

Operating Instructions  
**Boiler controller Lambdatronic S 3200 - Touch**

Version 50.04 - Build 05.09 | Version 60.01 - Build 01.23



**Translation of the original German operating instructions for technicians and operators**

Read and follow the instructions and safety information!

Technical changes, typographical errors and omissions reserved!

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## 1 General

### 1.1 About these instructions

Please read and follow the operating instructions, in particular the safety information contained therein. Keep them available next to the boiler.

These operating instructions contain important information about operation, electrical connection and troubleshooting for the Lambdatronic S 3200 control.

#### NOTICE

The values given in the parameter lists are examples, and should not be used as standard values!

The constant further development of our products means that there may be minor differences from the pictures and content. If you discover any errors, please let us know.

### 1.2 Safety information

#### DANGER



When working on electrical components:

*Risk of electrocution!*

When work is carried out on electrical components:

- Only have work carried out by a qualified electrician
- Observe the applicable standards and regulations
- ➔ Work must not be carried out on electrical components by unauthorised people

#### WARNING



When touching hot surfaces:

*Severe burns are possible on hot surfaces and the flue gas pipe!*

When work is carried out on the boiler:

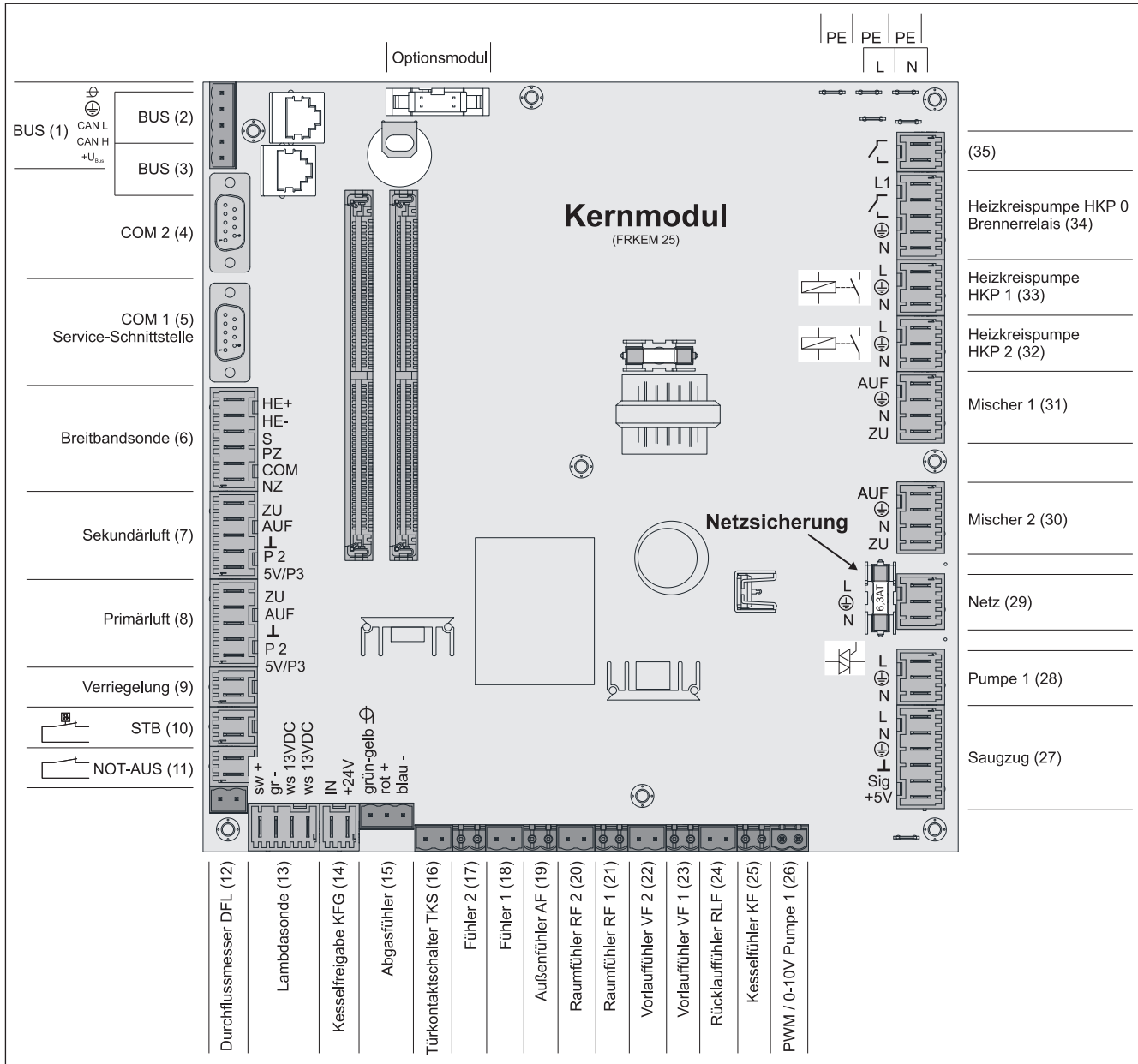
- Shut down the boiler in a controlled way (operating status "Off") and allow it to cool down
- Protective gloves must generally be worn for work on the boiler, and it should only be operated using the handles provided
- Insulate the flue pipes or simply avoid touching them during operation.

The information on safety, standards and guidelines in assembly and operating instructions for the boiler should also be observed.

## 2 Electrical connection and wiring

### 2.1 Core module and connection options

#### 2.1.1 Board view

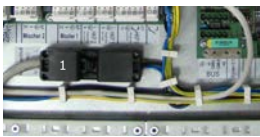


### Connection instructions

| Port                                | Cable dimensions / Specifications / Information   |
|-------------------------------------|---|
| Bus (1)                             | Port with cable – LIYCY paired 2x2x0.5;<br>⇒ See "Connecting the bus cable" [page 18]<br><input type="checkbox"/> Warning! CAN L and CAN H must not be connected to +U <sub>BUS</sub> !   |
| Bus (2)                             | Patch cable CAT 5 RJ45 SFTP 1:1 configuration   |
| Bus (3)                             | Patch cable CAT 5 RJ45 SFTP 1:1 configuration, boiler display port  |
| COM 2 (4)                           | Null modem cable 9-pin SUB-D;<br><input type="checkbox"/> Port can be used as a MODBUS interface<br>General Settings  |
| COM 1 (5)                           | Null modem cable 9-pin SUB-D;<br><input type="checkbox"/> Service interface for installing new boiler software or port for the visualisation software   |
| Broadband probe (6)                 | Connection cable <sup>1)</sup> 5 x 0.75 mm <sup>2</sup><br><input type="checkbox"/> Connection of a BOSCH or NTK broadband Lambda probe   |
| Secondary air (7)                   | Connection cable <sup>1)</sup> 5 x 0.75 mm <sup>2</sup><br><input type="checkbox"/> When using the S1 Turbo firewood boiler, the air flap must be connected a the "Secondary air" connection port   |
| Primary air (8)                     | Connection cable <sup>1)</sup> 5 x 0.75 mm <sup>2</sup>   |
| Latch (9)                           | Connection cable <sup>1)</sup> 2 x 0.75 mm <sup>2</sup>   |
| High-limit thermostat - STL (10)    |   |
| EMERGENCY STOP (11)                 | Connection cable <sup>1)</sup> 2 x 0.75 mm <sup>2</sup><br><input type="checkbox"/> Warning! Do not connect the emergency off/emergency stop switch to the power supply cable of the boiler. The switch must be a N/C switch and it must be linked to the 24V safety chain of the STL at this terminal. |
| Flowmeter FLM (12)                  | Connection cable <sup>1)</sup> 2 x 0.75 mm <sup>2</sup>   |
| Lambda probe (13)                   | Connection cable <sup>1)</sup> 4 x 0.75 mm <sup>2</sup><br><input type="checkbox"/> LSM11 Lambda probe connection   |
| Boiler release (14)                 | Connection cable <sup>1)</sup> 2 x 0.75 mm <sup>2</sup><br><input type="checkbox"/> Warning! The connection must be a floating connection.  |
| Flue gas temperature sensor (15)    | Connection cable <sup>1)</sup> 3 x 0.75 mm <sup>2</sup>   |
| Door switch DCS (16)                | Connection cable <sup>1)</sup> 2 x 0.75 mm <sup>2</sup>   |
| Sensor 2/1 (17/18)                  | Connection cable <sup>1)</sup> 2 x 0.75 mm <sup>2</sup>   |
| Outside temperature sensor (19)     | Connection cable <sup>1)</sup> 2 x 0.75 mm <sup>2</sup> , shielded from 25m cable length  |
| Room temperature sensor 2/1 (20/21) |   |
| Flow temperature sensor 2/1 (22/23) |   |
| Return sensor RTS (24)              | Connection cable <sup>1)</sup> 2 x 0.75 mm <sup>2</sup>   |
| Boiler sensor BS (25)               |   |
| PDM / 0-10V Pump 1 (26)             |   |
| Induced draught (27)                | Connection cable <sup>1)</sup> 3 x 1.5 mm <sup>2</sup> , power supply<br>Connection cable <sup>1)</sup> 3 x 0.75 mm <sup>2</sup> , analysis of current speed  |

| Port   | Cable dimensions / Specifications / Information  |
|--|--|
| Pump 1 on core module (28)                               | Connection cable <sup>1)</sup> 3 x 1.5 mm <sup>2</sup> , max. 1.5A / 280W / 230V                                   |
| Mains (29)   | Connection cable <sup>1)</sup> 3 x 1.5 mm <sup>2</sup> ; fused with 16A (provided by the customer)                 |
| Mixing valve 2/1 (30/31)                                 | Connection cable <sup>1)</sup> 4 x 0.75 mm <sup>2</sup> , max. 0.15A / 230V  |
| Heating circuit pump 2/1 (32/33)                         | Connection cable <sup>1)</sup> 3 x 1.5 mm <sup>2</sup> , max. 2.5A / 500W  |
| Heating circuit pump HCP 0 / burner relay (34)           | Connection cable <sup>1)</sup> 3 x 1.5 mm <sup>2</sup> , max. 3A / 600VA   |
| (35)   | Connection cable <sup>1)</sup> 2 x 0.75mm <sup>2</sup><br>⇒ See "Valve for flue gas condenser connection" [page 9] |
| 1. YMM as per ÖVE-K41-5 or H05VV-F as per DIN VDE 0881-5 |  |

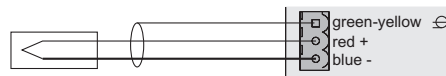
### 2.1.2 Mains connection



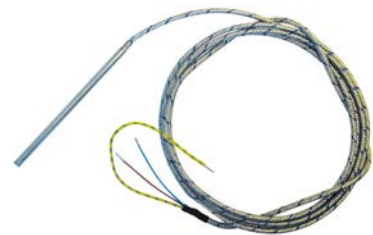
Connect the power supply at the "Mains connection" plug

- Flexible sheathed cable must be used for the wiring; this must be of the correct size to comply with applicable regional standards and regulations.
- The power supply line (mains connection) must be fitted with a 16A fuse by the customer. If a safety overload switch is used it should be a type with 16A.

### 2.1.3 Connecting the flue gas sensor



Core module

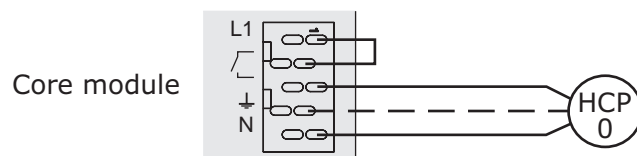




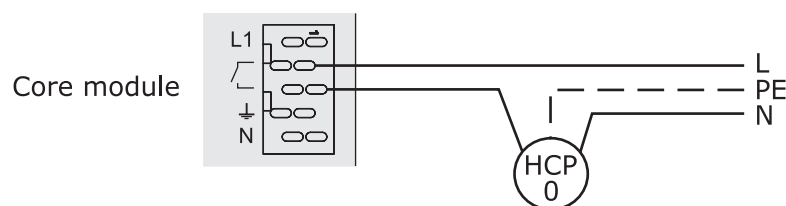
### 2.1.4 Combination with oil burner

The connection "Heating circuit pump 0" can be used for heating circuit pump 0 or as burner relays depending on the system setting.

