                                                                                             |
|--------------|--|-------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------|
|              |  | FF61                                      | ID run                    | Procedura identyfikacji silnika nie została zakończona pomyślnie.                           |
|              |  | FF81                                      | Wymuszone wyzwolenie FB A | Polecenie wyzwolenia błędu zostało odebrane za pośrednictwem adaptera magistrali polowej A. |
|              |  | FF8E                                      | Wymuszone wyzwolenie EFB  | Polecenie wyzwolenia błędu zostało odebrane za pośrednictwem interfejsu magistrali polowej. |

### 4.13 Tabela alarmów sprężarek z inwerterem Sanhua

W tabeli zamieszczono szczegółowe informacje dotyczące sprężarek z inwerterem Sanhua (przesyłane z inwertera do sterownika W3000+ przez połączenie szeregowe) oraz odpowiadający kod alarmu inwertera sterownika W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

Kodowanie alarmów pochodzących z inwertera przedstawiono w poniższej tabeli:

100-115: stan alarmu bezpieczeństwa 1 (każdy numer odpowiada odpowiednim bitom pierwszego rejestru w kolejności sekwencyjnej. Przykład: 100 = bit 0)

200-215: stan alarmu bezpieczeństwa 2 (każdy numer odpowiada odpowiednim bitom drugiego rejestru w kolejności sekwencyjnej). Przykład: 201 = bit 1)

| Alarm W3000+ |                                                          | Alarmy sprężarki z inwerterem Sanhua |        |                                              |
|--------------|----------------------------------------------------------|--------------------------------------|--------|----------------------------------------------|
| AL           | Opis                                                     | Zmienna                              | Nr/Bit | Opis                                         |
| 701          | Inwerter offline                                         |                                      |        | Odlączenie inwertera                         |
| 711          | Alarm zasilania                                          | Rejestr 1                            | 100    | Zabezpieczenie nadprądowe sprężarki          |
|              |                                                          |                                      | 105    | Zabezpieczenie przed utratą fazy na wyjściu  |
|              |                                                          |                                      | 114    | Błąd zmiany obwodu                           |
|              |                                                          | Rejestr 2                            | 200    | Zabezpieczenie nadprądowe AC                 |
|              |                                                          |                                      | 202    | Zabezpieczenie nadprądowe hardware PFC       |
|              |                                                          |                                      | 204    | Zabezpieczenie przed utratą fazy AC software |
|              |                                                          |                                      | 212    | Zabezpieczenie podnapięciowe AC              |
| 731          | Alarm zasilanie wariatora inwertera 1                    | Rejestr 1                            | 213    | Zabezpieczenie przepięciowe AC               |
|              |                                                          |                                      | 103    | Zabezpieczenie nadprądowe hardware IPM       |
|              |                                                          |                                      | 112    | Zabezpieczenie podnapięciowe DC              |
|              |                                                          | Rejestr 2                            | 113    | Zabezpieczenie przepięciowe software DC      |
|              |                                                          |                                      | 203    | Zabezpieczenie przepięciowe hardware DC      |
| 741          | Alarm zabezpieczenia termicznego prostownika inwertera 1 | Rejestr 2                            | 210    | Zabezpieczenie przed przegrzaniem PFC        |
| 761          | Alarm zabezpieczenia termicznego wariatora inwertera 1   | Rejestr 1                            | 211    | Usterka czujnika temperatury PFC             |
|              |                                                          |                                      | 110    | Zabezpieczenie przed przegrzaniem IPM        |
| 811          | Alarm komunikacji inwertera 1                            | Rejestr 1                            | 111    | Usterka czujnika temperatury IPM             |
|              |                                                          | Rejestr 2                            | 115    | Utrata komunikacji host                      |
|              |                                                          |                                      | 209    | Zabezpieczenie DLT                           |
| 851          | Alarm ogólny inwertera 1                                 | Rejestr 1                            | 214    | Anomalny błąd danych pamięci EEPROM          |
|              |                                                          |                                      | 104    | Anomalny błąd offset AD                      |
|              |                                                          |                                      | 106    | Błąd startup sprężarki                       |
|              |                                                          | Rejestr 2                            | 107    | Błąd niewspółosiowości prędkości sprężarki   |
|              |                                                          |                                      | 205    | Brak równowagi faz AC software               |
|              |                                                          |                                      | 208    | Zabezpieczenie HPS                           |
|              |                                                          |                                      | 215    | Błąd autotest MCU                            |

