Installer guide

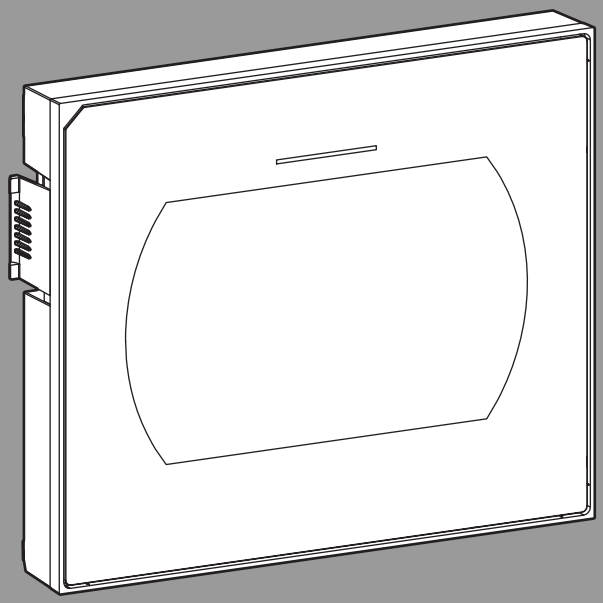
User interface

# BC400-FO

Heat Pump

Buderus

Read carefully prior to operation.



6721121811 (2026/08) UK/IE

## Table of contents

# 1 Version history

The table that follows includes an overview of the versions of the document and the related software releases.

| Document date | Software release |
|---|---|
| 2026/08 | NF87.03 (2026/07) |
| 2026/03 | NF87.02 (2025/11) |
| 2025/09 | Initial version |

*Table 1*

# 2 Explanation of symbols and safety instructions

## 2.1 Explanation of symbols

**Warnings**

In warnings, signal words at the beginning of a warning are used to indicate the type and seriousness of the ensuing risk if measures for minimizing danger are not taken.

The following signal words are defined and can be used in this document:

**DANGER**

**DANGER** indicates that severe to life-threatening personal injury will occur.

**WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, could result in serious personal injury or danger to life.

**CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, could result in minor to moderate personal injury.

***NOTICE***

**ATTENTION** indicates that material damage may occur.

**Important information**

The info symbol indicates important information where there is no risk to people or property.

## 2.2 General safety instructions

**⚠ Notices for the target group**

These installation instructions are intended for competent persons who are skilled in dealing with water installations, ventilation, heating and electrical systems. All instructions must be observed. Failure to comply with instructions may result in material damage and personal injury, including danger to life.

- ▶ Read these instructions before starting any installation.
- ▶ Observe the safety instructions and warnings.
- ▶ Follow national and regional regulations, technical regulations and guidelines.
- ▶ Document all work carried out.

**⚠ Intended use**

- ▶ Use the product only to control the heating and ventilation units.

All other use is considered unsuitable. We accept no liability for damage caused through incorrect use.

**⚠ Electrical work**

Electrical work must only be carried out by a qualified electrician.

- ▶ Before starting electrical work:
  - Isolate the mains electrical supply and secure against reconnection.
  - Using suitable means, test that the mains voltage is disconnected.
- ▶ Never connect the product to mains voltage.
- ▶ Also observe the connection diagrams of other system components.

### 2.2.1 Safety instructions for the operation and commissioning of the user interface and appliance

**⚠ WARNING**

**Risk of scalding!**

As hot water temperatures above 60 °C can be reached when the customer activates the extra hot water function, thermal disinfection or daily heat up, a temperature mixing device must be installed.

***NOTICE***

**Floor damage!**

The floor may be damaged due to excessive heat.

- ▶ For underfloor heating systems, make sure that the maximum temperature for the floor type in question is not exceeded.
- ▶ If necessary, connect an additional temperature switch at the voltage input of the respective circulation pump and to one of the external inputs.

### 2.2.2 Remarks for the operation of the user interface

The software version used for the creation of this operation manual can be different from the software version installed in the user interface of the appliance.

- ▶ Make sure to refer to the correct version of the operation manual.

Some menus and settings described in the manual are not available for all countries.

- ▶ Make sure to select the correct installation country during commissioning to see the available menus and settings.

# 3 Product Information

## 3.1 Declaration of Conformity

The design and operating characteristics of this product comply with the British, European and supplementary national requirements.

UK CA CE The UKCA and CE markings declare that the product complies with all the applicable British and European legislation, which is stipulated by attaching these markings.

You can request the complete text of the Declaration of Conformity from the UK address indicated in this document.

### 3.2EU or GB Importer

Bosch Thermotechnology Ltd.
Cotswold Way, Warndon
Worcester WR4 9SW / UK

## 3.3 Simplified UK/EU Declaration of conformity regarding radio equipment

Bosch Thermotechnik GmbH hereby declares, that the product BC400-FO described in these instructions complies with the Directive UK S.I. 2017/1206 (UK) 2014/53/EU.

You can request the complete text of the UK/EU Declaration of Conformity from the UK address indicated in this document.

## 3.4 Regulations

In order to ensure installation and operation of the product in accordance with the regulations, observe all the applicable national and regional regulations as well as all technical rules and guidelines.

## 3.5 Product description

The control panel is equipped with a touch screen display. Swipe your finger to toggle between the menu options and tap the display to select settings. The purpose of the control panel is to control the heat pump for max. 4 heating circuits for heating and cooling and a cylinder charging circuit for hot water, solar hot water and solar central heating backup, heat recovery ventilation and fresh water station.

- The control panel is equipped with a time program:
  - Heating systems: For each heating circuit, 1 time program with 2 switching times per day.
  - Domestic hot water: One time program for hot water heating and one time program for the hot water circulation pump, each with 6 switching times per day.
- Certain menu items are specific to certain countries and are only displayed if the country in which the heat pump is installed has been set accordingly.

The functional scope, and therefore the menu structure of the control panel, depend on the system configuration. The adjustment ranges, default settings and functional scope may differ from the information in these instructions, depending on the system installed at the site.

Depending on the software version of the control panel, the texts shown in the display may differ from the texts in this manual.

- If 2 or more heating/cooling circuits are installed, settings for each heating/cooling circuit is available and are necessary.

- If additional system components and modules are installed, corresponding settings are available and are also necessary. Check the module and accessory documentation for specific settings.

### 3.6 Status LED

The LED at the top of the control panel uses different colours to indicate the status of the operation of the appliance.

| LED colour | Operation status |
|---|---|
| **Blue** | Normal operation. |
| **Yellow** | Warnings, non-blocking system errors, or maintenance information. |
| **Red** | Locking or blocking errors. |

*Table 2*

### 3.7 Control panel overview

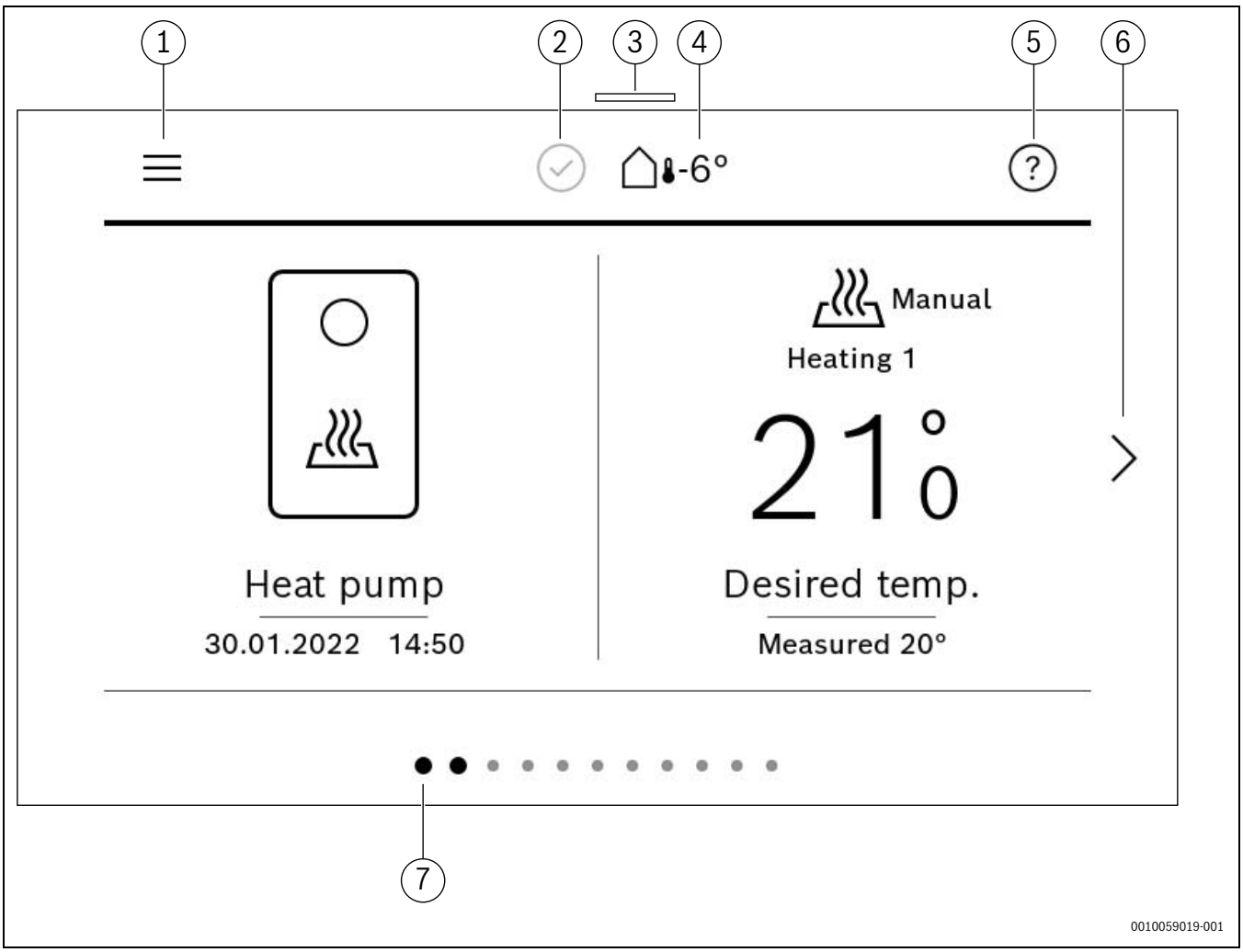



*Fig. 1 Control Panel*

[1] General settings[1)]
[2] System status
[3] Status LED
[4] Current outside temperature
[5] Help
[6] Next page
[7] Page indicator

1) Press and hold for 5 seconds to open the service menu.

### 3.8 Additional accessories

Function modules and user interfaces of the EMS Plus control system:

| Accessory | Definition |
|---|---|
| Simple remote control RC 100 /RC 100.2 | Simple remote control |
| Simple remote control RC 100 H /RC 100.2 H | Simple remote control with the option to measure relative humidity |
| Wireless remote control RC 120 RF | Simple remote control with the option to measure relative humidity. MX 400 is required |
| Comfort remote control RC 220 | Comfort remote control with the option to measure relative humidity |
| MM 100 | Module for one heating or cooling circuit, optional with mixing valve |
| MX 400 | Internet gateway (WLAN and LAN) and radio module for wireless connection |
| Logavent | Heat recovery ventilation (HRV) |
| EM 100 | Module for external failure alarm and 0-10V control |
| The accessories that follow are only available for Air/water heat pumps: | |
| SM 100 | Module for standard solar systems |
| SM 200 | Module for advanced solar systems |
| RNW/DWF 200...350 | Dehumidifier |
| The accessories that follow are only available for Liquid/water heat pumps: | |
| HP-PCU-1 | Passive cooling station |
| The accessories that follow are only available for Air/water and Cascade heat pumps: | |
| Logalux FS/ 2, FS.../3 | Fresh water station |
| The accessories that follow are only available for Cascade heat pumps: | |
| Power Meter PM 5000 | Power meter |

*Table 3 Additional accessories list*

## 4 Commissioning

**Overview of the commissioning:**

1. Make sure the electrical connections (power feed and signal cables) of the system and accessories are properly made.
2. Carry out coding of the accessory modules and room controllers (observe instructions for the modules and room controllers).
3. Make sure that your heating system is completely filled with water and vented.
4. Switch on the system.
5. Carry out commissioning of the control panel (see → chapter 4.2 "Commissioning of the control unit", page 6).
6. Perform further commissioning steps, if necessary (see → chapter 4.3 "Additional commissioning settings", page 9.
7. Check the settings in the service menu and make further configurations, if necessary (see → chapter 6 "Service menu", page 11).
8. Check the warnings and errors and reset error history.
9. Check for software updates and update the heat pump, if necessary (see chapter 6.5 "Updating the system software", page 32).
10. System handover (see → chapter 5 "Handover of the system", page 11).

### 4.1 Configuration wizard for commissioning

The configuration wizard guides the initial set up of the appliance.

- The system analysis automatically detects any BUS components that are installed in the system (for example, remote controls or sensors).
- Based on the system analysis, the configuration wizard adapts the menus and the factory default settings.

When the **Commissioning** menu appears:

- ▶ Do a check of the sub-menus and the automatic factory default settings.
- ▶ If necessary, adjust the sub-menus and automatic default settings.

