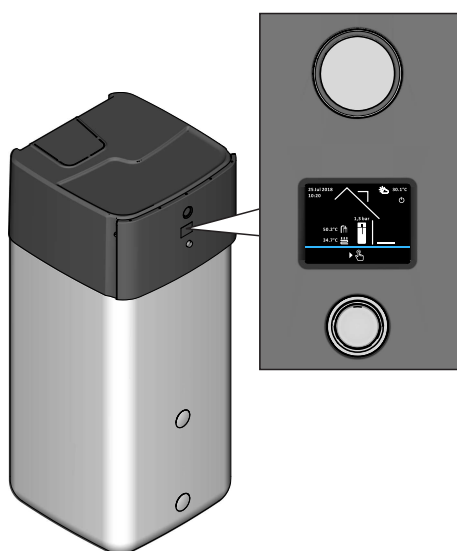


# Operating Instructions

## Daikin RoCon+ HP



|               |               |
|---------------|---------------|
| EHSX(B)04P30D | EHSX(B)08P30D |
| EHSX(B)04P50D | EHSX(B)08P50D |
| EHSX(B)04P30D | EHSX(B)08P30D |
|               | EHSX(B)08P50D |



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## 1 General safety precaution

### 1.1 Particular safety instructions

#### **WARNING**

Heating devices that are not set up and installed correctly can impair the function of the heating device and/or cause serious or fatal injuries to the user.

- Work on the heat generator (such as set-up, servicing, connection and initial commissioning) must only be carried out by persons who are authorised and who have successfully completed qualifying technical or vocational training and who have taken part in advanced training sessions recognised by the relevant responsible authorities for the specific activity. These include, in particular, certified heating engineers, qualified electricians and HVAC specialists who, because of their professional training and their expert knowledge, have experience in the professional installation and maintenance of heating systems, oil and gas installations and hot water storage systems.
- Only operate the heat generator in perfect condition with the protective hood closed.

#### **WARNING**

Disregarding the following safety instructions can result in serious physical injury or death.

- This device may only be used by children aged 8 and above and by persons with restricted physical, sensory or mental capabilities or with a lack of experience and knowledge if they are under supervision or if they have been instructed in the safe use of the equipment and understand the dangers arising from it. Children must not play with the device. Cleaning and user maintenance must not be carried out by children without supervision.

- The power supply must be established in accordance with IEC 60335-1, via a separator device which exhibits contact separation in all poles with a contact opening distance that provide full disconnection in accordance with overvoltage category III.
- All the electrical work must only be carried out by electrically qualified experts and taking into account the local and national regulations as well as the instructions in this manual. Check that a suitable electrical circuit is being used. Inadequate capacity of the power circuit or improperly executed connections can cause electrocution or fire.

#### 1.1.1 Observing the instructions

- The original documentation is written in German. All other languages are translations.
- Please read this manual carefully and thoroughly before starting installation or modification of the heating system.
- The precautionary measures described in this document cover very important topics. Follow them meticulously.
- The installation of the system and all activities described in this manual and the applicable documents for the installer must be carried out by an approved installer.

This manual provides all the necessary information for installation, commissioning and maintenance as well as basic information on operation and settings. Please see the attached documents for a detailed description of operation and control.

All heating parameters needed for smooth operation are already factory-set. Please refer to other relevant documents for information on setting the control.

#### Relevant documents

- Daikin Altherma EHS(X/H) :
  - Installation instructions
  - Commissioning checklist
  - Heat pump operating manual
- Outdoor unit:
  - Installation instructions
  - Operating instructions
- Room station EHS157034 and mixer module EHS157068: Operating instructions
- Other optional accessories and optional system components: Associated installation and operating instructions

The guides are included in the scope of supply for the individual devices.

## 1.1.2 Meaning of warnings and symbols

Warnings in this manual are classified according to their severity and probability of occurrence.



### DANGER

Indicates an immediate danger.

Disregarding this warning can lead to serious injury or death



### WARNING

Indicates a potentially dangerous situation

Disregarding this warning may result in serious physical injury or death.



### CAUTION

Indicates a situation which may cause possible damage

Disregarding this warning can cause damage to property and the environment, and result in minor injuries.



This symbol identifies user tips and particularly useful information, but not warnings or hazards

### Special warning signs

Some types of danger are indicated by special symbols:



Electric current



Risk of burns or scalds

### General description

1 Handling instructions are shown as a list. Actions for which the sequential order must be maintained are numbered.

→ Results of actions are identified with an arrow.

[Operating mode]: Parameters are shown in square brackets.

[→ Main menu]: The position of menus and functions is shown in square brackets with →.

## 1.2 Safety instructions for installation and operation

### 1.2.1 General

- For any work on the equipment, which extends above and beyond the operation of the regulating system, the details provided in the supplementary documents must be observed, particularly with regard to safety instructions.

#### Avoiding danger

The Daikin Altherma EHS(X/H) is state of the art and is built in accordance with all recognised technical regulations. However, improper use may result in serious physical injuries or death, as well as property damage.

To avoid hazards, only operate the Daikin Altherma EHS(X/H):

- as stipulated and in perfect condition,
- with an awareness of safety and the dangers involved.

This assumes knowledge and use of the contents of this manual, all applicable documents, the relevant accident prevention regulations as well as the recognised safety-related and occupational health rules.

#### Display of the RoCon+ controller

Certain screen displays or menu items may deviate from those shown in these instructions depending on the national or equipment variant of the Daikin Altherma EHS(X/H) or the user status logged onto the controller.

### 1.2.2 Intended use

The RoCon+ HP controller must only be used in Daikin Altherma EHS(X/H) heat pumps that are approved for the regulating system. The RoCon+ HP control unit must only be operated in accordance with the specifications in these instructions.

Any other use or use beyond the intended use is considered improper use. The operator alone shall bear responsibility for any resulting damage.

For any work on the equipment, which extends above and beyond the operation of the regulating system, the details provided in the supplementary documents must be observed, particularly with regard to safety instructions.

#### Documentation

The technical documentation included in the scope of supply is a constituent part of the equipment. It must be stored in such a way that it can be consulted at any time by the operator or technicians.

## 2 Product description



### INFORMATION

The RoCon+ HP controller is part of the Daikin Altherma EHS(X/H).

It consists of the RoCon BM2C switching panel PCB, to which actuators and sensors as well as other components of the control system are connected and the control panel RoCon+ B1.

In this instruction manual we only explain the functions and setting possibilities of the control unit. More information on the boiler control panel and other equipment components can be found in the supplementary documents.

The electronic, digital control unit is able to automatically control all heating and hot water functions for a direct heating circuit, a storage loading circuit and also further heating circuits via optionally connectable mixer modules, depending on the heating device.

It undertakes all safety management for the Daikin Altherma EHS(X/H). In the event of a water shortage or undefined operating states, this executes a . A corresponding error message shows the operator all the information regarding fault causes.

All function settings for the Daikin Altherma EHS(X/H) and the optional RoCon devices that are connected via the data bus are undertaken with the controls of the integrated RoCon+ B1 control panel and shown on the plain text display with coloured backlighting.

The following additional, optional devices can be connected to the Daikin Altherma EHS(X/H) via the controller data bus:

- Room controller EHS157034
- EHS157068 mixer module

In addition, the RoCon+ HP controller has a frost protection function for the direct heating circuit and the storage tank charging circuit as well as an automatic function for heating support (integration of an additional heat source such as a wood-burning boiler or solar system).


The potential-free AUX switching contact can be used to carry out different control functions in conjunction with external devices (request from an external heat generator, switching to bivalent operating mode, external status display, etc.).

In addition, it also has several inputs for assessing external control contacts (external operating mode switching or heat request, Smart Grid and low rate EVU functions<sup>(1)</sup>).

The optional outside temperature sensor installed on the north side of the building can be used to further optimise the weather-compensated feed temperature control.

If the optional EHS157056 gateway is installed and connected to the Internet, the Daikin Altherma EHS(X/H) can be conveniently monitored and operated by remote control using a mobile phone (app).

The RoCon+ HP control unit contains a timer that can be used to set:

- 2 individually-adjustable timer programs <sup>(2)</sup>for room heating and cooling  (direct HC),
- 2 individually-adjustable timer programs for domestic hot water preparation,
- 1 individually-adjustable timer program for an optional circulation pump.

Initial commissioning of the heating system is described in the installation instructions for the Daikin Altherma EHS(X/H).

Certain menu items of the RoCon+ HP control unit are only accessible to the heating expert. This security measure ensures that no undesirable malfunctions arise during operation of the system through incorrect settings.

All settings for the allocated HC can be carried out in the same way as the operating unit. If the terminal function is activated, all operating possibilities that are available on the integrated operating unit are available, with the exception of certain special functions (e.g. manual operation).

After corresponding assignment, a connected EHS157068 mixer module is also operated using the RoCon+ B1 control panel and/or the EHS157034 room station.

<sup>(1)</sup> The energy supply company (EVU) sends signals that are used for controlling the power mains loading and that have an influence on the cost of the power and availability.

<sup>(2)</sup> Use of the timer programs for room cooling only in combination with a connected room thermostat

## 3 Operation

### 3.1 General



#### **DANGER: RISK OF ELECTROCUTION**

If electrical components come into contact with water, this can cause an electric shock as well as cause potentially fatal burns or injuries.

- The displays and keys of the control unit must be protected against the effects of moisture.
- To clean the control unit, use a dry cotton cloth. The use of aggressive cleaning agents and other fluids can cause damage to devices or lead to an electric shock.



#### **INFORMATION**

The Daikin Altherma EHS(X/H) makes the most effective use of energy at the lowest possible return and hot water temperature setpoints.

If an external heat generator (e.g. the optional backup heater) is activated at feed temperature setpoints above 50 °C, the efficiency (COP) of the Daikin Altherma EHS(X/H) can deteriorate (depending on the external temperature).

### 3.2 Display and operating elements

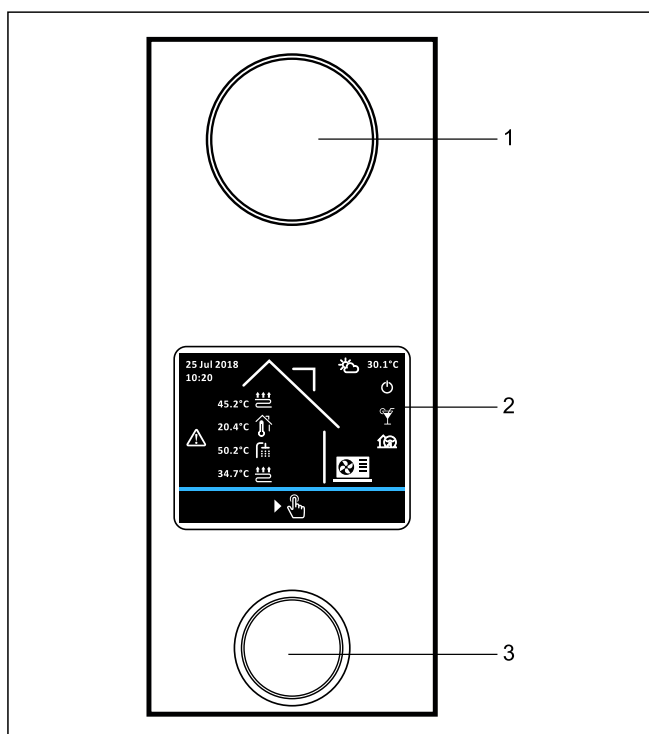


Fig. 3-1 RoCon+ HPDisplay and operating elements

| Item | Designation      |
|------|------------------|
| 1    | Status indicator |
| 2    | Display          |
| 3    | Rotary button    |

Tab. 3-1 RoCon+ HPDisplay and operating elements

#### 3.2.1 Status display

The LEDs of the status indicator light up or flash to indicate the operating mode of the device.

| LED            | Mode      | Description  |
|----------------|-----------|--|
| Flashes blue   | STANDBY   | The device is not in operation.  |
| Lights up blue | Operation | The device is in operation.  |
| Flashes red    | Error     | A malfunction occurred. For further details, see <a href="#">Chap. 8</a> . |

Tab. 3-2 Status display

#### 3.2.2 Display

During normal operation the display is deactivated (completely dark). The activity of the system is indicated by the status display. Each press of the rotary button (turn, press or hold) activates the display with the start screen.

If the start screen is active and no user input is made for 60 seconds, the display is deactivated. If no input is made by the user at any other point in the menu for 120 seconds, the system returns to the start screen.

#### 3.2.3 Rotary button



#### **CAUTION**

Never operate the operating elements of the control unit with a hard, pointed object. This can cause damage and can cause the control to malfunction.

The rotary button can be used to navigate in the respective level, to select or change the setting value and to accept this change with a short key press.

| Action           | Result   |
|------------------|--|
| Turning          | Select menu, select setting, make setting            |
| Press            | Confirm selection, accept setting, execute function. |
| Press for 2 sec. | Exit menu  |

Tab. 3-3 Function of the rotary button

#### 3.2.4 Start screen

The start screen provides an overview of the current operating status of the system. From the start screen, any operation of the rotary switch (turn, press or hold down) leads to the Main menu.

### 3 Operation

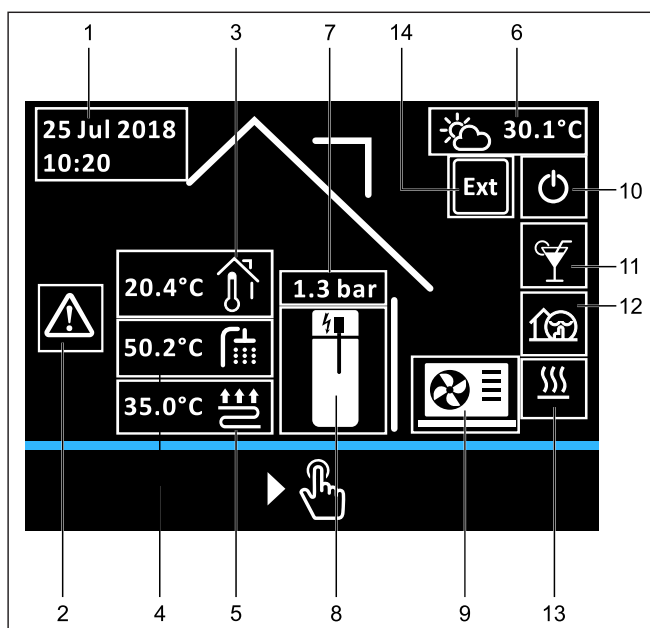


Fig. 3-2 Display position on the start screen

| Item | Icon | Explanation                                     |
|------|------|---|
| 1    |      | Date and time                                   |
| 2    |      | Error message                                   |
| 3    |      | Only with connected room unit: Room temperature |
| 4    |      | Hot water temperature                           |
| 5    |      | Floor heating feed temperature                  |
|      |      | Convector heating feed temperature              |
|      |      | Radiator heating feed temperature               |
| 6    |      | Outside temperature                             |
| 7    |      | Pressure in the HC                              |
| 8    |      | Storage tank without heating rod                |
|      |      | Storage tank with connected heating rod (off)   |
|      |      | Storage tank with connected heating rod (on)    |
| 9    |      | No outdoor unit detected                        |
|      |      | Outdoor unit present, compressor off            |
|      |      | Outdoor unit present, compressor on             |

| Item | Icon | Explanation   |
|------|------|---|
| 10   |      | Operating mode: Standby   |
|      |      | Operating mode: Reducing  |
|      |      | Operating mode: Heating   |
|      |      | Operating mode: Cooling   |
|      |      | Operating mode: Summer  |
|      |      | Operating mode: Automatic 1   |
|      |      | Operating mode: Automatic 2   |
|      |      | Operating mode: Emergency operation   |
| 11   |      | Special program: Party  |
|      |      | Special program: Away   |
|      |      | Special program: Vacation   |
|      |      | Special program: Holiday  |
|      |      | Special program: 1x Hot Water   |
|      |      | Special program: Screed   |
|      |      | Special program: Ventilation  |
| 12   |      | Quiet modeOn  |
| 13   |      | Operating mode: Heating   |
|      |      | Operating mode: Cooling   |
|      |      | Operating mode: Hot water   |
|      |      | Operating mode: Defrost   |
|      |      | Operating mode: No request  |
| 14   | Ext  | External operating mode switched (Burner blocking contact or Room thermostat) |

Tab. 3-4 Display icons on the start screen



#### INFORMATION

If the local control panel is used as a remote control for a mixer module, both the standard screen and the menu structure are changed (see [Chap. 9](#)).



### 3.3 Operating concept

The operating concept of the controller enables fast navigation in the menu, clear display of information and convenient selection of parameters as well as the setting of setpoints and programs.

The basics of the operating concept are described in detail below using a few examples. The operation of special functions follows the same principle and is described in the corresponding sections if required in [Chap. 4](#).

#### 3.3.1 Navigating in the menu

From the start screen, any operation of the rotary switch (turn, press or hold down) leads to the main menu. The menu view consists of an upper area for the menu icons of the various submenus and the lower menu bar. The Back and Help icons are displayed in the menu bar. Use the rotary button to switch between the icons (including the icons in the menu bar). Multi-page menus are indicated by the page break arrow. Use the rotary button to switch between the menu icons on the different menu pages.

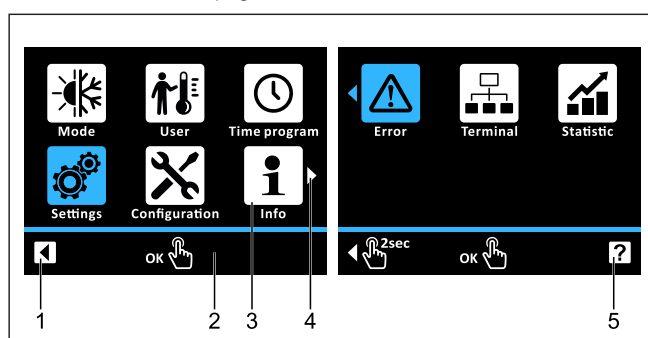


Fig. 3-3 Example: Elements in a two-page menu

| Item | Designation                              |
|------|--|
| 1    | Back icon                                |
| 2    | Menu bar                                 |
| 3    | Menu icon                                |
| 4    | Page change arrow (for multi-page menus) |
| 5    | Help icon                                |

Tab. 3-5 Elements in the menu display

**Example:** In the "Statistics" menu, change [→ Main menu]:

- 1 Turn the rotary button clockwise until the "Statistics" icon (on the second menu page) turns blue.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The "Statistics" submenu is called up

#### 3.3.2 Help function

A help text is available for each menu icon.

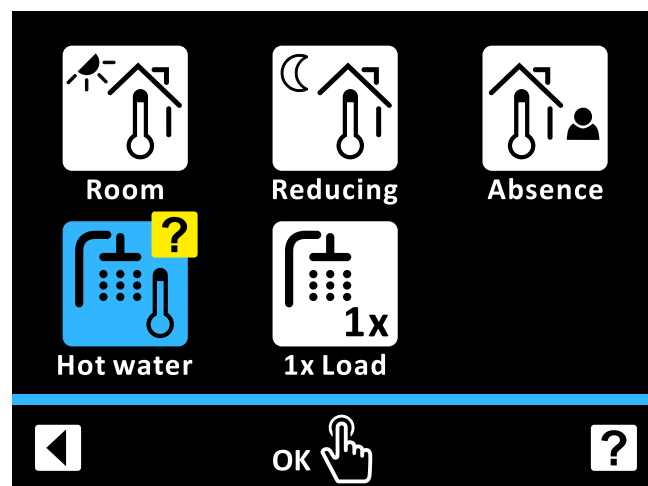


Fig. 3-4 Help function

**Example:** Call up the help text for the "Hot water" menu and stop the help function again [→ Main menu→ User]:

- 1 Turn the rotary button clockwise until the help icon in the menu bar turns blue.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The help function becomes active, the "?" symbol is displayed on the last menu icon.
- 3 Turn the rotary button anticlockwise until the "?" symbol appears on the "Hot water" icon.
- 4 Briefly press the rotary button to confirm ("OK").  
→ The help text for the "Hot water" is displayed.
- 5 Briefly press the rotary button to confirm ("OK").  
→ Exits the help text level.
- 6 Turn the rotary button clockwise until the help icon in the menu bar turns blue.
- 7 Briefly press the rotary button to confirm ("OK").  
→ The help function is terminated.

#### 3.3.3 Navigating in lists and selecting list entries

Lists exist as pure information lists or can be used to select a list entry. Turning the rotary button switches between the list entries. Multi-page lists are indicated by the page break arrow. Turn the rotary button to switch between the list entries of the different pages.

In the case of selection lists, the currently selected list entry is indicated by a tick. Click "OK" to select another list entry. The corresponding setting is then accepted and the list is exited.

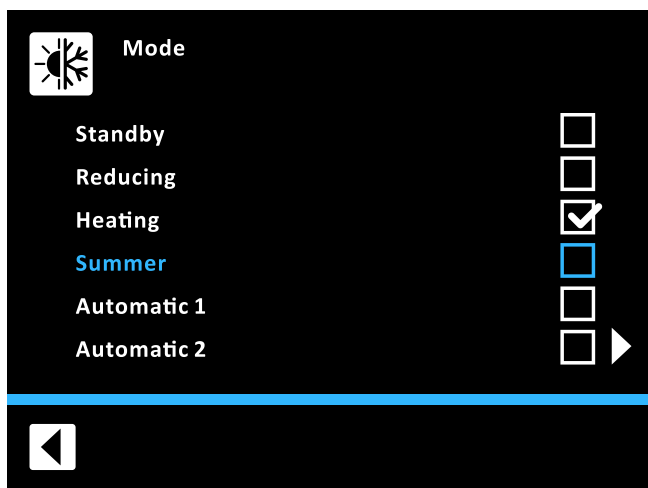


Fig. 3-5 List with selected list entry

**Example:** Switch the operating mode to "Summer" [→ Main menu → Operating mode]

- 1 Turn the rotary button clockwise until the "Summer" list entry is displayed in blue.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The box is ticked in the "Summer" list entry.
- 3 Turn the rotary button anticlockwise until the Back icon turns blue.
- 4 Briefly press the rotary button to confirm ("OK").  
→ The setting is saved and the setting level is exited.

#### 3.3.4 Setting setpoints

The setpoint of a parameter can be changed within the displayed scale. Press "OK" to save the new value. Press and hold the rotary button to exit the setting level without saving. For some parameters there is an "Off" setting in addition to values on the scale. This setting can be selected by turning the rotary button anticlockwise after the minimum value of the scale has been reached.

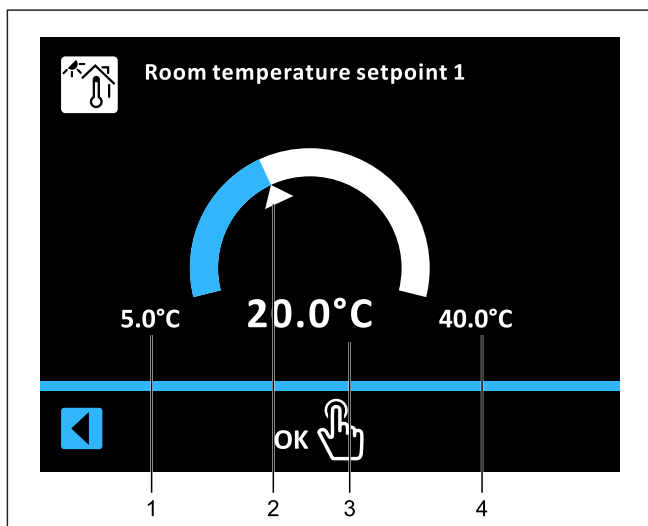


Fig. 3-6 Display of the parameter setting

| Item | Designation              |
|------|--------------------------|
| 1    | Minimum value            |
| 2    | Default value            |
| 3    | Currently selected value |
| 4    | Maximum value            |

Tab. 3-6 Elements in the parameter setting display

**Example:** Set [Room temperature setpoint 1] to 22 °C [→ Main menu → User → Room → Room temperature setpoint 1]:

- 1 Turn the rotary button clockwise until 22 °C is displayed.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The setting is saved and the setting level is exited.

#### 3.3.5 Setting the times

The clock function is used to set the current time.



Fig. 3-7 Setting the times

**Example:** Set the time to 16:04 [→ Main menu → Settings → Display → Time]:

- 1 Turn the rotary button clockwise until the circle is displayed in blue.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The hour hand is displayed in blue.
- 3 Turn the rotary button clockwise until 16:00 is displayed.
- 4 Briefly press the rotary button to confirm ("OK").  
→ The minute hand is displayed in blue.
- 5 Turn the rotary button clockwise until 16:04 is displayed.
- 6 Briefly press the rotary button to confirm ("OK").  
→ The Confirm icon in the menu bar is displayed in blue.
- 7 Briefly press the rotary button to confirm ("OK").  
→ The setting is saved and the setting level is exited.