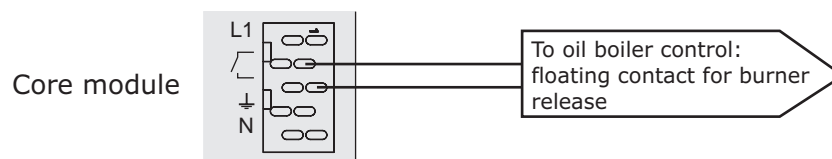
Connecting a HCP 0 up to max. 2 Ampere:



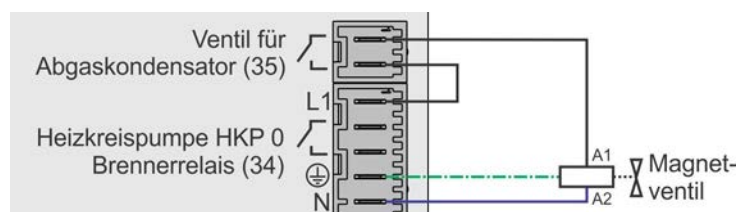
Connecting a HCP 0 up to max. 5 Ampere:



Connection as burner relays:



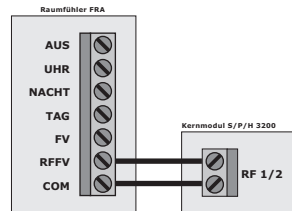
### 2.1.5 Valve for flue gas condenser connection



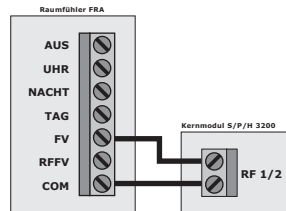
### 2.1.6 Connecting the remote control

A room temperature sensor is included in the remote control, which sends the current room temperature to the control.





affecting room:



not affecting room:



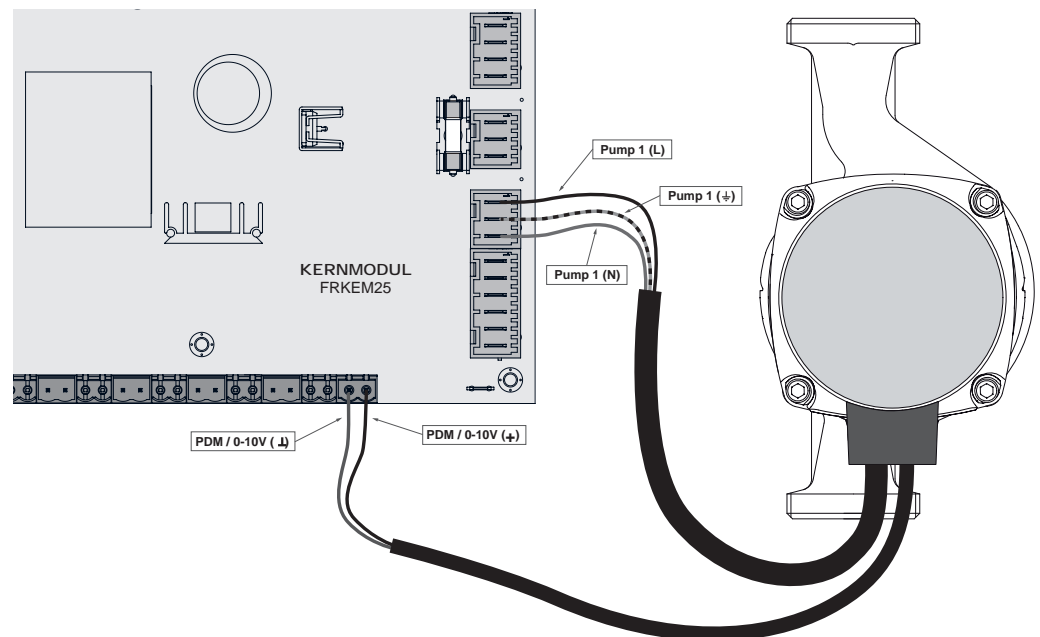
Switch settings:

|   |   |   |
|---|---|---|
|  | <b>Switched-off</b>                             | Heating circuit deactivated, only frost protection! |
|  | <b>Automatic mode</b>                           | Heating phases according to setback program         |
|  | <b>Setback mode</b>                             | Ignores the heating phases                          |
|  | <b>Override circuit</b>                         | Ignores the setback                                 |
| Handwheel...  | Allows you to adjust the temperature by +/- 3°C |   |

**IMPORTANT!** See assembly instructions/functional description for room temperature sensor FRA

### 2.1.7 Connecting a high efficiency pump to the core module

Wire the high efficiency pump as shown in the connection diagram below:



- Connect the power supply for the high efficiency pump to output "Pump 1" of the core module
- Connect the PWM cable of the high efficiency pump to the corresponding port "PWM / 0-10V"
  - Make sure that the cables are configured correctly (polarity) in accordance with the connection diagram of the pump!

**Important!** When using a Froling pump assembly:

⇒ See "Connection diagrams according to pump types" [page 20]

## 2.2 Expansion modules

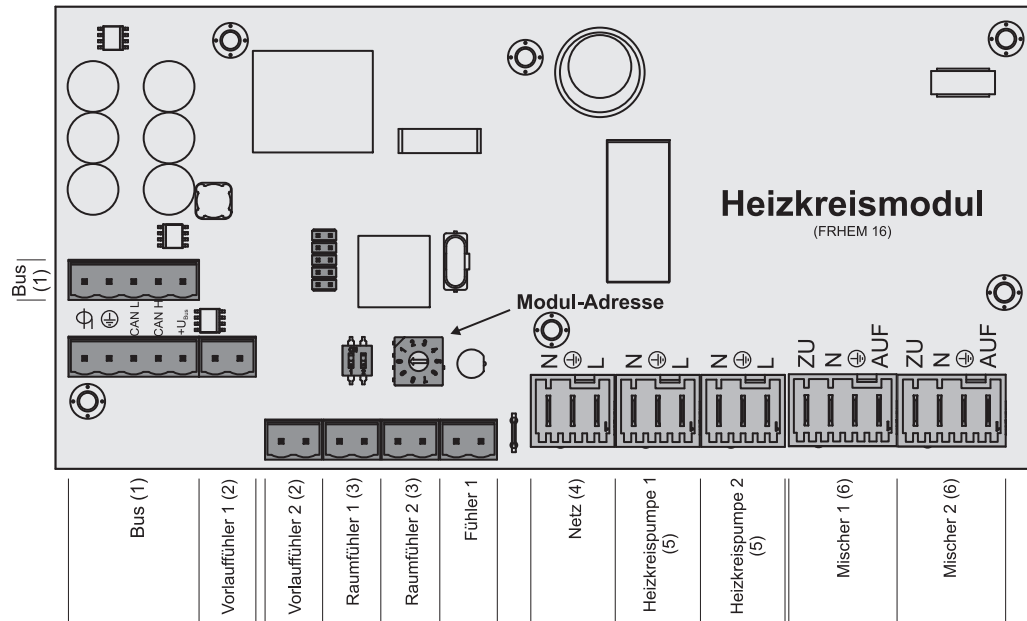
### 2.2.1 Heating circuit module

Two heating circuits can be controlled as standard with the core module.

The heating circuit module boards must be used to expand the heating circuit control.

Eight heating circuit modules (addresses 0 to 7) can be added, and the module address must be set correctly.

⇒ See "Setting the module address" [page 20]



#### Connection instructions

| Port                            | Cable dimensions / Specifications / Information   |
|---------------------------------|---|
| Bus (1)                         | Port with cable – LIYCY paired 2x2x0.5;<br>⇒ See "Connecting the bus cable" [page 18]<br><input type="checkbox"/> Warning! CAN L and CAN H must not be connected to +U <sub>BUS</sub> ! |
| Flow temperature sensor 1/2 (2) | Connection cable <sup>1)</sup> 2 x 0.75mm <sup>2</sup>  |
| Room temperature sensor 1/2 (3) | Connection cable <sup>1)</sup> 2 x 0.75mm <sup>2</sup> , shielded from 25m cable length   |
| Mains (4)                       | Connection cable <sup>1)</sup> 3 x 1.5mm <sup>2</sup> , fuse 10A  |
| Heating circuit pump 1/2 (5)    | Connection cable <sup>1)</sup> 3 x 1.5mm <sup>2</sup> , max. 2.5A / 230V / 500W   |
| Mixing valve 1/2 (6)            | Connection cable <sup>1)</sup> 4 x 0.75mm <sup>2</sup> , max. 0.15A / 230V  |

1. YMM as per ÖVE-K41-5 or H05VV-F as per DIN VDE 0881-5

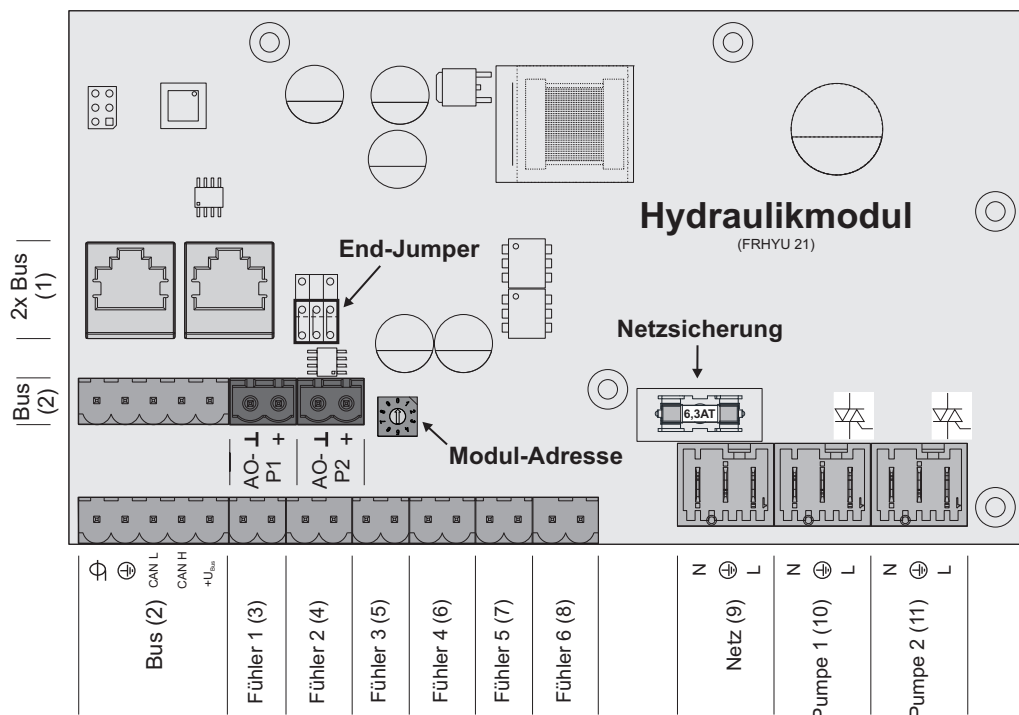
### 2.2.2 Hydraulic module

The hydraulic module makes the connections of sensors and pumps available for the hydraulic components of the system (storage tank, DHW tank etc.).

A hydraulic module is included in the delivery as standard (address 0). A further seven modules (addresses 1 to 7) can be retrofitted.

You must ensure that the module address is given correctly.

⇒ See "Setting the module address" [page 20]



#### Connection instructions

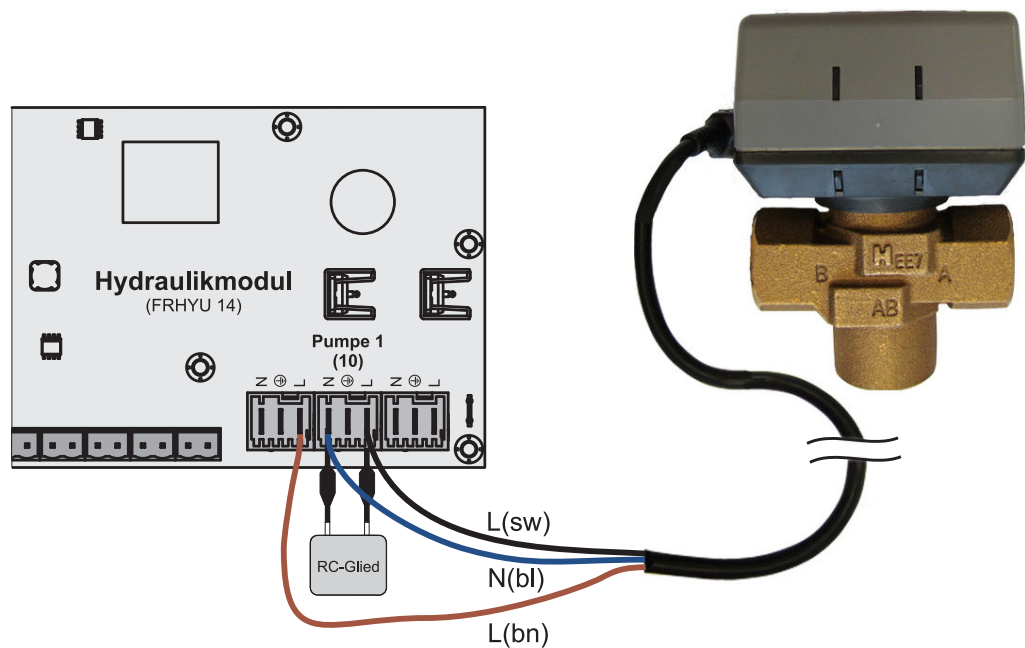
| Port   | Cable dimensions / Specifications / Information   |
|--|---|
| 2 x Bus (1)  | Patch cable CAT 5 RJ45 SFTP 1:1 configuration   |
| Bus (2)  | Connection with cable - LIYCY paired 2x2x0.5;<br>⇒ See "Connecting the bus cable" [page 18]<br><input type="checkbox"/> Important! CAN L and CAN H must not be connected to +U <sub>BUS</sub> ! |
| Sensors 1 – 6 (3-8)                                      | Connection cable <sup>1)</sup> 2 x 0.75mm <sup>2</sup> , shielded from 25m cable length   |
| Mains (9)  | Connection cable <sup>1)</sup> 3 x 1.5mm <sup>2</sup> , fuse 10A  |
| Pump 1/2 (10/11)   | Connection cable <sup>1)</sup> 3 x 1.5mm <sup>2</sup> , max. 1.5A / 230V / 280W   |
| 1. YMM as per ÖVE-K41-5 or H05VV-F as per DIN VDE 0881-5 |   |

### Connecting an isolating valve

If an isolating valve is connected to a speed-controlled pump outlet, an RC element must be used.

Furthermore, the minimum speed for the pump outlet in use must be set to 100% in the boiler control system.