If a remote control or module is installed later, the settings can be adjusted in the configuration wizard again. Starting the configuration wizard again does not have an effect on existing settings.

### 4.2 Commissioning of the control unit

When the control panel is connected to the power supply for the first time, the configuration wizard is launched.The configuration wizard includes the mandatory settings that have to be configured before the start of the system. The system analysis detects the modules and accessories that are installed in the system. The detailed settings are pre-configured with default values.Once the wizard is complete, save and return to the main screen or make additional settings in the service menu (→ chapter 6.2.2 "Menu: Manual commissioning", page 12).

**Single heat pumps system**

This menu contains the settings for the heat pump. The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| Language | Language selection |
| Date format | Date format selection:<br>• DD.MM.YY<br>• MM/DD/YY<br>• YY-MM-DD |
| Date | Date configuration |
| Time of Day | Time configuration |
| Check installation | ▶ Ensure that the accessory modules and remote controls are installed and addressed before continuing. |
| Configuration wizard | Analysis of the system and the installed accessories |
| Country | Country of installation selection |
| Min. outdoor temperature | ▶ Set the lowest dimensioned outdoor temperature of the system.<br>This is the lowest average outside temperature in the relevant region. The setting affects the slope of the heating curve as it is the point where the heat source reaches the highest flow temperature. |
| Hydraulic configuration[1)] | Selection of the hydraulic connection:<br>• Direct hydraulics<br>• Buffer cylinder<br>• Bypass[2)] |
| Hot water[1)] | Type of heating for hot water:<br>• Not installed<br>• Indirect hot water cylinder<br>• Buffer cylinder with middle inlet and fresh water station[2)] |
| Power Meter[3)] | Installation of power meter:<br>▶ Select Installed, if a power meter is installed in the system to protect the circuit breaker. |
| Electrical mode[4)] | ▶ Select the maximum power for the Auxiliary heater depending on the electrical connection and design requirements. |
| Limitation with compressor (Elec. aux. heater)[4)] | ▶ Select the maximum auxiliary heater power during compressor operation. |
| Limitation without compressor (Elec. aux. heater)[4)] | ▶ Select the maximum auxiliary heater power during operation without the compressor. |
| Limitation in HW mode (Elec. aux. heater)[4)] | ▶ Select the maximum auxiliary heater power during hot water heating operation. This setting provides an additional limit in hot water mode and cannot exceed the two previous limits. |
| Block aux heater operation | Select Variable: Yes to activate. This setting blocks the auxiliary heater so that the heating energy and hot water heating is provided only by the heat pump (the compressor). |
| Low-noise operation | Selection of the Operation mode<br>• Off to deactivate low-noise operation.<br>• Auto to activate the low-noise operation at the set times.<br>• Permanent if the low-noise operation should be active continuously. |
| Fitting situation[5)] | Selection of the type of house:<br>• Single-family home<br>• Apartment building[5)] |
| System function HC1[6)] | Selection of the heating and cooling settings:<br>• Cooling<br>• Heating<br>• Heating + Cooling |
| Heating system HC1[6)] | Selection of the type of heat distribution in heating circuit 1:<br>• Radiators<br>• Radiant floor heating<br>• Fan convectors |
| Maximum temp. HC1[6)] | Maximum flow temperature for heating circuit 1:<br>• Radiators and Fan convectors [30...75(80)] °C<br>• Radiant floor heating [30...60] °C |
| Design temperature HC1[6)] | Design flow temperature for heating circuit 1:<br>• Radiators and Fan convectors [30...75(80)] °C<br>• Radiant floor heating [30...60] °C |

| Menu item | Description |
|---|---|
| Appliance ventilation[7] | Type of Heat Recovery Ventilation installed:<br>• 100<br>• 101<br>• 260<br>• 261 |
| Nominal volume flow rate, ventilation[7] | ▶ Select the value for the nominal flow rate of the ventilation ( $m^3/h$). |
| Configuration wizard | If the configuration is complete:<br>▶ Select Save and close<br>**-or-**<br>▶ Select Detailed settings to continue the detailed configuration (→ chapter 4.3.1 "Detailed settings", page 9) |
| The settings that follow are only available for Air/water heat pumps: | |
| Power limitation overall system[8] | Limit the power of the system for 1-phase connected heat pumps statically (compressor and the auxiliary heater). |
| Dew pt. HCXXX | When enabled, the cooling function will be controlled by the dew point temperature. The controller maintains the set flow temperature by this value above the calculated dew point. A remote control with humidity sensor is required for this function.<br>• Yes<br>• No |
| The settings that follow are only available for Liquid/water heat pumps: | |
| Passive cooling[9] | Passive cooling:<br>• Not installed<br>• Installed |

1) This setting is not used and not displayed if the hydraulic scheme is determined by the hydraulic unit.
2) Only available for air/water heat pumps.
3) Only applicable for cascade systems.
4) Not applicable for cascade heat pump systems.
5) With "Apartment building", the Away function in the control panel and all functions outside the assigned heating circuit in a room control will be hidden.
6) If several heating circuits are installed, follow this action by making the settings for the other heating circuits.
7) This setting only appears if Heat Recovery Ventilation (HRV) is installed.
8) Only available for specific countries.
9) For further information, observe the technical documentation of the Passive Cooling Station.

*Table 4 Configuration wizard*

**Cascade heat pumps system**

This menu contains the settings for the cascade heat pump. The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| Number of installed heat pumps | Select the amount of installed heat pumps in a cascade system |
| Relative position of the heat pump(s) | For the water pressure calculations, describe the position of the controller in relation to the installed heat pumps<br>• Above indoor unit/controller<br>• Below indoor unit/controller |
| Altitude difference btw. HP(s) - IDU/ controller | Select the height between the heat pumps and the controller in meters |
| Auxiliary heater | • Auxiliary heater - auxiliary heater installation:<br>– External electric aux. heater<br>– External fossil aux. heater |
| Rated output of aux. heater | Set the power size of the external heater for correct calculating of the energy values |

*Table 5 Configuration wizard*

## 4.3 Additional commissioning settings

### 4.3.1 Detailed settings

After completing the initial setup of the appliance with the configuration wizard, the options that follow are shown:

- **Save and close**
- **Detailed settings**

▶ Select **Save and close** to save the settings and quit the configuration wizard.
The **Detailed settings** and obsolete menu options are not shown.

**-or-**

▶ Select **Detailed settings** to access and configure detailed settings for each configured function.

It is also possible to configure the detailed settings in **Service** > **System settings**.

### 4.3.2 Heating systems

If necessary, do a check and change the additional settings in the heating menu.

▶ Do a check to the settings for heating circuit 1 ...4.
▶ To set the **Heating curve**, refer to the system requirements.

### 4.3.3 Hot water settings

To make sure that the hot water mode is working correctly during commissioning, proceed as follows:

▶ Check the settings in the hot water menu. Ensure that the temperature settings are correct to prevent bacterial growth in the DHW cylinder and system.
▶ If necessary, adjust the settings.

### 4.3.4 Settings for further systems and units

If additional systems or units are installed, different menu options are shown, for example:

- Passive cooling station
- External module EM 100
- Ventilation
- **Fresh water station**
- **Energy manager**
- **EEBUS**

For more information on how to configure the dedicated menu or other accessories or modules, refer to the relevant technical documentation.

## 4.4 Function tests

The function tests can be accessed through the **Diagnosis** menu (→ Chapter 6.3.1, page 30).

## 4.5 Monitored values check

The monitored values can be accessed through the **Info** menu (→ Chapter 6.4, page 31).

## 4.6 Stop of system operation

Usually, the unit is always operating. To permanently stop the system operation, stop the supply of power to the entire system and all the BUS components.

After a long power failure or a long period of idleness, the date and time settings are reset. All other settings are kept permanently.

## 4.7 Quick start of heat pump

▶ Select and hold ☰ until the service menu opens (approximately 5 seconds).
▶ Select **System settings** and then **Heat pump**.
▶ Select **Quick compressor start**.
▶ In the dialog box, select Yes.
The quick start function ignores the delay timer and increases the heating demand so that the heat pump starts as soon as possible.

## 4.8 System overview

This end-user menu shows information about the heat pump.

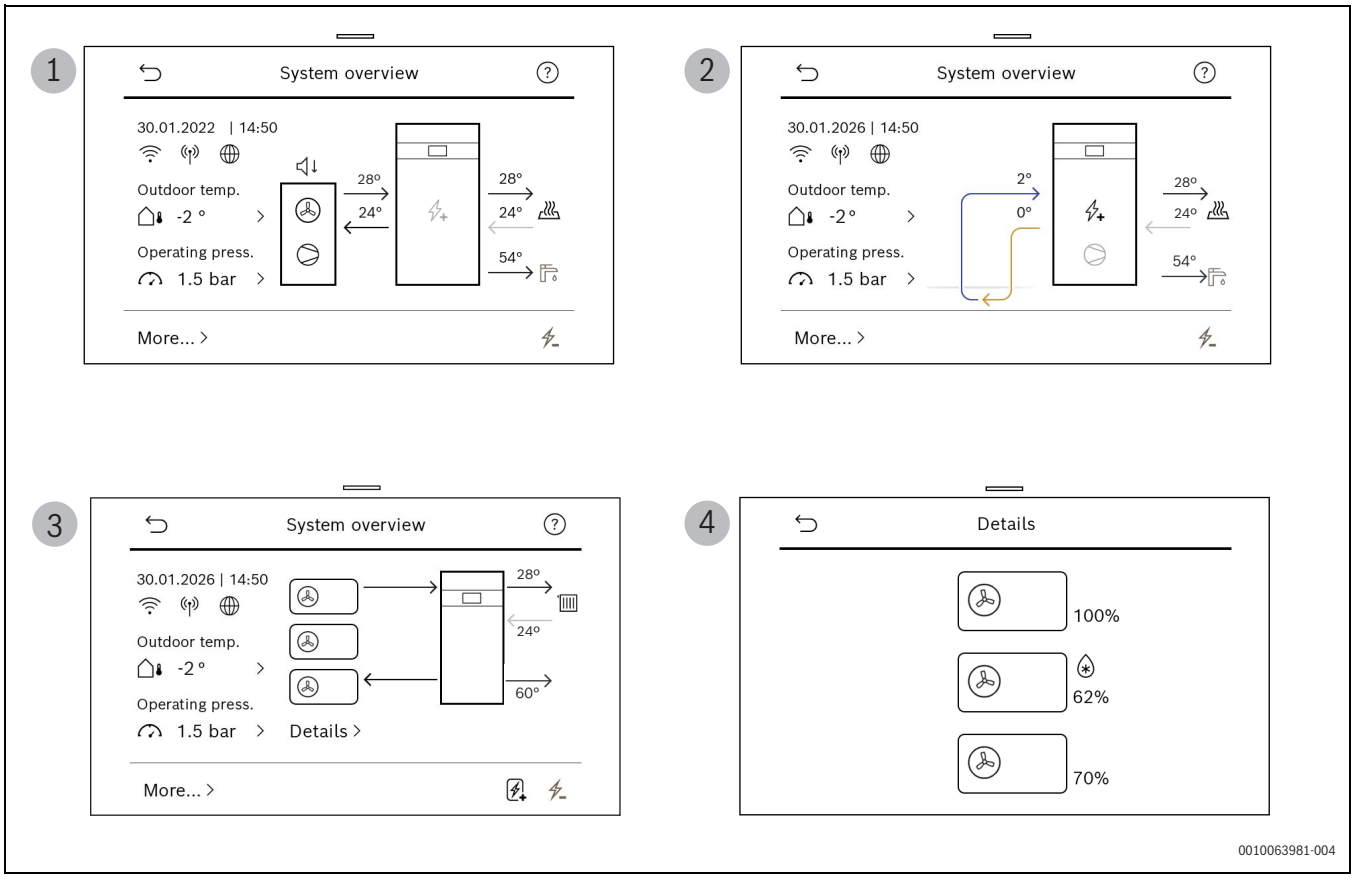



*Fig. 2 Overview of the heat pump*

[1] Air/water heat pump system overview
[2] Liquid/water heat pump system overview
[3] Air/water heat pump cascade system overview
[4] Air/water cascade heat pump system detailed view

## 4.9 Keylock function

**Enabling of the Keylock function**

- ▶ Select ☰.
- ▶ Set the toggle switch of the **Advanced view** menu to **On**.
- ▶ Scroll down to see the **Keylock** function.
- ▶ Set the toggle switch of the **Keylock** menu to **On**.
  The **Keylock** symbol shows at the top of the screen.
- ▶ Do not touch the screen for approximately 2 minutes.
  The screen goes into sleep mode.
  After the next boot up, the screen is locked.

The screen must go into sleep mode to start the **Keylock**. After not touching the interface for the duration of the selected **Display off after** time, the screen goes into sleep mode.

**Temporary disabling of the Keylock function**

- ▶ Touch any area of the screen.
  A pop-up window shows.
- ▶ In the pop-up window, press and hold on top of the 🔒 symbol for approximately 3 seconds.
  The screen will be temporarily unlocked.
- ▶ Make and save the necessary changes.
  After 2 minutes of not touching the interface, the screen is locked again.