#### 3.3.6 Calendar function

The calendar function is used to set the current date or the [Vacation] and [Holiday] time programs. The calendar function allows the selection of a time period for the time programs.

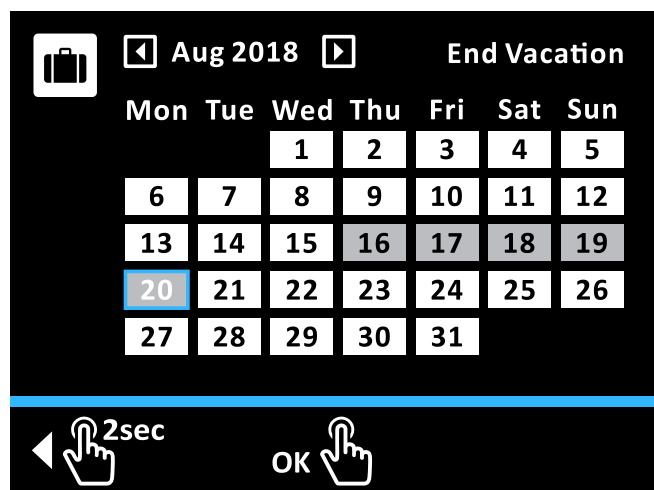


Fig. 3-8 Setting the period with the calendar function

**Example:** Set [Vacation] from 25th August, 2018 - 2nd September, 2018 [→ Main menu → Time program → Vacation]:

- 1 Turn the rotary button clockwise until the month selection is Aug 2018.
- 2 Briefly press the rotary button to confirm ("OK").  
→ August 1 is shown with a blue border.

Turn the rotary button clockwise until 25th August is highlighted in blue.

- 1 Briefly press the rotary button to confirm ("OK").  
→ August 25 is shown on a grey background.
- 2 Turn the rotary button clockwise until 2nd September is highlighted in blue.
- 3 Briefly press the rotary button to confirm ("OK").  
→ The setting is saved and the setting level is exited.

When a new holiday period is set, the previously set holiday period is automatically deleted. Alternatively, the holiday setting can also be reset.

**Example:** Reset the holiday setting [→ Main menu → Time program → Vacation]:

- 1 Turn the rotary button clockwise until the month selection is displayed in blue.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The last selected day of the holiday is displayed with a blue border.
- 3 Turn the rotary button anticlockwise until all days are shown in white.
- 4 Briefly press the rotary button to confirm ("OK").  
→ The holiday setting is reset and the setting level is exited.

### 3.3.7 Setting the time programs

The time program function is used to set permanent time programs (see Chap. 4.3.2). This allows the daily setting of 3 switching cycles. The times can be entered separately for each individual weekday or in blocks of "Monday to Friday", "Saturday to Sunday" and "Monday to Sunday". The selected switching cycles are highlighted in grey (Fig. 3-9) in the overview level of the respective program.

| Time period                                  | Switching cycle   |
|--|---|
| Single day of the week (Monday, Tuesday ...) | 1. 06:00 to 22:00<br>2. xx:xx to xx:xx<br>3. xx:xx to xx:xx |
| Working week (Monday to Friday)              | 1. 06:00 to 22:00<br>2. xx:xx to xx:xx<br>3. xx:xx to xx:xx |
| Weekend (Saturday to Sunday)                 | 1. 06:00 to 22:00<br>2. xx:xx to xx:xx<br>3. xx:xx to xx:xx |
| Entire week (Monday to Sunday)               | 1. 06:00 to 22:00<br>2. xx:xx to xx:xx<br>3. xx:xx to xx:xx |

Tab. 3-7 Structure of the permanent time programs



#### INFORMATION

Time settings for a switching cycle in a weekday or block program will also be accepted for other time periods as long as they are for the same weekdays.

- The starting time in the first switching cycle is changed from 06:00 am to 05:00 am for the individual weekday "Monday". In the period "Monday to Friday" and "Monday to Sunday", the first switching cycle is automatically changed from 06:00 to 05:00.

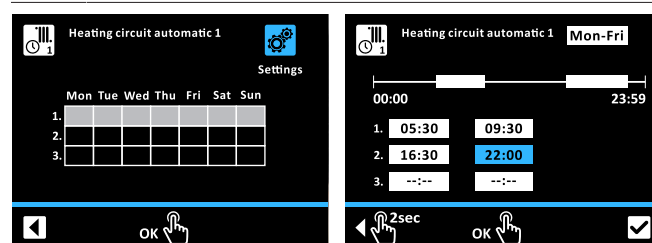


Fig. 3-9 Time program function with overview level (left) and setting level (right)

**Example:** For the [Heating circuit automatic 1] program, set switch cycles 1 and 2 for Monday to Friday [→ Main menu → Time program → HC auto 1]:

- 1 Turn the rotary button clockwise until the Setting icon turns blue.
- 2 Briefly press the rotary button to confirm ("OK").  
→ Display changes to setting level with blue flashing period selection.
- 3 Turn the rotary switch clockwise until the required time period is displayed.
- 4 Briefly press the rotary button to confirm ("OK").  
→ The display changes to the input window for the start time of the first switching cycle.
- 5 Briefly press the rotary button to confirm ("OK").  
→ Input window for start time of the first switching cycle flashes blue.
- 6 Turn the rotary button clockwise until the required start time is displayed.
- 7 Briefly press the rotary button to confirm ("OK").  
→ The display changes to the input window for the end time of the first switching cycle.
- 8 Turn the rotary button clockwise until the required end time is displayed.
- 9 Briefly press the rotary button to confirm ("OK").  
→ The display changes to the input window for the start time of the second switching cycle.

## 3 Operation

---

- 10 Briefly press the rotary button to confirm ("OK").
  - ➔ Input window for the start time of the second switching cycle flashes blue.
- 11 Turn the rotary button clockwise until the required start time is displayed.
- 12 Briefly press the rotary button to confirm ("OK").
  - ➔ The display changes to the input window for the end time of the second switching cycle.
- 13 Turn the rotary button clockwise until the required end time is displayed.
- 14 Briefly press the rotary button to confirm ("OK").
  - ➔ The display changes to the input window for the start time of the third switching cycle.
- 15 Turn the rotary button clockwise until the Confirm icon turns blue.
  - ➔ The display changes to the Confirm icon.
- 16 Briefly press the rotary button to confirm ("OK").
  - ➔ The programming is saved.
  - ➔ The setting level is exited.
  - ➔ Selected switching cycles are highlighted in grey.
- 17 Turn the rotary button anticlockwise until the Back icon turns blue.
- 18 Briefly press the rotary button to confirm ("OK").
  - ➔ The menu is exited

### 3.3.8 External operation

In addition to operation via the integrated RoCon+ HP control system, the system can also be adjusted and operated via external devices.

#### Operation via the Internet

An optional gateway (EHS157056) can be used to connect the control unit RoCon+ HP to the Internet. This enables remote control of the RoCon+ HP by mobile phones (by app).

#### Operation via the room station

It can also be operated via the optional EHS157034 room controller. For this purpose, observe the operating instructions enclosed with the device.

## 4 Function

The system fully automatically controls the operation of the room heating, room cooling and domestic hot water generation on the sanitary side on the basis of the specifications set in the RoCon+ HP control system. The functions that can influence system operation are described below.

Some of the functions and parameters described are restricted by access privileges and can only be set by a heating specialist (see Chap. 4.5.1).

### 4.1 Mode

[→ Main menu → Operating mode]

This menu is used to select the operating mode for operating the device. The current operating mode is indicated by a corresponding symbol on the start screen.

#### Standby operating mode



#### NOTICE

A heating system that is not protected against frost can freeze in the event of frost and thus be damaged.

- Drain the heating system on the water side if there is a danger of frost.
- If the heating system is not drained, the power supply must be ensured and the mains switch must remain switched on if there is a risk of frost.

In this mode, the Daikin Altherma EHS(X/H) is switched to standby mode. The frost protection function remains unchanged. In order to maintain this function, the system may not be disconnected from the mains.

All controllers integrated in the RoCon system via the CAN bus are primarily also switched to the "Standby" operating mode.



#### INFORMATION

In the [Standby] mode, the heat pump and the optionally connected backup heater are disconnected from the power supply (energy-saving mode) if the following conditions are met:

- the external temperature sensor is connected and correctly parametrised in the system configuration,
- the external temperature is more than 8 °C
- there is no heating requirement,
- the frost protection function is not active in any connected HC and
- the Daikin Altherma EHS(X/H) has been switched on for at least 5 minutes.

#### ModeReducing

Reduced heating operation (lower room setpoint temperature) according to the set reduction temperature in the [Room temperature reduced] parameter (see Chap. 4.2).

Domestic hot water generation according to the temperature setpoints and switching cycles in the [Hot water automatic 1] hot water time program (see Chap. 4.2).

#### ModeHeating

Heating, cooling mode according to the room temperature setpoint set in the [Room temperature setpoint 1] parameter (see Chap. 4.2).

A connected external temperature sensor (weather-dependent feed temperature control unit) or a connected room control unit also influence the temperature setpoint.

Domestic hot water generation according to the feed temperature setpoints and switching cycles in the [Hot water automatic 1] hot water time program (see Chap. 4.2).

#### ModeSummer

Only domestic hot water is generated according to the set temperature setpoints and switching cycles in the [Hot water automatic 1] hot water time program (see Chap. 4.2).

All controllers integrated in the RoCon system via the CAN bus are also switched to the higher-level [Summer] mode.

#### Mode Automatic 1 (time program)

Automatic heating and setback mode according to the permanent time programs (see Chap. 4.3):

- [Heating circuit automatic 1]
- [Hot water automatic 1]

#### Mode Automatic 2 (time program)

Automatic heating and setback mode according to the permanent time programs (see Chap. 4.3):

- [Heating circuit automatic 2]
- [Hot water automatic 2]



#### INFORMATION SWITCHING CONTACT FOR EXTERNAL OPERATING MODE CHANGEOVER

Switching can also be performed from an external device (e.g. modem, ...) via a floating switching contact connected to terminal J8 of the Daikin Altherma EHS(X/H) to the "Ext" terminals. See Tab. 4-1.

In this case, the switching contact functionality is dependent on the parameter [Func. burner blocking contact]:

- [Func. burner blocking contact] = Resistance values (default setting): Evaluation of the resistance values.
- [Func. burner blocking contact] = Burner blocking contact: Evaluation as a burner blocking contact. If the switching contact is closed, the external heat generator has priority.

| Mode        | Resistance | Tolerance |
|-------------|------------|-----------|
| Standby     | < 680 Ω    | ±5%       |
| Heating     | 1200 Ω     |           |
| Reducing    | 1800 Ω     |           |
| Summer      | 2700 Ω     |           |
| Automatic 2 | 4700 Ω     |           |
| Automatic 2 | 8200 Ω     |           |

Tab. 4-1 Resistance values for evaluating the EXT signal



#### INFORMATION

The resistances specified in Tab. 4-1 function in a tolerance field of 5%. Resistances outside this tolerance field are interpreted as an open input. The heat generator switches back to the previously active operating mode.

The input is not considered for resistance values greater than the value for "Automatic 2".

If several switching contacts are connected to the Daikin Altherma EHS(X/H) (e.g. smart grid, room thermostat), the associated functions may have a higher priority than the external mode switching. The mode requested by the EXT switching contact is then possibly not activated or is only activated later.

Besides these operating modes, different temporary time programs (see Tab. 4-2) are available that are carried out with priority after activation.

## 4 Function

| Temporary heating program | Setting/activation in the menu | Information                 |
|---------------------------|--------------------------------|-----------------------------|
| Party                     | Time program                   | <a href="#">Chap. 4.3</a>   |
| Away                      |                                |                             |
| Holiday                   |                                |                             |
| Vacation                  |                                |                             |
| Screed                    | Configuration                  | <a href="#">Chap. 4.5.7</a> |

Tab. 4-2 Overview of temporary time programs



### INFORMATION

If a temporary heating program (Party, Away, Holiday, Vacation, Screed) is started during the selected operating mode, control is carried out primarily according to the settings for this time program.

## 4.2 User

[→ Main menu → User]

The most important target temperatures and functions are set for the user in this menu.

### 4.2.1 Room temperature setpoint setting

[→ Main menu → User → Room]

The room temperature setpoints for room heating in Heating mode are defined in this menu. The available setpoints (1-3) belong to the respective cycle (1-3) of the [Heating circuit automatic 1] and [Heating circuit automatic 2] time programs.

Further explanations and possible settings for this menu can be found in [Chap. 7.3](#).

### 4.2.2 Room temperature reduced setting

[→ Main menu → User → Reduce]

The room target temperatures for room heating in Reduced mode are defined in this menu. The reduced operation is carried out by the "Reduce" operating mode or by the [Heating circuit automatic 1] and [Heating circuit automatic 2] time programs.

Further explanations and possible settings for this menu can be found in [Chap. 7.3](#).

### 4.2.3 Room temperature absence setting

[→ Main menu → User → Absent]

The room target temperature for room heating in Absence mode are defined in this menu. The absence operation is carried out by the [Away] or [Vacation] time programs.

Further explanations and possible settings for this menu can be found in [Chap. 7.3](#).

### 4.2.4 Hot water temperature setpoint setting

[→ Main menu → User → Hot water]

The hot water target temperatures for domestic hot water preparation are defined in this menu. The available setpoints (1-3) belong to the respective cycle (1-3) of the [Hot water automatic 1] and [Hot water automatic 2] time programs.

Further explanations and possible settings for this menu can be found in [Chap. 7.3](#).

### 4.2.5 Unscheduled domestic hot water generation

[→ Main menu → User → 1x load]

By starting this function, the hot water can be heated up to the [Hot water temp. setpoint 1] target temperature at any time. The heating up is carried out with priority and independent of other heating programs. After this temporary function has elapsed, the control unit automatically jumps back to the previously active operating mode.

Possible settings for this menu can be found in [Chap. 7.3](#).

## 4.3 Time Program

[→ Main menu → Time program]

Various freely adjustable permanent time programs are available for convenient and individual room and hot water temperature control. Temporary time programs are also available, which override the permanent time programs or the currently set operating mode for the duration of their validity.

### 4.3.1 Temporary time programs



### INFORMATION

The following temporary time programs can be cancelled at any time due to the manual changing of the operating mode.

#### Party

[→ Main menu → Time program → Party]

The program runs from activation until the end of the set period. During this time, the HC is controlled to the temperature set in the [Room temperature setpoint 1] parameter. If the [Automatic 1] or [Automatic 2] time program is active, the heating cycle is extended or started prematurely. The domestic hot water preparation is not affected.

#### Away

[→ Main menu → Time program → Absent]

The program runs from activation until the end of the set period. During this time, the HC is controlled to the room target temperature in the [Room temperature absence] parameter. The domestic hot water preparation is not affected.

#### Vacation

[→ Main menu → Time program → Holiday]

A calendar function can be used to enter a time period of absence. During this time, the HC is continuously controlled (24 h per day) to the room target temperature set in the [Room temperature absence] parameter. This program is not started if the [Standby] operating mode is active on the set start date.

#### Holiday

[→ Main menu → Time program → Public holiday]

A calendar function can be used to enter a time period of presence. During this time, regulation is carried out exclusively according to the settings for "Sunday" in [Heating circuit automatic 1] and [Hot water automatic 1].

### 4.3.2 Permanent time programs

For the connected HCs and the storage tank charging circuit, time programs control the HC and hot water temperatures or the operating times of the circulation pump according to the specified switching cycles. The switching cycles are saved in time blocks for which different target temperatures can be set.

The saved time program can be changed at any time. For a better overview, it is recommended to write down and safely store the programmed switching cycles ([Chap. 11.1](#)).



### Heating circuit auto. 1 and Heating circuit auto. 2

[→ Main menu → Time program → HC auto 1 /HC auto 2]

The time programs for the HC can be parametrised in these menus. Three switching cycles can be set per day, to which the [Room temperature target 1/2/3] parameters are assigned. Outside the switching cycles, it is controlled to the [Room temperature reduced] set-point. The entry can be made separately for each individual weekday or in week segments.

### Hot water auto. 1 and Hot water auto. 2

[→ Main menu → Time program → DHW auto 1 /DHW auto 2]

The time programs for the domestic hot water preparation can be parametrised in these menus. Three switching cycles can be set per day, to which the [Hot water temperature, target 1/2/3] parameters are assigned.

### Circulation program

[→ Main menu → Time program → Circulation]

A time program for an optionally connected circulation pump can be parametrised in this menu. 3 switching cycles per day can be set.






#### INFORMATION

Use of circulation lines not permitted in France!

### Factory settings

The permanent time programs are preset according to [Tab. 4-3](#).

|                                |   | Switching cycle 1                       |       | Switching cycle 2                       |       | Switching cycle 3                       |       |
|--------------------------------|---|---|-------|---|-------|---|-------|
| Time period                    |   | On                                      | Off   | On                                      | Off   | On                                      | Off   |
|                                |   |   |       |   |       |   |       |
| Room heating                   |   |   |       |   |       |   |       |
| Temperature setting            |    | [Room temperature setpoint 1]:<br>20 °C |       | [Room temperature setpoint 2]:<br>20 °C |       | [Room temperature setpoint 3]:<br>20 °C |       |
|                                |    | [Room temperature reduced]: 10 °C       |       |   |       |   |       |
| "Heating circuit automatic 1"  |   |   |       |   |       |   |       |
| Monday - Friday                |   | 06:00                                   | 22:00 | --:--                                   | --:-- | --:--                                   | --:-- |
| Saturday, Sunday               |   | 07:00                                   | 23:00 | --:--                                   | --:-- | --:--                                   | --:-- |
| "Heating circuit automatic 2"  |   |   |       |   |       |   |       |
| Monday - Friday                |   | 06:00                                   | 08:00 | 16:00                                   | 22:00 | --:--                                   | --:-- |
| Saturday, Sunday               |   | 07:00                                   | 23:00 | --:--                                   | --:-- | --:--                                   | --:-- |
|                                |   |   |       |   |       |   |       |
| Domestic hot water preparation |   |   |       |   |       |   |       |
| Temperature setting            |  | [Hot water temp. setpoint 1]: 60 °C     |       | [Hot water temp. setpoint 2]: 60 °C     |       | [Hot water temp. setpoint 3]: 60 °C     |       |
| "Hot water automatic 1"        |   |   |       |   |       |   |       |
| Monday - Sunday                |   | 05:00                                   | 21:00 | --:--                                   | --:-- | --:--                                   | --:-- |
| "Hot water automatic 2"        |   |   |       |   |       |   |       |
| Monday - Friday                |   | 05:00                                   | 21:00 | --:--                                   | --:-- | --:--                                   | --:-- |
| Saturday, Sunday               |   | 06:00                                   | 22:00 | --:--                                   | --:-- | --:--                                   | --:-- |
| "Circulation program"          |   |   |       |   |       |   |       |
| Monday - Friday                |   | 05:00                                   | 21:00 | --:--                                   | --:-- | --:--                                   | --:-- |
| Saturday, Sunday               |   | 06:00                                   | 22:00 | --:--                                   | --:-- | --:--                                   | --:-- |

Tab. 4-3 Factory setting of the permanent time program

### 4.3.3 Time program reset

[→ Main menu → Time program → TP reset]

This menu can be used to reset the time programs to factory settings. To do this, select the respective time programs and then confirm the selection with the Confirm button on the second menu page.

## 4.4 Settings

[→ Main menu → Settings]

The basic settings of the controller and the system are made in this menu. This includes the integration of optional and external components. Depending on the access authorisation (user or expert), different parameters are available.

### 4.4.1 Display settings

[→ Main menu → Settings → Display]

This menu can be used to set the following parameters: Language, date, time, LCD brightness and LCD illumination duration.

Further explanations and possible settings for this menu can be found in [Chap. 7.5](#).



#### INFORMATION

Increasing the brightness of the LCD display beyond the factory-set value will reduce the life of the display.

## 4 Function

### 4.4.2 System

[→ Main menu → Settings → System]

This menu combines basic parameters of the heating system.

Further explanations and possible settings for this menu can be found in [Chap. 7.5.2](#).

### 4.4.3 Additional heat generators

[→ Main menu → Settings → Ext. source]

This menu can be used to configure the integration of an optional external heat source.

The heat supplied by an alternative WEZ must be fed to the unpressurised storage tank water in the Daikin Altherma EHS(X/H) hot water storage tank.

- When using the optional BUxx backup heater, this is carried out due to the design installation situation.
- If an alternative WEZ (e.g. gas- or oil-fired boiler) is used, this can be hydraulically integrated
  - unpressurised via the connections (solar feed and solar return) of the hot water storage tank or
  - in the case of Daikin Altherma EHS(X/H) ...B device types, via the integrated pressurised solar system heat exchanger

The setting of the [Config. of external heat source] parameter is used to define if any additional heat generator (WEZ) is available for domestic hot water preparation and heating support, and which.

- No external heat source
- Optional backup heater
- Ext. heat sources HW and HZU: Alternative WEZ provide domestic hot water preparation and backup heating. To request the WEZ, relay K3 on printed circuit board RTX-EHS is switched.
- Ext. heat source HW or HZU: Alternative WEZ 1 (optional BUxx backup heater) undertakes domestic hot water preparation and alternative WEZ 2 undertakes heating support. To request WEZ 1, relay K3, and to request WEZ 2, relay K1, on printed circuit board RTX-EHS is switched respectively. Heed warning notice! The operation of an additional alternative WEZ is also influenced by the settings of the [Bivalence function] and [Bivalence temperature] parameters.

Further explanations and possible settings for this menu can be found in [Chap. 7.5.3](#).

### 4.4.4 Inputs/Outputs

[→ Main menu → Settings → Inputs/Outputs]

This menu can be used to adjust parameter for inputs and outputs of the controller PCB to optimise the system controller individually.

#### Smart grid



#### WARNING

There is a danger of scalds at hot water target temperatures over 65 °C. This is possible because the utility company (EVU) is entitled to control current draw optimised according to supply and demand in the definitions for Smart Grid.

Due to such forced charging, the hot water target temperature in the hot water storage tank can exceed 65 °C.

This storage tank charging is carried out even when the [Standby] operating mode is set.

- Install scald protection in the hot water distribution line.

To use this function, a special electricity meter with SG receiver to which the Daikin Altherma EHS(X/H) must be connected is required.

As soon as the function is activated by the [Smart grid] parameter, the heat pump is set to an operating mode as per [Tab. 4-4](#) depending on the utility company signal.

| Signal <sup>(3)</sup> |    | Electricity costs | Effect on   |  |
|-----------------------|----|-------------------|---|--|
| EVU                   | SG |                   | Domestic hot water  | Heating installations  |
| 1                     | 0  | ---               | No operation <sup>(4)</sup>   | No operation <sup>(4)</sup>  |
| 0                     | 0  | Normal            | Normal operation  | Normal operation   |
| 0                     | 1  | Low               | Switch-on recommendation and storage tank temperature setpoint is increased depending on the [Mode Smart Grid] parameter. | Switch-on recommendation and flow temperature setpoint are increased depending on the [Mode Smart Grid] parameter. |
| 1                     | 1  | Very low          | Switch-on command and storage tank temperature setpoint is set to 70 °C.  | Switch-on command for storage tank charging.   |

Tab. 4-4 Use of the SG signal

#### AUX switching function

Setting the [AUX switching function] parameter selects the switching conditions for the potential-free AUX switching contact (toggle switch output A). This switching contact can be used to control an external heat generator, for example.

If one of the switching conditions is fulfilled, the potential-free switching contact is switched after the time set in the [AUX delay time] parameter.

**AUX switching contact** (toggle switch output A) is **not switched** if setting is deactivated.

**AUX switching contact** (toggle switch output A) is **switched**, if setting

- Storage tank temperature ( $T_{dhw}$ )  $\geq$  [TDHW switching threshold] parameter value.
- if an error is pending.
- Outside temperature  $<$  [Equilibrium Temp] parameter value.
- Heat request for domestic hot water preparation.
- Heat request for room heating.
- Heat request for room heating or domestic hot water preparation.

#### Interlink function

Setting the [Interlink function] parameter = On offers the possibility that the Daikin Altherma EHS(X/H) two different feed temperature setpoints are included in the control.

This applies to both weather-compensated control and control according to a fixed feed target temperature (see [Chap. 4.5](#)).

One possible application is, for example, the additional integration of an HP convector in a surface heating and cooling system.

Prerequisite: 2 switching contacts are connected to Daikin Altherma EHS(X/H) plug connection J16 (e.g. room thermostats).

- [Interlink function] parameter = Off: Deactivated

<sup>(3)</sup> Switching contacts at input J8 of the RoCon BM2C PCB closed (1) or open (0).