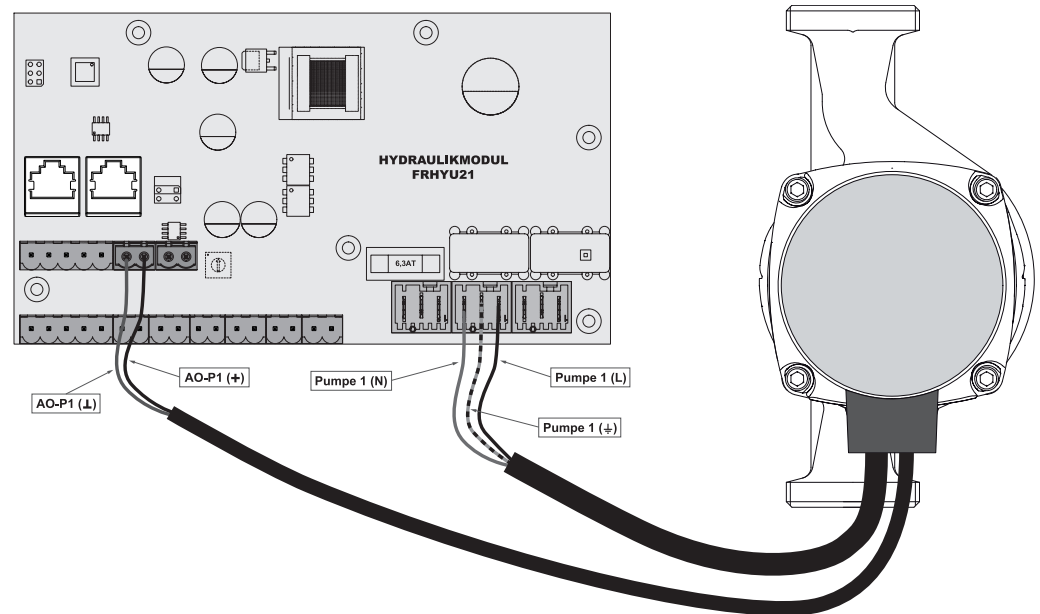
#### Connection example:



The outer cable L(bn) should be connected to the outer cable of the respective mains supply of the module or to the core module, HCP0/burner relay output at pin "LV".

### Connecting a high efficiency pump to the hydraulic module

Wire the high efficiency pump as shown in the connection diagram below:



- Connect the power supply for the high efficiency pump to output "Pump 1" or "Pump 2" of the hydraulic module
- Connect the PWM cables of the high efficiency pump to the corresponding port "AO-P1" or "AO-P2"
  - Make sure that the cables are configured correctly (polarity) in accordance with the connection diagram of the pump!

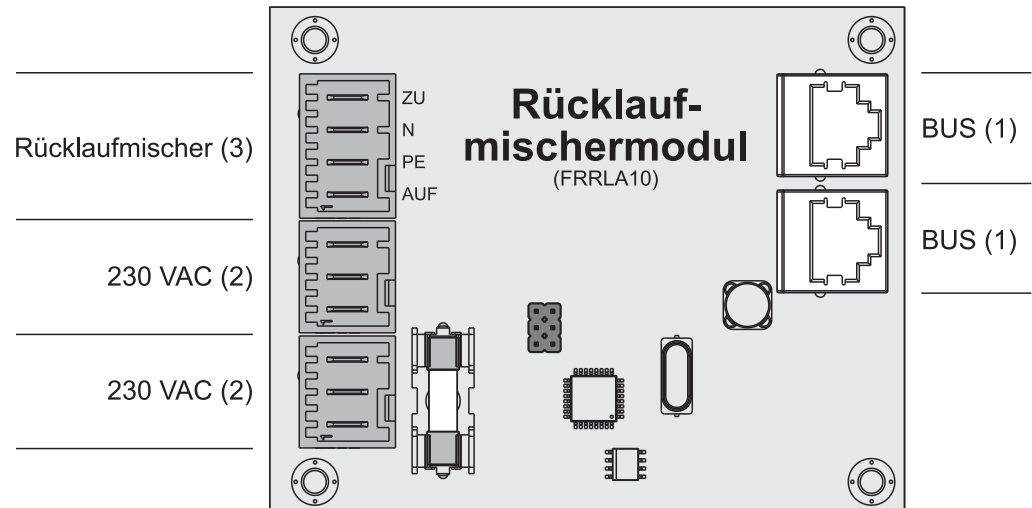
**IMPORTANT!** When using a Froling pump assembly:

⇒ See "Connection diagrams according to pump types" [page 20]

### 2.2.3 Return mixer module

The return mixer module provides the connection for a return mixer. The relevant sensor is the return sensor on the core module. If this module is used, the "Return flow mixer through external module" parameter must be set to "YES".

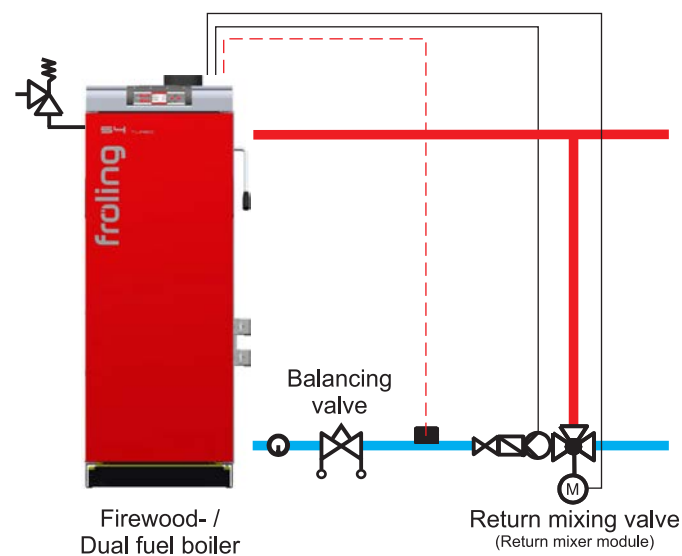
Setting the system type



#### Connection instructions

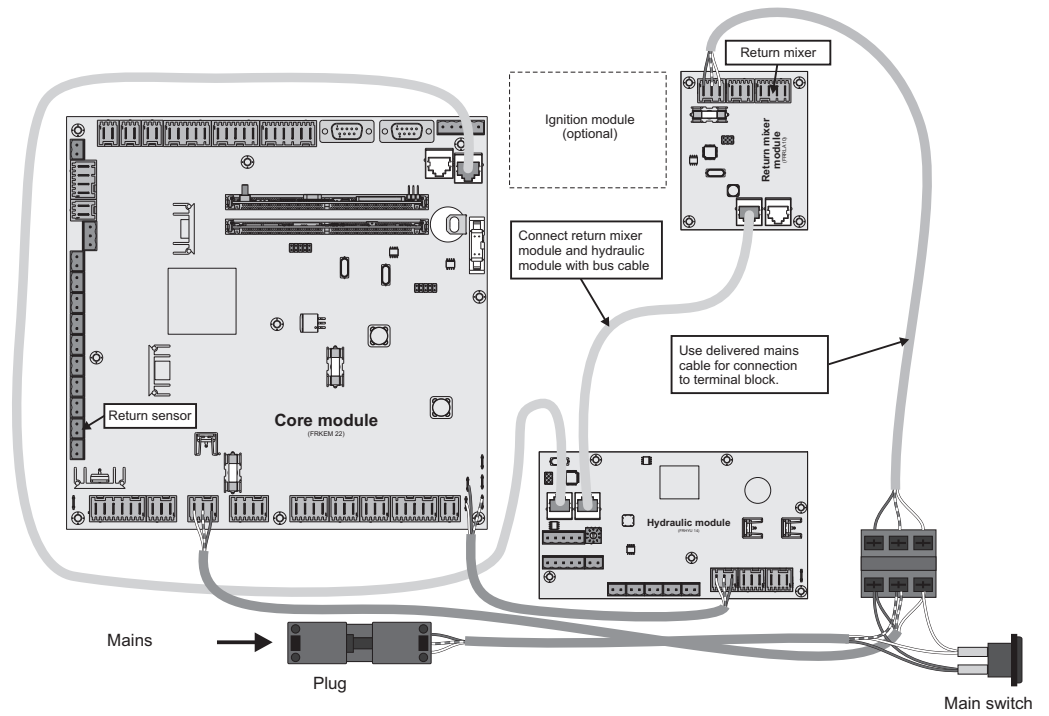
| Port   | Cable dimensions / Specifications / Information                            |
|--|--|
| Bus (1)  | Connection with enclosed patch cable 0.5m                                  |
| 2 x mains (2)  | Connection cable <sup>1)</sup> 3 x 1.5mm <sup>2</sup> ,                    |
| Return mixer (3)   | Connection cable <sup>1)</sup> 4 x 0.75mm <sup>2</sup> , max. 0.15A / 230V |
| 1. YMM as per ÖVE-K41-5 or H05VV-F as per DIN VDE 0881-5 |  |

#### Connection example



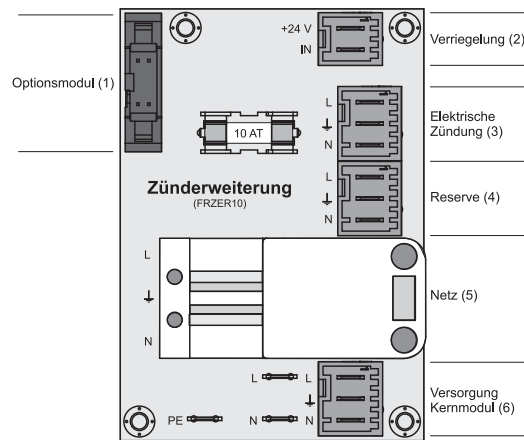


Connection diagram

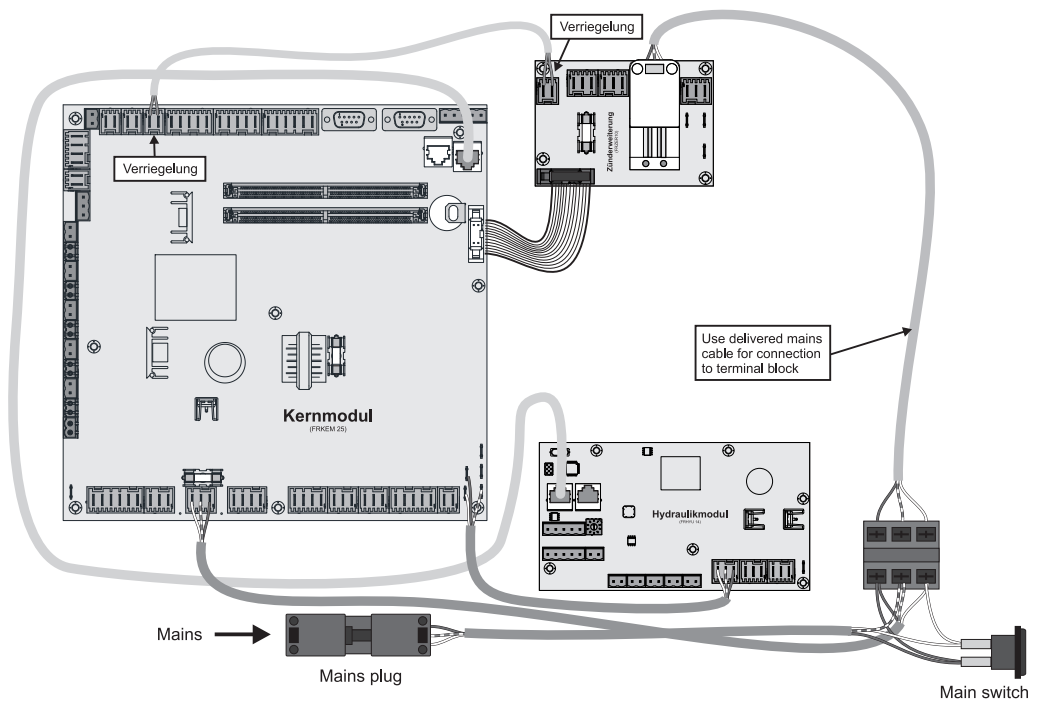


2.2.4 Ignition expansion

The ignition expansion makes the connection for an electrical ignition fan available and makes it possible for the boiler to be heated up automatically.

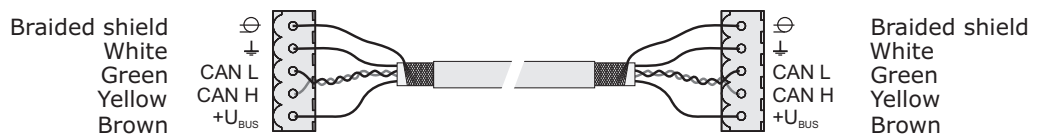


Connection diagram



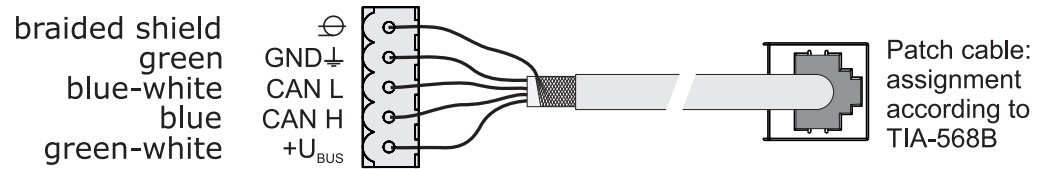
2.2.5 Connecting the bus cable

For the bus connections between the individual modules, cable type LIYCY paired 2x2x0.5 should be used. The connection to the 5-pin plugs should be carried out according to the following diagram:



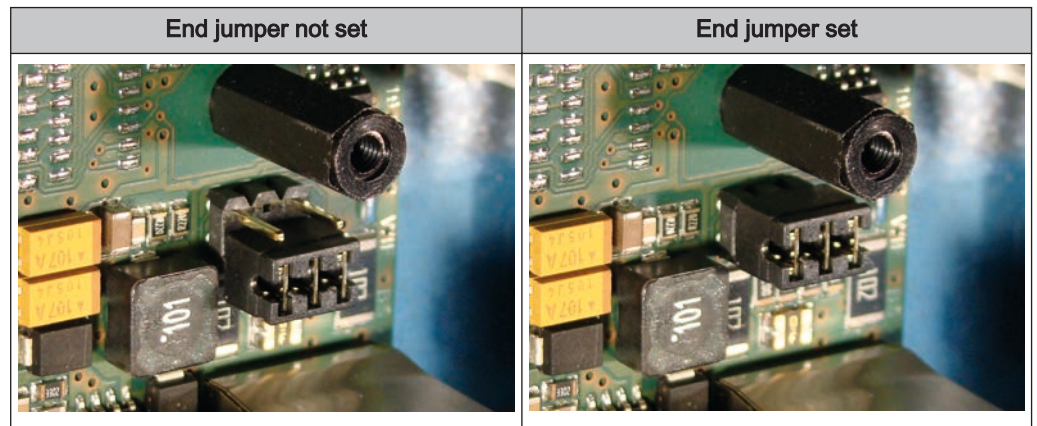
### 2.2.6 Connect the patch cable to the bus plug

To connect a patch cable to a RJ45 bushing and a 5-pin plug, follow the connection diagram below:



### 2.2.7 Setting end jumpers

To ensure smooth running of the bus system, the jumper must be placed on the last module.