**Permanent disabling of the Keylock function**

- Touch any area of the screen.
  A pop-up window shows.
- In the pop-up window, press and hold on top of the symbol for approximately 3 seconds.
  The screen will be temporarily unlocked for 30 seconds.

Make sure to complete the next action steps during the 30-second period. If the action steps are not completed during the 30-second period, the screen will be locked again.

- Select ☰.
- Scroll down to find the **Keylock** function.
- Set the toggle switch of the **Keylock** menu to **Off**.
  The **Keylock** symbol goes out of view at the top of the screen.
  The screen is unlocked.

# 5 Handover of the system

- Check for software updates (→ Chapter 6.5 "Updating the system software", page 32).
- Enter the contact details of the relevant specialist company in **Service** > **Diagnosis** > **Installer contact data**.
- Explain to the customer how the system user interface and accessories work and how to operate them.
- Inform the customer about the settings that have been selected.

# 6 Service menu

## 6.1 Operating the service menu

**Opening the service menu**

- Select and hold ☰ until the service menu opens (approximately 5 seconds).

**Closing the service menu**

- Select ⮌ until the first level of the service menu is displayed.
- Select ← to close the service menu.

**Using the ⓘ icon**

The ⓘ icon is found in the upper right corner of the display.

- Select ⓘ to open the list with the most important service relevant heat pump values.
- Select ⮌ to return to the previous menu level.

The adjustments (including ranges and default values) can be different from the information in this manual.

## 6.2 System settings

### 6.2.1 Start configuration wizard

The control unit detects the BUS nodes that are installed in the system and changes the menu structure and factory settings automatically.

| Menu item | Description |
|---|---|
| Configuration wizard | Make sure that the accessory modules and room controls are installed and configured. To continue with the configuration, select Yes. Select No to go back. |

*Table 6 Start system analysis*

### 6.2.2 Menu: Manual commissioning

Manual configuration of the system components. All specific settings about the system components need to be configured in the respective menus, for example, heating circuit settings need to be configured in the heating menu.

**Single heat pumps system**

This menu contains the settings for **single heat pumps**. The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| Country | Country selection |
| Hydraulic configuration[1)] | Selection of the hydraulic connection:<br>• None<br>• Buffer cylinder<br>• Bypass[2)] |
| Hot water[1)] | Hot water settings:<br>• Not installed<br>• Indirect hot water cylinder<br>• Buffer cylinder with middle inlet and fresh water station |
| Extension module | Extension module (EM 100) settings:<br>• Not installed<br>• Installed |
| Fitting situation | Selection of the type of house:<br>• Single-family home<br>• Apartment building[3)] |
| Heating circuit 1 | Heating circuit settings:<br>• Not installed<br>• On heat pump<br>• On module |
| Heating system HC2[4)] | Heating circuit:<br>• Heat pump<br>• On module |
| Solar | Installation of solar system:<br>▶ Select Yes if a solar module is connected to the heat pump |
| Ventilation | Installation of the ventilation unit:<br>▶ Select Yes if a ventilation unit is connected to the heat pump |
| Energy manager | Energy management function:<br>▶ Select Yes to enable the energy manager. |
| The settings that follow are only available for Air/water heat pumps: | |
| Power limitation overall system[5)] | Limit the power of the system for 1-phase heat pumps statically (compressor and the auxiliary heater). |
| The settings that follow are only available for Liquid/water heat pumps: | |
| Passive cooling[6)] | Passive cooling:<br>• Not installed<br>• Installed |

1) This setting is not used and not displayed if the hydraulic scheme is determined by the hydraulic unit.

2) This connection is only available for air/water heat pumps.

3) With "Apartment building", the Away function in the control panel and all functions outside the assigned heating circuit in a room control will be hidden.

4) The settings are also available for heating circuits 3 and 4.

5) Only available for specific countries and for air/water heat pumps.

6) For further information, observe the technical documentation of the Passive Cooling Station.

*Table 7 Commissioning*

**Cascade heat pumps system**

This menu contains the settings for the **cascade heat pumps**. The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| Power Meter | Power Meter settings:<br>• Not installed<br>• Installed |
| Current limitation for output limiter | Set the fuse size or maximum current limit for the heat pump in Ampere. |
| Number of installed heat pumps | Select the amount of installed heat pumps in a cascade system |
| Relative position of the heat pump(s) | For the water pressure calculations, describe the position of the controller in relation to the installed heat pumps<br>• Above indoor unit/controller<br>• Below indoor unit/controller |
| Altitude difference btw. HP(s) - IDU/ controller | Select the height between the heat pumps and the controller in meters |
| Auxiliary heater | • Auxiliary heater - auxiliary heater installation:<br>– External electric aux. heater [0...10V]<br>– External fossil aux. heater [0...10V] |

*Table 8 Commissioning*

### 6.2.3 Menu: Heat pump

The menu options **ESC block** or **ESC dimming** are only available in the External input 1 menu and for specific countries. Select the appropriate blocking time based on the EVU specifications.
For SG1 configure **ESC blocking 1** or **ESC dimming**[1)] in **External input 1**.
For SG2 configure the **PV system** in one of the external inputs.
Relevant settings will be included in chapter 6.2.14.The heat pump is smart grid ready according to version **1.1**.

**Single heat pumps system**

This menu contains the settings for **single heat pumps**. The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| Expert view | The Expert view option is set to **Off** by default. Switch On the Expert view to see more menu options. |
| Quick compressor start | If enabled, the Quick compressor start function ignores the delay timer and increases the heating demand for a faster start of the heat pump (in relation to the compressor warm-up phase). |
| Low-noise operation | • Operation mode. Select one of the options:<br>– Off to deactivate low-noise operation.<br>– Auto to activate the low-noise operation at the set times.<br>– Permanent if the low-noise operation should be active continuously. |
| | • From: select start time for low-noise operation. |
| | • To: select shut down time for low-noise operation. |
| | • Switch off below outside temperature: select minimum temperature time for low-noise operation. |
| Compressor current limitation | The output stage for the compressor operation can be limited.<br>▶ Limit the compressor depending on the supply current [Not limited\| 1ph: 10 ...13 A \| 3 ph: 6 ... 8 A].<br>Make sure to check the technical data to confirm the outputs and find the related settings. |

1) Only available in Germany, maximal grid connection power according §14a EnWG, power intake restricted to 4.2 kW or 40% of max. compressors and e-heaters thermal output power.

| Menu item | Description |
|---|---|
| External input 1...4<br>Various settings are possible in each menu. | By default, when a closed contact is detected, the external input is shown as On.<br>Enable the Input inverted setting to invert and show open contacts as On.<br>• No<br>• Yes |
| | • Block aux heater operation: an active signal at the external input blocks the electric booster heater. |
| | • Block HW operation: an active signal on the external input blocks the hot water operation. |
| | • Block heating mode: an active signal on the external input blocks the heating operation |
| | • Block cooling mode: an active signal at the external input blocks the cooling operation |
| | • Overheat. protection: an active signal at the external input blocks the heating mode and leads to a fault display. |
| | • ESC blocking 1[1)]: an active signal at the external input blocks the operation of the compressor and the electric booster heater. |
| | • ESC dimming [2)]: dimming of the compressor and auxiliary heater according to paragraph 14a EnWG Germany. |
| | • PV system[1)]:<br>an active signal at the external input enables control via a photovoltaic system. |
| Service display | Reminder to schedule the maintenance service of the appliance.<br>• Off<br>• By date |
| Service date | Date of the next maintenance service. |
| TC3-TC0 temp. diff. htg. | ▶ Enter the reference temperature differential (Delta) for the heat transfer in heating mode [3...10 K.].<br>The control unit controls the speed continuously to achieve a specific difference between the supply and return flow to the refrigerant in case of hydraulics without separation. |
| TC0-TC3 temp. diff. cool. | ▶ Enter the reference temperature differential (Delta) for the cooling transfer in direct hydraulics [3...10 K.].<br>The control unit controls the speed continuously to achieve a specific difference between the supply and return flow to the refrigerant in case of hydraulics without separation. |
| Alternating operation | Htg.-HW alt. mode:<br>▶ Enable the setting to switch between heating and hot water operation. |
| | HW maximum time:<br>▶ Enter the maximum duration of the DHW mode when heat energy demand exists [20...**30**...60 min.] . |
| | Heating maximum time<br>▶ Enter the maximum duration of the heating mode when DHW demand exists [20...**50**...60 min.]. |
| Anti-seize protection | The heat pump has a pump kick function for pumps and valves in the heat pump as well as the system.<br>▶ Enter the time interval between the pump kicks. |
| Air-purge mode | Select the operation mode of the heat pump's air purge function.<br>▶ Select the operation mode of the Air-purge mode of the heat pump:<br>• Off: disables the Air-purge mode.<br>• Auto: enables the automatic air-purge.<br>• On: starts the air-purge mode manually. |
| Min. operation pressure | ▶ Set the permitted lowest system pressure of the heating system. |
| Optimum operating pressure | ▶ Set the optimum system pressure of the heating system. |
| 3-way valve in centre position | Factory default configuration required for filling and draining the appliance, for example. |
| LIN-bus Pumps | • PC0 connected [Yes] \| [No].<br>• PC1 connected [Yes] \| [No].<br>• PC2 connected [Yes] \| [No].<br>• More...<br>– [Connect to PC0] \| Disconnect connection with PC0<br>– [Connect to PC1] \| Disconnect connection with PC1<br>– [Connect to PC2] \| Disconnect connection with PC2 |
| The settings that follow are only available for Air/water heat pumps: | |
| Low-noise operation | ▶ Power reduction: Set the reduction percentage (%) of the output power of the compressor. Select the applicable level:<br>– Level 1 (-30% max. compressor capacity).<br>– Level 2 (-40% max. compressor capacity).<br>– Level 3 (-50% max. compressor capacity).<br>– Level 4 (-60% max. compressor capacity).[2)] |

| Menu item | Description |
|---|---|
| Manual defrosting | ▶ The heat pump is forced to defrost the evaporator. |
| The settings that follow are only available for Liquid/water heat pumps: | |
| Test period of safety venting system | The safety test automatically runs within the set time window, preferably when the compressor is off. If the compressor is constantly running, the test will execute at the end of the window, safely stopping the compressor to do so. Setting a longer time period helps to avoid interruptions to the compressor's operation for the safety test.<br>• Duration: select the duration time for the test period.<br>– Minimum duration [1.5h]<br>– Maximum duration [18h]<br>– Default time [16h] |
| | • Start time: select the start time for the test period |
| Compressor output limitation[3)] | The output stage for the compressor operation can be limited.<br>▶ Select the highest desired output stage of the compressor (%).<br>Make sure to check the technical data to confirm the outputs and find the related settings. |
| External input 1...4<br>Various settings are possible in each menu. | • Brine pump:<br>Off select and set a speed to activate the brine pump via a signal at the external input. |
| | • Low brine pressure:<br>an active signal indicates a low pressure alarm in the brine circuit. |
| Heat source | The heat source selected determines the highest freeze protection temperature required for the heat transfer fluid:<br>• Borehole (brine): The energy is collected with a geothermal heat probe.<br>– Freeze protection: -15 °C.<br>• Earth: The energy is collected through collectors installed in the ground.<br>– Freeze protection: -15 °C. |
| TB0 brine temp min. in | ▶ Enter the lowest brine inlet temperature.<br>The compressor will not operate below this limit. |
| TB1 brine temp min. out | ▶ Enter the lowest brine outlet temperature.<br>The compressor will not operate below this limit. |
| Restart the safety board | The safety board can be reset to leave the service mode. |

1) The menu options ESC blocking 1 and ESC dimming are only available in the External input 1 menu.

2) Not available in Switzerland.

3) The menu options Compressor output limitation and Compressor current limitation are only available in 3-phase heat pumps.

*Table 9 Heat pump settings*

**Cascade heat pumps system**

This menu contains the settings and sequence of menu items that are installed for **cascade heat pumps**. The empty descriptions are explained in the menu for single heat pumps (see → Table 9). The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| Quick compressor start | When triggered, the Quick Start command is transmitted to all heat pumps in the cascade. It speeds up the system start-up by temporarily reducing programmed delay times. This Quick Compressor Start simply applies to the next start request received by each eligible heat pump from the cascade controller. |
| Low-noise operation | |
| Compressor current limitation | Only with an installed power meter. To prevent exceeding the configured maximum current, the system dynamically limits the power consumption of the electric heater and the outdoor units based on the measured phase current.<br>• [Not limited], 3ph: 0...25.5A] |
| External input 1...4 | |
| Service display | |
| Service date | |
| TC3-TC0 temp. diff. htg. | |
| Alternating operation | |
| Anti-seize protection | |
| Air-purge mode | |
| Min. operation pressure | |
| Optimum operating pressure | |

| Menu item | Description |
|---|---|
| 3-way valve in centre position | |
| Heat pump (1...3) | The heat pump is forced to defrost the evaporator.<br>• Manual defrosting<br>– No<br>– Yes |

*Table 10 Settings for cascade heat pumps*

### 6.2.4 Menu: Auxiliary heater

This menu contains the dedicated settings for the **Auxiliary heater**. These settings are only accessible if the system is designed and configured as described here and the unit used supports this setting.