<sup>(4)</sup> No frost protection function



- [Interlink function] parameter = On: Evaluation of the heating and cooling switching contacts at plug connection J16 on the RoCon BM2C PCB. Activation of cooling mode only by switching the operating mode to [Cooling] (see Chap. 4.1). Setting of the [Room thermostat] parameter is no longer evaluated.
  - Open switching contacts: Only frost protection active
  - [Heating] or [Automatic 1] / [Automatic 2] operating mode active during daytime switching cycles.
  - Closed switching contact Heating = IL1
  - It is controlled to the normal feed target temperature according to the parameter settings for [Heating].
  - Closed switching contact Cooling = IL2
  - It is controlled to the increased feed target temperature (normal feed target temperature + value of the [Interlink temperature rise] parameter). Priority if both switching contacts are closed!
- [Cooling] operating mode active.
  - Closed switching contact Heating = IL1
  - It is controlled to the normal feed target temperature according to the parameter settings in level [HC Configuration] > [Cooling].
  - Closed switching contact Cooling = IL2
  - The system is regulated to the reduced feed target temperature (normal feed target temperature - value of the parameter [Interlink temperature reduction]). Priority if both switching contacts are closed!

Further explanations and possible settings for this menu can be found in [Chap. 7.5](#).

#### 4.4.5 Intelligent storage tank management

[→ Main menu → Settings → ISM]

If the storage temperatures are high enough, the energy in the storage tank can be used for room heating. This can either increase comfort ([Continuous heating] function) or make it possible to use energy from an external heat source, e.g. solar, when heating is required ([Heating support (HZU)] function).

##### Continuous heating

This function enables uninterrupted heating, even when the evaporator is being defrosted. This enables high comfort to be guaranteed, even with rapidly reacting heating systems (e.g. convectors).

##### Heating support (HZU)

If the Heating support function (parameter [Heating support (HZU)] = On) is activated, the energy in the Daikin Altherma EHS(X/H)'s integrated storage tank is used to undertake the heating function. If the storage temperature is sufficiently high, the burner remains inactive.

The minimum value ( $T_{\text{HZUmin}}$ ) is calculated as follows:  $T_{\text{HZUmin}} = \text{currently active hot water target temperature [Hot water temperature setpoint]} + [\text{HZU hysteresis}]$  parameter.

##### Switch-on condition:

$T_{\text{dhw}} > T_{\text{HZUmin}} + 4 \text{ K}$  and  $T_{\text{dhw}} > [\text{Hot water temperature setpoint}] - \text{information parameter} + 1 \text{ K}$

If the switch-on condition is fulfilled, heat is taken from the storage tank and this is used to supply the heating system.

##### Switch-off condition:

$T_{\text{dhw}} < T_{\text{HZUmin}}$  or  $T_{\text{dhw}} < [\text{Feed temperature setpoint}]$  parameter (see [Chap. 4.5.3](#))

If the switch-off condition is fulfilled, the heating support from the hot water storage tank is set and the burner takes over the heating operation.

The [Power BIV] parameter limits the maximum power that can be taken. The [HZU max. temperature] parameter limits the maximum temperature that can enter the heating system.

Further explanations and possible settings for the parameters in this menu can be found in [Chap. 7.5.5](#).

#### 4.4.6 Special functions

[→ Main menu → Settings → Special]

Special functions influence the power consumption of the heat pump. For example, quiet mode means that the heat pump outdoor unit operates at reduced output. This reduces the operating noise generated by the heat pump outdoor unit.

##### Quiet mode



##### CAUTION

During active quiet mode, the output in room heating and room cooling mode decreases so that it may no longer be possible to achieve pre-set target temperature values.

- If outside temperatures are below freezing, there is a risk of material damage caused by frost.

When the function is activated, the heat pump operates in low-noise mode. The [Noise level] parameter can be used to select three noise levels.

Further explanations and possible settings for this menu can be found in [Chap. 7.5](#).

#### 4.5 Configuration

[→ Main menu → Configuration]

This menu can be used to optimally adapt the operating characteristics of the system to the system structure and the needs of the users. Additional programs facilitate commissioning. Depending on the access authorisation (user or expert), different parameters are available.

##### 4.5.1 Access privileges (technician code)

[→ Main menu → Configuration → Access]

Certain functions and parameters in the controller are restricted by access rights and are not visible to the user. To gain access to it, the specialist code must be entered.

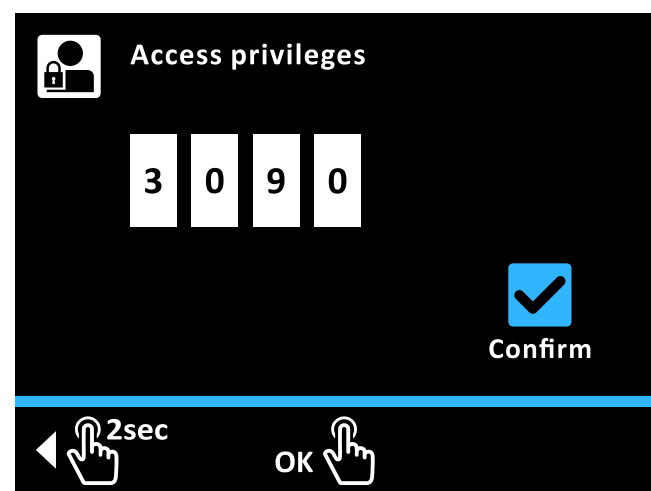


Fig. 4-1 Setting the access code

**Example:** Set code 3090 (example only, this is not a valid access code) [→ Main menu → Configuration → Access]:

- 1 Turn the rotary button clockwise until the first input field is displayed in blue.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The first input field flashes blue.
- 3 Turn the rotary button clockwise until 3 is displayed.

## 4 Function

- 4 Briefly press the rotary button to confirm ("OK").  
→ The second input field is displayed in blue.
- 5 Turn the rotary button clockwise until the third input field is displayed in blue.
- 6 Briefly press the rotary button to confirm ("OK").  
→ The third input field flashes blue.
- 7 Turn the rotary button clockwise until 9 is displayed.
- 8 Briefly press the rotary button to confirm ("OK").  
→ The fourth input field is displayed in blue.
- 9 Turn the rotary button clockwise until the Confirm icon turns blue.
- 10 Briefly press the rotary button to confirm ("OK").  
→ The code is checked and the setting level is exited.

### 4.5.2 Sensors

[→ Main menu → Configuration → Sensors]

Optional sensors are activated and configured in this menu. Pressure setpoints for the water side can be defined.

Further explanations and possible settings for the parameters in this menu can be found in [Chap. 7.6.1](#).

### 4.5.3 HC configuration

[→ Main menu → Configuration → HC config]

This menu is used to adjust the basic functionality of the heating circuit.

Further explanations and possible settings for the parameters in this menu can be found in [Chap. 7.6.2](#).

### Weather-dependent feed temperature control

If the weather-dependent feed temperature control is active, the feed temperature ([Feed temperature setpoint] parameter) is determined automatically depending on the external temperature according to the set heating/cooling curve.

This function is activated in delivery condition. It can only be deactivated (fixed value control) or reactivated with a technician code.

If the room controller is also connected (EHS157034) to the RoCon+ HP, the temperature setpoints are controlled according to the weather and room temperature ([Room Influence] parameter).

This function can only be configured using the technician code. Contact your heating expert in this regard.

This function is activated or deactivated via the [Weather-dependent] parameter in the "Configuration" menu.

- [Weather-dependent] parameter = Weather-compensated: Weather-compensated feed temperature control
- [Weather-dependent] parameter = Feed temperature, fixed: Control based on fixed target temperature
  - For heating mode: [Feed temperature heating mode] parameter or [Feed temperature reducing mode] parameter
  - For cooling mode: [Feed temperature cooling mode] parameter



#### INFORMATION

The weather-compensated feed temperature control has no influence on the feed target temperature in the case of a hot water circuit request.

### With connected Mixer module

The setting of the heating/cooling curves and the activation of the weather-compensated feed temperature control for the assigned HC are carried out in the same way as described above.

The assigned HC can be operated as a:

- Mixer add-on  
The outside temperature of the outside temperature sensor connected to the Daikin Altherma EHS(X/H) external temperature sensor is transmitted to the mixer module via the CAN bus.
- or as a
- Mixer add-on with zone control  
A separate outside temperature sensor must be connected to the mixer module. The assigned HC is controlled according to the outside temperature relevant for this zone.

If the terminal function is activated, the mixer module can be operated and the settings for the assigned heating circuit undertaken via the RoCon+ B1 control panel of the Daikin Altherma EHS(X/H).

In conjunction with the EHS157034 room control, the mixer module can also control the assigned heating circuit completely autonomously and independently of the heat generator.

Further explanations and possible settings for this menu can be found in [Chap. 7.6](#).

### Frost protection function

The integrated heating circulation pump is switched on at an outside temperature below the [Frost protection temperature] parameter value in order to prevent the heating system from freezing.

In addition, the feed, storage and connected room temperature sensors are also constantly monitored. If the temperature measured by one of these sensors falls below 7 °C (below 5 °C at room temperature), the antifreeze function is also activated.

If the heating feed temperature falls below 7 °C, the Daikin Altherma EHS(X/H) heats until the heating feed temperature reaches at least 12 °C.

The function is ended if the outside temperature rises above the set [Frost protection temperature] parameter value + 1 K and also there is no other activation condition.



#### INFORMATION

If low rate functions are activated,

[HT/NT function] parameter = Switch all off

or

[Smart grid] parameter = On

operation of the heat pump can be shut off completely for a limited period of time by the utility company. In these cases, regulation is not possible even in frost protection conditions and the device's internal heating circulation pump is not switched on.

These situations can be recognised if, in the [→ Main menu → Information → Overview] menu in the operating data field: "Ext", the "High rate" value or "SG1" is displayed.

### 4.5.4 Heating

[→ Main menu → Configuration → Heating]

This menu is used to configure heating times and target feed temperatures for heating mode.

## Heating curve



### WARNING: FLAMMABLE MATERIAL

In the event of malfunction, the floor heating system, the screed or the floor structure could be damaged due to overheating.

- Prior to initial commissioning, set the maximum temperature limit in the RoCon+ HP control unit ([Max. feed temperature] parameter) to the maximum permitted system temperature prior to starting the emission measurement.
- Connect an overheating protection switch (in the building) at the "Ext" plug connection for external operating mode switch-over so that the Daikin Altherma EHS(X/H) is switched to the "Standby" or "Summer" operating mode. If the [Room thermostat] parameter = Yes or the [Interlink function] parameter = On, the overheating protection switch must be connected so that the room thermostat's switching contact is interrupted.
- If the floor heating is also used for room cooling, the connection notes in the above point also apply to the connection of a moisture protection switch in the building.

The heating curve is used to adapt the feed temperature to the characteristics of the building independent of the respective outside temperature (weather-compensated feed temperature control, see [Chap. 4.5](#)). Generally speaking, the steepness of the heating curve describes the ratio of the feed temperature change to the external temperature change.

The heating curve is valid within the limits of the minimum and maximum temperatures set for the respective HC. The room temperature measured in the occupied area may differ from the required room temperature; these deviations can be kept to a minimum by installing a room thermostat or a room control.

The **control unit** is set at the **factory** in such a way that the **heating curve** does **not independently adjust itself** during operation.

The **automatic heating curve adjustment** can be activated ([Heating curve adaptation] parameter) if the **outside temperature sensor** and the **room controller** (EHS157034) are **connected** (see [Chap. 4.5](#)).

Start conditions for automatic heat slope adjustment:

- Outside temperature < 8 °C
- Operating mode is [Automatic 1 or Automatic 2]
- Duration of the setback period is at least 6 h

If **no automatic heating curve adjustment** is activated, the heating curve can be **manually** adjusted by **adjusting** the [Heat-Slope] parameter).



### INFORMATION: MANUALLY ADJUSTING THE HEATING CURVE

Do not make any corrections to the set values for 1 - 2 days, and then only make them in small increments.

- Deactivate the external heat sources (e.g. stoves, direct sunlight, open windows).
- Fully open any radiator thermostat valves or actuators.
- Activate "Heating" operating mode. Approximate setting values:

Radiators and System 70: 1.4 to 1.6.

Floor heating: 0.5 to 0.9.

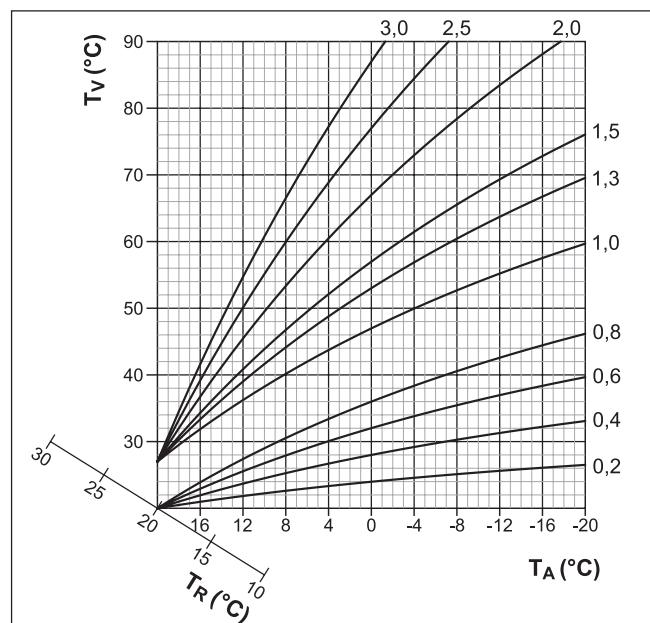


Fig. 4-2 Heating curves

| Item                     | Designation             |
|--------------------------|-------------------------|
| Temperature <sub>A</sub> | Outside temperature     |
| t <sub>R</sub>           | Room target temperature |
| T <sub>V</sub>           | T-HS                    |

Tab. 4-5

### Comfort heating

If the heat pump cannot cover the heating demand when outside temperatures are very low, heat is extracted from the storage tank and used for room heating. In rare cases (in systems with high required feed temperatures and low required hot water temperatures), the required feed temperature can be higher than the storage tank target temperature. In order to avoid short-term loss of comfort in heating mode for these systems, the [Comfort heating] parameter can be set to "On". At corresponding outside temperatures, the storage tank temperature is raised above the storage tank temperature set for the hot water requirement.



### INFORMATION

If [Comfort heating] is set to "On", the power consumption of the heat pump may increase. In the default setting, [Comfort heating] is set to "Off".

Detailed explanations and possible setting values of this function can be found in [Chap. 7.6](#).

## 4.5.5 Cooling

[→ Main menu → Configuration → Cooling]

This menu is used to make settings for cooling mode.



### CAUTION: DANGER OF CONDENSATION

In the event of malfunction or incorrect parameter settings, the floor heating, the screed or the floor structure could be damaged due to condensation.

- Before initial commissioning and activation of cooling operation, set the minimum temperature limit in the RoCon controller ([Feed temperature lower limit] parameter) to the minimum permissible system temperature.

Prerequisites for cooling mode:

- Outside temperature > set value of room target temperature
- Outside temperature > set value of the [Start T-Out Cooling] parameter

## 4 Function

- [Cooling] operating mode activated.
  - via menu "Operating mode" or
  - via room thermostat function (cooling switching contact closed)
- No heat request active in the RoCon system of the heating system



### INFORMATION

If the mean outside temperature falls below 4 °C when "Cooling" operating mode is active, the operating mode automatically switches to "Heating".

Renewed automatic operating mode switching to "Cooling" only takes place:

- if a room thermostat is connected to plug connection J16 (cooling) and
- the room thermostat's switching contact is closed and
- the mean outside temperature increases to over 10 °C again.

### Cooling curve

[→ Main menu → Configuration → Cooling → Cooling curve]

The cooling curve determines the feed target temperature in cooling mode depending on the respective outside temperature. (for weather-compensated feed temperature control, see [Chap. 4.5.3](#)). Warmer outside temperatures result in a colder feed target temperature and vice versa. The cooling curve can be adapted to the condition of the building by four parameters (see [Fig. 4-3](#)).

- 1 [Start T-Out Cooling]
- 2 [Max T-Out Cooling]
- 3 [T-Flow Cooling start]
- 4 [T-Flow Cooling max]

### Cooling parameters

[→ Main menu → Configuration → Cooling → Parameters]

This menu combines further parameters to determine feed target temperatures in cooling mode.

During weather-compensated T-HS control, the user can increase or decrease the feed target temperature by a maximum of 5 K with the [Cooling setpoint adjustment] parameter. A temperature reduction is limited by the [Feed temperature lower limit] parameter.

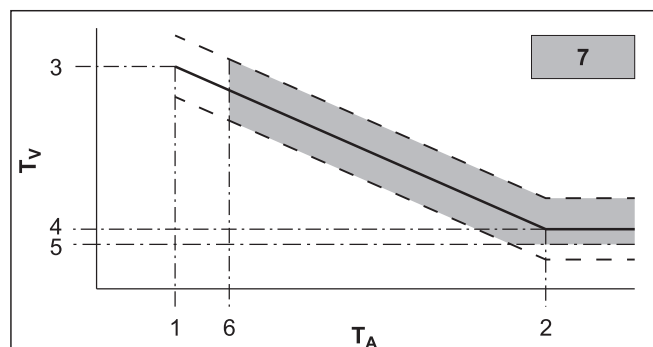


Fig. 4-3 Cooling curve parameter dependency

| Item | Designation                              |
|------|--|
| 1    | [Start T-Out Cooling] parameter          |
| 2    | [Max T-Out Cooling] parameter            |
| 3    | [T-Flow Cooling start] parameter         |
| 4    | [T-Flow Cooling max] parameter           |
| 5    | [Feed temperature lower limit] parameter |
| 6    | Room target temperature                  |
| 7    | Cooling mode possible                    |

| Item                          | Designation                           |
|-------------------------------|---------------------------------------|
| Temperat-<br>ure <sub>A</sub> | Outside temperature                   |
| T <sub>v</sub>                | T-HS                                  |
| -----                         | Cooling curve                         |
| - - - -                       | Possible parallel cooling curve shift |

Tab. 4-6

Further explanations and possible settings for the parameters in this menu can be found in [Chap. 7.6.4](#).

### 4.5.6 Domestic hot water

[→ Main menu → Configuration → DHW]

The domestic hot water preparation can be individually adapted to the behaviour and requirements of the users in this menu. This minimises energy consumption and increases comfort.

### Settings for optional circulation pump

Depending on the [Circulation pump control] parameter, an optional circulation pump can be controlled synchronously with the selected time program for domestic hot water generation or with the time program for the circulation pump (see [Chap. 4.3](#)). During the release times of the selected time program, the circulation pump can be operated either continuously or cycled. This is defined with the [Circulation pump control] parameter.

### Anti-legionella protection

This function is used to prevent bacterial contamination in the hot water tank by thermal disinfection. To do so, the hot water tank is heated 1× daily or 1× weekly to the disinfection temperature [Thermal disinfection temp.] depending on the [Thermal disinfection day] parameter. Disinfection starts at the specified start time [Thermal disinfection start time] and is active for one hour. An optionally connected circulation pump is automatically switched on during this time.

Detailed explanations and possible setting values of this function can be found in [Chap. 7.6.5](#).

### 4.5.7 Additional program

[→ Main menu → Configuration → Addition]

This menu combines programs which simplify initial commissioning of the system.

### Air purge function

[→ Main menu → Configuration → Addition → Ventilation]

By activating the ventilation function, the controller starts a fixed defined sequence program with start/stop operation of the integrated heating circulation pump and various positions of the integrated 3-way switching valves. Existing air can escape during operation via the automatic ventilation valve.



### INFORMATION

The activation of this function does not replace correct venting of the HC.

The HC must be completely full before activating this function.

### Relay Test

[→ Main menu → Configuration → Addition → Relay test]

This program allows testing of internal switching relays. This may be necessary in the event of malfunctions, error messages or as part of annual maintenance. When the menu is opened, all relays are deactivated. Selecting one or more relays activates them. When the menu is exited, all relay tests are terminated.

The relay test menu is operated in the same way as list entries (see Chap. 3.3.3). However, several relays can be activated in parallel in the relay list for testing. To do this, select the corresponding relay with "OK". Activated relays are indicated by a tick.

### Floor screed dryout

[→ Main menu → Configuration → Addition → Screed]

The screed drying is started in the menu according to the settings in [Screed Program]. The program is used exclusively for the pre-scribed drying of newly created screed for floor heating systems. The first day of the screed program begins after activation of the program at the change of day at 00:00.

Screed drying is a special function and is not interrupted by any other operating mode. It can only be activated by the heating expert for the direct HC and/or optionally connected mixed HCs. It must be activated separately for each HC.



#### INFORMATION

Before starting the screed drying, the [Room thermostat] and [Interlink function] parameters must be deactivated. During a short-term power failure, a previously activated screed drying is continued at the point of the interruption.

After activation of the screed drying, all weather-compensated control functions of the respective HC are switched off. The respective HC works as a constant temperature control regardless of the operating mode and switching times.

Already activated screed drying can be deactivated at any time. After ending the screed drying, the parameter is automatically set to "Off" and the HC works according to the currently set operating mode again.

### Floor screed program

[→ Main menu → Configuration → Addition → Program]

This menu allows the individual adjustment of the factory settings for the duration and feed target temperatures of the screed drying. Changes can only be made after entering the specialist code.

#### Changing the screed program

A separate feed target temperature can be set for each day for a maximum duration of 28 days. The end of the screed program is defined by the first day without a preset feed target temperature.

| Day   | Factory setting | Day     | Factory setting |
|-------|-----------------|---------|-----------------|
| 1 - 3 | 25 °C           | 10 - 19 | 55 °C           |
| 4 - 7 | 55 °C           | 20      | 40 °C           |
| 8     | 25 °C           | 21      | 25 °C           |
| 9     | 40 °C           | 22 - 26 | -               |

Tab. 4-7 Default settings of the screed program

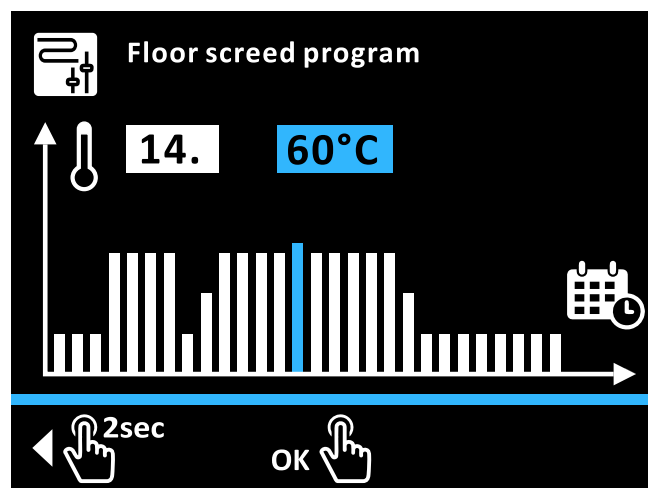


Fig. 4-4 Changing the screed program

**Example:** Increase the feed temperature of the 3rd day to 40 °C and stop the program on the 8th day [→ Main menu → Configuration → Addition → Program]:

- 1 Turn the rotary button clockwise until the day selection is set to 3.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The temperature field is displayed in blue.
- 3 Turn the rotary button clockwise until the temperature selection is 40 °C.
- 4 Briefly press the rotary button to confirm ("OK").  
→ Temperature selection of the next day is shown in blue
- 5 Briefly press the rotary button several times until the day selection is set to 8.
- 6 Turn the rotary button anticlockwise until the temperature selection is set to "Off".
- 7 Briefly press the rotary button to confirm ("OK").  
→ Day 8 to day 28 are set to "Off", Confirm icon is shown in blue
- 8 Briefly press the rotary button to confirm ("OK").  
→ The programming is saved and the menu is exited.

#### Typical screed programs

##### Function heating

The function heating serves as proof of the production of defect free work for the heating engineer. A prefabricated heating protocol relating to floor heating systems can be found on the manufacturer's Internet portal.

In this sense, the function heating (identical with "Heating" in EN 1264, section 5.2) is not considered as a heating process to achieve workability of the screed. Generally, a special screed curing heating and/or mechanical drying is required for this.

The heating of cement screeds should be carried out after 21 days at the earliest and of anhydrite screeds after 7 days at the earliest in accordance with the specifications of the manufacturer. The first heating begins with a feed temperature of 25 °C that must be maintained for 3 days. Afterwards, the heating is carried out with the maximum set feed temperature for the HC (limited to max. 55 °C), which must be maintained for a further 4 days.

Due to the insulating effect of the DUO heating pipe for System 70, the screed function must be carried out at higher temperatures. The temperature profile must be adapted in the [Screed Program] parameter for this use case. For System 70, the heating begins at a temperature of 38 °C that is maintained for 3 days. The set maximum HC temperature (limited to 70 °C) is then maintained for 4 days.