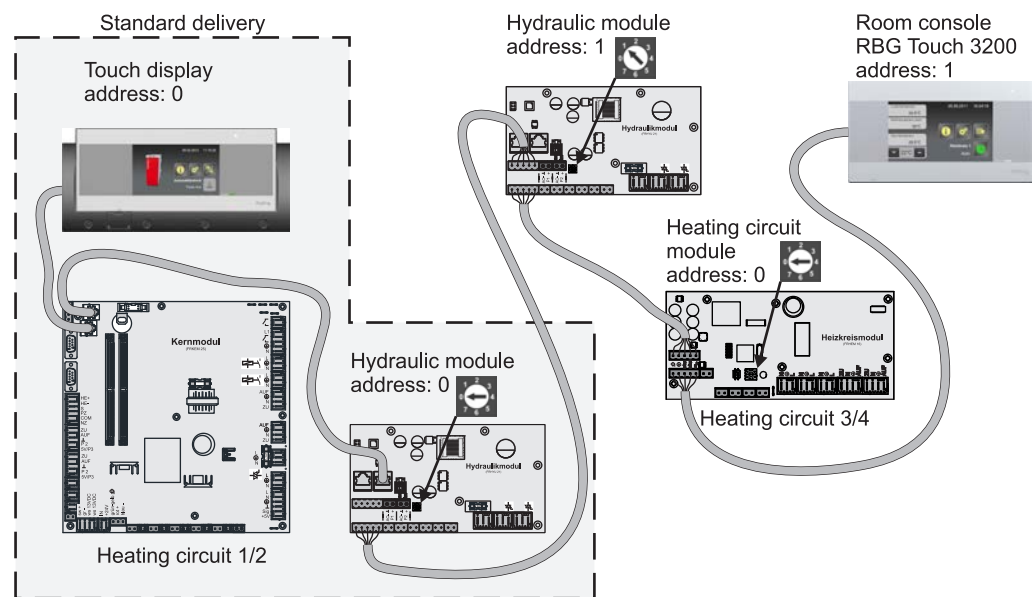


If the contacts at the base of the end jumper are not bridged (image left), it is referred to as "not set". In this case there is no bus termination. If the contacts are closed (image right), the end jumper is set and the bus connection is terminated.

### 2.2.8 Setting the module address

For hydraulic modules or heating circuit modules it is necessary to set the required order with the module addresses. The first board of a module type should always have the address 0, so that the standard hydraulic systems set do not have to be subsequently configured. For further module types ascending module addresses (address 1 - 7) are set.

A hydraulic module with address 0 is included in standard delivery. If a second hydraulic module is also installed, address 1 is set.



| Module address set | Heating circuit module | Hydraulic module |           |
|--------------------|------------------------|------------------|-----------|
|                    | Heating circuit        | Sensor           | Pump      |
| 0                  | 03 – 04                | 0.1 – 0.6        | 0.1 – 0.2 |
| 1                  | 05 – 06                | 1.1 – 1.6        | 1.1 – 1.2 |
| 2                  | 07 – 08                | 2.1 – 2.6        | 2.1 – 2.2 |
| 3                  | 09 – 10                | 3.1 – 3.6        | 3.1 – 3.2 |
| 4                  | 11 – 12                | 4.1 – 4.6        | 4.1 – 4.2 |
| 5                  | 13 – 14                | 5.1 – 5.6        | 5.1 – 5.2 |
| 6                  | 15 – 16                | 6.1 – 6.6        | 6.1 – 6.2 |
| 7                  | 17 - 18                | 7.1 – 7.7        | 7.1 – 7.2 |






## 2.3 Connection diagrams according to pump types

Three different pump types are used in all depending on the pump assembly used:






























Either a 2-pin control cable (WILO Stratos TEC, WILO Yonos Para) or a 4-pin control cable (WILO Stratos Para) is used for the connection depending on the pump type. Please follow the connection instructions below for the wiring depending on the pump type used:

### *Pump type with 2-pin control cable*

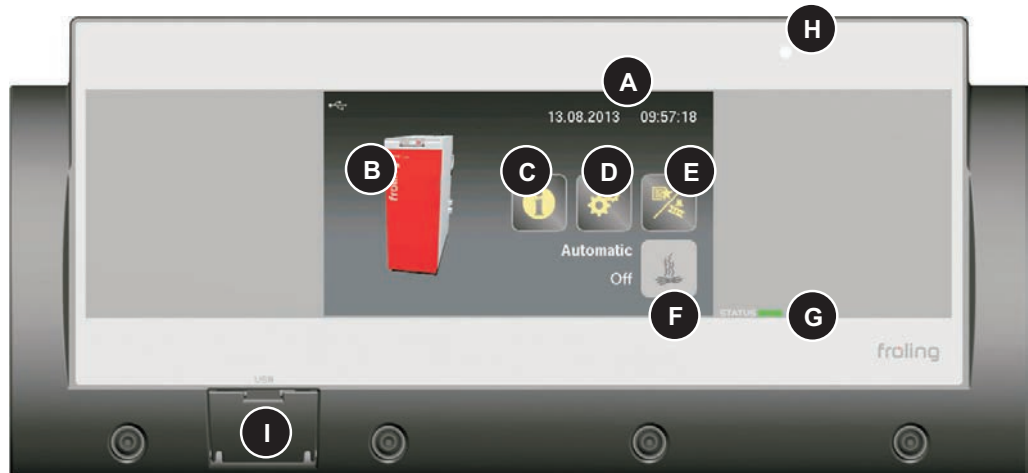
| Power supply   | 2-pin control cable   |
|--|---|
| (brown) L <br>(blue) N <br>(yellow-green) PE  | (blue) ⊥ <br>(brown) +  |
| Wire the power supply to the pump outlet on the board  | Connect the control cable to the board's PWM output, making sure that the polarity is correct:<br>- blue wire to earth<br>- brown wire to plus  |

### *Pump type with 4-pin control cable*

| Power supply   | 4-pin control cable   |   |   |   |  |   |   |                 |  |   |  |   |   |
|--|---|---|---|---|--|---|---|-----------------|--|---|--|---|---|
| (brown) L <br>(blue) N <br>(yellow-green) PE  | <table border="0"> <tr> <td><b>PDM</b></td> <td>(brown) ⊥ </td> <td></td> </tr> <tr> <td></td> <td>(white) + </td> <td></td> </tr> <tr> <td><b>not used</b></td> <td>(blue) </td> <td></td> </tr> <tr> <td></td> <td>(black) </td> <td></td> </tr> </table> | <b>PDM</b>  | (brown) ⊥  |  |  | (white) +  |  | <b>not used</b> | (blue)  |  |  | (black)  |  |
| <b>PDM</b>   | (brown) ⊥    |  |   |   |  |   |   |                 |  |   |  |   |   |
|  | (white) +    |  |   |   |  |   |   |                 |  |   |  |   |   |
| <b>not used</b>  | (blue)   |  |   |   |  |   |   |                 |  |   |  |   |   |
|  | (black)    |  |   |   |  |   |   |                 |  |   |  |   |   |
| Wire the power supply to the pump outlet on the board  | Connect the control cable to the board's PWM output, making sure that the polarity is correct:<br>- brown wire to earth<br>- white wire to plus<br>Do not use the other two wires (blue, black) and insulate if necessary   |   |   |   |  |   |   |                 |  |   |  |   |   |

## 3 Overview of the basic functions

### 3.1 Visual display



|   |  |
|---|--|
| A | Date and time display  |
| B | Image of set boiler type   |
| C | Info menu icon for viewing all system information  |
| D | System menu icon for opening the system settings. All parameters can be displayed/edited depending on the user level |
| E | Quick menu icon for viewing the available quick functions  |
| F | Mode icon  |
| G | Status LED for displaying the current operating status   |
| H | Brightness sensor for automatically adjusting the display brightness   |
| I | USB port for connecting a USB stick for software updates   |

#### 3.1.1 Status LED

The status LED shows the operating status of the system:

- GREEN flashing (interval: 5 sec OFF, 1 sec ON): Off
- GREEN constant: **BOILER SWITCHED ON**
- ORANGE flashing: **WARNING**
- RED flashing: **FAULT**

### 3.1.2 Control icons

**Cancel icon**

Discards any values entered without saving and closes messages.

**Confirm icon**

Confirms any values entered and activates parameters.

**Home icon**

Tapping the Home icon takes you back to the basic display from any menu.

**Info menu icon**

To access all system information. The information is ordered in a circular buffer. The right and left arrows are used to switch between the individual pages.

**Quick menu icon**

Opens the quick menu. Various functions are available depending on the user level, system configuration and current status.

**Pen icon**

If a parameter has the pen symbol beside it, it means that the parameter can be adjusted. If you open the parameter, either the numeric keypad or a list box for changing the value of the parameter will appear.

**System menu icon**

Opens the system settings. Depending on the operating level and system configuration, the various menu items available are organised in a circular buffer which can be navigated using the right and left arrow.

**Back icon**

Takes you back up one menu level of the system menu. Can be used to return to the basic display.

### 3.1.3 Display icons

Depending on the selected settings and current status, additional icons may be shown in the upper left section of the display. Tapping the upper left display section takes the user to the "Connection Center". Here the online portal "froeling-connect.com" can be activated or deactivated.



froeling-connect.com is not in use or was deactivated by the user.



Command server error; a connection with the froeling-connect.com server was not able to be established.



Connection with the froeling-connect.com server is being established.



froeling-connect.com is available.

Remote control of the boiler can also be activated or deactivated in the "Connection Center". The prerequisite is that the parameter "Remote control of the boiler can be activated" is set to "YES" in the menu "System selection" under "Boiler remote control".

⇒ [See "Boiler remote control" \[page 46\]](#)



Remote control (switching the boiler on and off) by external operators via froeling-connect.com is permitted.



Remote control (switching the boiler on and off) by external operators via froeling-connect.com is not permitted.

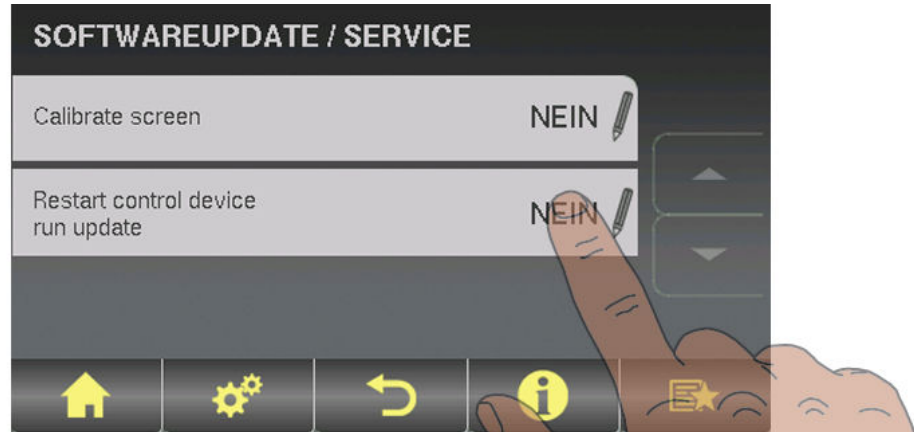


### 3.2 Operating statuses

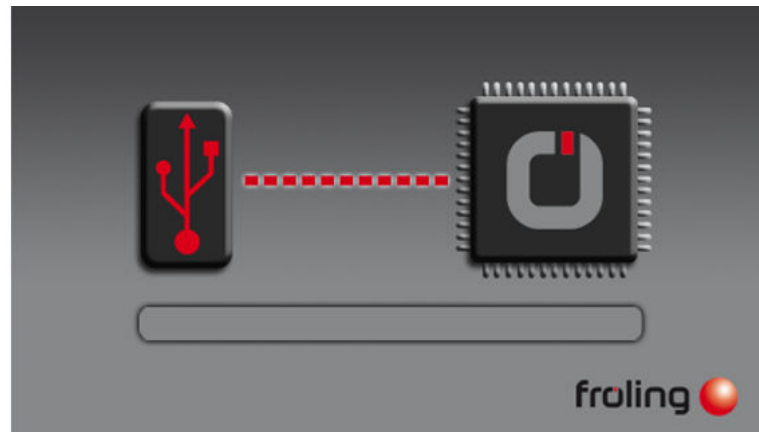
|  |   |
|--|---|
| Heating up                               | Boiler status during the heating up process up to a certain minimum flue gas temperature. Fan and primary air at 100%   |
| Preventilation<br>(with autom. ignition) | Safety function with operation with automatic ignition.<br>Within a specified time the boiler attempts to reach the status Heating without activating the ignition. Within this time period, heating up can be carried out manually, to bypass the automatic ignition.  |
| Ignition wait<br>(with autom. ignition)  | When the safety time has elapsed (operating status preventilation) the boiler remains in the status "ignition wait" until the time specified in the ignition menu for the automatic ignition has been reached.  |
| Ignition<br>(with autom. ignition)       | The fuel is ignited with fan assistance. The boiler attempts to reach the criteria for heating status within a specified time.  |
| Heating                                  | The Lambdatronic S 3200 controls combustion according to the boiler setpoints.  |
| Slumber                                  | Very low power consumption.<br>When the boiler temperature setpoint is exceeded by a specified value, the boiler goes to "Slumber" status. The fan stops and the air flaps are closed to the minimum opening.<br>If the temperature falls below the boiler temperature setpoint the boiler goes back to "heating" status. |
| Door open                                | The insulating door is open and the fan runs at maximum speed.  |
| Off                                      | The boiler burns down to residual embers.   |
| Fault                                    | WARNING - There is a fault!<br>⇒ See "Troubleshooting" [page 104]   |