**Single heat pumps system**

This menu contains the settings for **single heat pumps**. The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| Expert view | The Expert view option is set to **Off** by default. Switch On the Expert view to see more menu options. |
| Electric auxiliary heater | • Electrical mode:<br>▶ Select how many stages should be possible in auxiliary heater operation<br>**-or-**<br>▶ Select stage for reduced auxiliary heater operation |
| | • Limitation with compressor:<br>▶ Select the maximum auxiliary heater power during compressor operation. |
| | • Limitation without compressor:<br>▶ Select the maximum auxiliary heater power during operation without the compressor. |
| | • Limitation in HW mode:<br>This setting provides an additional limit in hot water mode and cannot exceed the two previous limits. |
| | • Bival. pt. parallel mode:<br>When the outdoor temperature is greater than the selected value, the electric auxiliary heater is blocked for heating. |
| | • Stand-alone mode:<br>If a temporary operation is to be carried out without the refrigeration circuit, using only the Auxiliary heater, the Auxiliary heater operates in stand-alone mode. |
| To see the settings that follow, switch On the Expert view: | |
| Auxiliary heater block | Select Yes to activate.<br>The auxiliary heater will automatically activate to ensure frost protection, support defrosting, or provide emergency heating if the compressor is locked. |
| Heating delay | The delay for the start of the operation in the heating mode.<br>The delay depends on the time and the amount by which the flow temperature deviates from the set value [0...**300**...1000] K x min. |

*Table 11 Auxiliary heater setting*

**Cascade heat pumps system**

This menu contains the settings and sequence of menu items that are installed for **cascade heat pumps**. The empty descriptions are explained in the menu for single heat pumps (see → Table 11). The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| Expert view | |
| Electric auxiliary heater | |
| To see the settings that follow, switch On the Expert view: | |
| External auxiliary heater | • Rated output<br>Set the power size of the external auxiliary heater. |
| | • Bival. pt. parallel mode<br>This setting enables the outdoor temperature threshold parallel mode. |
| | • Bival. pt. switch mode<br>This setting enables the outdoor temperature threshold alternative mode. |
| Auxiliary heater block | |
| Heating delay | |

*Table 12 Auxiliary heater setting*

If the setting is carried out for the auxiliary heater None, the auxiliary heater does not start when in fault or antifreeze mode. In this case, there is a risk of damage to property.

### 6.2.5 Menu: Passive cooling station

This menu is available if a Passive Cooling station is installed and configured. This menu is only applicable for **liquid/water heat pumps**.

| Menu item | Description |
|---|---|
| VK1 PCS valve runtime | Runtime of the valve in the PCS [Default: 120sec]. |

*Table 13 Settings in the Passive cooling station menu*

### 6.2.6 Menu: Extension module

The **Extension module** EM 100 contains the settings for the 0-10V supply flow setpoint control and feedback loop. Observe additional information on the settings and functions in the technical documentation of the Extension module.

### 6.2.7 Menu: Heating / Cooling

The menu contains the dedicated settings for the **Heating** and **Cooling** operation. The settings that are shown here can change because of the configuration of the system and the accessories that are installed.

| Menu | Menu items | Additional settings |
|---|---|---|
| System settings | • Summer/winter changeover:<br>Define the season switch between the heating mode in winter to cooling mode in summer with the settings in this menu. [1)] | • Operation mode. Select operating mode for switching from idle to heating mode.<br>– No heating mode, no cooling mode (summer)<br>– Heating mode only<br>– Cooling mode only<br>– Automatic switching: Automatic switch between the heating or cooling operation according to the following settings:<br>• Heating mode up to: Select the temperature threshold to change from heating mode to cooling mode [10…**16**…21] °C.<br>• Direct start temperature difference: Configure the outside temperature difference to automatically switch to heating mode. The system will switch immediately, without a delay timer. [1…**4**…10] K.<br>• Summer mode delay: Select the delay timer for the switch from heating mode to summer mode.[00:15…**03:00**…48:00]h.<br>• Heating mode delay: Select the delay timer for the switch from summer to heating mode. [00:15…**03:00**…48:00]h.<br>• Cooling mode from: Select the temperature threshold to start the cooling mode. [20…**23**…35] °C.<br>• Cool. activ. delayed: Select the delay timer for the switch from summer to cooling mode. [00:15…**01:00**…48:00]h.<br>• Cool. deactiv. delayed: Select the delay timer for the switch from cooling to summer mode (heating and cooling off) [00:15…**18:00**…48:00]h. |
| | • Min. outdoor temperature:<br>Select the dimensioned outdoor temperature of the system [-35…-**10**…+10 °C]. | |
| | • Building damping:<br>Select the damping level of the building. For more information, see → chapter 6.2.8, page 24.<br>– None<br>– Light<br>– Medium<br>– Heavy | |
| | • HC1 priority:<br>When this setting is enabled, Heating circuit 1 [2)] has priority over all other heating circuits. As a result, the heat pump prioritises the heating operation in Heating circuit 1. The heat pump ignores heating requests from all other circuits if Heating circuit 1 does not send a heating request. This setting is frequently used for hydraulic systems that do not have a separation device, for example, Bypass or Buffer tank.<br>When this setting is not enabled, no heating circuit has priority. The heat pump can heat according to the heating requests of each heating circuit. If the system does not have hydraulic separation, the heat pump also heats Heating circuit 1 automatically. | |

| Menu | Menu items | Additional settings |
|---|---|---|
| | • Air dehumidification:<br>Activate it, if a dehumidifier is installed and connected to the heat pump.<br>– No<br>– Yes | |
| | • Dehumidification set value:<br>Set the requested humidity value [40...55..70%] | |
| Heating circuit 1 | • System function HC1:<br>– Select Heating to operate the system only in heating mode.[3)]<br>– Select Cooling to operate the system only in cooling mode.<br>– Select Heating + Cooling to operate the system in heating and in cooling mode. | |
| | • Heating system type HC1:<br>– Radiators<br>– Radiant floor heating<br>– Fan convectors | |
| | • Remote control type:<br>– None<br>– RC 100<br>– RC 100 H<br>– RC 120 RF<br>– RC 220<br>– Single Room Control | |
| | • The Configure Single Room Control sub-menu is only shown if the selected Remote control type is the Single room controller. | • Control type: Select the control type for operation with individual room controllers (when an individual controller is installed in individual rooms).<br>– Outside temp.-compensated<br>– Outdoor temperature with base point<br>– Single room-dependent<br>• Select Connection with single-room control. Establish connection. Display of notices on the procedure for establishing the connection and configuration. Scan the QR code with the service app to configure the individual rooms/thermostats.<br>• Select Reset adaptive heat curve to delete the learned heat curve with the control type Single room-dependent. This can also be done directly within the heating menu.<br>• Temperature monitoring:<br>– Select **Yes**, to detect any increase of the heating circuit flow temperature caused by defective heating valves.<br>– Select **No**, to avoid the detection.<br>• Select Reset detected errors [4)] |
| | • HC1 with mixer: Select [Yes] if the heating circuit is mixed. | |
| | • Mixer run time HC1 Set the run time for the mixer [10...**140**...600 sec]. | |

| Menu | Menu items | Additional settings |
|---|---|---|
| | • Heating | • Heating curve:<br>– Outside temp.-compensated[5)]<br>– Outdoor temperature with base point<br>– Single room-dependent<br>• Max. temp. HC1: Select the maximum flow temperature for the heating circuit. For under floor heating [22...**40**...60 °C] \| RadiatorsFan convectors: [22...**55**...60 °C].<br>• Minimum flow temperature:<br>– Off<br>– On[6)]<br>• Heating curve. Menu for graphic setting of the heating curve.<br>• Room influence HC1: This factor defines how much the measured room temperature can influence the flow temperature through parallel displacement of the heating curve. The higher this value is, the stronger the weighting of the deviation and the greater the influence [1...**3**...10].<br>• Room temperature offsetAdjust the temperature if the current temperature is perceived as being too low or too high [-10...**0**...+10] K.<br>• Frost protection[7)]. Frost protection for the heating system:<br>– Off<br>Room temperature (Only with remote controller).<br>– Outdoor temp.<br>– Room and outside temperature (Only with room controller).<br>Frost protection will be set depending on the temperature selected here.<br>– Frost protection for the heat pump itself is independent of this setting, and is always active and available.<br>• Frost protection limit temperature: Set the temperature at which the frost protection should be activated [-20...**+5**...+10] °C.<br>• Cont. heat below:<br>– Select Yes to activate.<br>– Select No to deactivate.<br>Set the outdoor temperature from which the time program should be overridden [**Off**...-30...+10] °C.<br>• Reset adaptive heat curve: Delete the learned adaptive heat curve with the control type Single room-dependent. |

| Menu | Menu items | Additional settings |
|---|---|---|
| | • Cooling[8)] | The Cooling mode can be controlled with:<br>• A remote room control with an integrated humidity sensor for dew point monitoring.<br>• A remote room control without an integrated humidity sensor for cooling mode below the dew point.[9)]<br>• Without a remote control and dew point monitoring[8)]. The operation runs according to the set cooling curve and with an optimal time program that can be configured in the end user level.<br>• Cooling curve:<br>The graphical configuration of the cooling curve depends on the outside temperature. The supply temperature can be configured with the base point (at 35 °C outside temperature) and the end point (at 25 °C outside temperature). The minimum temperature is limited by the installed heat pump system.<br>• Max. switching differential set room temperature:<br>Set the temperature difference (hysteresis) to the room set temperature on the remote control to start and stop the cooling operation [1...10] K[10)].<br>• Dew point offset:<br>Set an offset on the dew point calculation, if needed [1...3...10] K[11)].<br>• Dew point calculation:<br>Enable or disable the dew point calculation based on the humidity sensor in the remote control to determine the active flow set temperature[12)]. |
| If there are several heating circuits in a heating system, configure these in the same way as heating circuit 1. | | |
| The settings that follow are only shown if the heating circuit is connected to a mixer module: | | |
| | • Pump power supply | • Switched:<br>– The heating circuit pump is controlled by the mixer module.<br>• Permanent<br>– The heating circuit pump is controlled directly by the heat pump and constant power supply is required. |
| | • The Pump error indication sub-menu configures the error input of the heating circuit pump according to the pump supplier specifications. | • Pump error indication:<br>– None<br>– Active when contact closed<br>– Active when contact open |
| The settings that follow are only shown if the Hydraulic configuration is set to Direct hydraulics. | | |

| Menu | Menu items | Additional settings |
|---|---|---|
| | • Type of pump control:<br>– Controls the mode of the circulation pump in the heat pump during heating mode. | • Auto:<br>– Select if the pressure is unknown. The PC0 pump flow pressure set-point is calculated by an appliance self-learning software algorithm.<br>• Constant pressure (default):<br>– The speed of PC0 is continuously controlled to ensure that the set pressure head is maintained according to the Target pump pressure. |
| | • Target pump pressure | • Target pump pressure:<br>Sets the target pump pressure for the heating circuit.<br>– For Radiant floor heating [150...**250**...750].<br>– For Radiators [150...**200**...750]. |
| | • Minimum pump pressure: Adjust the minimum pressure for Heating circuit pump 1 if necessary. | • Auto:<br>Sets the allowed minimum range for the Heating circuit pump 1 pump. |
| | • Maximum pump pressure: Adjust the maximum pressure for Heating circuit pump 1 if necessary. | • Auto:<br>Sets the allowed maximum range for the Heating circuit pump 1 pump. |
| | • Temp. diff. heating | • Temp. diff. heating<br>Set the temperature difference between supply and return flow to the heat pump in heating mode.<br>– For Radiant floor heating [3...**4.5**...10].<br>– For Radiators [3...**7.5**...10]. |
| | • Temp. diff. cooling | • Temp. diff. cooling<br>Set the temperature difference between supply and return flow to the heat pump in cooling mode [2...**3**...10]. |

1) To enable Cooling settings, install the Passive Cooling Station and configure a heating circuit for cooling. The Cooling settings are not available for cascade heat pumps.
2) This setting is not available for cascade heat pumps.
3) Further settings available for Air/water heat pumps.
4) For more details about this function, refer to the separate function manual.
5) This heat curve variant is not available for all countries.
6) Set a minimum temperature value for the heating curve.
7) The frost protection cannot be turned off, because it is not possible to use frost protection fluid in the heating system.
8) If the heating circuit is set to Cooling or Heating + Cooling operation, the Cooling menu is shown. This feature is not available for cascade heat pumps.
9) Make sure the system is protected agaisnt condensation water.
10) Only shown if remote control is installed.
11) Only shown if the Dew point calculation is enabled.
12) Only shown if a remote control with humidity sensor is installed.

*Table 14 Settings for Heating*

If the constant flow temperature is higher than 45°C, the appliance lifetime can be affected.

**Heating curve**

The heating curve controls the indoor temperature based on the outside temperature. There are two variants of the heating curve:

| Menu item | Description |
|---|---|
| Heating curve | • Control type > Outside temp.-compensated[1]:<br>– Optimised upward-curved heating curve that allocates the flow temperature based on the outside temperature.<br>– Only desired and maximum temperatures have to be set.<br>– Optionally, a minimal flow temperature limit can be set (Minimum flow temperature has to be enabled). |
| | • Control type > Outdoor temperature with base point:<br>– Classic heating curve setting that provides multiple options to fulfil specific building requirements.<br>– The heating curve has a base point[2] and end point[3].<br>– Additionally, the user can select a comfort point[4] during the transition period.<br>– Optionally, a minimal flow temperature limit can be set (Minimum flow temperature has to be enabled). |

1) This heat curve variant is not available for all countries.