## 4 Function

After the described heating process, it is not yet assured that the screed has reached the required moisture content for workability of the screed.

The moisture content in the screed must be checked by measurement prior to laying the surface covering.

### INFORMATION

Procedure in accordance with EN 1264 Part 4:

For anhydrite and cement screeds, the HCs must be leak tested by a water pressure test after completion. The leak-tightness must be ensured immediately before and during the laying of the screed. The height of the test pressure is at least 1.3x the maximum permitted operating pressure.

Suitable measures must be taken if there is a risk of freezing, e.g. use of antifreeze agents or heating the building. If antifreeze agents are no longer necessary for the intended operation of the system, the antifreeze agent must be removed by draining and rinsing the system with at least 3 changes of the water.

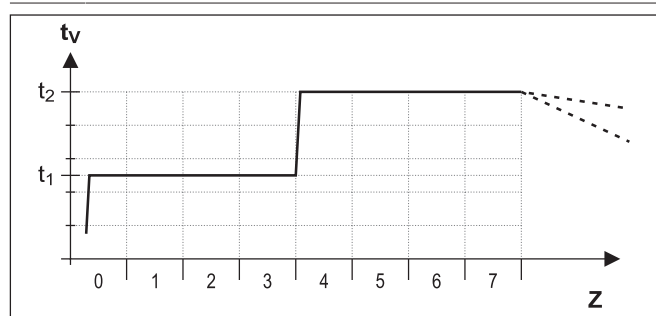


Fig. 4-5 Chronological sequence of the screed program during the function heating

| Item  | Designation   |
|-------|---|
| $t_1$ | Start temperature 25 °C (38 °C with system 70)                      |
| $t_2$ | Maximum HC temperature  |
| $T_v$ | T-HS  |
| Z     | Duration of the screed function in days after starting the function |

Tab. 4-8

### Screed curing heating

The drying process for the screed cannot be exactly predicted. If there is a high degree of humidity, sometimes it can stop completely. The drying process can be speeded up by activating the floor heating (screed curing heating) or measures such as mechanical drying.

Each screed curing heating must be ordered separately by the client as an extra service in accordance with German construction contract procedures (VOB). The workability of the screed is a prerequisite for the top floor installer to start work so that he can produce defect free work.

With standard settings, the combined function and screed curing heating program can be activated to achieve the required residual moisture in the screed for workability of the screed (see Fig. 4-6). However, the residual moisture of the screed must basically be checked metrologically before the flooring can be laid.

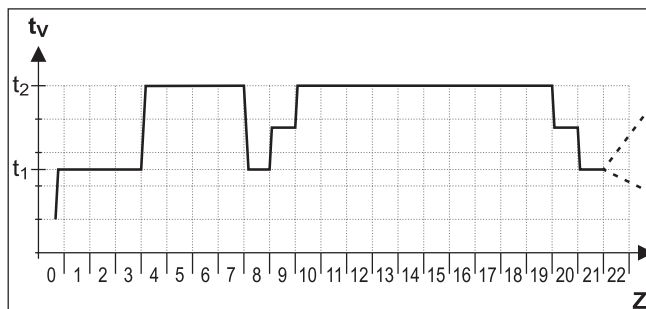


Fig. 4-6 Chronological sequence of the screed program during the combined function and screed curing heating (for legend, see Tab. 4-8)

Detailed explanations and possible setting values of this function can be found in Chap. 7.6.

### 4.5.8 Configuration wizard

[→ Main menu → Configuration → Wizard]

This menu summarises the parameters queried in the Configuration Wizard. This allows a quick adjustment of the system settings. See Chap. 5.1.

### 4.5.9 Parameter Reset

[→ Main menu → Configuration → Parameter reset]

All customer-specific parameter settings can be reset to factory settings in this menu. This can be useful if the Daikin Altherma EHS(X/H) no longer functions properly and no other causes of malfunction can be identified.

## 4.6 Info

[→ Main menu → Information]

This menu displays all system temperatures, the heat generator type, various software information and the operating states of all system components. The number of displayed parameters depends on which components are connected. No adjustments can be made to these values.

### 4.6.1 Current

[→ Main menu → Information → Current]

This menu shows the hydraulic diagram of the system. The first and second pages show sensors and the assigned, current values. The third page shows the compressor, pump and heating rod in white if they are inactive and blue if they are active. The current valve position is shown for both mixing valves.

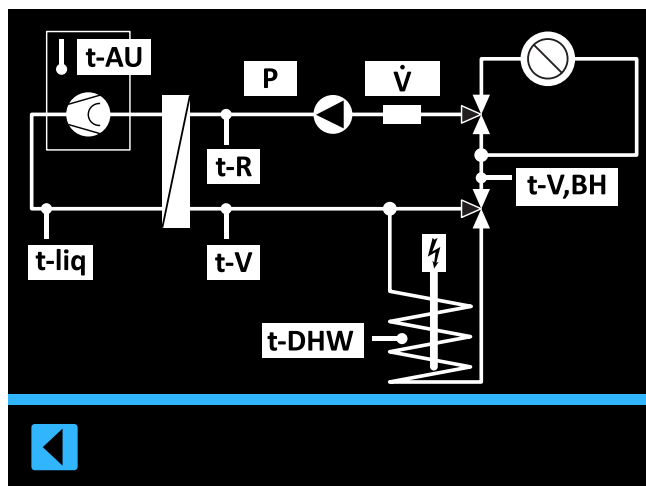


Fig. 4-7 Hydraulic circuit diagram - first page

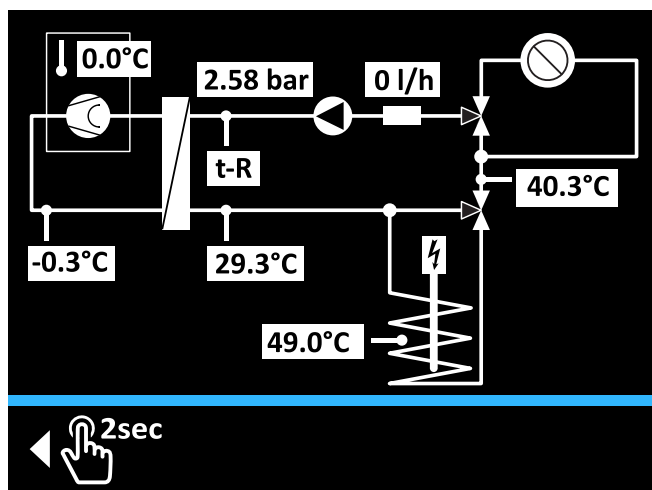


Fig. 4-8 Hydraulic circuit diagram - second page

| Item    | Designation  |
|---------|--|
| t-AU    | Outside temperature sensor   |
| P       | Pressure   |
| V       | Flow rate  |
| t-R     | Heating return flow temperature  |
| t-V, BH | Heating feed temperature, if necessary after heating support heat exchanger              |
| t-liq   | Refrigerant temperature  |
| t-V     | Feed temperature after the plate heat exchanger  |
| T-DHW   | Temperature in the hot water storage tank  |
| B1      | Current position of mixing valve 3UVB1 (0%: heating network; 100%: internal bypass)      |
| DHW     | Current position of the mixing valve 3UV DHW (0%: heating network; 100%: hot water tank) |

Tab. 4-9 Legend to the hydraulic circuit diagrams

### 4.6.2 Overview

[→ Main menu → Information → Overview]

This menu lists the current operating states and sensor values of the heat pump.

Further explanations of the parameters in this menu can be found in [Chap. 7.7](#).

| ID / Function   | System components                     | Parameters   | Comments   |
|---|---------------------------------------|--|--|
| HC ID<br>Unique numbering of a HC in the heating system in the RoCon system. A maximum of 16 HCs can be controlled. | Daikin Altherma EHS(X/H) (RoCon BM2C) | [Unmixed Circ Config]<br>See <a href="#">Chap. 7.11</a>      | Factory setting = 0<br>Should not normally be changed. <sup>(5)</sup>  |
|   | EHS157034 room station                | [Heating circuit assignment]<br>see RoCon U1/M1 instructions | Factory setting = Off<br>Adaptation required if there are different HCs in the system and/or the [Master-RoCon] parameter = On               |
|   | EHS157068 mixer module                | [Heating circuit assignment]<br>see RoCon U1/M1 instructions | Factory setting = Off<br>Must always be adapted to the setting of the address switch.  |
| Heat generator ID<br>Unique numbering of a heat generator in the RoCon system.                                      | Daikin Altherma EHS(X/H) (RoCon BM2C) | [BUS ID HS]<br>See <a href="#">Chap. 7.11</a>                | Factory setting = 0<br>Should not normally be changed. <sup>(5)</sup>  |
|   | EHS157068 mixer module                | [Boiler Assignment]<br>see RoCon U1/M1 instructions          | Factory setting = 0<br>Should not normally be changed. <sup>(5)</sup><br>Defines the heat generator that supplies the assigned HC with heat. |

<sup>(5)</sup> A maximum of 8 heat generators can be connected in the RoCon system via the CAN data bus. Several heat generators integrated in the heating installation must be regarded as a special application. If necessary, contact a service technician.

### 4.6.3 Values

[→ Main menu → Information → Values]

This menu lists the target and actual temperatures as well as current status of the system actuators.

Further explanations of the parameters in this menu can be found in [Chap. 7.7](#).

### 4.6.4 Water pressure

[→ Main menu → Information → Water pressure]

The current water pressure is displayed in large font in this menu. This makes it easier to read during the installation of the system.

## 4.7 Error

[→ Main menu → Error]

The error handling of the Daikin Altherma EHS(X/H) takes place in this menu. see [Chap. 8](#).

## 4.8 Terminal

[→ Main menu → Terminal]

This menu can be used to operate and parametrise other devices (mixer module or added heat generators control components) in the RoCon system if the respective control panel has the required authorisation rights.

### Functional IDs

The RoCon system offers a very wide range of application and extension options. The individual RoCon system components communicate via the CAN data bus. For this purpose, the RoCon BM2C PCBs and the RoCon+ B1 control panels of the Daikin Altherma EHS(X/H) as well as the optional RoCon U1 room station system components and RoCon M1 mixer module are connected to each other via data bus lines. These system components must be allocated unique functional IDs, so that the data exchange and assignment within the system functions without any problems.

The easiest way to assign the functional identifiers is to use the Configuration Wizard. This is carried out automatically during the first commissioning or can be started manually in case of extensions in the heating system in [→ Main menu → Configuration → Wizard]. In addition, most identifiers can also be adapted to the RoCon system by parameter settings in this menu.

## 4 Function

| ID / Function  | System components                     | Parameters  | Comments   |
|--|---------------------------------------|---|--|
| <b>Terminal ID</b><br>Unique numbering of a RoCon+ B1 or EHS157034 control panel from which a heat generator and/or mixer module can be remotely controlled in the RoCon system.<br><br>The authorisation for remote control can be allocated to up to 10 control panels in the RoCon system. If remote control is to be possible in the RoCon system, the control panel must be allocated the ID "0". | Daikin Altherma EHS(X/H) (RoCon BM2C) | [Terminaladdress]<br><br>See <a href="#">Chap. 7.9</a>          | Factory setting = Off<br><br>The value should be set to "0" if at least 1 mixer module is connected in the RoCon system and the mixer circuit is to be operated from the heat generator.                         |
|  | EHS157034 room station                | [Terminaladdress]<br><br>See <a href="#">Chap. 7.9</a>          | Factory setting = Off<br><br>The value must be set to a unique numerical value in the RoCon system if the room station system components are to be remotely controlled using a valid device ID.                  |
| <b>Device ID</b><br>Unique numbering of a heat generator or mixer module in the RoCon system.<br><br>Up to 16 device numbers can be allocated.<br><br>These device numbers are detected during a [Bus - Scan] and are displayed for identification of a remotely controlled device.  | Daikin Altherma EHS(X/H) (RoCon BM2C) | [BUS ID HS]<br><br>See <a href="#">Chap. 7.11</a>               | Identical to heat generator detection.<br><br>The value must not be the same as the HC ID of a mixer module in the RoCon system.   |
|  | EHS157068 mixer module                | [Heating circuit assignment]<br><br>See <a href="#">Chap. 9</a> | Identical to the HC ID.<br><br>The value must not be the same as the heat generator ID of the Daikin heat generator in the RoCon system.<br><br>The value must be the same as the setting of the address switch. |

Tab. 4-10 Functional IDs in the RoCon system

### 4.8.1 Selecting the terminal address

[→ Main menu → Terminal → Address]

Setting of the terminal ID of the control panel for system access. The set value must be unique throughout the entire system. Confirmation of this parameter with the rotary button effects a new initialisation of the control unit.

All settings (except "Off") authorise the user of the control panel to activate the terminal function and thus to operate all RoCon system components with a valid device ID.

### 4.8.2 Bus-Scan for terminal function

[→ Main menu → Terminal → Bus scan]

After activating the "Bus scan", a list of detected devices (with assigned terminal address) is displayed in the menu [→ Main menu → Terminal] for selection. After selecting and confirming an external device, the terminal function for this device is activated. The control panel is then in terminal operation.

The local control panel acts as a remote control for the external device and the corresponding start screen is shown on the display. In this case, all the control functions are performed and saved 1:1 in the same way as on the external device. The displayed values and symbols are always taken over by the selected device.

To operate the local device, switch to the start screen of the external device. Press and hold the rotary switch to return to the menu of the local device.



#### INFORMATION

To perform the bus scan, a valid terminal address must be assigned to the RoCon+ B1 control panel of the Daikin Altherma EHS(X/H) or the EHS157034 room station. This can only be done with a specialist code. Contact your heating expert in this regard.

If the terminal function is to be used in the heating system, the terminal ID = 0 must be allocated to a control panel.

**Example:** Activate terminal operation for the heat generator with bus identification 2 [→ Main menu → Terminal → Bus scan]:

The bus scan is carried out. An overview of all devices that are found is displayed.

- 1 Turn the rotary switch clockwise until the BM1/BE1 #2 controller is displayed in blue.
- 2 Briefly press the rotary button to confirm ("OK").  
→ The local control panel acts as a remote control for the heat generator with bus ID 2.

To end terminal operation and switch back to the operation of the assigned device, switch to the start screen of the external device. Press and hold the rotary switch to return to the menu of the local device.



#### INFORMATION

If the local control panel is used as a remote control for a mixer module, both the standard screen and the menu structure have been changed (see [Chap. 9](#)).

## 4.9 Statistics

[→ Main menu → Statistics]

In this menu, summed values for the power output and running times of the heat pump and its components since commissioning (or since the last reset by a specialist) can be called up.



## 5 Initial commissioning



### INFORMATION

In addition to the commissioning instructions listed in this chapter, the specific commissioning instructions listed in the respective installation instructions for the Daikin Altherma EHS(X/H) must be observed.

### 5.1 Configuration Wizard

The Configuration Wizard simplifies system configuration during installation. It appears automatically during initial commissioning and guides the user through defined selection pages. As long as the entire system setting is not confirmed, the Configuration Wizard is called up again each time it is switched on. Only after confirmation of the system setting can the heat generator switch to normal operation. In normal operation, the parameters of the Configuration Wizard can be called up and set in the menu [→ Main menu → Configuration → Wizard].

The different selection pages of the Configuration Wizard are operated according to the screens described in [Chap. 3.3](#). Confirming a selection with "OK" or the Confirm icon leads directly to the next selection page. The modified parameter is applied directly.

### 5.2 Menu navigation in the Configuration Wizard

#### →Language

- 1 Select the desired language.
- 2 Confirm the selection with the Confirm icon.

#### →Standard configuration

If **no optional RoCon system components** are connected:

- 1 Briefly press the rotary button to confirm ("Yes").

When **optional RoCon system components** such as EHS157034 and/or EHS157068 are connected:

- 1 Turn the rotary button clockwise until "No" is displayed in blue.
- 2 Briefly press the rotary button to confirm ("OK").
- 3 Select and set the following list elements as required:
  - Direct circuit configuration(see [Chap. 4.8](#))
  - Bus ID heat generator(see [Chap. 4.8](#))
  - Time master(see [Chap. 7.11](#))
- 4 If all settings have been made as required, confirm by clicking on the Confirm icon.

#### →Time

- 1 Setting the current time (see [Chap. 3.3.5](#)).

#### →Date

- 1 Setting the current date (see [Chap. 3.3.6](#)).

#### → System parameters

The following parameters can be set:

- [Room thermostat] present? (see [Chap. 7.5.4](#))
- [Heating support (HZU)] required? (see [Chap. 7.5.5](#))
- [Continuous heating] required? (see [Chap. 7.5.5](#))

#### → Heating limit

The following parameters can be set:

- [Heating operation limit] (see [Chap. 7.5.3](#))
- [Heat limit reducing mode] (see [Chap. 7.5.3](#))

#### →Weather-compensated

Weather-compensated control is required:

- 1 Confirm the "Weather-compensated" selection with the Confirm icon.

The following parameters can be set:

- [Room temperature setpoint 1] setting (see [Chap. 7.5.1](#))
- [Heat-Slope] setting (see [Chap. 4.5.4](#))
- Only with reversible device type: Setting of the cooling curve (see [Chap. 4.5.5](#))

Weather-compensated control is not required:

- 1 Select the "Feed temperature, fixed" setting.
- 2 Confirm the selection with the Confirm icon.

The following parameters can be set:

- [Feed temperature heating mode] setting (see [Chap. 7.6.3](#))
- Only with reversible device type: Setting [Feed temperature cooling mode] (see [Chap. 7.6.4](#))

#### →Hot water

The following parameters can be set:

- [Hot water temp. setpoint 1] (see [Chap. 7.3.4](#))
- [Hot water hysteresis] (see [Chap. 7.6.5](#))

#### → Device selection

The following parameters can be set:

- [Outdoor unit]
- [Indoor unit]

#### → External heat generator

No external heat generator available:

- 1 Select the "No external heat generator" setting.
- 2 Confirm the selection with the Confirm icon.

Optional backup heater available:

- 1 Confirm the "Backup heater BUH" selection with the Confirm icon.
- 2 Select and set the following list elements as required:
  - [External power hot water] (see [Chap. 7.5.3](#))
  - [External power stage 1] (see [Chap. 7.5.3](#))
  - [External power stage 2] (see [Chap. 7.5.3](#))
  - Emergency operation(see [Chap. 8.1](#))
- 3 If all settings have been made as required, confirm by clicking on the Confirm icon.

Alternative external heat generator available:

- 1 Select the "DHW + heating support" or "Two external heat generators" setting (see [Chap. 7.5.3](#)).
- 2 Confirm the selection with the Confirm icon.
- 3 Select and set the following list elements as required:
  - [External power hot water] (see [Chap. 7.5.3](#))
  - [External power stage 1] (see [Chap. 7.5.3](#))
  - Emergency operation(see [Chap. 8.1](#))
- 4 If all settings have been made as required, confirm by clicking on the Confirm icon.

#### →Heating system

- 1 The [Heating system] parameter can be set (see [Chap. 7.5.2](#)).

## 6 Parameter overview

### 6.1 Menu: Operating mode

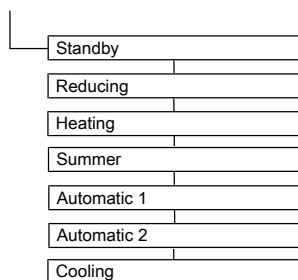


Fig. 6-1 Parameter in menu: "Operating mode"

### 6.2 Menu: User

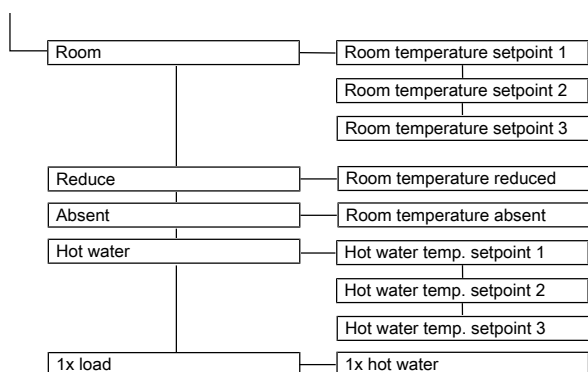


Fig. 6-2 Parameter in menu: "User"

### 6.3 Menu: Time program

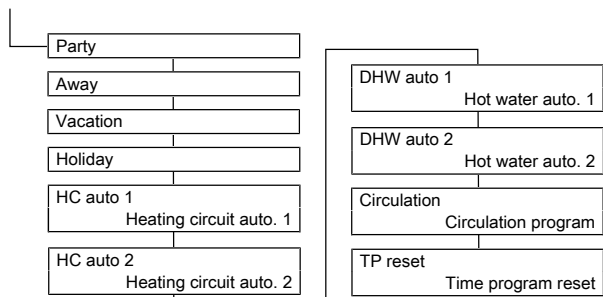


Fig. 6-3 Parameter in menu: "Time program"

### 6.4 Menu: Settings

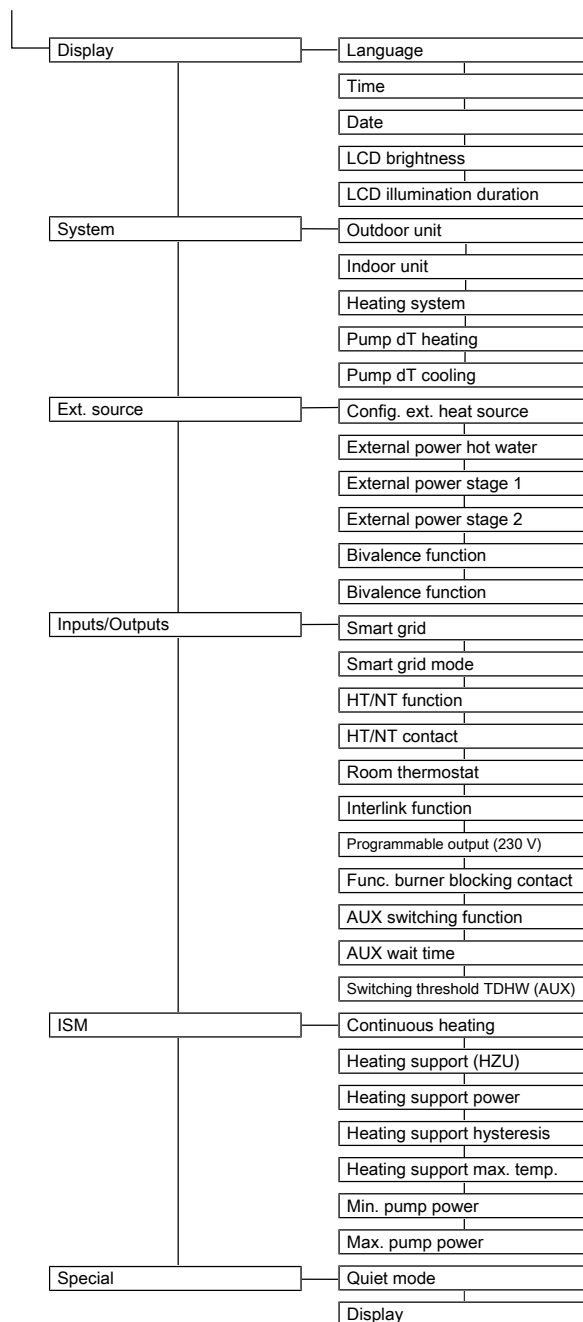


Fig. 6-4 Parameter in menu: "Settings"

## 6.5 Menu: Configuration

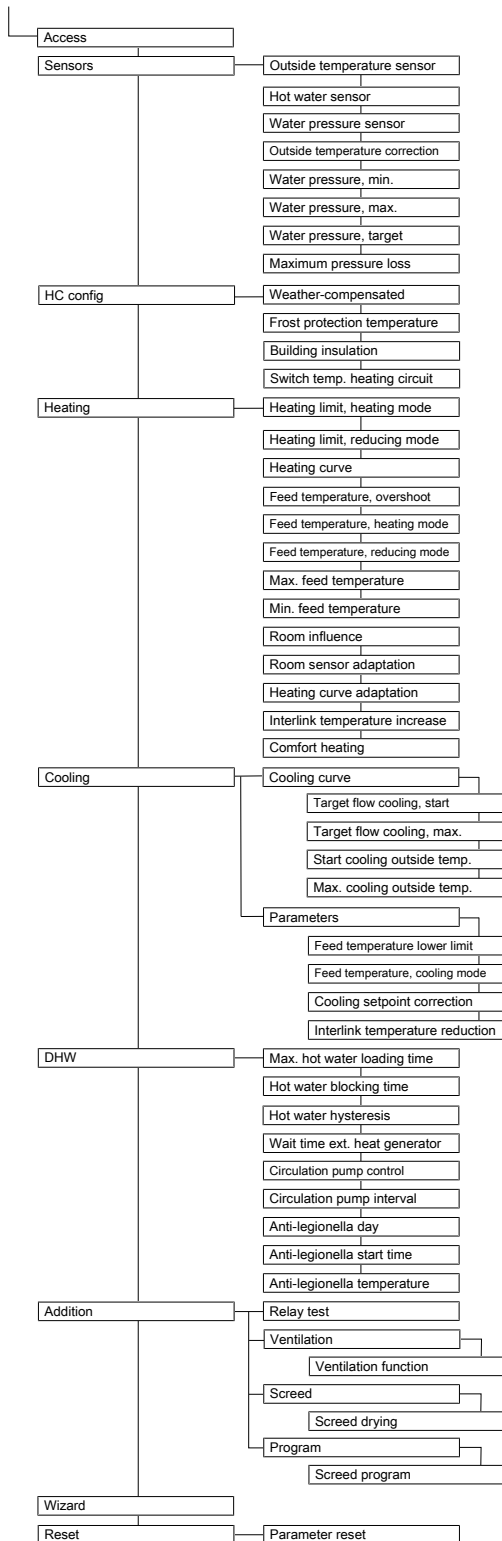


Fig. 6-5 Parameter in menu: "Configuration"