### 3.3 Updating the software of the touch control

- Insert the USB stick with the necessary data (linux.bin; rootfs.img; update) into the USB port
- "Display settings" menu → "Software update / Service"
- Set "Restart control / Update" parameter to "Yes"
  - ➔ Update will begin

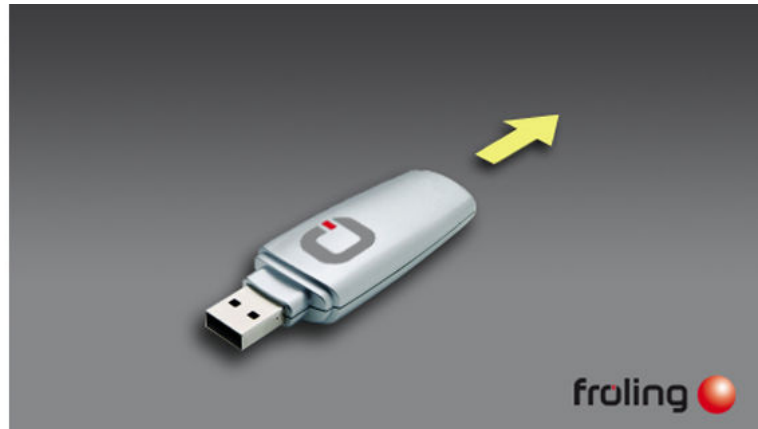


Display during the update:



Once the update is complete, a message will appear that you can remove the stick

- Remove the USB stick
- Close the USB cover cap on the barrel
  - The cap must click into place
- Tap the touch screen



After restarting the display will start calibrating.

Once the calibration is complete, it will restart again to finish. The touch control software is now up to date.

## NOTICE

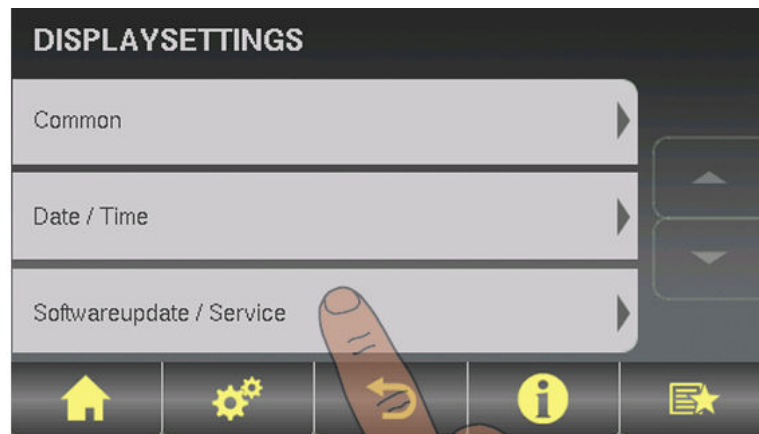
### Inaccurate calibration

*If you do not tap the indicated points accurately, the control may stop working properly and a software update may be required.*

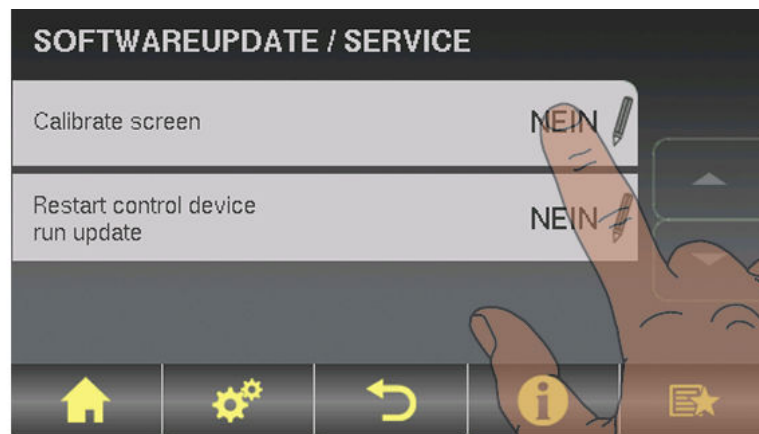
### 3.4 Calibrating the touchscreen

If the touchscreen stops working properly, it will need to be calibrated.

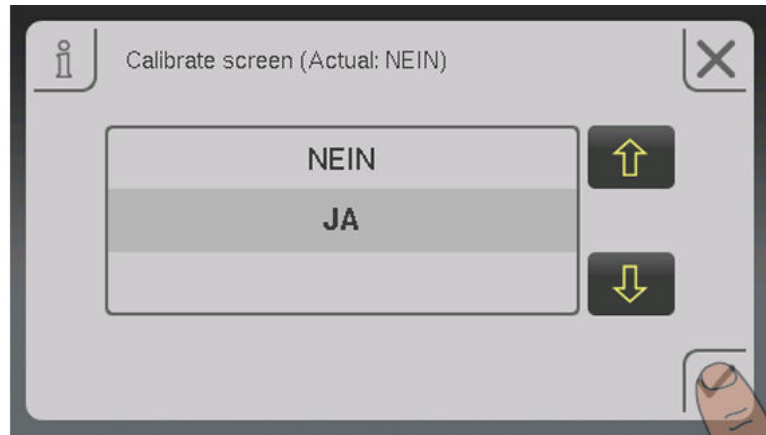
- Go to the “Display settings” menu
- Scroll down with the down arrow until the “Software update / Service” submenu appears and open the submenu



- In the “Software update / Service” menu open the “Recalibrate touch control” parameter



- ❑ Set the parameter to “YES” and confirm at the bottom right
  - The touchscreen will restart and begin calibrating



To calibrate the touchscreen, you must press five points indicated by a crosshair in the order shown. The control will restart after calibration.

## NOTICE

### Inaccurate calibration

*If you do not tap the indicated points accurately, the control may stop working properly and a software update may be required.*

## 4 Operation

### 4.1 Before switching on for the first time

#### NOTICE

You should have the initial startup carried out by the authorised heating engineer from Froling customer services.

#### 4.1.1 Controller check

- Check boards for foreign bodies (pieces of wire, washers, screws ...)
- Carry out a wiring check:  
Check for loose, uninsulated wires, which could cause a short-circuit
- Check plug configuration of pumps, mixing valves and other units, which have NOT been prepared by Froling
- Check the connection of the BUS cable for short-circuits
- Check the specified addresses and terminal jumpers on the individual modules (heating circuit modules, hydraulic modules, displays etc.)
  - ⇒ See "Setting the module address" [page 20] and
  - ⇒ See "Setting end jumpers" [page 19]

#### 4.1.2 Check on the connected units

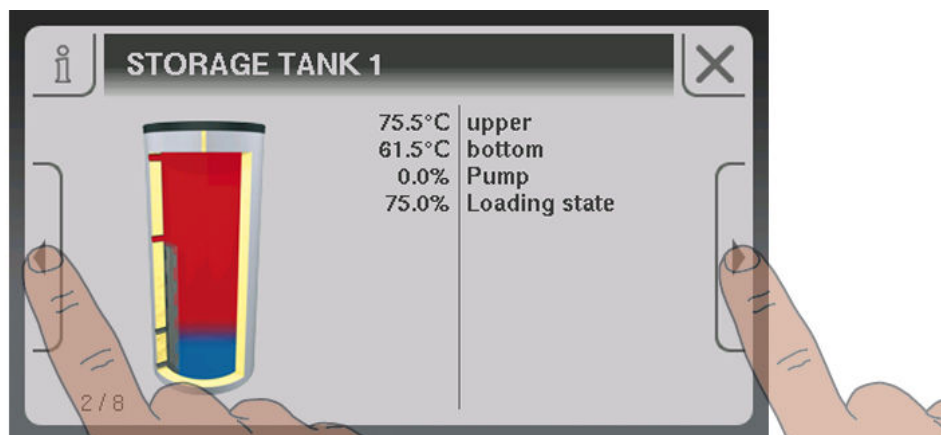
- Check that all units that are used are connected correctly
- Carry out a wiring check:  
Check for loose or uninsulated wires in the terminal boxes of the pumps, mixer and switch valve, which could cause a short-circuit

#### 4.1.3 System Check

- Check that the main fuse for the boiler has a sufficient rated amperage (16A )
  - If a safety overload switch is used, it should be a type with 16A.

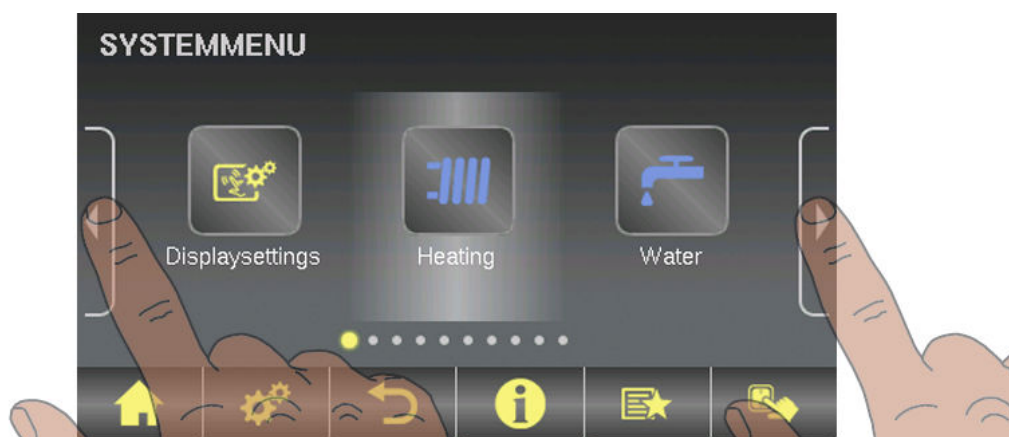
## 4.2 Navigation within the info menu

The info menu displays all the information about the system. Use the right and left arrows to go to the individual menu items for the relevant information. The next time you open the info menu, the last page viewed will be displayed.



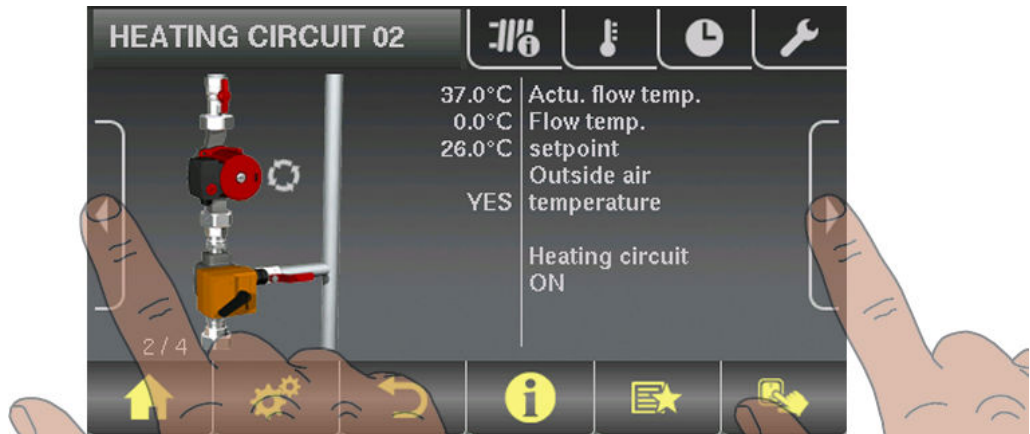
## 4.3 Navigation within the system menu

The system menu shows the menu items available depending on the user level and the system configuration. Tap the icon to open the corresponding menu item. The system menu is structured in a circular buffer, which can be navigated using the right and left arrows. The next time you open the system menu, the last page viewed will be displayed.



### 4.3.1 Navigating the menus

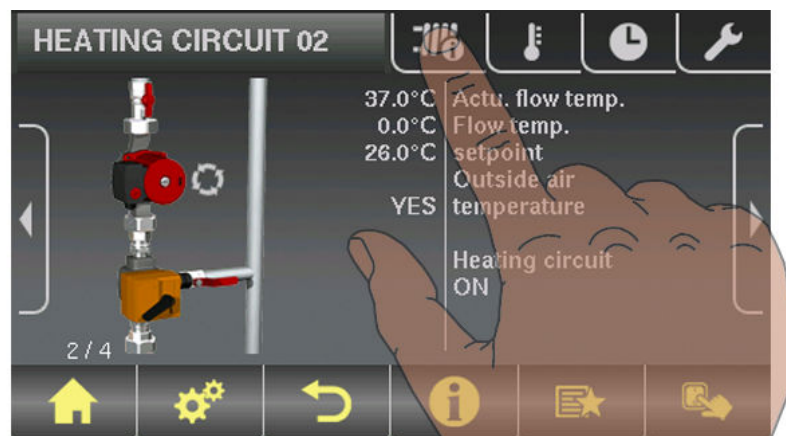
After you open a menu item, the corresponding status display with current values will appear. If, for example, several heating circuits are installed, you can use the right and left arrows to navigate to the desired heating circuit. You can open any other menu items available in the same way.