2) The base point is the flow temperature that is reached when the outside temperature is, at least, 20 °C.

3) The end point is the flow temperature that is reached at the lowest outdoor temperature, in the region. The end point affects the slope of the heating curve.

4) During the transition period (spring or autumn), the user can configure the comfort point to increase the flow temperature.

*Table 15 Menu for setting the heating curve*

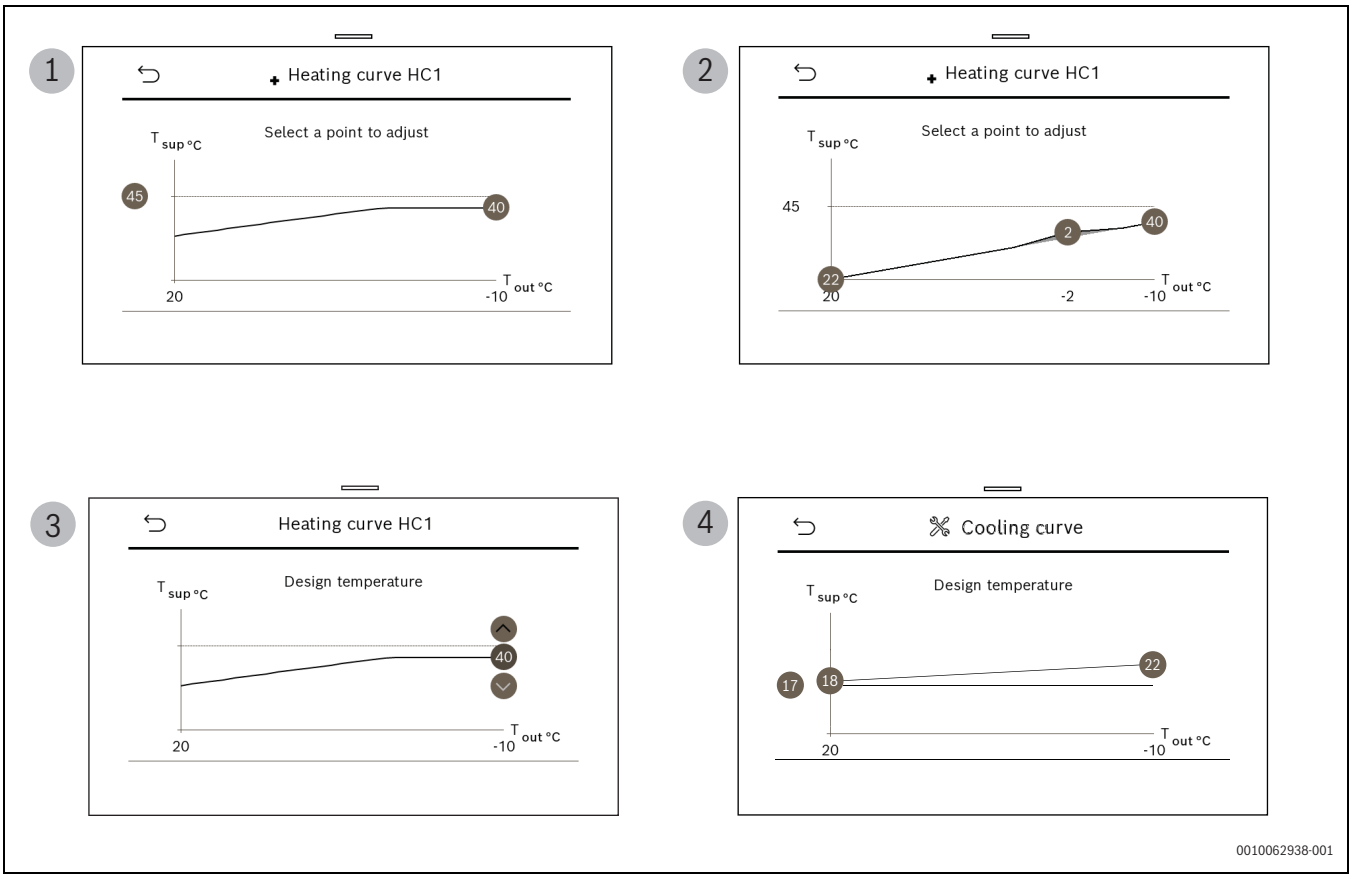



*Fig. 3*

[1] Start screen for setting the heating curve for the outside temp.-compensated heat curve
[2] Start screen for setting the heating curve for the outside temperature control type with base point (and comfort point)
[3] Adjust temperatures
[4] Start screen for setting the cooling curve

### 6.2.8 Type of building

When the thermal damping setting is enabled, the system makes adjustments to compensate for fluctuations in the outside temperature. The system will take into account the type of building and thermal inertia of the building mass to adjust the heating curve.

| Menu item | Description |
|---|---|
| Light(low storage capacity) | Examples: building made of precast concrete, post-and-beam structures, timber structures. |
| | **Output:**<br>• Low damping of outside temperature<br>• Rapid increase in the flow temperature |
| Medium (average storage capacity) | Example: building made of hollow concrete blocks (standard setting). |
| | **Output**:<br>• Medium damping of the outside temperature<br>• Average increase in the flow temperature |
| Heavy (high storage capacity) | Example: brick house. |
| | **Output**:<br>• High damping of outside temperature<br>• Slow increase in the flow temperature |

*Table 16 Settings for the building type*

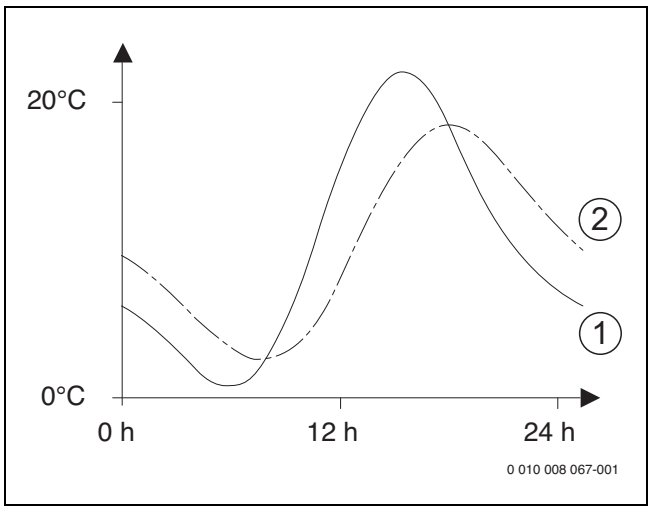



*Fig. 4 Example for adapted outside temperature:*

[1] Current outside temperature
[2] Adjusted outside temperature

### 6.2.9 Screed drying menu

This menu contains the settings for screed drying. The settings in this menu are only shown when, at least, one underfloor heating circuit is installed. It is possible to configure a screed drying program for a specific heating circuit or for the entire heating system.
The heating system will automatically run the screen drying program once to dry new screeds. Additionally, after a power failure or a heat pump shut down, the screed drying program continues automatically[1)].

| Menu item | Description |
|---|---|
| Screed drying | By default the screed drying program is not active. To enable the screed drying program:<br>▶ Select Yes.<br>The settings for the screed drying program are shown. |
| Wait time before start | • Skip: the screed drying program starts immediately for the selected heating circuits.<br>• Duration: The selected heating circuits are switched off during the waiting time. The frost protection is active (→ Fig. 5, time before day 0). |
| Start phase period | • Skip: no start phase.<br>• Duration: setting for the time interval between the beginning of the start phase and the next phase [1 ... **3** ... 30 days]. |
| Start phase temperature | Flow temperature during the start phase [20 ... **25** ... 55 °C]. |
| Heat-up phase increment | • Skip: no heat-up phase takes place.<br>• Duration: setting for the time interval between the steps in the heat-up phase [1 ... 10 days]. |
| Temp. diff. in heat. ph. | Temperature differential between the steps in the heat-up phase [1 ... **5** ... 35 K/Step]. |
| Holding phase period | Time interval between the beginning of the holding phase (duration of the maximum temperature for screed drying) and the next phase [1 ... **7** ... 99 days]. |

1) The voltage failure must not last longer than the power reserve of the user interface (approximately 4h) or the maximum interruption duration defined.

| Menu item | Description |
|---|---|
| Holding phase temperature | Flow temperature during the holding phase (maximum temperature) [20 ... **55** °C]. |
| Cool-down phase incr. | • Skip: no cooling phase takes place. |
| | • Duration: setting for the time interval between the steps (increment) in the cooling phase [**1** ... 10 days]. |
| Temp. diff. in cool. ph. | Temperature differential between the steps in the cooling phase [1 ... **5** ... 35 K]. |
| End phase period | • Skip: no end phase takes place. |
| | • Duration: setting for the time interval between the beginning of the end phase (last temperature step) and the end of the screed drying program [**1** ... 30 days]. |
| | • Permanent: an end time is not defined for the end phase. |
| Temperature of end phase | Flow temperature during end phase [20 ... **25** ... 55 °C]. |
| Max. interruption without error | If there is an interruption of the screed drying program (for example, a power failure), an error is shown only after the configured time interval [2...12...24 h]. |
| Screed dry. System | If this setting is enabled, the screed drying is active for all heating circuits of the system.[1)] |
| Screed drying heating circuit 1 ... | The screed drying program is only enabled in the selected heating circuits. |
| Stop | The screed drying program can be stopped temporarily (Stop:Yes). If the maximum duration for the temporary interruption is exceeded, an error is shown. |

1) Single heating circuits cannot be selected. Water heating and the Hot water menus are not available.

*Table 17 Settings in the menu Screed drying (→ Fig. 5 shows the default setting of the screed drying program)*

***NOTICE***

**Risk of damaging or destroying the screed!**

- ▶ With multi-circuit systems, this function can only be used in combination with a heating circuit with mixer.
- ▶ Set the screed drying according to the instructions of the screed manufacturer.
- ▶ In spite of the screed drying function, visit the systems daily and keep the prescribed record.

***NOTICE***

- ▶ The heat sources borehole (brine) or Earth are generally not suitable for the additional energy required to heat up the screed. We strongly recommend using on-site drying equipment.

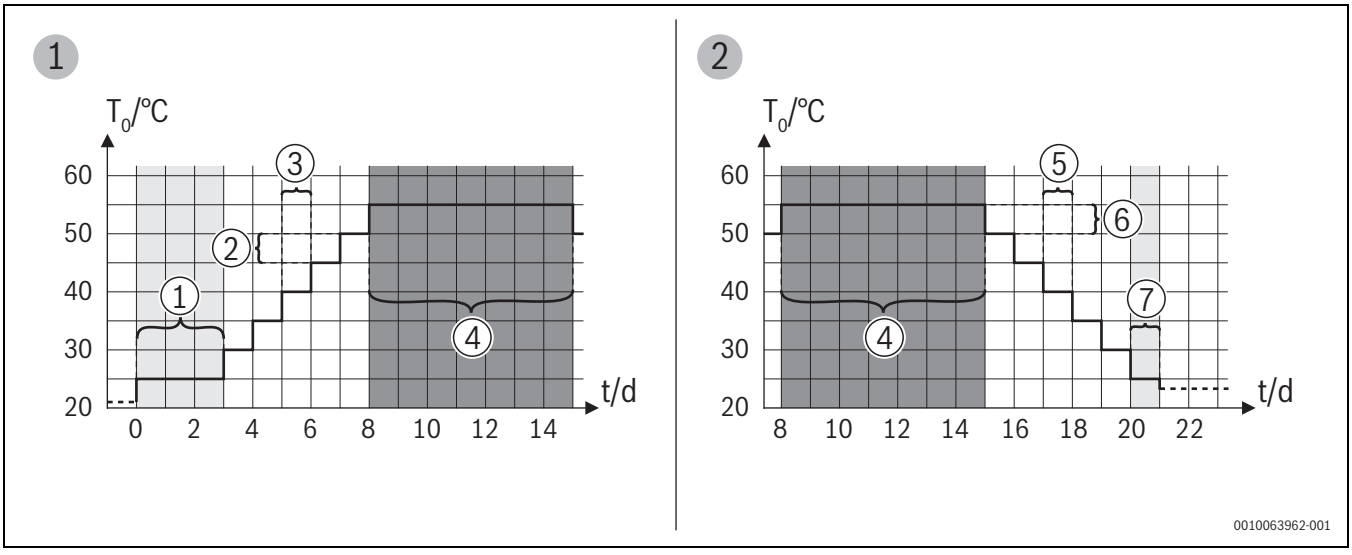



*Fig. 5 Screed drying process with default settings in the heat-up and cooling phases*

**Legend for Fig. 5:**

[1] Screed drying process with default settings in the heat-up phase
[2] Screed drying process with default settings in the cool-down phase
$T_0$ Flow temperature
t Time (in days)