#### 4.14 Tabela alarmów sprężarek z falownikiem Emerson

W tabeli zamieszczono szczegółowe informacje dotyczące sprężarek z falownikiem Emerson (przesyłane z falownika do sterownika W3000+ przez połączenie szeregowe) oraz odpowiadający kod alarmu falownika sterownika W3000+. Kody alarmów inwertera są wyświetlane razem z polem kodu alarmu W3000+ na ekranach alarmów i historii alarmów sterownika.

| Alarm W3000+ |                               | Alarmy sprężarki z falownikiem Emerson |     |                                                  |
|--------------|-------------------------------|----------------------------------------|-----|--------------------------------------------------|
| AL           | Opis                          | Kod wyświetla cza inwertera            | Nr  | Opis                                             |
| 701          | Inwerter offline              |                                        |     | Odlączenie inwertera                             |
| 711          | Alarm zasilania               | 63                                     | 101 | Za duży prąd na wejściu AC                       |
|              |                               | 6                                      | 102 | Przebieżenie magistrali DC                       |
|              |                               | 7                                      | 103 | Pod napięcie magistrali DC                       |
|              |                               | 8                                      | 104 | Przebieżenie na wejściu AC                       |
|              |                               | 9                                      | 105 | Pod napięcie na wejściu AC                       |
|              |                               | 60                                     | 106 | Brak faz /niezrównoważone fazy na wejściu AC     |
|              |                               | 29                                     | 204 | Timeout cofania prądu na wejściu AC              |
|              |                               | 25                                     | 313 | Błąd odczytu napięcia AC                         |
| 721          | Alarm zasilania silnika       | -                                      | 100 | Za duży prąd fazy sprężarki                      |
|              |                               | -                                      | 109 | Brak fazy sprężarki                              |
|              |                               | -                                      | 200 | Pod napięcie gałęzi DC                           |
|              |                               | -                                      | 202 | Timeout na cofaniu prądu fazowego sprężarki      |
|              |                               | 59                                     | 300 | Prąd fazowy sprężarki niezrównoważony            |
|              |                               | 50                                     | 308 | Za duży prąd fazy U sprężarki                    |
|              |                               | 51                                     | 309 | Za duży prąd fazy V sprężarki                    |
|              |                               | 52                                     | 310 | Za duży prąd fazy W sprężarki                    |
|              |                               | 49                                     | 311 | Za duży prąd HW sprężarki                        |
|              |                               | 26                                     | 314 | Błąd odczytu napięcia DC                         |
|              |                               | 53                                     | 315 | Przebieżenie sprężarki                           |
| 791          | Alarm przekroczenia prędkości | 24                                     | 303 | Przekroczenie prędkości                          |
| 811          | Alarm komunikacji             | -                                      | 206 | Timeout autokonfiguracji komunikacji             |
|              |                               | 14                                     | 207 | Utrata komunikacji Modbus                        |
| 851          | Alarm ogólny                  | -                                      | 107 | Desaturacja falownika                            |
|              |                               | 58                                     | 108 | Anomalia presostatu                              |
|              |                               | 23                                     | 110 | Utrata kontroli nad silnikiem                    |
|              |                               | 10                                     | 111 | Zbyt wysoka temperatura napędu                   |
|              |                               | 57                                     | 113 | Anomalia rozruchu sprężarki                      |
|              |                               | 28                                     | 203 | Timeout na sterowaniu temperaturą cofania        |
|              |                               | -                                      | 205 | Timeout temperatury DLT                          |
|              |                               | 13                                     | 208 | Nadtemperatura tranzystora DLT                   |
|              |                               | -                                      | 211 | Nadmierna temperatura modułu zasilania sprężarki |
|              |                               | -                                      | 302 | Awaria mikroelektroniki                          |
|              |                               | 15                                     | 304 | Błąd EEPROM                                      |
|              |                               | 16                                     | 306 | Błąd konfiguracji sprężarki                      |
|              |                               | -                                      | 402 | Błąd czujnika DLT                                |

| Alarm W3000+ |  |   | Alarmy sprężarki z falownikiem Emerson |                                            |
|--------------|--|---|----------------------------------------|--------------------------------------------|
|              |  | - | 405                                    | Błąd czujnika temperatury modułu zasilania |
|              |  | - | 411                                    | Awaria wentylatorów                        |
|              |  | - | 415                                    | Blokowanie graniczne awarii                |