The individual menus are divided into tabs for quicker navigation.

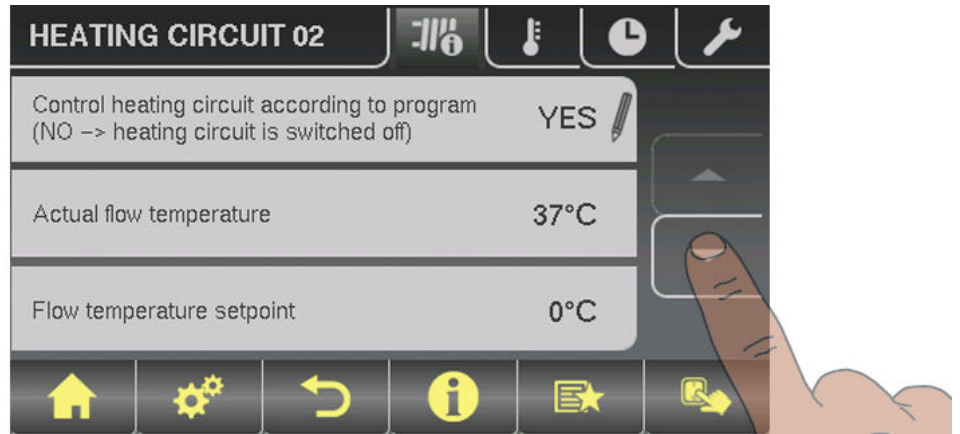
□ Tap on the desired tab

➤ The list of parameters for the selected area will appear



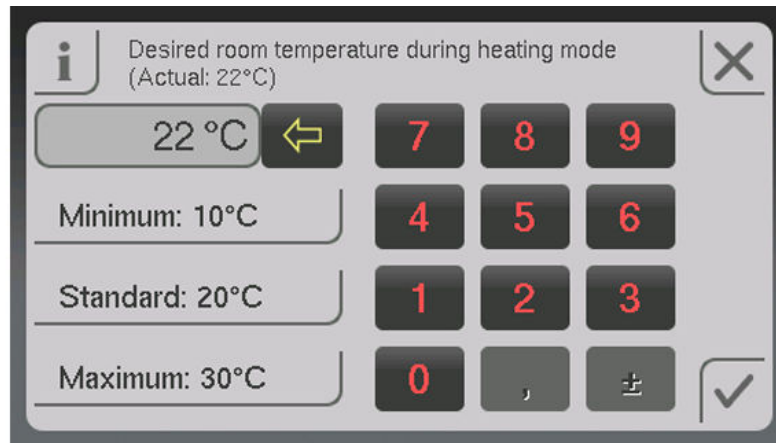
The parameter list shows three parameters. The up and down arrows can be used to scroll through longer lists of parameters. If you have reached the start or end of the parameter list, the relevant arrow symbol will become inactive.



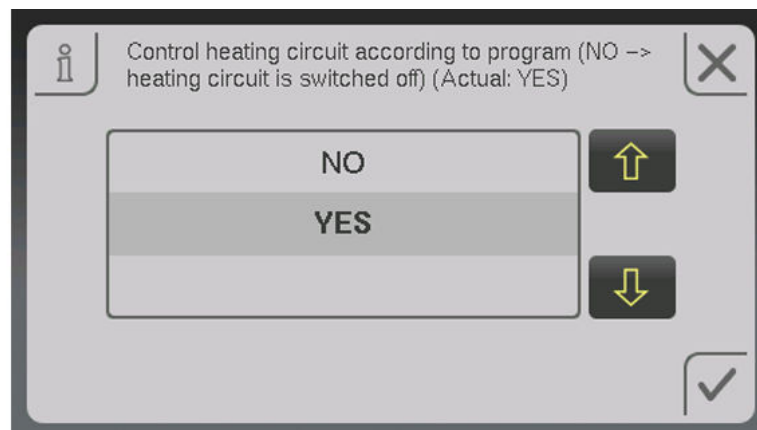


## 4.4 Adjusting parameters

A parameter can only be adjusted if there is a pen icon beside it. Depending on the type of parameter, either the numeric keypad...



... or a list box will appear.



In both cases you need to tap the confirm icon to save the entry.

## 4.5 Setting times

The desired time window for the component can be set in the "Times" tab in the individual menus of the heating components (heating circuits, DHW tanks etc.). The structure of the time menu and the procedure for changing the times are always the same.

- Use the left or right arrow to navigate to the desired day of the week
- Tap the symbol under the day of the week
  - The edit window will appear



You can specify up to four time windows per component and day.

- Tap the desired time window



- The time window will open for editing
- Set the start and end time for the time window using the up and down arrows
- Save the time window setting by tapping on the confirm icon



To delete a time window, set the times so that the hour and minute displays are replaced by two dashes.



If you want to apply the time window setting to another day in addition, you can do this by activating the relevant day.



## 4.6 Setting the date/time

- To set / adjust the date and time displayed, tap on the date/time at the top right of the basic display.



- A menu will then appear allowing you to adjust the date and time. To apply the new values you need to confirm the date and time by tapping the “confirm” icon.



## 4.7 Quick menu

### 4.7.1 "Operating level" function



To change the operating level you need to enter the relevant code.

⇒ See "Switching user level" [page 39]

### 4.7.2 "Choose language" function



The control starts in German by default. If you change the language of the control, it will restart, uploading all text in the selected language from the core module.

### 4.7.3 "Chimney sweep" function



The chimney sweep function is used for measuring boiler emissions using the chimney sweeper. For further information and the procedure for measuring emissions, see the operating instructions of the boiler and/or the "Instructions for the procedure for measuring emissions for the firewood boiler".

- The boiler runs for 45 minutes at nominal load
  - The boiler temperature setpoint is set to 85 °C
  - The heating pumps switch on and the mixer valves regulate to the maximum flow temperature setpoint
  - DHW tank and storage tank loading pump are controlled as normal

### 4.7.4 "Extra heating" function



During extra heating, heating and domestic hot water are heated for 6 hours. The mode setting is ignored.

**Caution: The external temperature heating limit set in the "Heating" menu is active and can prevent release of the heating circuits.**

### 4.7.5 "Mode in automatic mode" function



If you want to stop the chimney sweeper function early, you can switch back to automatic mode by tapping this symbol.

### 4.7.6 "Extra loading" function



One-off manual loading of domestic hot water. After loading, the mode that was previously set becomes active again.

### 4.7.7 "Ignition" function



Directly opens the ignition settings of the automatic hot air ignition.

⇒ See "Menu - Ignition" [page 72]

### 4.7.8 "Touch cleaning" function

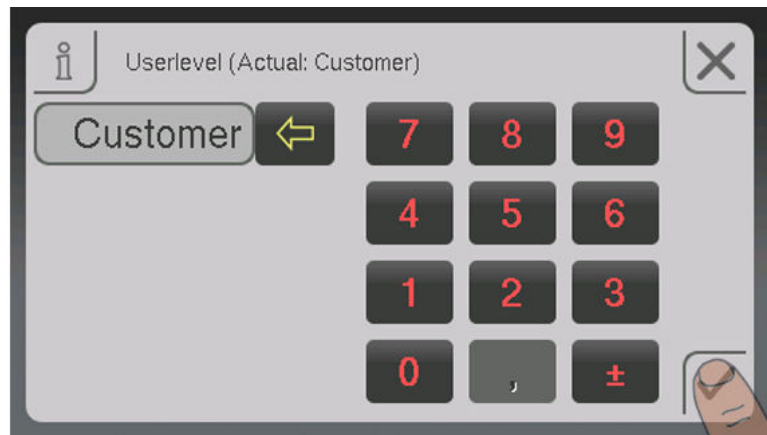


For cleaning the touchscreen surface. The screen is disabled for 10 seconds to allow you to clean it without opening a menu or inadvertently adjusting a parameter.

## 4.8 Initial startup

### 4.8.1 Switching user level

The range of functions of the touch display depends on the current user level setting. To switch to another user level, open the "Operating level" function in the quick menu.  
⇒ See "Quick menu" [page 38]



Once you have entered and confirmed the relevant user code, the number of functions available will vary. The "installer" and "service" user levels are also shown on the basic display above the quick menu icon.

| Operating level               | Description  |
|-------------------------------|--|
| <b>Child lock</b><br>(Code 0) | At "Child lock" level, only the "Status" menu appears. It is not possible to change parameters at this level.                |
| <b>Customer</b><br>(Code 1)   | Standard level for normal operation of the touch display. All customer-specific parameters are displayed and can be changed. |
| <b>Installer / Service</b>    | Releases parameters to adjust the controller to the system components (if configured).                                       |

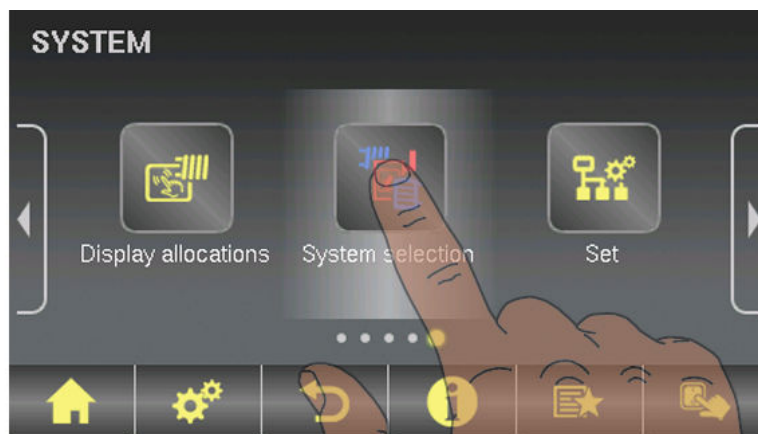
## 4.8.2 Setting the system selection

### *Open the system selection menu*

- In the system menu open “System”



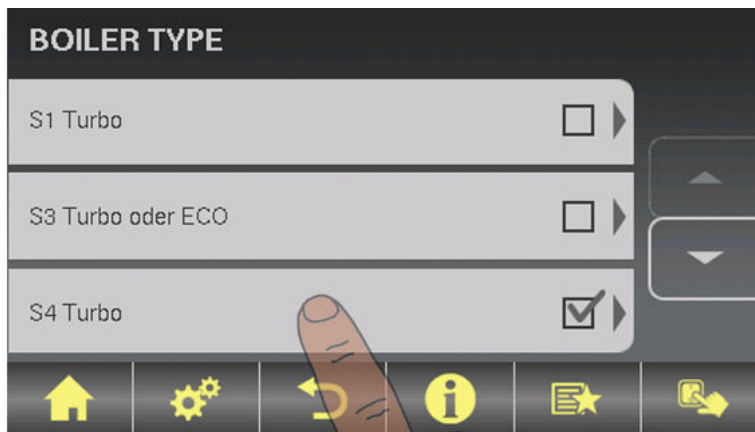
- Then navigate to “System selection” in the menu and open the menu



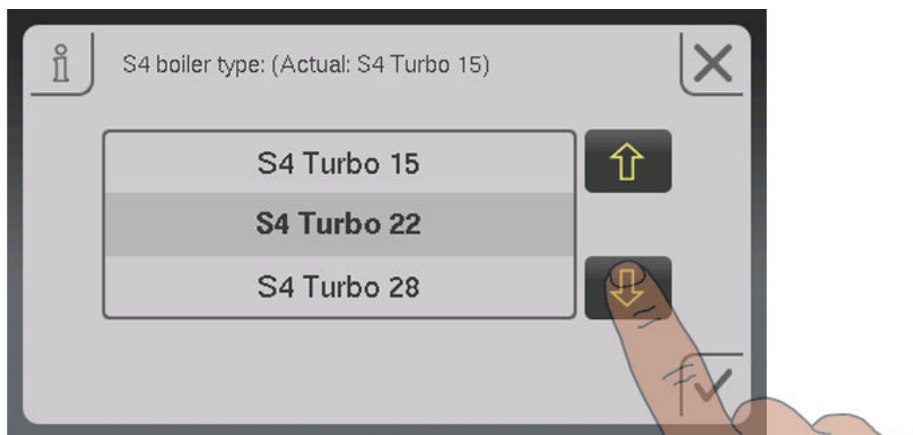


### Selecting the boiler type

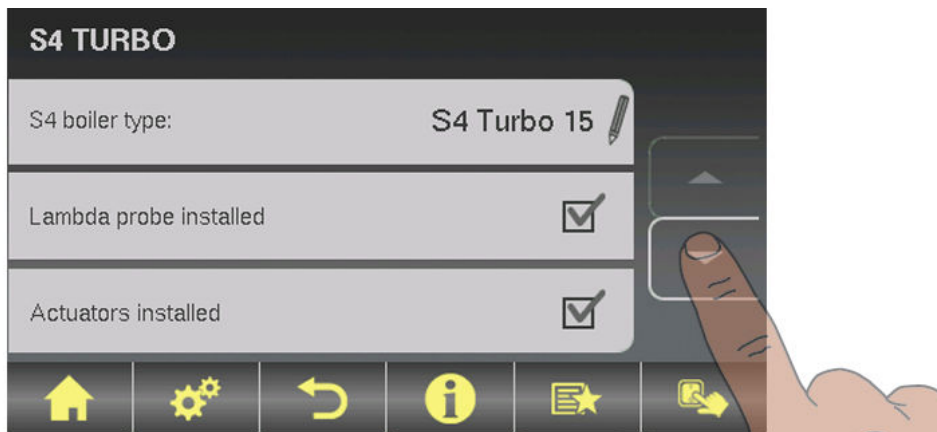
- In the boiler type menu select the “S4 Turbo” firewood boiler



- Then set the boiler output entered on the identification plate and confirm.