### 6.2.10 Menu: Hot water

This menu contains the settings for hot water. The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| The settings below are only shown when the selected HW cylinder is set on the Heat Pump. | |
| Expert view | The Expert view option is set to **Off** by default.<br>▶ Switch On the Expert view to see more menu options. |
| Temperature | • Comfort start temp. |
| | • Comfort stop temp. |
| | • Eco start temp. |
| | • Eco stop temp. |
| | • Eco+ start temp. |
| | • Eco+ stop temp. |
| | • Extra hot water |
| | • Energy man. stop temp.[1)] |
| Thermal disinfection | • Auto: Automatic thermal disinfection operation. |
| | • Daily/weekday: The thermal disinfection is carried out Daily or weekly in the selected week day. |
| | • Start time: Start time of the thermal disinfection. |
| | • Temperature: Temperature for thermal disinfection operation. |
| | • Heat maint. time: Select keep hot between [0.0...**1.0**...3.0] hours. |
| | • Maximum time: Maximum duration of the thermal disinfection operation [2...**3**...4 h]. |
| | • Start manually now: Start the thermal disinfection manually. |
| | • Stop manually now: Stop the thermal disinfection manually. |
| Daily heat-up | • Enable:<br>▶ Select Yes to enable the daily heating of the domestic hot water tank to 60°C, if the temperature of hot water tank has not reached 60°C in the last 12 hours. |
| | • Time of Day:Operation time for the daily heat-up of the water tank. |
| Hot water circulation pump | • PW2 Circulation pump installed<br>▶ Select On if the domestic hot water circulation is electrically connected to the heat pump. The heat pump controls the hot water circulation. |
| | • Select Operation mode:<br>– Off<br>– On<br>– According to hot water program<br>– Auto (own time program) |
| | • Start frequency of the circulation pump:<br>– Permanent: Continuous operation.<br>– Interval: Set required interval to between [1...**3**...6]. The circulation pump will run for 3 minutes for each start. |
| HC pump on in HW mode | Heat pump operation during the heating of the water.<br>▶ Select On to enable. |
| Comfort temp. difference for charging | Charging temperature difference for hot water production in Comfort mode, measured between supply flow (TC1) and tank temperature (TW1) [4...18]. |
| Eco temp. difference for charging | Charging temperature difference for hot water production in eco mode, measured between supply flow (TC1) and tank temperature (TW1) [4...18]. |
| Eco+ temp. difference for charging | Charging temperature difference for hot water production in eco+ mode, measured between supply flow (TC1) and tank temperature (TW1) [4...15]. |

1) Available if an external energy manager is connected and configured.

*Table 18 Settings for hot water heating with heat pump*

By default, the hot water mode is active.

▶ If the hot water mode is not installed, disable the hot water mode during commissioning.

The settings ranges and default values for hot water is depending on the installed combination of heat pump and indoor unit, therefore not stated here.

▶ Check the respective manual of the indoor unit for the range and default values.

### 6.2.11 Menu: Fresh water station

This menu is only applicable for air/water and cascade heat pumps.

For further information about the fresh water stations, check the relevant technical documentation.

This menu contains the settings for the fresh water station. The settings that are shown in this menu can change because of the configuration of the system and the accessories that are installed.

| Menu item | Description |
|---|---|
| The settings below are only shown when the selected HW cylinder is set on the Heat Pump. | |
| Expert view | The Expert view option is set to **Off** by default.<br>▶ Switch On the Expert view to see more menu options. |
| Size of freshwater station | • 15/20 l/min<br>• 27 l/min<br>• 40 l/min |
| Current configuration freshwater system | |
| Change configuration freshwater system | |
| Temperature | • Comfort start temp. |
| | • Comfort stop temp. |
| | • Eco start temp. |
| | • Eco stop temp. |
| | • Eco+ start temp. |
| | • Eco+ stop temp. |
| | • Extra hot water |
| | • Energy man. stop temp.[1)] |
| Thermal disinfection | • Temperature: Temperature for thermal disinfection operation. |
| | • Start manually now: Start the thermal disinfection manually. |
| | • Stop manually now: Stop the thermal disinfection manually. |
| Hot water circulation pump | • Time-controlled circulation<br>– Select Yes to enable. |
| | • Circulation pulse-control<br>– Select Yes to enable. |
| | • Select Operation mode:<br>– Off<br>– On<br>– According to hot water program<br>– Auto (own time program) |
| | • Start frequency of the circulation pump:<br>– Permanent: Continuous operation.<br>– Interval: Set required interval to between [1…**3**…6]. The circulation pump will run for 3 minutes for each start. |
| Keep hot | Keep the connection line between the buffer tank and the fresh water station warm to ensure instant hot water availability, particularly in case of long piping.<br>▶ Select On to enable. |
| Keep warm temp. diff. | Temperature threshold for the Keep hotfunction. |
| Switching diff. ret. strat. | Set temperature threshold for the return flow switching valve. |
| Error display | • Select the Error display options:<br>– Off<br>– Normal<br>– Inverted |

| Menu item | Description |
|---|---|
| Buffer cylinder charging | • HC pump on in HW mode<br>– Select On to enable.[2)] |
| | Set the delta between buffer tank offset to the requested hot water temperature.<br>• Comfort temp. difference for charging |
| | • DHW temp. offset for end of buffer loading [5...**8**...20]K. |

1) Available if an external energy manager is connected and configured.

2) Depending on the hydraulic installation, the heating circuit pump(s) can stop during the HW charging.

*Table 19 Settings for the fresh water station with heat pump*

By default, the hot water mode is active.

► If the hot water mode is not installed, disable the hot water mode during commissioning.

The settings ranges and default values for hot water is depending on the installed combination of heat pump and indoor unit, therefore not stated here.

► Check the respective manual of the indoor unit for the range and default values.

### 6.2.12 Menu: Solar

This menu is only applicable for air/water and liquid/water heat pumps.

The settings for the solar heat system are available in this menu (see → Table 20 "Overview of the settings for solar heat systems"). Observe additional information on the settings and functions in the technical documentation of the solar modules.

To access this menu, go to Service > Solar.

These settings are only accessible if the system is designed and configured accordingly and the unit used supports these settings.

| Menu item | Description |
|---|---|
| Second solar module | Select On to activate the solar expansion module for the solar heat system.<br>**-or-**<br>Select Off to deactivate. |
| Current solar configuration | Shows the current configuration of the solar heat system. |
| Change solar configuration | Select Confirm to edit the configuration of the solar heat system.<br>-or-<br>Select Cancel to go back.<br>To select the required system configuration and add components, scroll through the menu options. Select Add element to add the selected components.<br>**-or-**<br>Select Stop adding to finish.<br>Select Complete config. if the configuration of the solar heat system has been finished. |
| Settings | ► Solar circuit.<br>► Cylinder (heat sinks). Perform the settings for the storage cylinder, heat exchanger or swimming pool installed in the solar circuit.<br>► Solar yield. In this menu, settings for energy recovery and estimated solar energy gain can be configured. The values can be reset.<br>► Runtime reset. Resets the statistic values of the solar module. |
| The settings that follow are only available for Air/water heat pumps: | |
| Settings | ► Thermal disinfection. Performs the thermal disinfection between two tank installations. |

*Table 20 Overview of the settings for solar heat systems*

| Menu item | Description |
|---|---|
| Start solar thermal system | Select On to activate the solar heat system, when it is filled, vented, and ready for operation. |

*Table 21 Settings for solar heat systems*

### 6.2.13 Menu: Ventilation

This menu contains the settings for the ventilation. The settings that are shown in this menu can change because of configuration of the system and the accessories that are installed. For further information about the settings and functions, refer to the documentation of the Logavent (Heat recovery ventilation).

| Menu item | Description |
|---|---|
| Expert view | The Expert view option is set to **Off** by default. Switch On the Expert view to see more menu options. |
| Appliance ventilation | • Appliance ventilation:<br>– 100<br>– 101<br>– 260<br>– 261 |
| Nominal flow rate | Refer to the planning document before selecting the value of the Nominal flow rate [0...**100**...1000 $m^3/h$]. |
| Frost protection | • Frost protection modes:<br>– Interval<br>– Imbalance<br>– Electrical preheater |

*Table 22 Overview of the Ventilation settings*

### 6.2.14 Menu: PV system

This menu contains the settings for the photovoltaic (PV) system. The settings that are shown in this menu can change because of the configuration of the system and if the appliance supports the setting.

| Menu item | Description |
|---|---|
| Incr. the desired temp. | The energy available in the PV system is used for heating operation, if the system operation is set to heating mode.<br>▶ Select the value for how much the room temperature can be increased [0...5 K]. |
| Max. buffer flow setpoint temp. | If the PV surplus mode is enabled, select the maximum buffer temperature. |
| Increased hot water convenience | The energy available in the PV system is used for the heating of the Hot water.<br>When the setting is enabled, the water is heated to the temperature that has been selected for the Comfort operation mode in the hot water menu.<br>If the holiday program is enabled, the system will stop the heating operation for the water. |
| Red. the desired temp.[1)] | The energy available in the PV system is used for cooling, if the system is in cooling mode. |
| Cooling only with PV energy[1)] | When the setting is enabled, the cooling mode is only enabled if there is available energy in the PV system. No cooling is done if the holiday program is active. |
| Max. power f. compressor | If the PV mode is enabled, select the maximum power for the operation of the compressor. |

1) These settings are accessible only if cooling is enabled on any of the heating circuits.

*Table 23 Settings in the PV system data menu*

If photovoltaic energy is available and a buffer cylinder is installed with all heating circuits mixed, the buffer cylinder will be heated to the heat pump maximum temperature.

### 6.2.15 Menu: Energy manager

This menu is only applicable for air/water heat pumps.

The Energy manager settings are available in this menu. Observe additional information on the settings and functions in the technical documentation of the energy manager.

If photovoltaic energy is available, a buffer cylinder is installed with all heating circuits mixed and the Max. buffer flow setpoint temp. is disabled, the buffer cylinder will be heated to the heat pump maximum temperature.

| Menu item | Description |
|---|---|
| Incr. the desired temp. | Set maximum permissible room temperature for heating. |
| Red. the desired temp. | Set minimum permissible room temperature for cooling. |
| Max. buffer flow setpoint temp. | Set the maximum buffer temperature if the PV surplus mode is active [40...**60**...80]. |

| Menu item | Description |
|---|---|
| Cool only with energy man. | Select On<br>**-or-**<br>Select Off<br>If this setting is switched On, the heat pump uses excess current from the PV system for cooling, |
| The settings that follow are only available for Air/water heat pumps: | |
| Stop temp. hot water | Set the value to define the switch off temperature of the hot water. |

*Table 24 Overview of the Energy manager settings*

### 6.2.16 Menu: EEBUS

This menu is only applicable for air/water and liquid/water heat pumps.

The EEBUS settings are visible if the heating system supports EEBUS functionality.

- Power limitation (LPC)
- Power monitoring (MPC)
- Optimization of PV-self consumption (OHPCF)

| Menu item | Description |
|---|---|
| Commissioning | ▶ Set up the connection to the EEBUS during the commissioning.[1)] |

1) The same EEBUS commissioning setup is available in the end-user menu for electricians during the configuration of EEBus functions.

*Table 25 Overview of settings in the EEBUS menu*

For further information about the EEBUS and the solutions that are available, refer to the sector coupling web page.

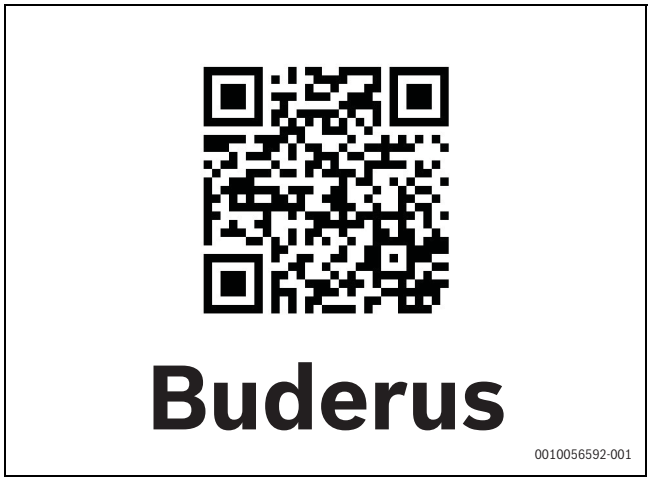



*Fig. 6*

### 6.2.17 Restore inst. settings

Select Restore inst. settings to revert to the settings that were made during commissioning and saved as installer settings. Select Yes to confirm. Select No to go back without resetting.

### 6.2.18 Factory settings

Select Factory settings go back to default settings. Select Yes to confirm. Select No to go back without resetting.

## 6.3 Diagnosis

This menu contains several diagnostic tools. Please note that which individual menu items are displayed depends on the system.

### 6.3.1 Menu: Function tests

Use this menu to individually test the active system components (compressor, mixing valve, pump or 3-way pump) to verify if the components respond correctly.To perform the function tests, the parameters for each individual component have to be set.
When the **Activate function tests** mode is enabled, the system stops the normal operation. The settings made in this menu only apply temporarily, as the configurations done outside of the test mode are saved.
When the **Activate function tests** mode is disabled, or if the Function tests menu is closed, the previous settings apply again.

### 6.3.2 Menu: High pressure switch test

This menu is only applicable for air/water and cascade heat pumps.