## 5 CHARAKTERYSTYKA MONITORINGU I STEROWANIA ZDALNEGO

**Przedmiot.** Zakupione agregaty mogą być wyposażone w urządzenia pozwalające wyłącznie firmie Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. (dalej zwanej „MEHITS”), za pośrednictwem łączności mobilnej lub przewodowej, na zdalny (i) monitoring, (ii) sterowanie, (iii) pozyskanie oraz analizę danych dotyczących pracy agregatów.

**Funkcje i System.** Funkcje mogą być dostarczone w trybie Machine-to-Machine (M2M) lub w trybie Cloud. Każda funkcja wymaga zainstalowania i użycia specjalnego hardware i/lub software (**System**).

**Łączność elektroniczna.** Skorzystanie z każdej Usługi wymaga połączenia internetowego (**Łączność elektroniczna**), które nie jest zapewnione razem z Usługą ani Systemem i musi być udostępnione przez Klienta.

W odniesieniu do Łączności elektronicznej, mimo, że firma MEHITS stosuje w swoich Systemach wszystkie środki zabezpieczające przed atakami cybernetycznymi, nie zapewnia pełnej ochrony przed tego typu atakami. Nabywca zwalnia spółkę MEHITS z wszelkiej odpowiedzialności przed atakami cybernetycznymi i zobowiązuje się do zastosowania odpowiednich środków zabezpieczających (firewall i inne systemy ochronne) w celu uniknięcia ewentualnych niepożądanych połączeń z Systemem przez osoby trzecie; i tam, gdzie jest to konieczne, zapewnić odpowiedni poziom bezpieczeństwa do przesyłania danych lub dla danych przesyłanych przez System (połączenia bezpieczne).

Na jakość usługi może mieć wpływ (niewchodzące w zakres odpowiedzialności MEHITS) nieprawidłowe funkcjonowanie połączenia internetowego, brak dostosowania do minimalnych wymogów/charakterystyki, niemożność ze strony nabywcy do zagwarantowania połączenia z siecią komórkową lub przewodową, jak podane niżej.

**Pozwolenie.** Zdalna łączność jest możliwa wyłącznie po uzyskaniu pisemnego pozwolenia ze strony klienta.

## 6 LIKWIDACJA I UNIESZKODLIWIENIE



### UNIESZKODLIWIENIE OPAKOWANIA

Elementy opakowania (karton, tworzywo sztuczne itp.) są sklasyfikowane jako zwykłe odpady miejskie i mogą być zlikwidowane bez żadnych problemów w ramach selektywnej zbiórki odpadów do recyklingu.

Przed przystąpieniem do likwidacji należy zawsze zapoznać się z właściwymi normami obowiązującymi w tej materii w miejscu instalowania.

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### UNIESZKODLIWIENIE PRODUKTU

Nasze produkty są wykonane z różnych materiałów. Większość z nich (tworzywo sztuczne i ewentualne kable elektryczne) są sklasyfikowane jako zwykłe odpady miejskie. Mogą być zutylizowane poprzez selektywną zbiórkę i unieszkodliwienie w autoryzowanych punktach zbiórki odpadów.



Inne komponenty (karty elektroniczne) mogą natomiast zawierać substancje zanieczyszczające. W związku z tym muszą być usunięte i przekazane do autoryzowanych punktów ich odzysku i unieszkodliwienia.

Przed przystąpieniem do likwidacji należy zawsze zapoznać się z właściwymi normami obowiązującymi w tej materii w miejscu unieszkodliwiania.

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