- Activate any other relevant parameters
  - Active parameters are identifiable by the confirm icon

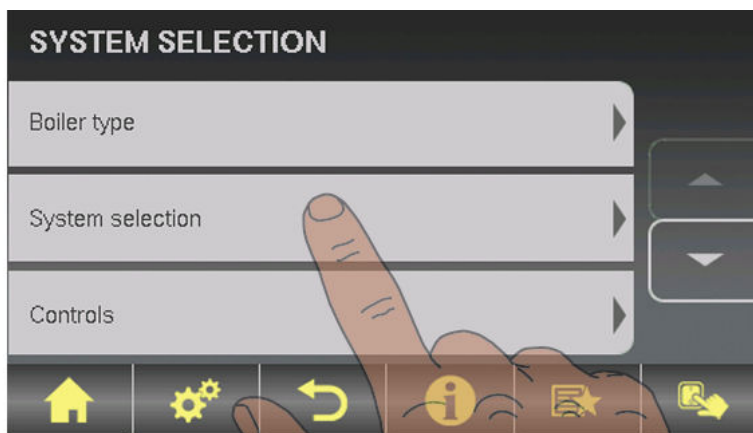


|  |     |
|--|-----|
| Lambda probe installed                   | YES |
| Actuators installed                      | YES |
| Ignition available                       | YES |
| Bypass pump installed                    | NO  |
| Return mixer using HC1                   | NO  |
| Return mixer using external mixer module | NO  |

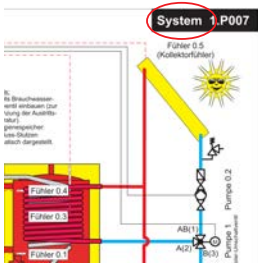
**NOTE:** Once all the relevant parameters have been set, the boiler standard values need to be entered in the “Boiler” menu under “General settings”.

| Parameter                    |    | Description   |
|------------------------------|----|---|
| Very dry material            | NO | If this parameter is set to "YES" and the boiler standard values are adopted, the parameters are automatically adjusted for very dry firewood.            |
| Adopt boiler standard values | NO | If this parameter is set to "YES", the current parameters for the selected boiler are set. After the values have been adopted the parameter jumps to "NO" |

*System selection*



|  |  |
|--|--|
| Hydraulic system 0<br>Hydraulic system 1<br>Hydraulic system 2<br>Hydraulic system 3<br>Hydraulic system 4 | SELECT<br><b>For description see</b> "Lambdatronic S 3200 Energy Systems" brochure |
| Hydraulic system for S3 boiler   | DO NOT SELECT  |
| Hydraulic system 12<br>Hydraulic system 13   | SELECT<br><b>For description see</b> "Lambdatronic S 3200 Energy Systems" brochure |
| Variant 1<br>Variants 2 and 5<br>Variant 3<br>Variant 4  | Multiple house diagrams  |
| Slave boiler for boiler sequence control   | Only for systems in the cascade!   |

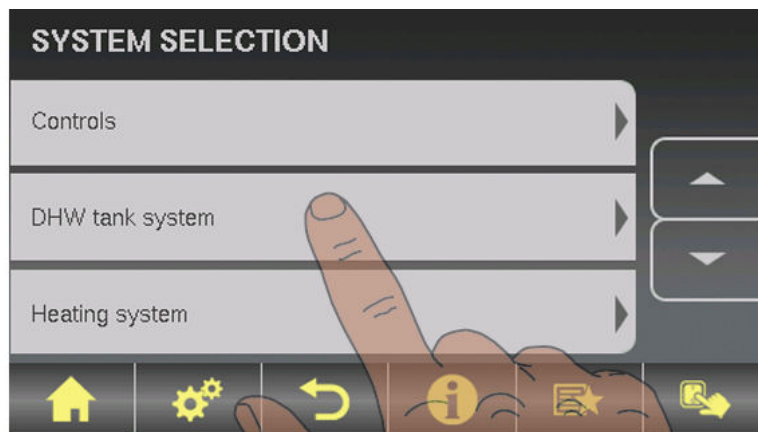


If the system has a Non-binding Planning Suggestion, the hydraulic system setting can be found at the top right-hand corner of the planning suggestion.

Otherwise, the selection table below shows the hydraulic system to be set for the specific system:

|                     | systematic components |          |                         |                            |                                    |                             |                         |                         | additional functions    |                 |                           |              |                               |              |                 |                          |
|---------------------|-----------------------|----------|-------------------------|----------------------------|------------------------------------|-----------------------------|-------------------------|-------------------------|-------------------------|-----------------|---------------------------|--------------|-------------------------------|--------------|-----------------|--------------------------|
|                     | Storage tank          | Boiler 2 | Multi sensor management | Middle storage tank sensor | Solar with external heat exchanger | Storage tank in boiler room | Storage tank in house 2 | Storage tank in house 3 | Storage tank in house 4 | Boiler blocking | Isolating valve installed | DHW priority | Freely prog. diff. controller | Network pump | Sec. circ. pump | MASTER boiler in cascade |
| Hydraulic System 0  |                       |          |                         |                            |                                    |                             |                         |                         |                         |                 | ✓                         | ✓            | ✓                             | ✓            |                 | ✓                        |
| Hydraulic System 1  | ✓                     |          |                         | ✓                          |                                    |                             |                         |                         |                         |                 | ✓                         | ✓            | ✓                             | ✓            | ✓               | ✓                        |
| Hydraulic System 2  | ✓                     | ✓        |                         | ✓                          |                                    |                             |                         |                         |                         | ✓               | ✓                         | ✓            | ✓                             | ✓            | ✓               | ✓                        |
| Hydraulic System 3  |                       | ✓        |                         |                            |                                    |                             |                         |                         |                         |                 | ✓                         | ✓            | ✓                             | ✓            |                 | ✓                        |
| Hydraulic System 4  | ✓                     | ✓        | ✓                       |                            |                                    |                             |                         |                         |                         | ✓               | ✓                         | ✓            | ✓                             | ✓            | ✓               | ✓                        |
| Hydraulic System 12 | ✓                     | ✓        |                         | ✓                          | ✓                                  |                             |                         |                         |                         | ✓               |                           | ✓            | ✓                             | ✓            | ✓               |                          |
| Hydraulic System 13 | ✓                     | ✓        |                         | ✓                          | ✓                                  |                             |                         |                         |                         | ✓               | ✓                         | ✓            | ✓                             | ✓            | ✓               |                          |
| Variant 1           |                       |          |                         |                            |                                    |                             |                         |                         |                         |                 | ✓                         | ✓            | ✓                             | ✓            |                 | ✓                        |
| Variant 2 and 5     |                       | ✓        |                         | ✓                          |                                    | ✓                           |                         |                         |                         | ✓               | ✓                         | ✓            | ✓                             | ✓            | ✓               | ✓                        |
| Variant 3           |                       | ✓        |                         | ✓                          |                                    | ✓                           | YES / NO                |                         |                         | ✓               | ✓                         | ✓            | ✓                             | ✓            | ✓               | ✓                        |
| Variant 4           |                       |          |                         |                            |                                    |                             | ✓                       | ✓                       | ✓                       |                 | ✓                         | ✓            | ✓                             | ✓            |                 | ✓                        |

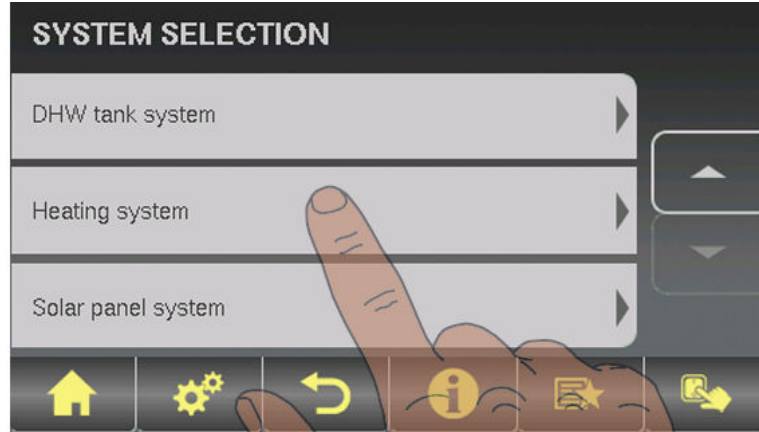
**DHW tank system**



|                       |                          |
|-----------------------|--------------------------|
| DHW tank 01 installed | <input type="checkbox"/> |
| DHW tank 02 installed | <input type="checkbox"/> |

|                       |                          |
|-----------------------|--------------------------|
| :                     | :                        |
| DHW tank 08 installed | <input type="checkbox"/> |

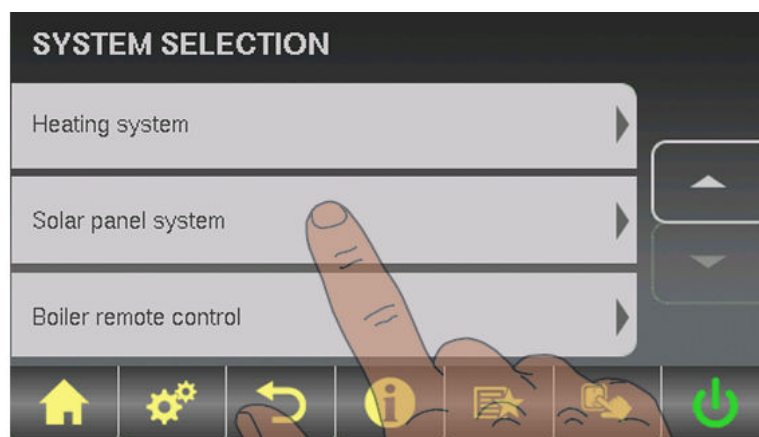
**Heating system**



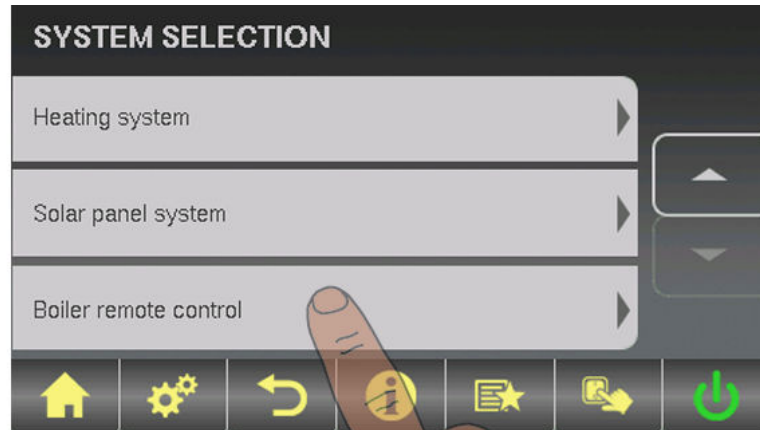
|                              |                          |
|------------------------------|--------------------------|
| Heating circuit 01 installed | <input type="checkbox"/> |
| Remote control 01 installed  | <input type="checkbox"/> |
| Heating circuit 02 installed | <input type="checkbox"/> |
| Remote control 02 installed  | <input type="checkbox"/> |
| :                            | :                        |
| Heating circuit 18 installed | <input type="checkbox"/> |
| Remote control 18 installed  | <input type="checkbox"/> |

The “remote control XX installed” parameter should be checked if any of the the three remote controls shown is used for the respective heating circuit.