## 6.6 Menu: Information

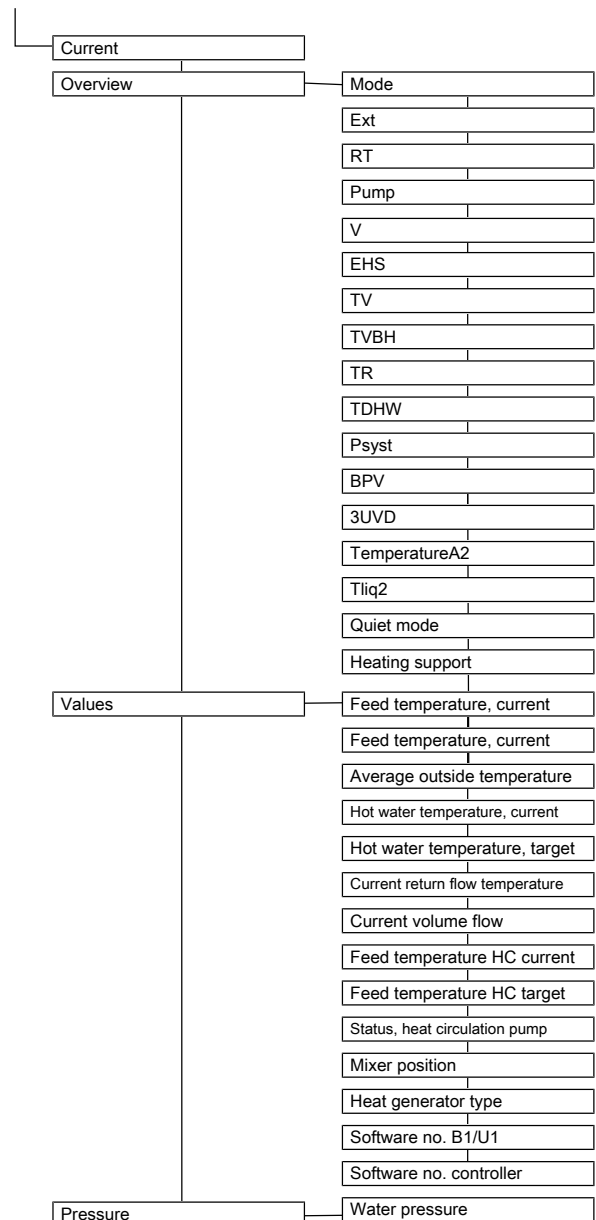


Fig. 6-6 Parameter in menu: "Information"

## 6.7 Menu: Error

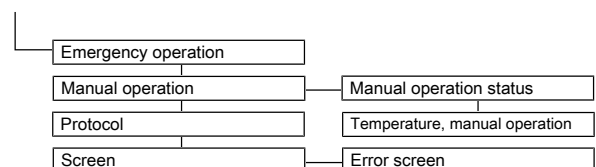


Fig. 6-7 Parameter in menu: "Error"

## 6.8 Menu: Terminal

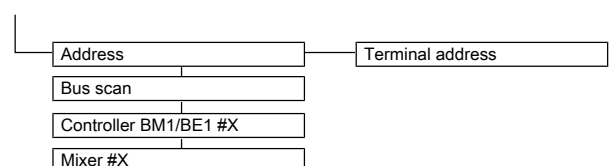


Fig. 6-8 Parameter in menu: "Terminal"

## 6 Parameter overview

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### INFORMATION

If the local control panel is used as a remote control for a mixer module, both the standard screen and the menu structure have been changed (see [Chap. 9](#)).

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## 6.9 Menu: Statistics

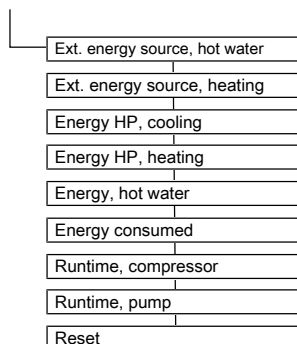


Fig. 6-9 Parameter in menu: "Statistics"

## 7 Parameter settings

### 7.1 Explanation of the parameter tables

The parameter tables listed in [Chap. 7.2](#) to [Chap. 7.10](#) contain compact information on all parameters that are available in the respective menus and submenus of the controller (1st menu level, 2nd menu level).

In addition to the parameter designations, the tables contain information on setting ranges, factory settings, setting options or adjustment steps and brief explanations of the function.

In addition, they provide an explanation of the access rights for operation of the control unit. The following abbreviations are used for corresponding labelling:

BE Access right for the operator

HF Access right with technician code

If different entries are made in the BE and HF columns, the technician must be logged in before selecting the parameter level in order to obtain the status entered in the HF column (see [Chap. 4.5](#)).

Status:

N Not visible

E Visible and configurable

S Visible



#### INFORMATION

Changing some parameters requires a restart of the device. This takes a few minutes. No further settings can be made during this time. The restart can be delayed by 5 minutes by selecting "Later" in response to the "Restart required. Perform now?" prompt.

Parameters that require a restart are marked with (\*) in the following tables

### 7.2 Operating mode

[→ Main menu → Operating mode]

| Parameters  | Setting range<br>Min / Max                                     | Description  | Factory<br>setting                  | Incre-<br>ment | Access |    |
|-------------|--|--|-------------------------------------|----------------|--------|----|
|             |  |  |                                     |                | BE     | HF |
| Standby     | <input type="checkbox"/> / <input checked="" type="checkbox"/> | In this operating mode all internal functions are switched off. Frost protection remains active and a blocking protection for the pump is guaranteed.<br><br>All controllers integrated in the RoCon system via the CAN bus are primarily also switched to the operating mode if this setting is selected.<br><br>Outputs are not always completely free of voltage.   | <input checked="" type="checkbox"/> | -              | E      | E  |
| Reducing    | <input type="checkbox"/> / <input checked="" type="checkbox"/> | The internal HC continuously regulates to the required reduced feed temperature according to the [Heat-Slope] or [Feed temperature reducing mode] parameters or to the room temperature [Room temperature reduced] if the room thermostat is connected. Domestic hot water preparation is carried out according to [Hot water automatic 1].  | <input type="checkbox"/>            | -              | E      | E  |
| Heating     | <input type="checkbox"/> / <input checked="" type="checkbox"/> | The internal HC continuously regulates to the required feed temperature according to the [Heat-Slope] or [Feed temperature heating mode] parameters or to the room temperature [Room temperature setpoint 1] if the room thermostat is connected. Domestic hot water preparation is carried out according to [Hot water automatic 1].  | <input type="checkbox"/>            | -              | E      | E  |
| Summer      | <input type="checkbox"/> / <input checked="" type="checkbox"/> | The internal HC is switched off. Frost protection remains active and a blocking protection for the pump is guaranteed. Domestic hot water preparation is carried out according to [Hot water automatic 1].<br><br>All controllers integrated in the RoCon system via the CAN bus are primarily also switched to the operating mode if this setting is selected.  | <input type="checkbox"/>            | -              | E      | E  |
| Automatic 1 | <input type="checkbox"/> / <input checked="" type="checkbox"/> | The internal heating circuits are controlled according to the set [Heating circuit automatic 1] time program with the respective room target temperatures. Domestic hot water preparation is carried out according to [Hot water automatic 1].   | <input type="checkbox"/>            | -              | E      | E  |
| Automatic 2 | <input type="checkbox"/> / <input checked="" type="checkbox"/> | The internal heating circuits are controlled according to the set [Heating circuit automatic 2] time program with the respective room target temperatures. Domestic hot water preparation is carried out according to [Hot water automatic 2].   | <input type="checkbox"/>            | -              | E      | E  |
| Cooling     | <input type="checkbox"/> / <input checked="" type="checkbox"/> | The internal heating circuit continuously regulates to the required feed temperature according to the parameters in the menu [→ Main menu→ Configuration→ Cooling] or to the [Room temperature setpoint 1] room temperature if the room thermostat is connected. Domestic hot water preparation is carried out according to [Hot water automatic 1]. Frost protection remains active and a blocking protection for the pump is guaranteed. | <input type="checkbox"/>            | -              | E      | E  |

Tab. 7-4 Parameter in menu: "Operating mode"

## 7 Parameter settings

### 7.3 User

[→ Main menu → User]

#### 7.3.1 Menu: Room temperature target

[→ Main menu → User → Room]

| Parameters                            | Setting range<br>Min / Max | Description   | Factory<br>setting | Incre-<br>ment | Access |    |
|---------------------------------------|----------------------------|---|--------------------|----------------|--------|----|
|                                       |                            |   |                    |                | BE     | HF |
| Room tem-<br>perature set-<br>point 1 | 5 - 40 °C                  | Target value of the room temperature in °C, which is valid for the 1st switching time cycle of the [Automatic 1] and [Automatic 2] time programs. | 20 °C              | 0.5 °C         | E      | E  |
| Room tem-<br>perature set-<br>point 2 | 5 - 40 °C                  | Target value of the room temperature in °C, which is valid for the 2nd switching time cycle of the [Automatic 1] and [Automatic 2] time programs. | 20 °C              | 0.5 °C         | E      | E  |
| Room tem-<br>perature set-<br>point 3 | 5 - 40 °C                  | Target value of the room temperature in °C, which is valid for the 3rd switching time cycle of the [Automatic 1] and [Automatic 2] time programs. | 20 °C              | 0.5 °C         | E      | E  |

Tab. 7-6 Parameter in menu: "Room temperature target"

#### 7.3.2 Menu: Room temperature reduced

[→ Main menu → User → Reduce]

| Parameters                         | Setting range<br>Min / Max | Description   | Factory<br>setting | Incre-<br>ment | Access |    |
|------------------------------------|----------------------------|---|--------------------|----------------|--------|----|
|                                    |                            |   |                    |                | BE     | HF |
| Room tem-<br>perature re-<br>duced | 5 - 40 °C                  | Target value of the reduced room temperature in °C, which is valid for the [Automatic 1] and [Automatic 2] time programs. | 15 °C              | 0.5 °C         | E      | E  |

Tab. 7-7 Parameter in menu: "Room temperature reduced"

#### 7.3.3 Menu: Room temperature absent

[→ Main menu → User → Absent]

| Parameters                         | Setting range<br>Min / Max | Description   | Factory<br>setting | Incre-<br>ment | Access |    |
|------------------------------------|----------------------------|---|--------------------|----------------|--------|----|
|                                    |                            |   |                    |                | BE     | HF |
| Room tem-<br>perature ab-<br>sence | 5 - 40 °C                  | Target value of the reduced room temperature in °C, which is valid for the [Away] + [Vacation] time programs. | 15 °C              | 0.5 °C         | E      | E  |

Tab. 7-8 Parameter in menu: "Room temperature absent"

#### 7.3.4 Menu: Hot water temperature, target

[→ Main menu → User → Hot water]

| Parameters                       | Setting range<br>Min / Max | Description  | Factory<br>setting | Incre-<br>ment | Access |    |
|----------------------------------|----------------------------|--|--------------------|----------------|--------|----|
|                                  |                            |  |                    |                | BE     | HF |
| Hot water<br>temp. setpoint<br>1 | 35 – 70 °C                 | Target value of the hot water temperature in °C, which is valid for the 1st switching time cycle of the [Automatic 1] and [Automatic 2] time programs. | 48 °C              | 0.5 °C         | E      | E  |
| Hot water<br>temp. setpoint<br>2 | 35 – 70 °C                 | Target value of the hot water temperature in °C, which is valid for the 2nd switching time cycle of the [Automatic 1] and [Automatic 2] time programs. | 48 °C              | 0.5 °C         | E      | E  |
| Hot water<br>temp. setpoint<br>3 | 35 – 70 °C                 | Target value of the hot water temperature in °C, which is valid for the 3rd switching time cycle of the [Automatic 1] and [Automatic 2] time programs. | 48 °C              | 0.5 °C         | E      | E  |

Tab. 7-9 Parameter in menu: "Hot water temperature, target"

### 7.3.5 Menu: 1x Hot water

[→ Main menu → User → 1x load]

| Parameters   | Setting range<br>Min / Max | Description  | Factory setting                     | Increment | Access |    |
|--------------|----------------------------|--|-------------------------------------|-----------|--------|----|
|              |                            |  |                                     |           | BE     | HF |
| 1x Hot Water | Off                        | Start of one-time domestic hot water preparation to the set target value [Hot water temp. setpoint 1] without time limit, independent of the heating programs. | <input checked="" type="checkbox"/> | -         | E      | E  |
|              | On                         |  | <input type="checkbox"/>            |           |        |    |

Tab. 7-10 Parameter in menu: "1x hot water"

## 7.4 Time Program

[→ Main menu → Time program]

| Parameters                  | Setting range<br>Min / Max         | Description  | Factory setting | Increment | Access |    |
|-----------------------------|------------------------------------|--|-----------------|-----------|--------|----|
|                             |                                    |  |                 |           | BE     | HF |
| Party                       | 0 – 360 min                        | This operating mode can be used to set a unique time for temporarily extending the heating time of the internal heating circuit.   | 0 min           | 15 min    | E      | E  |
| Away                        | 0 – 360 min                        | This operating mode can be used to set a one-off time for temporary regulation to the parametrised absence temperature.  | 0 min           | 15 min    | E      | E  |
| Vacation                    | Date 1st day<br>-<br>Date last day | The internal heating circuit provides continuous (24 h per day) regulation to the parametrised absence temperature ([Room temperature reduced] parameter).<br>A calendar function can be used to enter a time period of absence.   | -               | 1 day     | E      | E  |
| Holiday                     | Date 1st day<br>-<br>Date last day | A calendar function can be used to enter a time period of presence.<br>During this period of time, regulation is carried out exclusively according to the settings for "Sunday" in the [Heating circuit auto. 1] and [Hot water auto. 1] time programs.  | -               | 1 day     | E      | E  |
| Heating circuit automatic 1 | See Chap. 4.3                      | In this menu, the 1st time program can be parametrised for the internal HC. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (on) hh:mm - hh:mm (off)<br>Also, the cycles from Monday to Friday, Saturday to Sunday and Monday to Sunday can be parametrised.                   | See Tab. 4-3    | 15 min    | E      | E  |
| Heating circuit automatic 2 | See Chap. 4.3                      | In this menu, the 2nd time program for the internal HC can be parametrised. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (on) hh:mm - hh:mm (off)<br>Also, the cycles from Monday to Friday, Saturday to Sunday and Monday to Sunday can be parametrised.                   | See Tab. 4-3    | 15 min    | E      | E  |
| Hot water automatic 1       | See Chap. 4.3                      | This menu can be used to parametrise the 1st time program for domestic hot water preparation. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (on) hh:mm - hh:mm (off)<br>Also, the cycles from Monday to Friday, Saturday to Sunday and Monday to Sunday can be parametrised. | See Tab. 4-3    | 15 min    | E      | E  |
| Hot water automatic 2       | See Chap. 4.3                      | This menu can be used to parametrise the 2nd time program for domestic hot water preparation. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (on) hh:mm - hh:mm (off)<br>Also, the cycles from Monday to Friday, Saturday to Sunday and Monday to Sunday can be parametrised. | See Tab. 4-3    | 15 min    | E      | E  |
| Circulation program         | See Chap. 4.3                      | This menu can be used to parametrise a timer program for the circulation pump. 3 switching cycles with a resolution of 15 minutes can be set. A separate entry for each weekday is possible. Format: (on) hh:mm - hh:mm (off)<br>Also, the cycles from Monday to Friday, Saturday to Sunday and Monday to Sunday can be parametrised.                | See Tab. 4-3    | 15 min    | E      | E  |

## 7 Parameter settings

| Parameters         | Setting range<br>Min / Max  | Description   | Factory setting | Increment | Access |    |
|--------------------|-----------------------------|---|-----------------|-----------|--------|----|
|                    |                             |   |                 |           | BE     | HF |
| Time program reset | Party                       | This menu can be used to reset the time programs to factory settings. To do this, select the respective time programs and then confirm the selection with the Confirm icon. | -               | -         | E      | E  |
|                    | Away                        |   |                 |           |        |    |
|                    | Vacation                    |   |                 |           |        |    |
|                    | Holiday                     |   |                 |           |        |    |
|                    | Heating circuit automatic 1 |   |                 |           |        |    |
|                    | Heating circuit automatic 2 |   |                 |           |        |    |
|                    | Hot water automatic 1       |   |                 |           |        |    |
|                    | Hot water automatic 2       |   |                 |           |        |    |
|                    | Circulation program         |   |                 |           |        |    |

Tab. 7-11 Parameter in menu: "Time Program"

## 7.5 Settings

[→ Main menu→ Settings]

### 7.5.1 Menu: Display settings

[→ Main menu → Settings → Display]

| Parameters                | Setting range<br>Min / Max | Description   | Factory setting                     | Increment | Access |    |
|---------------------------|----------------------------|---|-------------------------------------|-----------|--------|----|
|                           |                            |   |                                     |           | BE     | HF |
| Language                  | Deutsch                    | National language of the display texts on the control panel   | <input checked="" type="checkbox"/> | -         | E      | E  |
|                           | English                    |   | <input type="checkbox"/>            |           |        |    |
|                           | Français                   |   | <input type="checkbox"/>            |           |        |    |
|                           | Nederlands                 |   | <input type="checkbox"/>            |           |        |    |
|                           | Espanol                    |   | <input type="checkbox"/>            |           |        |    |
|                           | Italiano                   |   | <input type="checkbox"/>            |           |        |    |
|                           | Portugués                  |   | <input type="checkbox"/>            |           |        |    |
| Time                      |                            | Time in hours/minutes format.   |                                     |           | E      | E  |
| Date                      |                            | Current date in day/month/year format. The current day of the week is calculated automatically from the date. |                                     |           | E      | E  |
| LCD Brightness            | 10 – 100%                  | Brightness of the display   | 80%                                 | 10%       | E      | E  |
| LCD illumination duration | 1 - 60 s                   | Lighting duration of the display  | 30 s                                | 1 s       | E      | E  |

Tab. 7-13 Parameter in menu: "Display settings"



### 7.5.2 Menu: System

[→ Main menu → Settings → System]

| Parameters          | Setting range          | Description   | Factory setting                     | Incre-<br>ment | Access |    |
|---------------------|------------------------|---|-------------------------------------|----------------|--------|----|
|                     | Min / Max              |   |                                     |                | BE     | HF |
| Outdoor unit        | No selection           | Heat pump outdoor unit type   | -                                   | -              | N      | E  |
|                     | 4 kW                   |   |                                     |                |        |    |
|                     | 6 kW                   |   |                                     |                |        |    |
|                     | 8 kW                   |   |                                     |                |        |    |
|                     | 11 kW                  |   |                                     |                |        |    |
|                     | 14 kW                  |   |                                     |                |        |    |
|                     | 16 kW                  |   |                                     |                |        |    |
| Indoor unit         | No selection           | Heat pump interior unit type.   | -                                   | -              | N      | E  |
|                     | R/EHS(B)(X/H)04P30/50D | Adaptation of the set value important, as the device types have different defrosting logics.  |                                     |                |        |    |
|                     | R/EHS(B)(X/H)08P30D    |   |                                     |                |        |    |
|                     | R/EHS(B)(X/H)08P50D    |   |                                     |                |        |    |
|                     | R/EHS(B)(X/H)16P50D    |   |                                     |                |        |    |
| Heating system (*)  | Floor heating          | Heat exchanger type in the heating system.  | <input checked="" type="checkbox"/> | -              | N      | E  |
|                     | Convector              | If "Radiator" is selected and high feed temperatures are desired, it may make sense to increase the [Max. feed temperature] parameter to 65 °C ([→ Main menu → Configuration → Heating]).   | <input type="checkbox"/>            |                |        |    |
|                     | Radiator               |   | <input type="checkbox"/>            |                |        |    |
| Pump dT heating (*) | 3 - 10                 | Required temperature difference between return and feed temperature. If a minimum temperature difference is required for good heat distribution system operation in heating mode.   | 5                                   | 1              | N      | E  |
| Pump dT cooling (*) | 3 - 10                 | Required temperature difference between return and feed temperature. If a minimum temperature difference is required for good heat distribution system operation in cooling mode.   | 5                                   | 1              | N      | E  |
| Pump limit          |                        | This parameter defines the maximum pump speed. Under normal conditions, the default setting should NOT be changed. The limitation of the pump speed is skipped if the flow rate is in the range of the minimum flow rate. The water flow resulting at limited pump speed can be taken from the pump characteristic curve (see Installation and maintenance instructions Daikin Altherma EHS(X/H)) | 6                                   | 1              | N      | E  |
|                     | 0                      | No limit  |                                     |                |        |    |
|                     | 1 – 4                  | Limitation of pump speed independent of the operating status. This setting cannot guarantee heating comfort. The maximum pump speed depends on the setting as follows: 1: 90%, 2: 75%, 3: 65%, 4: 55%   |                                     |                |        |    |
|                     | 5 - 8                  | Limitation of the pump speed if there is no heating or cooling requirement. The maximum pump speed depends on the setting as follows: 5: 90%, 6: 75%, 7: 65%, 8: 55%  |                                     |                |        |    |

Tab. 7-14 Parameter in menu: "System"

## 7 Parameter settings

### 7.5.3 Menu: External heat source

[→ Main menu → Settings → Ext. source]

| Parameters                      | Setting range<br>Min / Max    | Description  | Factory setting                     | Increment | Access |    |
|---------------------------------|-------------------------------|--|-------------------------------------|-----------|--------|----|
|                                 |                               |  |                                     |           | BE     | HF |
| Config. of external heat source |                               | Setting of whether there is an additional external heat generator for domestic hot water preparation (DHW) and/or heating support (HZU).   |                                     | -         | N      | E  |
|                                 | No external heat generator    | The heat pump is the only heat source  | <input type="checkbox"/>            |           |        |    |
|                                 | Backup heater BUH             | Optional heating rod (3N~) installed in the storage tank   | <input checked="" type="checkbox"/> |           |        |    |
|                                 | DHW + heating support         | An alternative heat generator (e.g. backup heater 1N~) provides domestic hot water preparation and backup heating  | <input type="checkbox"/>            |           |        |    |
|                                 | Two external heat generators  | Two external heat generators: Alternative WEZ 1 (e.g. backup heater 1N~) takes over domestic hot water preparation and alternative WEZ 2 takes over heating support  | <input type="checkbox"/>            |           |        |    |
| Ext. hot water power            | 1 - 40 kW                     | Heat output of the electric heater booster for domestic hot water preparation  | 3 kW                                | 1 kW      | N      | E  |
| Ext. power level 1 (*)          | 1 - 40 kW                     | Heat output of the electric heater booster for heating support stage 1<br>See operating instructions for the BUxx heating element.   | 3 kW                                | 1 kW      | N      | E  |
| Ext. power level 2 (*)          | 1 - 40 kW                     | Heat output of the electric heater booster for heating support stage 2<br>See operating instructions for the BUxx heating element.   | 3 kW                                | 1 kW      | N      | E  |
| Equilibrium function (*)        |                               | The bivalence function is only relevant to operation of the optional heater booster due to a backup request (room heating mode).   |                                     | -         | N      | E  |
|                                 | Aux. heating always possible  | Operation of the backup heater is always possible.   | <input type="checkbox"/>            |           |        |    |
|                                 | Aux. heating T-biv. dependent | Backup heater is only released if the temperature set in the [Equilibrium Temp] parameter is undercut.   | <input checked="" type="checkbox"/> |           |        |    |
| Equilibrium Temp                | -15 °C - +35 °C               | Setting influences the effect of the potential-free AUX switching contact (toggle switch output A) defined in the [AUX switching function] parameter.<br>Only if [Equilibrium function] parameter = heating up T-bivalence:<br>Outside temperature as of which the optional heater booster is activated to support room heating. The bivalence temperature is relevant to operation of the optional heater booster due to a backup request (room heating mode). The temperature of the temperature sensor (information value Temperature <sub>a</sub> ) integrated in the heat pump outdoor unit is used for this. | 0 °C                                | 1 °C      | N      | E  |