The **High pressure switch test** mode is only visible in Austria. This menu is only applicable for This test measures the safety of the high pressure switch of the refrigerant circuit (for more information → see the technical documentation of the air/water outdoor unit).

To perform the **High pressure switch test** a pressure gauge must be connected to the refrigerant circuit.

To access the menu, go to Service > Diagnosis> **High pressure switch test**.

### 6.3.3 Menu: Operation status - Errors

Current alarms and alarm history are displayed in this menu.

| Menu item | Description |
|---|---|
| Current system status | All current alarms in the system are shown here.<br>The latest alarms for the whole system are shown here in chronological order. |
| Heat pump history | The latest alarms for the heat pump are shown here in chronological order. For each alarm stored, a snapshot is available with current data at the time the alarm occurred. Press the alarm to display the snapshot. |
| System history | The latest alarms for the system are shown here in chronological order. |
| Reset heat pump status | Reset active alarms. Select Yes to reset<br>**-or-**<br>No to go back. |
| Reset heat pump history | Reset the heat pump alarm history. Select Yes to reset<br>**-or-**<br>No to go back. |
| Reset system history | Reset all alarms. Select Yes to reset<br>**-or-**<br>No to go back. |

*Table 26 Alarm menu*

### 6.3.4 Installer contact data

- Select Installer contact data to enter the installer's contact details. Enter Name, Address and Phone number. Confirm the entry with Confirm. After the installer fills in the contact data in the service level, the user will see the contact data in the user menu > general settings (in the upper-left corner of the header).
- Explain to the customer how the user interface and the accessories work and how to operate them.
- Inform the customer about the selected settings.

## 6.4 Info

This menu contains information and status reports for the heat pump, accessories and the system.Depending on the functions and accessories installed in the heat pump and the system, the information can change. For quick access to key information about the heat pump, use the ⓘ icon in the header of every service menu level. In System components, the software version can be checked.

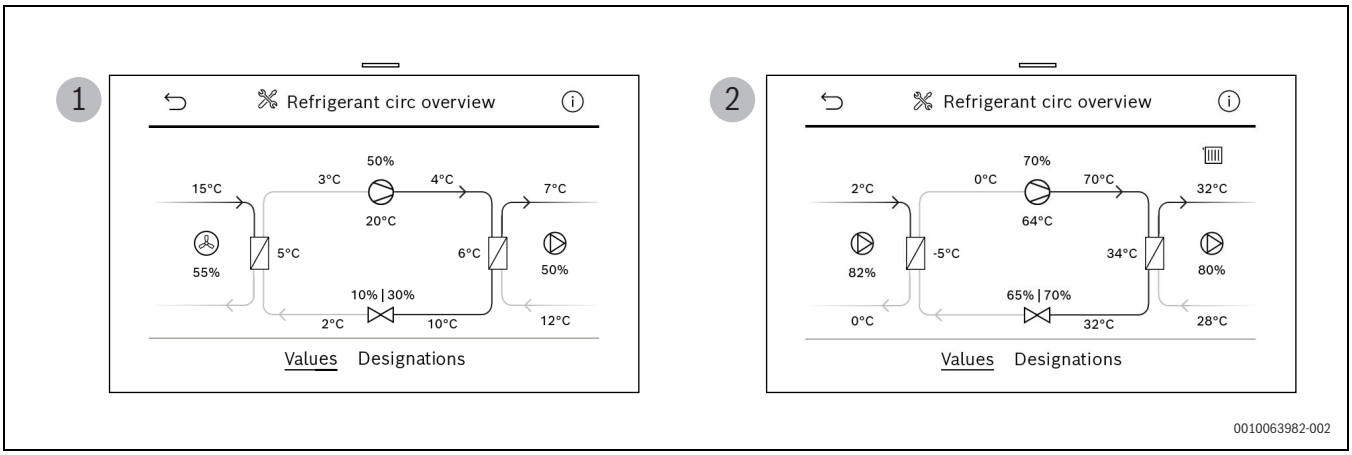



*Fig. 7 Overview of the refrigerant circuit*

[1] Overview of the refrigerant circuit for Air/water heat pumps
[2] Overview of the refrigerant circuit for Liquid/water heat pumps

## 6.5 Updating the system software

The system software can be updated by a professional.

Check the software version and, if necessary, update it to the latest version, including current optimizations and bug fixes.

Inform the customer that, to be able to update the appliance at the customer, there will be some data transferred to Bosch, such as serial number. This data will be anonymized.

After commissioning the appliance, check if updates are available.

▶ The displays in the service app and on the appliance will guide you through the update process.

**What you need**

- MX400 plugged in.
- Service app Buderus ProWork[1)] installed on your mobile device.

**Download and install the app**

When checking and downloading updates to your mobile device, an internet connection is needed.

1. Download and install the Service app Buderus ProWork.
2. Open the Service app Buderus ProWork, confirm the terms of use and confirm continuous update of the database.
3. In the Service app Buderus ProWork, manually start the initial download of the software database. The service app tells how much space the update(s) will use of the mobile device.
4. Every time when the app is started the app checks automatically if there are new updates.
5. The app will then keep the database in your mobile device updated. When the app is running and there is available updated software, the software will be automatically downloaded, if there is an internet connection available.
6. If the app has been closed for 90 days or more, there will be a message “The database could be not up to date”, then the download starts automatically.

**Check for updates in the appliance**

Since the software database is stored on your mobile device, there is no need of an internet connection while updating the appliance.

▶ To establish a wireless connection between the service app and the appliance:
  – Select the **Software update** function in the service menu of the appliance.
  – An info screen is presented. Ensure that the steps shown in the display are fulfilled.
  – Select **Software update** > **Start software update** in the service app.
  – Scan the QR code displayed on the appliance with the service app in your mobile device.

  The connection is made and confirmed by the appliance. Existing updates are displayed in the service app.

▶ If updates are available: select **Start system update** in the service app.
  The updates are transferred to the MX400. The MX400 distributes the updates to the appliance, restarts and finally restores the settings. In this stage, the mobile device does not need to be connected to the MX400. The MX400 handles the connection and the update of the appliance.

▶ After the update, a report will be created (PDF) in the service app, if the mobile device is still connected or when it is reconnected again.

If the update fails, the system will automatically go back to the current software and settings.

1) Available in the Apple App Store or Google Play Store.

## 6.6 Troubleshooting

A fault appears on the display of the user interface. The cause can be a fault on the user interface, in a component, in an assembly or on the heat source. More information is available in the Buderus ProWork app[1].

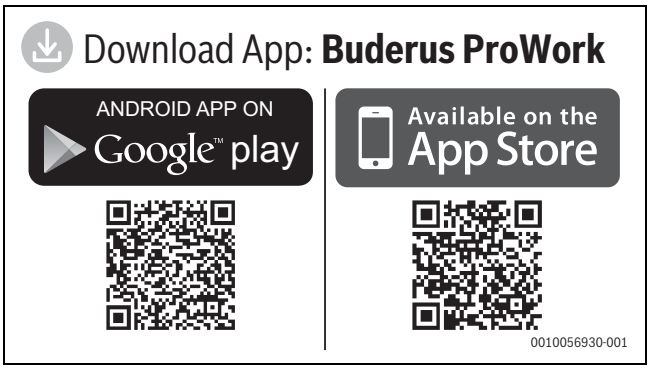



*Fig. 8 QR code for the Buderus ProWork app*

## 6.7 Activate Demo mode

The demo mode is available for exhibitions and presentations. When the demo mode is enabled, the heat pump is reset to default settings and the simulated operation of the control unit is limited to the user level. The demo mode can be disabled in the user menu.

## 6.8 Overview of Service

The menu options are shown in the order below. For access to the service menu, hold down the menu key until the countdown is complete (approx. 5 seconds). In each installation only menus of the installed modules or components are shown. The menu items shown may vary between different countries and markets.

The following menu overview includes all available settings. Refer to the available system settings in the service menu (→Chapter 6 "Service menu", page 11).

**Service**

**System settings**

- Start configuration wizard
  - No
  - Yes
- Manual commissioning
  - Country
  - Hydraulic configuration
  - HW cylinder
  - Passive cooling station
    - No
    - Yes
  - Auxiliary heater
    - None
    - Electric auxiliary heater
  - Power Meter
    - Not installed
    - Installed
  - Output limiter
    - No
    - Yes
  - Current limitation for output limiter
  - Extension module
    - Not installed
    - Installed
  - Fitting situation
    - Single-family home
    - Apartment building
  - Heating circuit 1
    - Not installed
    - Heat pump
    - On module
  - Heating circuit 2...4
    - Not installed
    - On module
  - Hot water
    - Not installed
    - Heat pump
    - Fresh water station
  - Solar
    - No
    - Yes
  - Ventilation
    - No
    - Yes
  - Energy manager
    - No
    - Yes
- Heat pump
  - Expert view
  - Quick compressor start
  - Heat source
    - Borehole (brine)
    - Earth
    - Groundwater
  - Low-noise operation
    - Operation mode
      - Off

1) The Buderus ProWork app is not available in all countries.

- Auto
- Permanent
- From
- To
- Switch off below outside temperature
- Compressor output limitation
- Compressor current limitation
- Manual defrosting
- External input
  - External input 1
    - Input inverted
    - Brine pump
    - Low brine pressure
    - Block aux heater operation
    - Block HW operation
    - Block heating mode
    - Block cooling mode
    - Overheat. protection
    - ESC blocking 1
    - ESC dimming
    - PV system
  - External input 2
  - External input 3
  - External input 4
- Service display
  - Off
  - By date
- Service date
- TC3-TC0 temp. diff. htg.
- TB0 brine temp min. in
- TB1 at brine circuit outlet
- Alternating operation
  - Htg.-HW alt. mode
  - HW maximum time
  - Heating maximum time
- Anti-seizing protection
- Air-purge mode
  - Off
  - Auto
  - On
- Min. operation pressure
- Optimum operating pressure
- 3-way valve in centre position
- Restart the safety board
- LIN-bus Pumps

- Auxiliary heater
  - Expert view
  - Electric auxiliary heater
    - Electrical mode
    - Limitation with compressor
    - Limitation without compressor
    - Limitation in HW mode
    - Bival. pt. parallel mode
    - Stand-alone mode
  - Heating delay
- Passive cooling station
  - VK1 PCS valve runtime
- Extension module
  - Input value for off
  - Input value for max.
  - Max. temperature
  - Min. temperature
- Heating / Cooling
  - System settings
    - Summer/winter changeover
      - Operation mode
      - Heating mode up to
      - Direct start temperature difference
      - Summer mode delay
      - Heating mode delay
      - Cooling mode from
      - Cool. activ. delayed
      - Cool. deactiv. delayed
    - Min. outdoor temperature
    - Building damping
      - None
      - Light
      - Medium
      - Heavy
    - HC1 priority
    - Air dehumidification
    - Dehumidification set value
  - Heating circuit 1
    - System function HC1
      - Htg. only
      - Cooling only
      - Heating + Cooling
    - Heating system type HC1
      - Radiators
      - Radiant floor heating
      - Air heating
      - Fan convectors
    - Remote control type
      - None
      - RC 100/RC 100.2
      - RC 100 H/RC 100.2 H
      - RC 120 RF
      - RC 220
      - Single room controller
    - Configure Single Room Control
      - Control type
      - Connection with single-room control
      - Reset adaptive heat curve
      - Temperature monitoring
      - Reset detected errors
      - Additional information
    - HC1 with mixer
    - Mixer run time HC1
    - Heating
      - Control type
        - Outside temp.-compensated
        - Outdoor temperature with base point
        - Single room-dependent
        - External
      - Max. temp. HC1
      - Minimum flow temperature
        - Off
        - On
      - Heating curve
      - Room influence HC1
      - Solar effect
      - Room temperature offset

- Frost protection
  - Off
  - Room temperature
  - Outdoor temp.
  - Room and outside temperature
- Frost protection limit temperature
- Cont. heat below
- Cooling
  - Cooling curve
  - Max. switching differential set room temperature
  - Dew point calculation
    - No
    - Yes
  - Dew point offset
- Air heating
  - Efficiency mode
    - Eco
    - Normal
    - Comfort
  - Bedroom bypass
    - No
    - Bypass 1
    - Bypass 2
  - Zoning activated
    - No
    - Yes
  - Min. air supply temp cooling
  - Max. air supply temp heating
  - Max. flow temp floor heat
  - Number of heating register modules
    - None
    - 1
    - 2
  - Allow energy supplier block for reheater
    - No
    - Yes
  - Runtime of zoning valve
  - Cooling down protection temperature
- Pump power supply
  - Switched
  - Always
- Pump error indication
  - None
  - Active when contact closed
  - Active when contact open
- Type of pump control
  - Constant pressure
  - Auto
- Target pump pressure
- Minimum pump pressure
- Maximum pump pressure
- TC3-TC0 temp. diff. htg.
- TC0-TC3 temp. diff. cool.
- Screed drying
  - Activate screed drying
  - Wait time before start
  - Start phase period
  - Start phase temperature
  - Heat-up phase increment
  - Temp. diff. in heat. ph.
  - Holding phase period
  - Holding phase temperature
  - Cool-down phase incr.
  - Temp. diff. in cool. ph.
  - End phase period
  - Temperature of end phase
  - Max. interruption without error
  - Screed dry. System
  - Screed drying heating circuit 1
  - Start
  - Stop
  - Continue
- Hot water
  - Expert view
  - Temperature
    - Comfort start temp.
    - Comfort stop temp.
    - Eco start temp.
    - Eco stop temp.
    - Eco+ start temp.
    - Eco+ stop temp.
    - Extra HW temperature
    - Energy man. stop temp.
  - Thermal disinfection
    - Auto
    - Daily/weekday
    - Start time
    - Temperature
    - Heat maint. time
    - Maximum time
    - Start manually now
    - Stop manually now
  - Daily heat-up
    - Enable
    - Time of Day
  - Hot water circulation
    - Enable
    - Operation mode
      - Off
      - On
      - According to hot water program
      - Auto
    - Start frequency
  - HC pump on in HW mode
    - Off
    - On
  - Comfort temp. difference for charging
  - Eco temp. difference for charging
  - Eco+ temp. difference for charging
- Fresh water station
  - Expert view
  - Size of freshwater station
    - 15/20 l/min
    - 27 l/min
    - 40 l/min
  - Current configuration freshwater system
  - Change configuration freshwater system
  - Temperature
    - Temperature comfort
    - Temperature Eco
    - Extra hot water
    - Max. temperature

- Thermal disinfection
  - Temperature
  - Start manually now
  - Stop manually now
- Hot water circulation
  - Time-controlled circulation
  - Circulation pulse-control
  - Operation mode
  - Start frequency
- Keep hot
  - Off
  - On
- Keep warm temp. diff.
- Switching diff. ret. strat.