Tab. 7-15 Parameter in menu: "External heat source"

## 7.5.4 Menu: Inputs/Outputs

[→ Main menu → Settings → Inputs/Outputs]

| Parameters      | Setting range<br>Min / Max  | Description   | Factory<br>setting                  | Incre-<br>ment | Access |    |
|-----------------|-----------------------------|---|-------------------------------------|----------------|--------|----|
|                 |                             |   |                                     |                | BE     | HF |
| Smart grid      |                             | Evaluation of the SG signal (see <a href="#">Chap. 4.4</a> ).   |                                     | -              | N      | E  |
|                 | Off                         | Smart Grid function not active, SG signal is not evaluated.   | <input checked="" type="checkbox"/> |                |        |    |
|                 | On                          | Depending on the utility company signal, the heat pump is shut off (no frost protection function) or operated at higher temperatures.   | <input type="checkbox"/>            |                |        |    |
| Smart grid mode |                             | Only if [Smart grid] parameter = On:<br>Is used for a possible target temperature increase with a Smart Grid switch-on command.   |                                     | -              | N      | E  |
|                 | Comfort                     | Increase of the hot water target temperature by 5 K   | <input checked="" type="checkbox"/> |                |        |    |
|                 | Standard                    | Increase of the feed target temperature by 2 K and increase of the hot water target temperature by 5 K  | <input type="checkbox"/>            |                |        |    |
|                 | Eco                         | Increase of the feed target temperature by 5 K and increase of the hot water target temperature by 7 K  | <input type="checkbox"/>            |                |        |    |
| HT/NT function  |                             | Setting of which heat sources are switched off if the high rate signal output by the utility company (EVU) is received in the case of a low rate mains connection.  |                                     | -              | N      | E  |
|                 | Inactive                    | Deactivated (no effect)   | <input checked="" type="checkbox"/> |                |        |    |
|                 | Switch off compressor       | Refrigerant compressor is switched off  | <input type="checkbox"/>            |                |        |    |
|                 | Switch off compressor + BUH | Refrigerant compressor and backup heater are switched off   | <input type="checkbox"/>            |                |        |    |
|                 | Switch all off              | Everything is switched off (no frost protection function, see <a href="#">Chap. 4.5.3</a> )   | <input type="checkbox"/>            |                |        |    |
| HT/NT contact   |                             | Definition of whether the HT/NT input is evaluated as a normally closed contact or a normally open contact.   |                                     | -              | N      | E  |
|                 | Normally open contact       | Switching contact closed during high rate.  | <input checked="" type="checkbox"/> |                |        |    |
|                 | Normally closed contact     | Switching contact closed during low rate.   | <input type="checkbox"/>            |                |        |    |
| Room thermostat |                             | Configuration of a room thermostat with potential-free contacts connected to Daikin Altherma EHS(X/H) connection J16.   |                                     | -              | N      | E  |
|                 | No                          | Deactivated   | <input checked="" type="checkbox"/> |                |        |    |
|                 | Yes                         | Only if [Interlink function] parameter = off<br><br>Evaluation of the heating and cooling switching contacts at plug connection J16 on the PCB of RoCon BM2C (only if none of the "Standby", "Reducing", "Summer", "Vacation", "Holiday" or "Screed" operating modes is active):<br><ul style="list-style-type: none"> <li>Closed heating switching contact: Operating mode is switched to "Heating". Priority if both switching contacts are closed.</li> <li>Closed cooling switching contact: Operating mode is switched to "Cooling".</li> </ul> Open contacts: Only frost protection active. | <input type="checkbox"/>            |                |        |    |

## 7 Parameter settings

| Parameters                         | Setting range<br>Min / Max     | Description  | Factory<br>setting                  | Incre-<br>ment | Access |    |
|------------------------------------|--------------------------------|--|-------------------------------------|----------------|--------|----|
|                                    |                                |  |                                     |                | BE     | HF |
| Interlink function                 |                                | Configuration for systems that are operated with 2 different feed target temperatures (see <a href="#">Chap. 4.4.4</a> ).<br><br>One possible application is, for example, the additional integration of an HP convector in a surface heating and cooling system.<br><br>Prerequisite: 2 room thermostats are connected to Daikin Altherma EHS(X/H) plug connection J16.   |                                     | -              | N      | E  |
|                                    | Off                            | Deactivated  | <input checked="" type="checkbox"/> |                |        |    |
|                                    | On                             | Evaluation of the heating and cooling switching contacts at plug connection J16 on the PCB of RoCon BM2C.<br><br>Activation of cooling mode only by switching the operating mode to "Cooling" (see <a href="#">Chap. 4.1</a> ).<br><br>Setting of the [Room thermostat] parameter is no longer evaluated. <ul style="list-style-type: none"><li>Open switching contacts: Only frost protection active</li><li>"Heating" and "Automatic 1" / "Automatic 2" operating mode active during the switching cycles in day mode.<ul style="list-style-type: none"><li>Closed heating switching contact = IL1:</li><li>It is regulated to the normal feed target temperature in accordance with the parameter settings in [→ Main menu → Configuration → Heating].</li><li>Closed cooling switching contact = IL2:</li><li>The system is regulated to the increased feed target temperature (normal feed target temperature + value of the [Interlink temperature rise] parameter. Priority if both switching contacts are closed!</li></ul></li><li>"Cooling" operating mode active.<ul style="list-style-type: none"><li>Closed heating switching contact = IL1:</li><li>It is regulated to the normal feed target temperature in accordance with the parameter settings in [→ Main menu → Configuration → Heating].</li><li>Closed cooling switching contact = IL2:</li></ul></li></ul><br>The system is regulated to the reduced feed target temperature (normal feed target temperature value of the [Interlink temperature reduction] parameter. Priority if both switching contacts are closed | <input type="checkbox"/>            |                |        |    |
| Program-<br>mable output<br>(230V) |                                | Configuration of the multi-function output (230 V, J14 connection):  |                                     | -              | N      | E  |
|                                    | Inactive                       | The output has no function.  | <input type="checkbox"/>            |                |        |    |
|                                    | Heating circuit request        | Header pump – The output becomes active as soon as a system heating circuit reports a heat requirement to the heat generator.  | <input type="checkbox"/>            |                |        |    |
|                                    | Circulation request            | Circulation pump – The output is activated either after the time program of the circulation pump or after the time program of the domestic hot water preparation, depending on the parametrisation (see <a href="#">Chap. 4.3</a> ).   | <input checked="" type="checkbox"/> |                |        |    |
|                                    | Direct heating circuit request | Feeder pump – The output becomes active as soon as a heat requirement is pending for the direct heating circuit of the heat generator.   | <input type="checkbox"/>            |                |        |    |
| Func. burner<br>blocking contact   | Resistance values              | Selection of the functionality of the EXT switching contact (J8) (see <a href="#">Chap. 4.1</a> )  | <input checked="" type="checkbox"/> | -              | N      | E  |
|                                    | Burner blocking contact        |  | <input type="checkbox"/>            |                |        |    |

| Parameters                           | Setting range<br>Min / Max           | Description   | Factory<br>setting                  | Incre-<br>ment | Access |    |
|--------------------------------------|--------------------------------------|---|-------------------------------------|----------------|--------|----|
|                                      |                                      |   |                                     |                | BE     | HF |
| AUX switch-<br>ing function          |                                      | Setting assigns the switching conditions for the potential-free AUX switch-<br>ing contact (toggle switch output A, see <a href="#">Chap. 4.4.4</a> ).  |                                     | -              | N      | E  |
|                                      | Inactive                             | Function deactivated.<br><b>AUX switching contact switches;</b>   | <input checked="" type="checkbox"/> |                |        |    |
|                                      | Switching<br>threshold TDHW<br>(AUX) | If storage tank temperature (T <sub>dhw</sub> ) ≥ value of [Switching threshold TDHW<br>(AUX)] parameter.   | <input type="checkbox"/>            |                |        |    |
|                                      | Heating/cooling<br>request           | If a cooling request or heating request is present.   | <input type="checkbox"/>            |                |        |    |
|                                      | BUH request                          | If a hot water request to the backup heater (BUxx) is present or the con-<br>figured backup heater is requested for heating support.  | <input type="checkbox"/>            |                |        |    |
|                                      | Error                                | If an error is pending  | <input type="checkbox"/>            |                |        |    |
|                                      | TVBH > 60 °C                         | If the sensor value (TVBH) is > 60 °C.  | <input type="checkbox"/>            |                |        |    |
|                                      | Outside temperat-<br>ure             | If the outside temperature is < [Equilibrium Temp] parameter value. (heat<br>pump continues to operate = parallel equilibrium mode)   | <input type="checkbox"/>            |                |        |    |
|                                      | Outside temp. +<br>DHW/heating       | If the outside temperature is < [Equilibrium Temp] parameter value + a<br>heating request or a hot water request is present. (heat pump does not<br>continue to operate = alternative equilibrium mode)   | <input type="checkbox"/>            |                |        |    |
|                                      | DHW request                          | If a hot water request is present.  | <input type="checkbox"/>            |                |        |    |
|                                      | Outside temperat-<br>ure + heating   | If the outside temperature is < [Equilibrium Temp] parameter value + "room<br>heating" heat request (not for hot water request). Heat pump no longer op-<br>erates in room heating mode below the value set in the [Equilibrium Temp]<br>parameter - only in hot water mode.<br><br>Application: Alternative room heating bi-valence mode if the boiler is hy-<br>draulically integrated so that it directly heats the unpressurised storage<br>tank water of the Daikin Altherma EHS(X/H) (connection via solar connec-<br>tions).   | <input type="checkbox"/>            |                |        |    |
|                                      | Multi-oil                            | If the outside temperature is < [Equilibrium Temp] parameter value + "room<br>heating" heat request (not for hot water request). Heat pump no longer op-<br>erates in room heating mode below the value set in the [Equilibrium Temp]<br>parameter - only in hot water mode.<br><br>Application: Alternative room heating equilibrium mode if the boiler is hy-<br>draulically integrated in the heat pump feed. For this application type, the<br>frost protection function must be deactivated on the Daikin Altherma<br>EHS(X/H) ([Frost protection temperature] parameter = Off). | <input type="checkbox"/>            |                |        |    |
|                                      | Cooling mode                         | If the heat pump is in the "Cooling" operating mode.  | <input type="checkbox"/>            |                |        |    |
| AUX delay<br>time                    | 0-600 s                              | AUX switching contact (A) only switches after a delay if the switching con-<br>dition (see [AUX switching function] parameter) is present for longer than<br>the set time.  | 120 s                               | 5 s            | N      | E  |
| Switching<br>threshold<br>TDHW (AUX) | 20 – 85 °C                           | Storage tank temperature (T <sub>dhw</sub> ) switching threshold for AUX switching<br>contact (see [AUX switching function] parameter).   | 50 °C                               | 1 °C           | N      | E  |

Tab. 7-16 Parameter in menu: "Inputs/Outputs"

## 7 Parameter settings

### 7.5.5 Menu: Intelligent Storage Mgmt

[→ Main menu → Settings → ISM]

| Parameters            | Setting range<br>Min / Max | Description  | Factory setting                     | Increment | Access |    |
|-----------------------|----------------------------|--|-------------------------------------|-----------|--------|----|
|                       |                            |  |                                     |           | BE     | HF |
| Continuous heating    |                            | This function enables uninterrupted heating, even when the evaporator is being defrosted. This enables high comfort to be guaranteed, even with rapidly reacting heating systems (e.g. convectors).  |                                     | -         | N      | E  |
|                       | Off                        | No uninterrupted heating   | <input type="checkbox"/>            |           |        |    |
|                       | On                         | Uninterrupted heating. When the evaporator is being defrosted, heat for heating is taken from the storage tank.  | <input checked="" type="checkbox"/> |           |        |    |
| Heating support (HZU) |                            | Heating support from hot water storage tank if minimum temperature is exceeded (see Chap. 4.4 and [HZU hysteresis] parameter).   |                                     | -         | N      | E  |
|                       | Off                        | No heating support   | <input type="checkbox"/>            |           |        |    |
|                       | On                         | Heating support function active  | <input checked="" type="checkbox"/> |           |        |    |
| Heating support power | 3 - 40 kW                  | The setting limits the heating support output.   | 15 kW                               | 1 kW      | N      | E  |
| HZU hysteresis        | 2 - 15                     | Only if [Heating support (HZU)] parameter = On.<br>Heating support is activated if<br>T <sub>dhw</sub> > THZUmin + 4 K and T <sub>dhw</sub> > [Feed temperature setpoint] + 1 K.<br>Heating support is deactivated if<br>T <sub>dhw</sub> < THZUmin or T <sub>dhw</sub> < [Feed temperature setpoint].<br>THZUmin = currently active hot water target temperature [Feed temperature setpoint] + set [HZU hysteresis] parameter value.<br>T <sub>dhw</sub> = current hot water storage tank temperature<br>[Feed temperature setpoint] = currently active feed target temperature (see Chap. 4.5) | 5                                   | 1         | N      | E  |
| HZU max. temperature  | 5 - 85 °C                  | The setting limits the feed target temperature (measured against t <sub>v</sub> , BH) when the heating support function is active.   | 60 °C                               | 1 °C      | N      | E  |
| Min. pump power       | 40 - 80%                   | Lower limit for pump operation. Only used when heating support is active or heat is generated by an external heat source.  | 50%                                 | 1%        | N      | E  |
| Max. pump power       | 60 - 80%                   | Upper limit for pump operation. Only used when heating support is active or heat is generated by an external heat source.  | 80%                                 | 1%        | N      | E  |

Tab. 7-17 Parameter in menu: "Intelligent Storage Mgmt"

### 7.5.6 Menu: Special functions

[→ Main menu → Settings → Special]

| Parameters  | Setting range<br>Min / Max | Description  | Factory setting                     | Increment | Access |    |
|-------------|----------------------------|--|-------------------------------------|-----------|--------|----|
|             |                            |  |                                     |           | BE     | HF |
| Quiet mode  |                            | Mode for quiet operation at reduced output (see Chap. 4.4).        |                                     | -         | N      | E  |
|             | Inactive                   | Inactive   | <input checked="" type="checkbox"/> |           |        |    |
|             | Active                     | Active   | <input type="checkbox"/>            |           |        |    |
|             | Active at night            | Only operated in whisper mode at night from 22:00 to 6:00 hours.   | <input type="checkbox"/>            |           |        |    |
| Noise level |                            | If low-noise operation is selected, three noise levels can be set. |                                     | -         | N      | E  |
|             | Min. noise reduction       | The output can fall in colder ambient conditions.                  | <input checked="" type="checkbox"/> |           |        |    |
|             | Med. noise reduction       | Reduced output is possible under all conditions.                   | <input type="checkbox"/>            |           |        |    |
|             | Max. noise reduction       | The output is reduced under all conditions.                        | <input type="checkbox"/>            |           |        |    |

Tab. 7-18 Parameter in menu: "Special functions"

## 7.6 Configuration

[→ Main menu → Configuration]

### 7.6.1 Menu: Sensors

[→ Main menu → Configuration → Sensors]

| Parameters                             | Setting range<br>Min / Max | Description  | Factory<br>setting                  | Incre-<br>ment | Access |    |
|--|----------------------------|--|-------------------------------------|----------------|--------|----|
|  |                            |  |                                     |                | BE     | HF |
| Outside tem-<br>perature<br>sensor (*) | Integrated sensor          | Selection of whether the sensor integrated in the outdoor unit or an optional<br>outside temperature sensor is used to determine the target feed temperat-<br>ures   | <input checked="" type="checkbox"/> | -              | N      | E  |
|  | Optional sensor            |  | <input type="checkbox"/>            |                |        |    |
| Tank temper-<br>ature sensor           |                            | Configuration of the domestic hot water preparation:   |                                     | -              | N      | E  |
|  | Inactive                   | No function for domestic hot water preparation.  | <input type="checkbox"/>            |                |        |    |
|  | Sensor                     | Function for domestic hot water preparation is activated. A storage temper-<br>ature sensor is evaluated for domestic hot water preparation (if no storage<br>temperature sensor is connected, an error message is generated).   | <input checked="" type="checkbox"/> |                |        |    |
|  | Thermostat                 | Function for domestic hot water preparation is activated. A thermostatic<br>switch (ON/OFF) is evaluated for domestic hot water preparation, where an<br>"open terminal" is evaluated as "not required".   | <input type="checkbox"/>            |                |        |    |
| Water pres-<br>sure sensor             |                            | Configuration of the sensor for detecting the water pressure of the system.  |                                     | -              | N      | E  |
|  | Off                        | No sensor evaluation   | <input type="checkbox"/>            |                |        |    |
|  | On                         | Sensor evaluation activated (if no pressure sensor is connected, an error<br>message is generated.)  | <input checked="" type="checkbox"/> |                |        |    |
| Adjustment<br>outside tem-<br>perature | -5.0 - +5.0 K              | Individual adjustment for the measured value of the outside temperature<br>relevant for the control unit.  | 0.0 K                               | 0.1 K          | N      | E  |
| Water pres-<br>sure min.               | 0.1 - 5.0 bar              | Defines the minimum water pressure.<br><br>Pressure monitor function (only with activated pressure sensor, [Water<br>pressure sensor]=On): If the measured value undercuts the set value, the<br>Daikin Altherma EHS(X/H) is shut off and an error message is generated.   | 0.5 bar                             | 0.1 bar        | N      | E  |
| Water pres-<br>sure max.               | 0.1 - 5.0 bar              | Defines the maximum water pressure.<br><br>Pressure monitoring function (only with activated pressure sensor, [Water<br>pressure sensor]=On): If the measured value exceeds the set value, a<br>warning message is generated.  | 3.0 bar                             | 0.1 bar        | N      | E  |
| Water pres-<br>sure target             | 0.1 - 5.0 bar              | Defines the target water pressure.<br><br>Pressure monitoring function (only with activated pressure sensor, [Water<br>pressure sensor] = on): If the measured value undercuts the value set in<br>the [Maximum pressure loss] parameter, a warning message is generated.  | 0.9 bar                             | 0.1 bar        | N      | E  |
| Max. pressure<br>drop                  | 0.1 - 5.0 bar              | Defines the maximum acceptable pressure loss in the heating system.<br><br>Pressure monitoring function (only with activated pressure sensor, [Water<br>pressure sensor]=On): If the measured value undercuts the value set in the<br>[Water pressure target] parameter by more than the set value, a warning<br>message is generated. | 0.5 bar                             | 0.1 bar        | N      | E  |

Tab. 7-20 Parameter in menu: "Sensors"

## 7 Parameter settings

### 7.6.2 Menu: Heating circuit config.

[→ Main menu → Configuration → HC config]

| Parameters                   | Setting range<br>Min / Max | Description   | Factory setting                     | Increment | Access |    |
|------------------------------|----------------------------|---|-------------------------------------|-----------|--------|----|
|                              |                            |   |                                     |           | BE     | HF |
| Weather-dependent            |                            | Selection of the method for determining the target feed temperature.  |                                     | -         | N      | E  |
|                              | Feed temperature, fixed    | Feed temperature, fixed: Control to a fixed flow value (depending on operating mode)  | <input type="checkbox"/>            |           |        |    |
|                              | Weather-compensated        | Weather-compensated: Weather-compensated control based on the heating curve   | <input checked="" type="checkbox"/> |           |        |    |
| Frost protection temperature | Off                        | No frost protection of the HC   | 0 °C                                | 1 °C      | E      | E  |
|                              | -15 - 5 °C                 | If the outside temperature drops below the set value, the system switches to frost protection operation (the pumps are switched on). The function is ended if the outside temperature rises above the set value +1 K.                                 |                                     |           |        |    |
| Insulation                   | Off                        | Setting the building insulation standard. This influences the averaged outside temperature and the automatic adaptations of the heating curve and the heating times.  | <input type="checkbox"/>            | -         | E      | E  |
|                              | low                        |   | <input checked="" type="checkbox"/> |           |        |    |
|                              | Normal                     |   | <input type="checkbox"/>            |           |        |    |
|                              | Good                       |   | <input type="checkbox"/>            |           |        |    |
|                              | very good                  |   | <input type="checkbox"/>            |           |        |    |
| Switch temp. heating circuit |                            | Automatic activation of cooling mode.   | Off                                 | 1 °C      | N      | E  |
|                              | Off                        | Deactivated   |                                     |           |        |    |
|                              | 10 - 40 °C                 | If the outside temperature exceeds the set value, the system is switched to the "Cooling" operating mode. If the outside temperature falls 2 K below the set value, the system automatically switches back to the previously activated operating mode |                                     |           |        |    |

Tab. 7-21 Parameter in menu: "Heating circuit config."

### 7.6.3 Menu: Heating

[→ Main menu → Configuration → Heating]

| Parameters                      | Setting range<br>Min / Max | Description   | Factory setting | Increment | Access |    |
|---------------------------------|----------------------------|---|-----------------|-----------|--------|----|
|                                 |                            |   |                 |           | BE     | HF |
| Heating operation limit         | Off                        | Setting of the automatic summer switch-off of the heating operation. If the outside temperature measured and averaged by the controller exceeds the set value by 1 K, the HC is switched off. The heating is released again if the outside temperature undercuts the set heating limit. | 19 °C           | 1 K       | E      | E  |
|                                 | 10 - 40 °C                 |   |                 |           |        |    |
| Heat limit reducing mode        | Off                        | Setting the heating limit for the "switch-off" of the heating circuit during the setback time (functioning as in [Heating operation limit] parameter).  | 10 °C           | 1 K       | E      | E  |
|                                 | 10 - 40 °C                 |   |                 |           |        |    |
| Heat-Slope                      | 0.0 - 3.0                  | Only if [Weather-dependent] parameter = weather-compensated:<br>Setting of the heating curve. The heating curve reflects the dependence of the target feed temperature of the HC on the outside temperature (see Chap. 4.5).  | 0.5             | 0.1       | E      | E  |
| Feed temperature, overshoot (*) | 0 - 4                      | This function defines how far the water temperature may exceed the feed target temperature before the compressor is stopped. The compressor resumes operation when the feed temperature falls below the target feed temperature. This function ONLY applies to heating mode.            | 3               | 1         | N      | E  |
| Feed temperature heating mode   | 20 - 90 °C                 | Only if [Weather-dependent] parameter = Weather-compensated:<br>Setting of the target feed temperature for the heating circuit during the heating time in operating mode: "Automatic 1", "Automatic 2", "Heating".  | 40 °C           | 1 °C      | E      | E  |
| Feed temperature reducing mode  | 10 - 90 °C                 | Only if [Weather-dependent] parameter = Weather-compensated:<br>Setting the target feed temperature for the heating circuit during the setback time for the operating mode: "Automatic 1", "Automatic 2", "Reducing".   | 10 °C           | 1 °C      | E      | E  |



## 7 Parameter settings

| Parameters             | Setting range<br>Min / Max | Description  | Factory setting | Increment | Access |    |
|------------------------|----------------------------|--|-----------------|-----------|--------|----|
|                        |                            |  |                 |           | BE     | HF |
| Max. feed temperature  | 20 – 90 °C                 | <p>The setting limits the feed temperature (measured at <math>t_{v2}</math>) with active heating support function.</p> <p>The determined target feed temperature of the HC is limited to the maximum value set here.</p> <p>If an optionally connected mixed HC requests a higher temperature of the heat generator, this is taken into account. This means the internal circulation pump of the heat generator always runs if the generator is switched on. If the direct HC supplies the floor heating, a mechanical temperature limiter must be installed to prevent any overheating of the screed.</p> | 80 °C           | 1 °C      | N      | E  |
| Min. feed temperature  | 10 – 90 °C                 | The determined target feed temperature of the HC is limited to the minimum value set here.   | 28 °C           | 1 °C      | N      | E  |
| Room Influence         |                            | <p>Only with the room control connected and assigned to the HC:</p> <p>The setting of what influence the deviation of the room temperature measured by EHS157034 from the current target value (see <a href="#">Chap. 4.2</a>) has on the feed temperature.</p>  | Off             | 1 K       | E      | E  |
|                        | Off,                       | Purely weather-compensated feed temperature control  |                 |           |        |    |
|                        | 0 K                        | Purely weather-compensated feed temperature control, but internal circulation pump continues running until the next heating cycle after a heat requirement during the setback cycle.   |                 |           |        |    |
|                        | 1 – 20 K                   | Causes a correction of the target feed temperature (parallel shift of the heating curve) by the set factor. If the measured temperature lies 2 K below the target value, the target feed temperature is increased by 2x the set value.   |                 |           |        |    |
| Adjustment room sensor | -5 - +5 K                  | <p>Only with room control connected and assigned to the HC.</p> <p>Individual adjustment of the room temperature relevant to the control unit.</p> <p>If a systematic deviation of the room temperature measured by the EHS157034 to the actual temperature in the occupied area of this room is determined, the measured value can be corrected by the set value.</p>   | 0.0 K           | 1 K       | E      | E  |

## 7 Parameter settings

| Parameters                 | Setting range<br>Min / Max | Description   | Factory setting                     | Increment | Access |    |
|----------------------------|----------------------------|---|-------------------------------------|-----------|--------|----|
|                            |                            |   |                                     |           | BE     | HF |
| Heating curve adaptation   |                            | The function can only be carried out with a room controller connected and assigned to the HC:   |                                     | -         | N      | E  |
|                            | Off                        | Off: Deactivated  | <input checked="" type="checkbox"/> |           |        |    |
|                            | On                         | <p>Activated = start of a one-time automatic heating curve adaptation.</p> <p>Prerequisites:</p> <ul style="list-style-type: none"> <li>Outside temperature &lt; 8 °C</li> <li>Setting of the operating mode: "Automatic 1" or "Automatic 2"</li> <li>Duration of the setback period is at least 6 hours</li> </ul> <p>Function: At the start of the setback time, the current room temperature is set as the target value for the following 4 hours. The heating curve that is required to maintain this room temperature is determined from the target feed temperature by the control unit.</p> <p>If the automatic heating curve adaptation is interrupted, the function pauses until the adaptation is successfully carried out or ended the next day (setting the parameter to "Off" or changing the current operating mode).</p> <p>Domestic hot water preparation and heating optimisation is locked during the automatic heating curve adaptation.</p> | <input type="checkbox"/>            |           |        |    |
| Interlink temperature rise | 1 - 50 K                   | <p>Only if [Interlink function] parameter = On:</p> <p>Feed target temperature is increased by the set value when the cooling RT switching contact is closed. Request, e.g. by HP convector.</p>  | 5 K                                 | 1 K       | N      | E  |
| Comfort heating            | Off                        | <p>If the heat pump cannot cover the heating demand when outside temperatures are very low, heat is extracted from the storage tank and used for room heating (see <a href="#">Chap. 4.5.4</a>)</p> <ul style="list-style-type: none"> <li>Off: Only if the heating demand is not covered is the storage tank temperature raised. During the time it takes to raise the temperature, there may be a slight loss of comfort.</li> <li>On: At corresponding outside temperatures, the storage tank temperature is always raised above the storage tank temperature set for the hot water requirement. The power consumption of the heat pump may increase.</li> </ul>   | <input checked="" type="checkbox"/> |           | N      | E  |
|                            | On                         |   | <input type="checkbox"/>            |           |        |    |

Tab. 7-22 Parameter in menu: "Heating"

## 7.6.4 Menu: Cooling

[→ Main menu → Configuration → Cooling]

| Parameters                      | Setting range<br>Min / Max | Description   | Factory<br>setting | Incre-<br>ment | Access |    |
|---------------------------------|----------------------------|---|--------------------|----------------|--------|----|
|                                 |                            |   |                    |                | BE     | HF |
| T-Flow Cooling start            | 5 - 25 °C                  | Only if [Weather-dependent] parameter = weather-compensated:<br>Setting of the cooling feed target temperature at the start of cooling mode (outside temperature = [Start T-Out Cooling] parameter)   | 18 °C              | 1 °C           | E      | E  |
| T-Flow Cooling max              | 5 - 25 °C                  | Only if [Weather-dependent] parameter = weather-compensated:<br>Setting of the minimum cooling feed target temperature. This is held constant as of the outside temperature ([Max T-Out Cooling] parameter).  | 8 °C               | 1 °C           | E      | E  |
| Start T-Out Cooling             | 15 - 45 °C                 | Only if [Weather-dependent] parameter = weather-compensated:<br>Setting as of which outside temperature cooling mode starts with the highest cooling feed target temperature [T-Flow Cooling start] (setting condition: "Cooling" operating mode).  | 24 °C              | 1 °C           | E      | E  |
| Max T-Out Cooling               | 20 - 45 °C                 | Only if [Weather-dependent] parameter = weather-compensated:<br>Setting of the outside temperature at which the lowest cooling feed target temperature [T-Flow Cooling max] is specified (setting condition: "Cooling" operating mode).             | 35 °C              | 1 °C           | E      | E  |
| Feed temperature lower limit    | 5 - 25 °C                  | Only if [Weather-dependent] parameter = weather-compensated:<br>Setting of the absolute lower limit of the cooling feed target temperature. Limitation acts if a lower cooling feed target temperature is determined from other parameter settings. | 18 °C              | 1 °C           | N      | E  |
| Feed temperature cooling mode   | 8 - 30 °C                  | Only if [Weather-dependent] parameter = feed temperature, fixed<br>Setting of the cooling feed target temperature (fixed value) for active cooling mode.  | 18 °C              | 1 °C           | E      | E  |
| Cooling set-point adjustment    | -5.0 - +5.0 K              | Parallel shift of the cooling characteristic curve by the set value.  | 0.0 K              | 1 K            | N      | E  |
| Interlink temperature reduction | 1 - 50 K                   | Only if [Interlink function] parameter = On:<br>When the RT switching contact cooling is closed, the cooling feed target temperature is reduced by the set value (see [Interlink function] parameter). Request, e.g. by HP convector.               | 5 K                | 1 K            | N      | E  |

Tab. 7-23 Parameter in menu: "Cooling"

## 7.6.5 Menu: Hot water

[→ Main menu → Configuration → DHW]

| Parameters                    | Setting range<br>Min / Max | Description  | Factory<br>setting                  | Incre-<br>ment | Access |    |
|-------------------------------|----------------------------|--|-------------------------------------|----------------|--------|----|
|                               |                            |  |                                     |                | BE     | HF |
| Max. hot water loading time   | 10 – 240 min               | Setting of the maximum duration of a domestic hot water preparation cycle. Then cancellation of domestic hot water preparation if the current hot water temperature does not reach the set target value in the [Hot water temp. set-point 1] parameter.  | 60 min                              | 10 min         | N      | E  |
| Hot water blocking time       | 0 – 180 min                | Setting of the blocking time after completion or cancellation of a domestic hot water preparation cycle. The repeat request for domestic hot water preparation is operated after this blocking time has elapsed at the earliest.   | 30 min                              | 10 min         | N      | E  |
| Hot water hysteresis          | 2 - 20 K                   | Hot water charging switching threshold<br>Setting of the temperature difference by which the temperature in the hot water storage tank may fall in comparison with the currently valid hot water target temperature [Hot water temperature setpoint] before the heat pump for hot water charging is to be activated. | 7 K                                 | 1 K            | E      | E  |
| Wait time ext. heat generator | 20 - 95 min                | Delay time as of which the additional heat generator may support the heat pump in hot water charging (see Chap. 4.5).  | 50 min                              | 1 min          | E      | E  |
| Circulation pump control      |                            | Setting for the control of a circulation pump. Use in France not permitted!  |                                     | -              | E      | E  |
|                               | Off                        | Optional circulation pump is synchronously controlled to the active switching time program for domestic hot water preparation.   | <input checked="" type="checkbox"/> |                |        |    |
|                               | On                         | Optional circulation pump is controlled according to the [Circulation program] switching time program.   | <input type="checkbox"/>            |                |        |    |

## 7 Parameter settings

| Parameters                              | Setting range<br>Min / Max | Description  | Factory<br>setting | Incre-<br>ment | Access |    |
|---|----------------------------|--|--------------------|----------------|--------|----|
|   |                            |  |                    |                | BE     | HF |
| Circulation<br>pump control             |                            | Setting of the interval control for an optional circulation pump. Use in France not permitted!   | Off                | 1 min          | E      | E  |
|   | Off                        | Deactivated. The circulation pump runs permanently during the release times of the assigned switching time program ([Circulation pump control] parameter). |                    |                |        |    |
|   | 1 - 15 min                 | The circulation pump runs clocked (clock cycle ratio: pump runtime = setting value each 15 min).   |                    |                |        |    |
| Thermal disin-<br>fection day           |                            | Setting of the day for thermal disinfection of the hot water storage tank.   | Off                | -              | E      | E  |
|   | Off                        | No thermal disinfection  |                    |                |        |    |
|   | Monday<br>...<br>Sunday    | Day of thermal disinfection  |                    |                |        |    |
|   | Daily                      | Daily thermal disinfection   |                    |                |        |    |
| Thermal disin-<br>fection start<br>time | 00:00 - 23:45              | Setting of the start time for thermal disinfection of the hot water storage tank (format hh:mm).   | 03:30              | 15 min         | N      | E  |
| Thermal disin-<br>fection temp.         | 60 – 70 °C                 | Setting of the hot water target temperature during thermal disinfection of the hot water storage tank.   | 65 °C              | 1 °C           | N      | E  |

Tab. 7-24 Parameter in menu: "Hot water"

### 7.6.6 Menu: Additional programs

[→ Main menu → Configuration → Addition]

| Parameters | Setting range<br>Min / Max      | Description   | Factory<br>setting                  | Incre-<br>ment | Access |    |
|------------|---------------------------------|---|-------------------------------------|----------------|--------|----|
|            |                                 |   |                                     |                | BE     | HF |
| Relay Test |                                 | Manual control of individual relays for test purposes. After confirmation of this parameter with the rotary button, the list of relays 1 - 9 is displayed with a checkbox on the display. For selection and confirmation of a relay with the rotary button, a tick is placed in the checkbox and the respective relay is activated. Multiple selection is possible. | -                                   | -              | N      | E  |
|            | Output J1                       | Output J1 (internal heating circulation pump), output pump  |                                     |                |        |    |
|            | Output J14                      | Output J14 (circulation pump), mixer "Open"   |                                     |                |        |    |
|            | Output J2 contact A             | Contact A on output J2 (3UVB1 switching valve), mixer "Closed"  |                                     |                |        |    |
|            | Output J2 contact B             | Contact B on output J2 (3UVB1 switching valve)  |                                     |                |        |    |
|            | Output J12 3UV DHW open         | Output J12, 3UV DHW switching valve "Closed"  |                                     |                |        |    |
|            | Output J12 3UV DHW closed       | Output J12, 3UV DHW switching valve "Open"  |                                     |                |        |    |
|            | Connection J3 N/O contact B     | Connection J3 (potential-free relay: normally open B-B1) - AUX  |                                     |                |        |    |
|            | Connec. J3 changeover contact A | Connection J3 (potential-free relay: Changer A-A1/A-A2) - AUX   |                                     |                |        |    |
|            | Output J10                      | Output J10 (A1P power supply)   |                                     |                |        |    |
|            | Output J17 relay K2             | Output J17 (pin 3) - relay K2 (RTX-EHS) output XBUH1 T2   |                                     |                |        |    |
|            | Output J17 relay K1             | Output J17 (pin 2) - relay K1 (RTX-EHS) output XBUH1 T3   |                                     |                |        |    |
|            | Output J17 relay K3             | Output J17 (pin 4) - relay K3 (RTX-EHS) output XBUH1 T1   |                                     |                |        |    |
| Air Purge  |                                 | Activation of automatic ventilation of the Daikin Altherma EHS(X/H) and the connected HC.   |                                     | -              | N      | E  |
|            | Off                             | Deactivated   | <input checked="" type="checkbox"/> |                |        |    |
|            | On                              | Start of the ventilation function   | <input type="checkbox"/>            |                |        |    |

| Parameters     | Setting range<br>Min / Max | Description  | Factory<br>setting                  | Incre-<br>ment | Access |    |
|----------------|----------------------------|--|-------------------------------------|----------------|--------|----|
|                |                            |  |                                     |                | BE     | HF |
| Screed         |                            | Function for screed drying   |                                     | -              | N      | E  |
|                | Off                        | Deactivated  | <input checked="" type="checkbox"/> |                |        |    |
|                | On                         | The feed target temperature is regulated according to the set [Screed program]. The day on which the screed function is activated is not included in the running time of the screed program. The first day starts when the day changes at 00:00 am. On the day of activation, heating is carried out for the remaining time with the feed target temperature of the program of the first day (see <a href="#">Chap. 4.5.7</a> ). | <input type="checkbox"/>            |                |        |    |
| Screed Program | 10 - 70 °C per heating day | Setting of the sequence program of the screed heating. An individual feed target temperature can be set for each day for a maximum duration of 28 days. The end of the screed program is defined by the 1st day with the target value setting "Off" (see <a href="#">Chap. 4.5.7</a> ).  | See <a href="#">Chap. 4.5.7</a>     | 1 °C           | N      | E  |

Tab. 7-25 Parameter in menu: "Additional programs"

## 7.7 Information

[→ Main menu → Information]

### 7.7.1 Overview

[→ Main menu → Information → Overview]

| Parameters | Setting range<br>Min / Max     | Description  | Factory<br>setting | Incre-<br>ment | Access |    |
|------------|--------------------------------|--|--------------------|----------------|--------|----|
|            |                                |  |                    |                | BE     | HF |
| Mode       | No request                     | Current mode of the heating pump.  | -                  | -              | S      | S  |
|            | Heating                        |  |                    |                |        |    |
|            | Cooling                        |  |                    |                |        |    |
|            | Domestic hot water preparation |  |                    |                |        |    |
|            | Defrost                        |  |                    |                |        |    |
| Ext        |                                | External request:  | -                  | -              | S      | S  |
|            | No external mode               | Heat pump operates in normal operation.  |                    |                |        |    |
|            | Low rate                       | EVU function HT/NT active and low rate.  |                    |                |        |    |
|            | High rate                      | EVU function HT/NT active and high rate.   |                    |                |        |    |
|            | SGN                            | EVU function Smart grid active, normal operation.  |                    |                |        |    |
|            | SG1                            | EVU function Smart grid active, discharge: No heat pump operation, no frost protection function.                                 |                    |                |        |    |
|            | SG2                            | EVU function Smart grid active, switch-on recommendation, operation at higher target temperatures, inexpensive electricity.      |                    |                |        |    |
|            | SG3                            | EVU function Smart grid active, switch-on command and storage tank charging to 70 °C, inexpensive electricity                    |                    |                |        |    |
| RT         |                                | Room thermostat/Interlink:   | -                  | -              | S      | S  |
|            | Off                            | If [Interlink function] = On: frost protection only; otherwise: Off  |                    |                |        |    |
|            | Request                        | If [Room thermostat] = Yes   |                    |                |        |    |
|            | No heat request                | If [Room thermostat] = Yes   |                    |                |        |    |
|            | IL1                            | If [Interlink function] = On: Normal feed target temperature   |                    |                |        |    |
|            | IL2                            | If [Interlink function] = On: In heating mode increased feed target temperature, in cooling mode reduced feed target temperature |                    |                |        |    |
| Pump       | Off                            | Status of the internal heating circulation pump (On/Off)   | -                  | -              | S      | S  |
|            | On                             |  |                    |                |        |    |
| V          | -                              | Current volume flow in the heating system  | -                  | -              | S      | S  |
| EHS        | -                              | Current output of the optional backup heater in kW   | -                  | -              | S      | S  |
| TV         | -                              | Current feed temperature after the plate heat exchanger (tV) in °C   | -                  | -              | S      | S  |
| TVBH       | -                              | Current feed temperature after heating support (tV, BH) in °C  | -                  | -              | S      | S  |
| TR         | -                              | Current return flow temperature in °C  | -                  | -              | S      | S  |
| Tdhw       | -                              | Current temperature in hot water tank in °C  | -                  | -              | S      | S  |
| Psyst      | -                              | Current water pressure in the heating network in bar   | -                  | -              | S      | S  |

## 7 Parameter settings

| Parameters      | Setting range<br>Min / Max | Description   | Factory setting | Increment | Access |    |
|-----------------|----------------------------|---|-----------------|-----------|--------|----|
|                 |                            |   |                 |           | BE     | HF |
| BPV             | -                          | Current position of 3UVB1 mixing valve (0%: heating network; 100%: internal bypass)           | -               | -         | S      | S  |
| 3UVD            | -                          | Current position of the 3UVDHW mixing valve (0% heating network; 100% hot water storage tank) | -               | -         | S      | S  |
| TemperatureA2   | -                          | Current outside temperature in °C (on optional outside temperature sensor)                    | -               | -         | S      | S  |
| Tliq2           | -                          | Current refrigerant temperature °C  | -               | -         | S      | S  |
| Quiet mode      | Inactive                   | Status of the Quiet mode  | -               | -         | S      | S  |
|                 | Active                     |   |                 |           |        |    |
|                 | Active at night            |   |                 |           |        |    |
| Heating support | Off                        | Status of the heating support   | -               | -         | S      | S  |
|                 | On                         |   |                 |           |        |    |

Tab. 7-27 Parameter in menu: "Overview"

### 7.7.2 Values

[→ Main menu → Information → Values]

| Parameters                      | Setting range<br>Min / Max | Description  | Factory setting | Increment | Access |    |
|---------------------------------|----------------------------|--|-----------------|-----------|--------|----|
|                                 |                            |  |                 |           | BE     | HF |
| Feed temperature current        | 0 – 100 °C                 | The current feed temperature of the heat generator ( $t_{v1}$ ) is displayed in °C.  | -               | 1 °C      | S      | S  |
| Feed temperature setpoint       | 0 – 90 °C                  | The current target temperature of the heat generator is displayed in °C.   | -               | 0.1 °C    | S      | S  |
| Average ext. temperature        | -39 – 50 °C                | The current outside temperature is displayed in °C.  |                 | 0.1 °C    | S      | S  |
| Hot water temperature current   | 0 – 100 °C                 | The current temperature of the hot water storage tank is displayed in °C. If no hot water function is activated, "- - -" is displayed.   | -               | 0.1 °C    | S      | S  |
| Hot water temperature setpoint  | 10 – 70 °C                 | The current target temperature for domestic hot water preparation is displayed in °C. If no hot water function is activated, "- - -" is displayed. Here, the current target value is always the maximum value of all requests relevant for this hot water circuit. | -               | 0.1 °C    | S      | S  |
| Current return flow temperature | 0 – 100 °C                 | The current return flow temperature of the heat generator is displayed in °C. If no respective sensor is connected to the heat generator, "- - -" is displayed.  | -               | 0.1 °C    | S      | S  |
| Current volume flow             | 0 - 5100 l/h               | The filtered value of the current volume flow is displayed.  | -               | l/h       | S      | S  |
| Feed temperature HC current     | 0 – 100 °C                 | The temperature of the direct HC ( $t_{v2}$ is displayed with active heating support, otherwise $t_{v1}$ ) in °C.  | -               | 0.1 °C    | S      | S  |
| Feed temperature HC setpoint    | 0 – 90 °C                  | The (feed) target temperature of the direct HC is displayed in °C.   | -               | 0.1 °C    | S      | S  |
| Status heat circulation pump    | Off                        | The current status of the internal circulation pump of the heat generator is displayed.  | -               | -         | S      | S  |
|                                 | On                         |  |                 |           |        |    |
| Mixer Position                  | -                          | Only 5xx: The current position of the 3UVDHW 3-way mixing valve in % is displayed.   | -               | 1%        | S      | S  |
| Heat generator type             | -                          | The configured type of the heat generator is displayed.  | -               | -         | S      | S  |
| Software Nr B1/U1               | -                          | The software and version of the operating unit are displayed.  | -               | -         | S      | S  |
| Software no. controller         | -                          | The software number and version of the control PCB are displayed.  | -               | -         | S      | S  |

Tab. 7-28 Parameter in menu: "Values"

**INFORMATION**

Depending on the device type, the system configuration and the version of the device software, individual information parameters listed in [Chap. 7.7](#) cannot be displayed or are displayed at another parameter level.

**7.7.3 Water pressure**

[→ Main menu → Information → Pressure]

| Parameters          | Setting range<br>Min / Max | Description                                     | Factory<br>setting | Incre-<br>ment | Access |    |
|---------------------|----------------------------|---|--------------------|----------------|--------|----|
|                     |                            |   |                    |                | BE     | HF |
| Water pres-<br>sure | 0 - 4 bar                  | The current water pressure is displayed in bar. | -                  | 0.1 bar        | S      | S  |

Tab. 7-30 Parameter in menu: "Water pressure"

**7.8 Error**

[→ Main menu → Error]

| Parameters                            | Setting range<br>Min / Max | Description  | Factory<br>setting                  | Incre-<br>ment | Access |    |
|---------------------------------------|----------------------------|--|-------------------------------------|----------------|--------|----|
|                                       |                            |  |                                     |                | BE     | HF |
| Emergency<br>operation                |                            | Emergency heating by backup heater or another external heat generator.         |                                     | -              | E      | E  |
|                                       | No                         | Yes: In the event of an error, emergency operation is automatically activated. | <input checked="" type="checkbox"/> |                |        |    |
|                                       | Yes                        | No: In the event of an error, emergency operation by manual activation only.   | <input type="checkbox"/>            |                |        |    |
| Manual oper-<br>ation status          | Inactive                   | Activation of the fixed feed temperature control (for diagnostic purposes).    | <input checked="" type="checkbox"/> | -              | E      | E  |
|                                       | Active                     |  | <input type="checkbox"/>            |                |        |    |
| Temperature,<br>manual oper-<br>ation | 20 - 80 °C                 | Required feed temperature for manual operation.                                | 50 °C                               | -              | E      | E  |

Tab. 7-31 Parameter in menu: "Error"

**7.9 Terminal**

[→ Main menu → Terminal]

| Parameters           | Setting range<br>Min / Max                                     | Description   | Factory<br>setting       | Incre-<br>ment | Access |    |
|----------------------|--|---|--------------------------|----------------|--------|----|
|                      |  |   |                          |                | BE     | HF |
| Terminalad-<br>dress | Off  | Setting of the terminal ID of the control panel for system access. The set value must be unique throughout the entire system. Confirmation of this parameter with the rotary button effects a new initialisation of the control unit.<br><br>All settings except "Off", authorise the user of the control panel to activate the terminal function and thus to operate all RoCon system components with a valid device ID. | Off                      | 1              | N      | E  |
|                      | 0 - 9  |   |                          |                |        |    |
| Bus - Scan           | Off  | No function   | Off                      | -              | E      | E  |
|                      | On   | Control unit checks which RoCon devices are connected in the system via CAN bus lines. Detected devices are displayed in the menu [→ Main menu → Terminal] with type and data bus ID (e.g. MM#8 = mixer module with bus ID 8).  |                          |                |        |    |
| Contr BM1/<br>BE1 #X | <input type="checkbox"/> / <input checked="" type="checkbox"/> | With a detected device only: Activation switches to the heat generator with the bus ID X (see <a href="#">Chap. 4.8</a> , [BUS ID HS] parameter).   | <input type="checkbox"/> | -              |        |    |
| Mix Valve #X         | <input type="checkbox"/> / <input checked="" type="checkbox"/> | With a detected device only: Activation switches to the mixer module with the bus ID X (see <a href="#">Chap. 4.8</a> , [Heating circuit assignment] parameter).  | <input type="checkbox"/> | -              | E      | E  |

Tab. 7-32 Parameter in menu: "Terminal"



## 7 Parameter settings

### 7.10 Statistics

[→ Main menu → Statistics]

| Parameters                    | Setting range<br>Min / Max | Description   | Factory<br>setting | Incre-<br>ment | Access |    |
|-------------------------------|----------------------------|---|--------------------|----------------|--------|----|
|                               |                            |   |                    |                | BE     | HF |
| Ext. energy source, hot water | -                          | The volume of heat of the additional heat generator for domestic hot water preparation in kWh is displayed. | -                  | kWh            | S      | S  |
| Ext. energy source, heating   | -                          | The volume of heat of the additional heat generator for heating mode in kWh is displayed.                   | -                  | kWh            | S      | S  |
| Energy HP, cooling            | -                          | The volume of heat of the heat pump for cooling mode in kWh is displayed.                                   | -                  | kWh            | S      | S  |
| Energy HP, heating            | -                          | The quantity of heat in the heat pump for heating is displayed in kWh.                                      | -                  | kWh            | S      | S  |
| Energy, hot water             | -                          | The quantity of heat for domestic hot water preparation is displayed in kWh.                                | -                  | kWh            |        |    |
| Energy consumed               | -                          | The total volume of heat of the heat pump in kWh is displayed.  | -                  | kWh            |        |    |
| Runtime, compressor           | -                          | The running time of the refrigerant compressor in h is displayed.   | -                  | 1 h            | S      | S  |
| Runtime, pump                 | -                          | The runtime of the internal heating circulation pump is displayed in h.                                     | -                  | 1 h            | S      | S  |
| Reset                         | -                          | All parameters listed in the Statistics menu are reset to "0". (Specialist code required).                  | -                  | -              |        |    |

Tab. 7-33 Parameter in menu: "Statistics"



#### INFORMATION

Depending on the device type, the system configuration and the status of the device software, individual listed information parameters cannot be displayed or can be displayed at a different parameter level.