- Solar
  - Second solar module
    - Not installed
    - Installed
  - Current solar configuration
  - Change solar configuration
  - Settings
    - Solar circuit
    - Cylinder (heat sinks)
    - Solar yield
    - Transfer system
    - Thermal disinfection
    - Runtime reset
  - Start solar thermal system
- Ventilation[1)]
- PV system
  - Incr. the desired temp.
  - Max. buffer flow setpoint temp.
  - Increased hot water convenience
    - No
    - Yes
  - Red. the desired temp.
  - Cooling only with PV energy
    - Off
    - Yes
  - Max. power f. compressor
- Energy manager
  - Incr. the desired temp.
  - Red. the desired temp.
  - Max. buffer flow setpoint temp.
  - Cool only with energy man.
    - Off
    - Yes
  - Stop temp. hot water
- PV own consump. optimiz.
  - Max. buffer flow setpoint temp.
  - Incr. the desired temp.
  - Red. the desired temp.
  - Cooling only with PV energy
    - No
    - Yes
  - Stop temp. hot water
- EEBUS[2)]
- Save installer settings
- Restore inst. settings
- Factory settings

**Function tests**

- Activate function tests
  - No
  - Yes
- Heat pump
  - PC0 speed
  - PB3 speed
  - PB1 groundwater pump
  - VW1 HW 3-way valve
  - Refrigerant circ test
  - Compressor
  - Evacuate/fill
  - EA0 Drain pan heater / Heating cable
  - Cooling active output
  - VK1 PCS mixing valve
  - VK2 PCS 3-way valve
  - Auxiliary heater step 1
  - Auxiliary heater step 2
  - Auxiliary heater step 3
  - Auxiliary heater step 4
  - Electr. hot water heater
  - PL2 Safety evacuation fan
  - Restart the safety board
- Heat pumps
  - VW1 HW 3-way valve
  - Required output of external aux. heater
  - Heat pump...6
    - Refrigerant circ test
    - Evacuate/fill
    - EA0 Drain pan heater / Heating cable
    - PC0 speed
- Heating circuit 1
  - PC1 htg circ pump HC1
  - PC1 speed
- Heating circuit 2...4
  - Pump HC2...4
  - Mixer HC2...4
- Hot water
  - PC0 speed
  - VW1 HW 3-way valve
  - Hot water circulation pump
- Fresh water station
  - Prim. side pump station 2
  - Hot water circulation pump
  - Return valve
  - Buffer cylinder heating
    - PC0 speed
    - VW1 HW 3-way valve
- Solar
  - PS1 solar circuit pump
  - VS2 valve cyl. 2
  - PS3 primary pump cylinder 2
  - VS4 valve cyl. 3
  - PS5 heat exchanger pump cylinder
  - PS4 pump solar circuit 2

1) For further information about the ventilation module, check the relevant technical documentation.

2) For further information about the K40 RF, check the relevant technical documentation.

  - PS6 reloading pump
  - PS7 reloading pump
  - Therm. disinfect. pump
  - M1 difference control output
  - PS10 collector cooling pump
- Ventilation[1)]

**High pressure switch test[1)]**

- Activate
- Status
- JR1 high pressure sensor
- JR0 low pressure sensor
- TR6 hot gas temp

**Operation status - Errors**

- Current system status
- Heat pump history
- System history
- Reset heat pump status
- Reset heat pump history
- Reset system history

**Restore inst. settings**

**Factory settings**

**Installer contact data**

- Name
- Address
- Phone number

**Info**

- Heat pump
  - Refrigerant circ overview
  - Heat pump status
    - Heating / Cooling
    - Compressor status
    - Auxiliary heater status
    - Compressor heat-up phase
    - Max. temperature reached
    - Flow temperature too low
    - Low flow in heating
    - Brine temp too low for htg
    - Brine temperature too high for heating
    - Brine temp too low for clg
    - Brine temperature too high for cooling
    - Heating mode off, outside temperature too low
    - Heating mode off, outside temperature too warm
    - Cooling mode off, outside temperature too high
    - Power consumption is limited
    - Heating blocked by external demand
    - Cooling blocked by external demandHot water blocked by external demand
    - Air purge mode
    - ESC block
    - PV system active
  - Inputs
    - External input 1
    - External input 2
    - External input 3
    - External input 4
    - Operating pressure
    - JB1 brine circuit pressure
    - Aux. heater alarm
  - Temperatures
    - TB0 at brine circuit inlet
    - TB1 at brine circuit outlet
    - TB2 groundw. inlet temp
    - TB3 groundw. outlet temp
    - TL2 air intake temp.
    - TL1 air intake temperature
    - JR0 low pressure sensor
    - TR5 suction line temp
    - Compr. heat-up act.
    - Compr. heat-up stop
    - TR6 hot gas temp
    - TR9 suction gas temperature
    - JR1 high pressure sensor
    - TR3 condenser temp htg
    - TR4 condenser temp clg
    - TC3 condenser temp.
    - TC1 primary flow temperature
    - TC0 return temperature
    - TA4 drain pan temp
    - TK1 clg flow temp.
    - TK2 clg frost sensor
  - Outputs
    - ER1 Compressor
    - ER1 Compressor output
    - ER1 Cur. compressor speed
    - ER1 Max. compressor speed
    - ER1 Set compressor speed
    - PC0 prim heating pump
    - PC0 speed
    - PC0 pressure difference
    - PC0 flow rate
    - Auxiliary heater step 1
    - Auxiliary heater step 2
    - Auxiliary heater step 3
    - Auxiliary heater step 4
    - Aux heater output
    - Electr. hot water heater
    - PL3 fan
    - PB3 speed
    - PB1 groundwater pump
    - PB3 flow rate
    - VR0 expansion valve
    - VR1 expansion valve
    - EA0 Drain pan heater / Heating cable
    - VR4 4-way valve
    - Cooling active output
    - VK1 PCS mixing valve
    - VK2 PCS 3-way valve
    - Anti-seize protection
    - LIN-bus Pumps
  - Safety board
    - Status

1) Only visible in Austria.

- Gas sensor 1
- Value gas sensor 1
- Remaining runtime gas sensor 1
- Type gas sensor 1
- PL2 Control mode
- PL2 Safety evacuation fan
- Air pressure difference
- STO safety shutdown

- Timer overview
  - Compressor start
  - Remaining time htg mode
  - Remaining time HW mode
  - Aux. heat. switch-on delay
  - Alarms
  - Therm disinf keep hot
  - Venting function active
  - Auxiliary heater delay
- Power Meter
  - Actual current
  - 48 h mean current
  - 48 h peak current value
- Statistics
  - Elap. time
  - Compressor starts
  - Reset statistics

- Heat pumps
  - Controller
    - Status
    - Inputs
    - Temperatures
    - Outputs
    - Timer overview
  - Heat pump...6
    - Refrigerant circ overview
    - Status
    - Limitations
    - Temperatures
    - Outputs
    - Statistics
- Extension module
  - IO1 Input 0 ... 10 V
  - OE1 error display
  - IO1 power monitor output
  - Flow setpoint
- System info
  - Outdoor temp.
  - Building damping
  - Flow setpoint
  - Flow temperature
  - Return temperature
  - Air dehumidification
  - Dehumidification required
  - Dehumidifier is part of the ventilation system
- Heating circuit 1
  - Operation mode
  - Flow setpoint
  - Flow temperature
  - System flow temperature
  - Set room temp. HC1
  - Increased room temp setpoint
  - Cur. room temp. HC1
  - Relative humidity
  - Dew point calculation
  - Heating circuit pump
  - Pump speed
  - Pump flow rate
  - Pump HC2
  - Pump flow rate
  - Pump HC2
  - Pump flow rate
  - Mixing valve position
  - Delay time sum./wint. changeover
  - Air heating
- Hot water
  - TW1 start temp HW
  - TW1 stop temp. HW
  - TW1 HW temperature
  - TW2 HW temperature
  - Hot water tap temp
  - Hot water circulation pump
  - VW1 HW 3-way valve
  - Thermal disinfection
  - Daily heat-up
- Fresh water station
  - Set hot water temperature
  - TS17 hot water outlet temperature
  - Cold water temp.
  - TS21 Buffer flow temperature
  - Vol. flow rate
  - Prim. pump speed
  - Return valve
  - Return temp. buffer cyl.
  - Hot water circulation
  - Return temp. circulation
  - Thermal disinfection
  - TW1 Buffer cylinder temp.
- Solar
  - Solar sensor overview
  - Solar circuit
  - Transfer system
  - Thermal disinfection
  - Heat meter
- Ventilation
- Energy manager
  - Status
  - Set flow temp. normal
  - Set flow temp. increased
- EEBUS
- System components
  - Heat pump
  - Heat pumps
  - Extension module
  - Heating / Cooling
  - Hot water
  - Passive cooling
  - Solar
  - Ventilation
  - Internet gateway
  - RF system
  - EEBUS

**Software update**

**Activate Demo mode**

## 7 Environmental protection and disposal

Environmental protection is a fundamental corporate strategy of the Bosch Group.
The quality of our products, their economy and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed.
We use the best possible technology and materials for protecting the environment taking account of economic considerations.

### Packaging

Where packaging is concerned, we participate in country-specific recycling processes that ensure optimum recycling.
All of our packaging materials are environmentally compatible and can be recycled.

### Used appliances

Used appliances contain valuable materials that can be recycled.
The various assemblies can be easily dismantled. Synthetic materials are marked accordingly. Assemblies can therefore be sorted by composition and passed on for recycling or disposal.

### Old electrical and electronic devices

This symbol means that the product cannot be disposed of with other waste, but must be taken to waste collection points for treatment, collection, recycling and disposal.

The symbol is valid for countries that have directives on electronic waste, e.g. "European Union Directive 2012/19/EC on end-of-life electrical and electronic appliances". These provisions define the regulatory framework of the directive valid for the return and recycling of used electronic appliances in each country.

Electronic appliances that may contain hazardous substances must be recycled responsibly in order to minimise possible damage to the environment and dangers to people's health. To this end, the recycling of electronic waste contributes to the preservation of natural resources.

For more information on the environmentally safe disposal of used electrical and electronic appliances, please contact the local authorities, waste disposal company or distributor from which you purchased the product.

You can find more information here:
www.bosch-homecomfortgroup.com/en/company/legal-topics/weee/

## 8 Data Protection Notice

We, **Bosch Thermotechnology Ltd., Cotswold Way, Warndon, Worcester WR4 9SW, United Kingdom**, process product and installation information, technical and connection data, communication data, product registration and client history data to provide product functionality (art. 6 §1.1 (b) GDPR), to fulfil our duty of product surveillance and for product safety and security reasons (art. 6 §1.1 (f) GDPR), to safeguard our rights in connection with warranty and product registration questions (art. 6 §1.1 (f) GDPR) and to analyse the distribution of our products and to provide individualized information and offers related to the product (art. 6 §1.1 (f) GDPR). To provide services such as sales and marketing, contract management, payment management, programming, data hosting and hotline services, we may request and transfer data to external service providers and/or Bosch affiliates. In some cases, but only if adequate data protection is ensured, personal data may be transferred to recipients located outside the European Economic Area. Additional information is provided upon request. You can contact our Data Protection Officer under: Data Protection Officer for Information Security and Privacy (C/ISP), Robert Bosch GmbH, Postfach 30 02 20, 70442 Stuttgart, GERMANY.

You have the right to object to the processing of your personal data at any time on the basis of Art. 6 §1.1 (f) GDPR on grounds relating to your particular situation or if your data is used for direct marketing purposes. To exercise your rights, please contact us at **privacy.ttpo@bosch.com.** For more information, follow the QR code.

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