### 7.11 Configuration wizard

Only after hardware reset.

| Parameters                   | Setting range<br>Min / Max | Description  | Factory<br>setting                  | Incre-<br>ment | Access |    |
|------------------------------|----------------------------|--|-------------------------------------|----------------|--------|----|
|                              |                            |  |                                     |                | BE     | HF |
| Direct circuit configuration | 0 – 15                     | Setting of the heating circuit ID for the direct heating circuit of the Daikin Altherma EHS(X/H). The HC ID must be unique throughout the RoCon system. There must be no overlap with the HC IDs of optional mixer circuits.   | 0                                   | 1              | N      | E  |
| Bus ID heat generator        | 0 – 7                      | The setting may only be changed if more than 1 heat generator is integrated in the RoCon system. Several heat generators integrated in the heating system must be regarded as a special application. If necessary, contact a service technician.   | 0                                   | 1              | N      | E  |
| Time master                  | No                         | Activation of a system-wide time master. The Time Master synchronises all controllers in the RoCon system with the time and date set on the Time Master. For all other control panels in the system, it is no longer possible to enter the time and date. There must only be one time master in the entire system. The parameter is not available if the Time Master parameter is activated on another controller in the RoCon system. | <input type="checkbox"/>            | -              | N      | E  |
|                              | Yes                        |  | <input checked="" type="checkbox"/> |                |        |    |

Tab. 7-35 Parameters in menu: "Configuration Wizard"

## 8 Faults and malfunctions



### **DANGER: RISK OF ELECTROCUTION**

Electrostatic charges can lead to voltage arcing that can destroy the electronic components.

- Ensure potential equalisation prior to touching the switching panel PCB (e.g. by touching the switching panel holder).

The electronics of the Daikin Altherma EHS(X/H) indicate an error by red illumination of the status display, the appearance of the error screen on the display (see [Chap. 8.4](#)) and the appearance of the error symbol on the start screen. An integrated error memory stores up to 15 error messages (see [Chap. 8.3](#)).



### **INFORMATION**

A list of all error codes can be found in the Daikin Altherma EHS(X/H) installation and maintenance instructions, chapter "Errors, malfunctions, messages".

#### **Troubleshooting: Error code E90XX**

An error reset can be performed. This can be started from the currently displayed error screen. If the error screen has been exited, it can be recalled via [→ Main menu → Error → Screen].

If the same error is displayed again shortly, the cause of the error must be found and rectified by a specialist. In the meantime, emergency operation may be maintained. Emergency operation can be permitted via [→ Main menu → Error → Emergency operation], see Emergency operation. If emergency operation has not been permitted, it can be started from the current error screen.

#### **Troubleshooting: Other error codes**

The cause of the error must be found and rectified by a specialist. In the meantime, emergency operation may be maintained. Emergency operation can be permitted via [→ Main menu → Error → Emergency operation], see Emergency operation. If emergency operation has not been permitted, it can be started from the current error screen.



### **INFORMATION**

To ensure that the error has not been caused by incorrect settings, set all the parameters back to the factory settings before possible replacement of components (see [Chap. 4.5.9](#)).

If it is not possible to determine the cause of the fault, please consult a service technician.

Please have the essential device data ready for this:

Type and manufacturer number of the Daikin Altherma EHS(X/H) (see heat pump nameplate) as well as the software versions of:

a: Control panel RoCon+ B1 [→ Main menu → Information → Values → Software no. B1/U1]

b: RoCon BM2C PCB [→ Main menu → Information → Values → Software no. controller]

On optional RoCon system components:

EHS157034 [Sw No B1/U1]

EHS157068 [Sw Nr mixing valve]

## 8.1 Emergency operation

[→ Main menu → Error → Emergency operation]

If the heat pump fails, the backup heater or another external heat generator can be used as an emergency heater. If [Emergency operation] is set to "Yes", in the event of an error, emergency operation is automatically activated. Otherwise, emergency operation can only be started in the event of an error via the error screen.

If emergency operation is started via the error screen, the [Emergency operation] parameter remains set to "Yes", i.e. emergency operation is also started automatically in the event of future errors. If this is not desired, the [Emergency operation] parameter must be reset to "No" after the error has been corrected.

## 8.2 Manual Operation

[→ Main menu → Error → Manual operation]

In manual operation, the heat pump is controlled to a fixed feed temperature. Manual operation should only be used for diagnostic purposes. Manual operation is started by setting the [Manual operation status] parameter to "Active". The desired feed temperature is set by [Temperature, manual operation] parameter.

With hydraulically controlled priority operation for domestic hot water preparation, it must be ensured that the feed target temperature set in manual operation is sufficient to achieve the stored hot water target temperature ([Hot water temp. setpoint 1] parameter).

## 8.3 Error protocol

[→ Main menu → Error → Protocol]

The error protocol can be read in this menu. The most recent error message comes first. All previous messages are moved backwards with each new entry in the position. The 16th error message is deleted if a new error message arrives. The error protocol can only be deleted by Service.

The protocol lists

- the error code,
- the PCB associated with the error (A1P or BM2, see Daikin Altherma EHS(X/H) Installation and maintenance instructions)
- Date and time when the error occurred.

## 8.4 Error screen

[→ Main menu → Error → Screen]

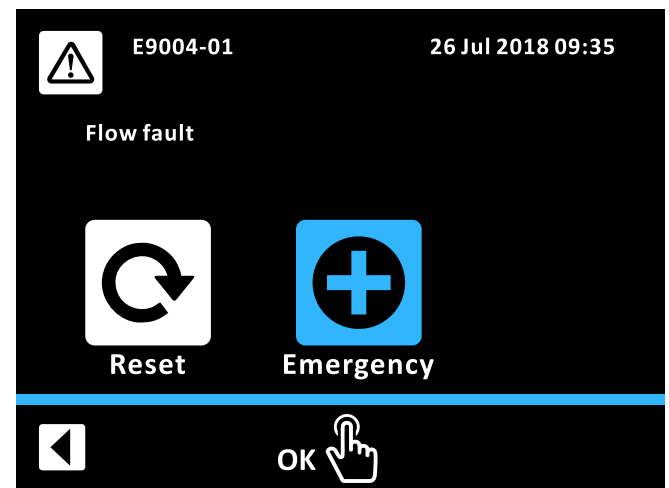


Fig. 8-1 Error screen

If an error occurs, the error screen is displayed. This displays the error code, an explanatory text and the date and time when the error occurred. Depending on the type of error, a reset can be carried out in the error screen by selecting the corresponding icons and/or emergency operation can be started (see [Chap. 8.1](#)). Selecting the Back icon closes the error screen and the display returns to the start screen.

If an error has occurred, the error screen can be called up manually via [→ Main menu → Error → Screen].

## 8 Faults and malfunctions

---

### 8.5 Error codes

See Daikin Altherma EHS(X/H) Installation and maintenance instructions; chapter "Errors, malfunctions, messages".

## 9 Mixer module

In addition to the direct HC, the emitter type can be extended by additional HCs using mixer modules EHS157068. These additional HCs can be configured independently of the direct HC. The configuration is similar to the configuration of the direct HC (see Chap. 4). Only a limited selection of parameters and functions is available (see Chap. 9.2).

The optional EHS157068 mixer module does not have its own control unit. For configuration and operation, it must be connected to the RoCon+ controller installed in the heat generator or to a EHS157034 room station via a CAN bus line. The mixer module can be operated in terminal mode from both operating units (see Chap. 4.8).

A unique device ID ( $\geq 1$ ) must be set on the address switch of the mixer module (see Fig. 9-1) for the HC to be controlled by this mixer module, which must be synchronised with the [Heating circuit assignment] parameter of the mixer module (see Tab. 4-10).



Fig. 9-1 Setting the device ID for the EHS157068 mixer module

The current operating status can be determined directly on the EHS157068 mixer module (see Fig. 9-2).

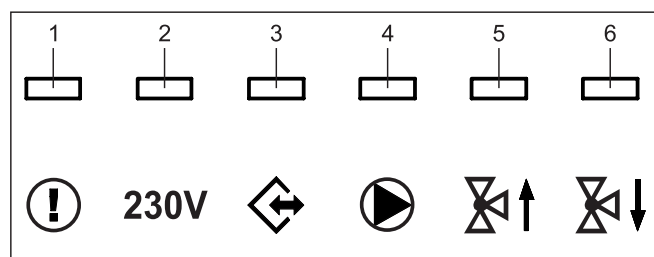


Fig. 9-2 Explanation of symbols for EHS157068 status displays

| Item | LED   | Description   |
|------|-------|---|
| 1    | Red   | Flashing: Internal error<br>(The error code is communicated to the relevant control unit via the CAN bus)<br>To: Undervoltage of the internal clock after a power failure (>10 h) |
| 2    | Green | To: Display during operation, mixer module switched on  |
| 3    | Green | To: CAN communication   |
| 4    | Green | To: Mixer circuit pump switched on  |
| 5    | Green | To: Mixer valve "Open" is activated   |
| 6    | Green | To: Mixer valve "Closed" is activated   |

Tab. 9-1

### 9.1 Mixer module start screen (terminal function)

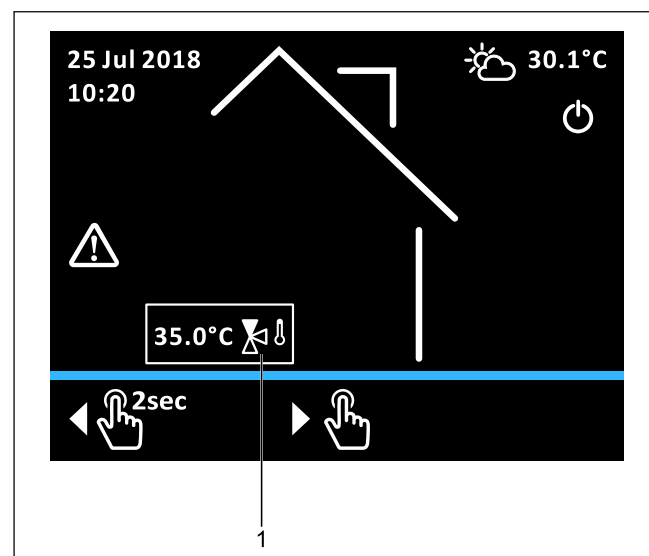


Fig. 9-3 Mixer module start screen

The start screen for the mixer module (Fig. 9-3) is a reduced version of the RoCon+ HP start screen. The meaning of the icons is the same Tab. 3-4, but the mixer temperature is the only system temperature displayed (Fig. 9-3, item 1).

The start screen for the mixer module is displayed in the menu [→ Main menu → Terminal → Mixer #X]. Briefly pressing the rotary switch switches to the mixer menu. A long press of the rotary switch switches to the menu of the local control panel.

### 9.2 Mixer valve parameter overview

#### Menu: Operating mode

see Chap. 6.1.

#### Menu: User

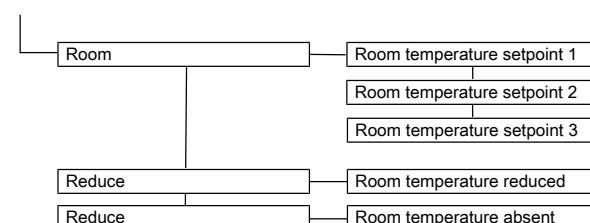


Fig. 9-4 Parameter in menu: "User"

#### Menu: Time program

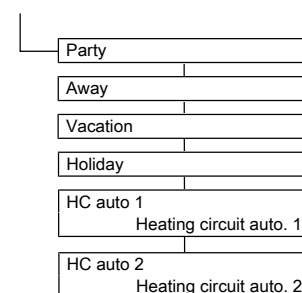


Fig. 9-5 Parameter in menu: "Time program"

## 9 Mixer module

### Menu: Access

#### Menu: System

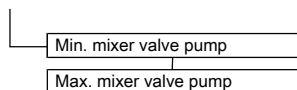


Fig. 9-6 Parameter in menu: "System"

#### Menu: Sensors

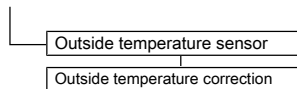


Fig. 9-7 Parameter in menu: "Sensors"

#### Menu: HC config

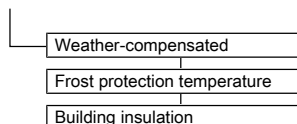


Fig. 9-8 Parameter in menu: "HC config"

#### Menu: Heating

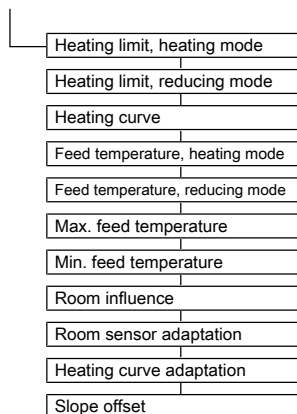


Fig. 9-9 Parameter in menu: "Heating"

#### Menu: Cooling

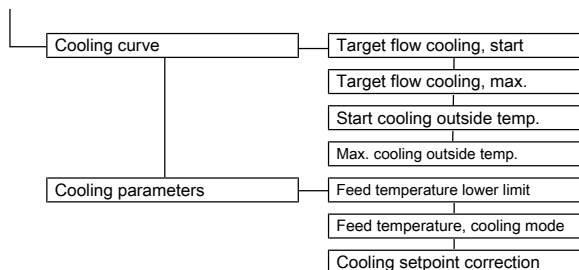


Fig. 9-10 Parameter in menu: "Cooling"

#### Menu: Special

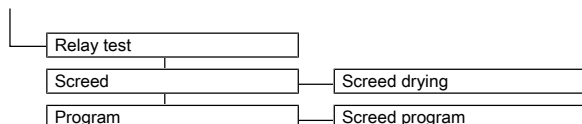


Fig. 9-11 Parameter in menu: "Special"

### Menu: Information

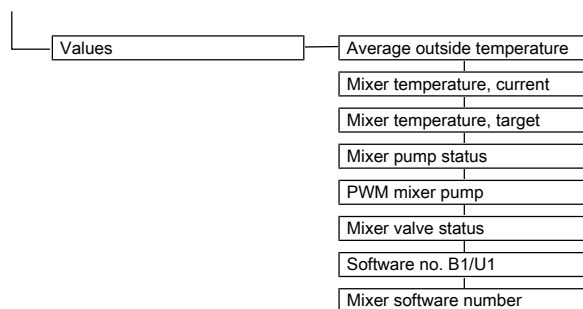


Fig. 9-12 Parameter in menu: "Information"

### 9.3 Mixer module parameter settings

The parameters available for the mixer module are largely identical to the parameter described in [Chap. 7](#). [Tab. 9-2](#) lists the additional parameters available for the mixer module.

| Parameters                      | Setting range<br>Min / Max | Description  | Factory<br>setting | Incre-<br>ment | Access |    |
|---------------------------------|----------------------------|--|--------------------|----------------|--------|----|
|                                 |                            |  |                    |                | BE     | HF |
| Min. mixer<br>valve pump        | 10 - 100%                  | [→ Main menu → System]<br>Minimum power of the pump in the mixer circuit.  | 30%                | 1%             | N      | E  |
| Max. mixer<br>valve pump        | 20 – 100%                  | [→ Main menu → System]<br>Maximum power of the pump in the mixer circuit.  | 100%               | 1%             | N      | E  |
| Slope offset                    | 0 - 50 K                   | [→ Main menu → Heating]<br><br>Setting of the slope offset of the feed target temperature on the Daikin Altherma EHS(X/H) in comparison with the feed target temperature determined for the mixer circuit. | 5 K                | 1 K            | N      | E  |
| Mixer temper-<br>ature, current | 0 – 100 °C                 | [→ Main menu → Information → Values]<br>Current feed temperature in the mixer circuit  | -                  | -              | S      | S  |
| Mixer temper-<br>ature, target  | 0 – 90 °C                  | [→ Main menu → Information → Values]<br>Current target feed temperature in the mixer circuit   | -                  | -              | S      | S  |
| Mixer pump<br>status            | On                         | [→ Main menu → Information → Values]   | -                  | -              | S      | S  |
|                                 | Off                        | Current status of the mixer pump   |                    |                |        |    |
| PWM mixer<br>pump               | 0 – 100%                   | [→ Main menu → Information → Values]<br>Current modulation of the mixer pump   | -                  | -              | S      | S  |
| Mixer valve<br>status           | Neutral                    | [→ Main menu → Information → Values]   | -                  | -              | S      | S  |
|                                 | Closed                     | Current status of the mixer valve  |                    |                |        |    |
|                                 | Open                       |  |                    |                |        |    |

Tab. 9-2 Parameters of the mixer module

## 10 Glossary

|  |   |
|--|---|
| Mode                                       | Request by the user or the control unit for the function of the heat generator (e.g. room heating, domestic hot water generation, standby, etc.)  |
| Backup requirement                         | Operating situation in which the required feed temperature cannot be reached efficiently or at all using the heat pump process. A heater booster (e.g. a backup heater) is therefore integrated to support the Daikin Altherma EHS(X/H) in generating heat.   |
| Backup heater                              | Optional electric heater booster for general support of the Daikin Altherma EHS(X/H) during heat generation.  |
| Heating curve                              | Mathematical relationship between the external temperature and the feed temperature setpoint in order to achieve the required room temperature at all external temperatures.  |
| Refrigerant                                | A substance used for heat transfer in the heat pump process. At low temperature and low pressure, heat is absorbed and at high temperature and a high pressure, heat is emitted.  |
| Anti-legionella system                     | Periodic heating of the storage water to >60 °C for the preventative elimination of pathogenic bacteria (so-called legionella) in the hot water circuit.  |
| Off-peak mains connection (HT/NT)          | A special mains connection to the energy supplier, which offers various cheaper rates during so-called low-load periods for electrical current (day-, night-, heat pump current, etc.).   |
| Parameters                                 | A value that influences the execution of programs or processes or defines specific states.  |
| Control unit                               | Device electronics that are used to control the processes for the heat generation and heat distribution of the heating system. The control unit consists of a number of electronic components. The most important component for the operator is the control panel in the front area of the heat generator, which includes program selection keys, rotary buttons and display.   |
| Return flow                                | Part of the hydraulic circuit that directs the cooled water from the radiators in the rooms back to the heat generator via the piping system.   |
| Switching time program                     | Program for setting the times on the control unit in order to determine the regular heating, reducing and hot water cycles.   |
| Smart Grid (SG)                            | Intelligent use of energy for inexpensive heating. By using a special electricity meter, it is possible to receive a "Smart Grid signal" from the utility company.<br>Depending on the signal, the heat pump is shut off or operated as normal or at higher temperatures.   |
| Flow                                       | Part of the hydraulic circuit that diverts the heated water from the heat generator to the heating surfaces.  |
| Domestic hot water circuit                 | This is the water circuit in which cold water is heated and diverted to the hot water tap.  |
| Domestic hot water generation              | Operating status of the heat generator in which heat with elevated temperatures is generated and fed to the hot water circuit, e.g. loading of the hot water storage tank.  |
| Heat pump process                          | In a closed-loop refrigerant circuit, the refrigerant absorbs the heat from the ambient air. By means of compression, the refrigerant achieves a higher temperature that is transferred to the heating system (thermodynamic cycle).  |
| Heat exchanger                             | A component that transfers thermal energy from one circuit to another. The two circuits are hydraulically separated from one another by a wall in the heat exchanger.   |
| Weather-dependent feed temperature control | A suitable feed temperature is determined from the measured value for the external temperature and a defined heating curve; this temperature is used as the target value for temperature control in the heating unit.   |
| Circulation pump                           | The circulation pump is an additional electrical circulation pump that permanently circulates the hot water in the hot water lines, thus providing it immediately at every tap. This circulation is especially useful in extensive pipeline networks. In systems without a circulation line, first the water cooled in the sampling line escapes during the sampling process until the sampling line has been sufficiently heated by the inflowing hot water. |
| Heater booster                             | Additional heat generator (e.g. backup heater or external boiler) integrated in the heating system to achieve the required feed temperature setpoint in the case of an inadequate or inefficient heat pump process.   |






## 11 User-specific settings




### 11.1 Switching time program

The factory settings of the timer programs are indicated in [Chap. 4.3](#).

Enter your timer settings in the table below.

|                         |                     | Switching cycle 1  |     | Switching cycle 2  |     | Switching cycle 3  |     |
|-------------------------|---------------------|--|-----|--|-----|--|-----|
|                         | Temperature setting |  [Room temperature target 1]: ____ °C |     |  [Room temperature target 2]: ____ °C |     |  [Room temperature target 3]: ____ °C |     |
|                         | Time period         | On   | Off | On   | Off | On   | Off |
| Heating circuit auto. 1 | Monday              |  |     |  |     |  |     |
|                         | Tuesday             |  |     |  |     |  |     |
|                         | Wednesday           |  |     |  |     |  |     |
|                         | Thursday            |  |     |  |     |  |     |
|                         | Friday              |  |     |  |     |  |     |
|                         | Saturday            |  |     |  |     |  |     |
|                         | Sunday              |  |     |  |     |  |     |
| Heating circuit auto. 2 | Monday              |  |     |  |     |  |     |
|                         | Tuesday             |  |     |  |     |  |     |
|                         | Wednesday           |  |     |  |     |  |     |
|                         | Thursday            |  |     |  |     |  |     |
|                         | Friday              |  |     |  |     |  |     |
|                         | Saturday            |  |     |  |     |  |     |
|                         | Sunday              |  |     |  |     |  |     |

Individual settings in the heating timer programs

|                   |                     | Switching cycle 1  |     | Switching cycle 2  |     | Switching cycle 3  |     |
|-------------------|---------------------|--|-----|--|-----|--|-----|
|                   | Temperature setting |  [Hot water temperature target 1]: ____ °C |     |  [Hot water temperature target 2]: ____ °C |     |  [Hot water temperature target 3]: ____ °C |     |
|                   | Time period         | On   | Off | On   | Off | On   | Off |
| Hot water auto. 1 | Monday              |  |     |  |     |  |     |
|                   | Tuesday             |  |     |  |     |  |     |
|                   | Wednesday           |  |     |  |     |  |     |
|                   | Thursday            |  |     |  |     |  |     |
|                   | Friday              |  |     |  |     |  |     |
|                   | Saturday            |  |     |  |     |  |     |
|                   | Sunday              |  |     |  |     |  |     |
| Hot water auto. 2 | Monday              |  |     |  |     |  |     |
|                   | Tuesday             |  |     |  |     |  |     |
|                   | Wednesday           |  |     |  |     |  |     |
|                   | Thursday            |  |     |  |     |  |     |
|                   | Friday              |  |     |  |     |  |     |
|                   | Saturday            |  |     |  |     |  |     |
|                   | Sunday              |  |     |  |     |  |     |

Individual settings in the hot water timer programs

|                     |             | Switching cycle 1 |     | Switching cycle 2 |     | Switching cycle 3 |     |
|---------------------|-------------|-------------------|-----|-------------------|-----|-------------------|-----|
|                     | Time period | On                | Off | On                | Off | On                | Off |
| Circulation program | Monday      |                   |     |                   |     |                   |     |
|                     | Tuesday     |                   |     |                   |     |                   |     |
|                     | Wednesday   |                   |     |                   |     |                   |     |
|                     | Thursday    |                   |     |                   |     |                   |     |
|                     | Friday      |                   |     |                   |     |                   |     |
|                     | Saturday    |                   |     |                   |     |                   |     |
|                     | Sunday      |                   |     |                   |     |                   |     |

Individual settings in the hot water timer programs

### 11.2 Parameters

Enter the parameter changes you made in the table below and in the operating manual of the heat generator.

## 11 User-specific settings

| Rotary switch setting | Parameter level | Parameters | Old value | New value | Date | Comments |
|-----------------------|-----------------|------------|-----------|-----------|------|----------|
|                       |                 |            |           |           |      |          |
|                       |                 |            |           |           |      |          |
|                       |                 |            |           |           |      |          |
|                       |                 |            |           |           |      |          |
|                       |                 |            |           |           |      |          |
|                       |                 |            |           |           |      |          |
|                       |                 |            |           |           |      |          |
|                       |                 |            |           |           |      |          |
|                       |                 |            |           |           |      |          |

Individual parameter changes

### 11.3 Data bus addresses

| RoCon Device | Data bus address | Comments |
|--------------|------------------|----------|
|              |                  |          |
|              |                  |          |
|              |                  |          |
|              |                  |          |
|              |                  |          |
|              |                  |          |
|              |                  |          |
|              |                  |          |
|              |                  |          |

Data bus addresses in the RoCon system

## 12 Notes

[illegible]



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