**Solar system**



|  |                          |
|--|--------------------------|
| Solar collector 01 installed                         | <input type="checkbox"/> |
| A second pump is used instead of the isolating valve | <input type="checkbox"/> |

*Boiler remote control*

|   |                          |
|---|--------------------------|
| Remote control of the boiler can be activated | <input type="checkbox"/> |
|---|--------------------------|

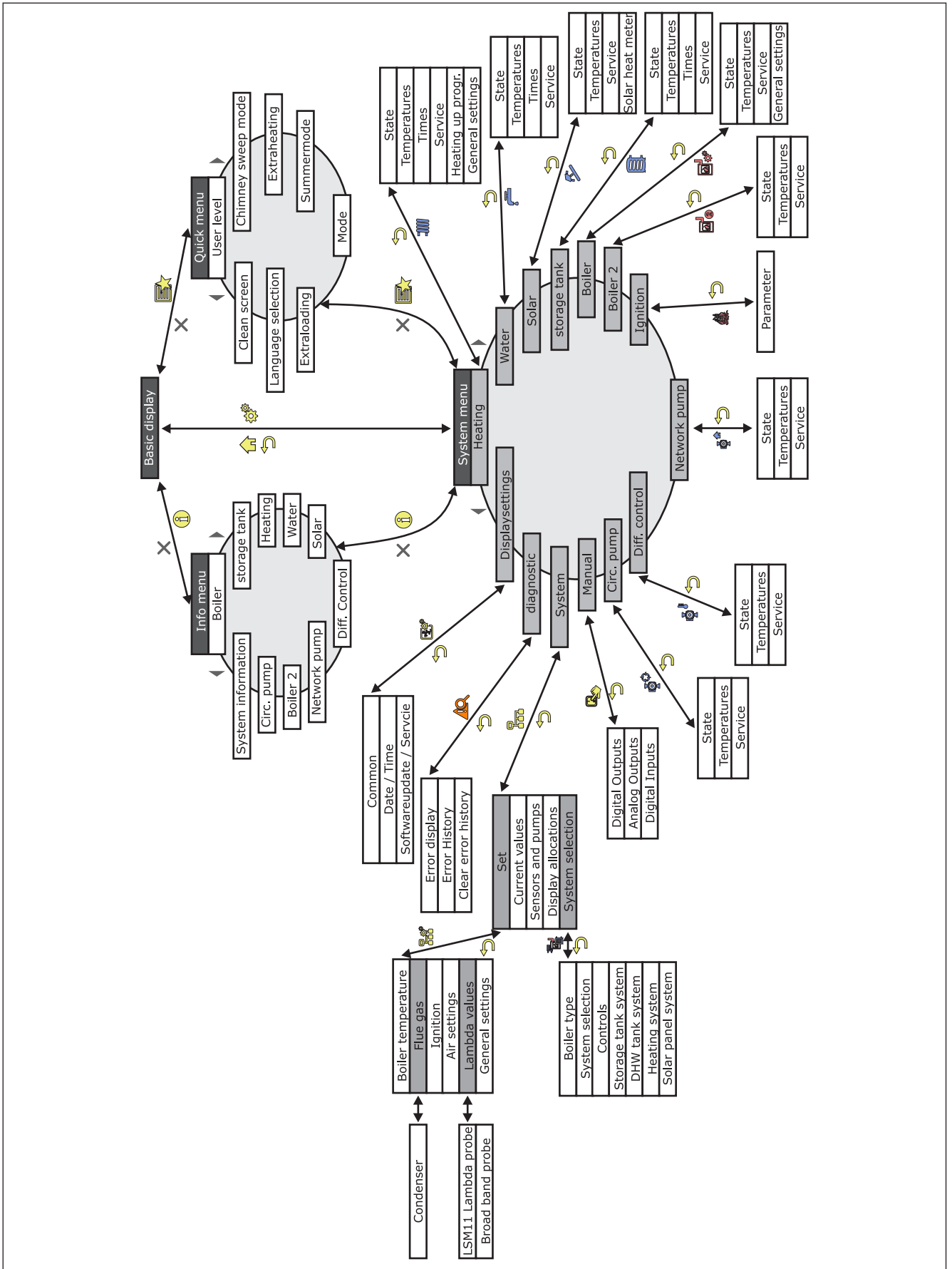
**4.8.3 Before heating up for the first time**

- Check the system pressure of the heating system
- Check that the heating system is fully ventilated
- Check that the safety devices are present and working correctly
- Check that there is sufficient ventilation in the boiler room
- Check the seal of the boiler
  - All doors and inspection openings must be tightly sealed!
  
- Calibrate the broadband probe
  - ⇒ See "Starting calibration" [page 91]
  
- Check that the Door switch is working correctly
  - ⇒ See "Digital inputs" [page 84]

***Drives***

- Check that drives and actuators are working and turning in the right direction
  - ⇒ See "Analogue outputs" [page 83] and
  - ⇒ See "Digital outputs" [page 83]

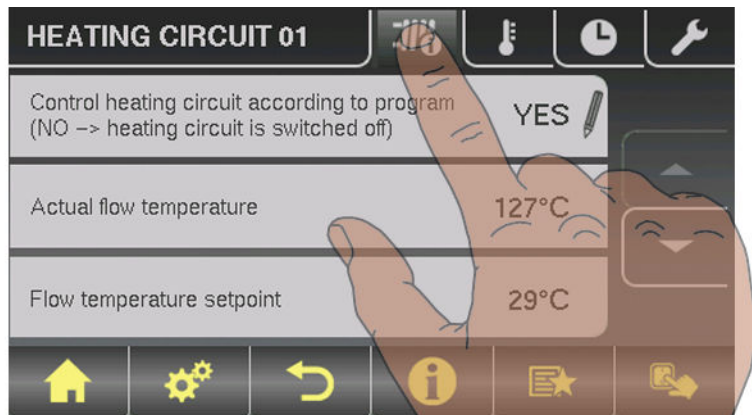
5 Menu overview and parameters



## 5.1 Menu - Heating

⇒ See "Navigation within the system menu" [page 31]

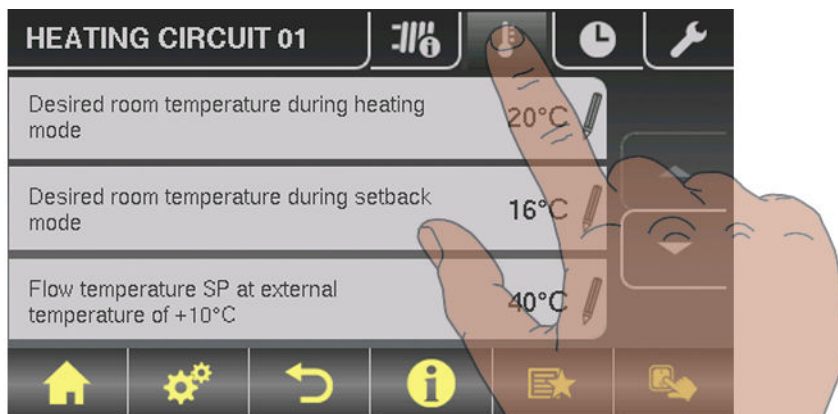
### 5.1.1 Status displays for the heating circuits



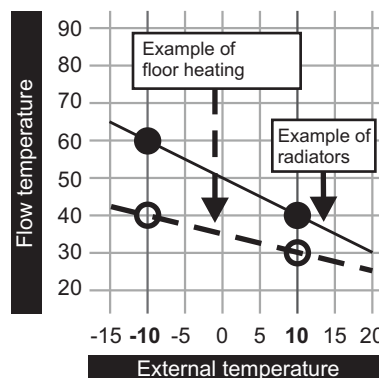
| Parameter  |      | Description  |
|--|------|--|
| Control heating circuit according to program (NO -> heating circuit is switched off) | YES  | NO -> Heating circuit is completely switched off. No frost protection!   |
| Actual flow temperature  | 46°C | Shows the current flow temperature   |
| Flow temperature setpoint  | 52°C | The calculated flow temperature setpoint   |
| Room temperature   | 21°C | Temperature on remote control of the current heating circuit (optional)  |
| Override switch  | Auto | Shows the current switch setting on the remote control (optional)<br>☀ (Party) = party mode; the setback program is ignored<br>🌙 (Setback) = setback mode; the heating phases are ignored<br>🕒 (Auto) = automatic mode; heating phases according to setback program<br>⏻ (Off) = switched off; heating circuit deactivated, only frost protection! |
| External temperature   | 2°C  | Shows the current external temperature   |



5.1.2 Temperature settings for the heating circuits



| Parameter   |      | Description  |
|---|------|--|
| Desired room temperature during heating mode  | 20°C | Room temperature during heating mode (only with remote control)  |
| Desired room temperature during setback mode  | 16°C | Room temperature during setback mode (only with remote control)  |
| Flow temperature SP at external temperature of +10°C                                  | 40°C | The heating curve can be adjusted to the relevant system with these two work points.   |
| Flow temperature SP at external temperature of -10°C                                  | 60°C |  |
| Controller gain room temperature Kp-Rm  | 6.0  | <p>Influencing factor of room temperature on the flow temperature of the heating circuit. If there is a deviation in the room temperature of +/- 1°C the set value of the flow temperature is corrected by this value.</p> <p>(Parameter only with optional remote control!)</p> <p>Recommended values for:</p> <ul style="list-style-type: none"> <li>- Floor heating 2 - 3</li> <li>- Radiators (new build): 4 - 5</li> <li>- Radiators (old build): 6 - 7</li> </ul> <p><b>Note:</b> Observe external influences on the room sensors!</p> |
| Reduction of flow temperature in setback mode   | 15°C | The flow temperature is reduced by this value during setback mode.   |
| External temperature below which the heating circuit pump switches on in heating mode | 18°C | If the external temperature exceeds this value during heating, the heating circuit pumps and mixing valve are deactivated.   |
| External temperature below which the heating circuit pump switches on in setback mode | 7°C  | If the external temperature falls below this value in setback mode, the heating circuit pumps and mixing valve are activated.  |



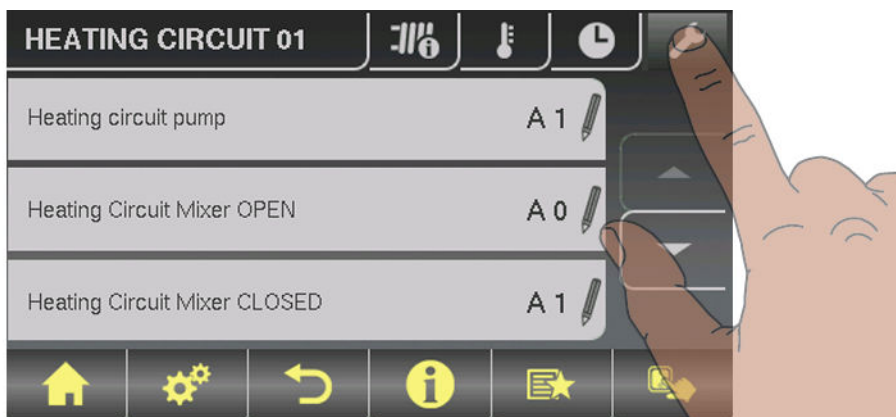
|                                    |      |   |
|------------------------------------|------|---|
| Maximum heating circuit flow temp. | 75°C | Maximum temperature for limiting outfeed temperature at which the heating circuit is supplied.  |
| Maximum DHW tank flow temp.        | 75°C | If DHW tank 1 is supplied directly from heating circuit 1, you can set another maximum flow temperature for the time of DHW tank loading. |
| Frost protection temperature       | 10°C | If the room temperature or the flow temperature is lower than the set value, the heating circuit pump will be switched on.                |

### 5.1.3 Heating times of the heating circuits



⇒ See "Setting times" [page 35]

### 5.1.4 Service parameters of the heating circuits

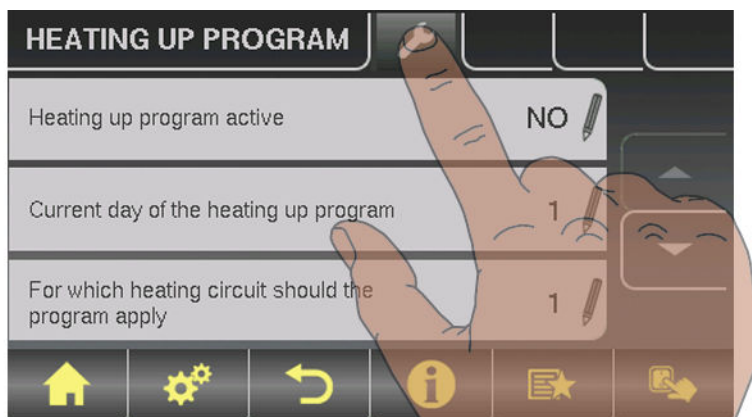


| Parameter  |      | Description   |
|--|------|---|
| Heating circuit pump   | A 0  | Used for testing the individual outputs.  |
| Heating circuit mixing valve OPEN                                | A 0  |   |
| Heating circuit mixing valve CLOSED                              | A 0  |   |
| Mixer runtime  | 240s | Set mixer runtime of heating circuit mixer in use.<br>Recommendation to reduce mixer vibration: do not set to < 150 s   |
| Switch off heating circuit pump when flow setpoint is lower than | 20°C | If a flow temperature setpoint is calculated below the value set here, the heating circuit pump switches off and the mixing valve closes (just without remote control). |

| Parameter   |    | Description  |
|---|----|--|
| Should this heating circuit heat when there is DHW tank priority?                   | NO | Generally the heating circuits are released with active DHW tank priority only when the DHW tank is fully charged. If this parameter is set to "YES", the DHW tank priority for this heating circuit is deactivated.   |
| From which storage tank or distributor is the heating circuit supplied (0 = boiler) | 1  | <b>NOTE:</b> Only valid for multiple house systems (variants).<br>Allocation of the heating source for this heating circuit:<br>0 = Boiler, 1 = Storage tank 01, ...   |
| High temperature requirement because of DHW tank 1 loading                          | NO | If DHW tank 1 is supplied directly from the heating circuit as well as the isolating valve, this parameter must be set to "YES". If there is a requirement from the DHW tank and the criteria for DHW tank loading have been met, the isolating valve immediately clears the way for boiler loading. The heating circuit pump starts running as soon as the "Load if temperature difference between boiler and DHW tank is" criterion is reached. Once DHW tank loading is complete, the heating circuit pump will stop, the isolating valve will remain active for a specified period of time and the heating circuit mixer will close. If time has run out, the heating circuit will go back to being supplied on a weather-compensated basis.<br><b>NOTE:</b> Parameter only available with <b>heating circuit 1</b> and generally only used in conjunction with the unit model of the P1 Pellet pellet boiler! |
| High temperature requirement because of DHW tank loading                            | NO | If this parameter is set to YES, the remote line is operated according to the set heating curve + overcharge. Whilst the DHW tank is loading, the remote line is supplied for a short time at a higher temperature, but once the DHW tank is loaded, it is supplied again according to the heating curve.<br><b>NOTE:</b> Parameters for <b>heating circuit 2</b> only!  |
| For high temperature requirement don't look at DHW tank 01                          | NO | If DHW tank 1 is positioned in front of the network mixer, it should not affect the temperature control of the remote line, therefore this parameter should be set to YES.<br><b>NOTE:</b> Parameters for <b>heating circuit 2</b> only!   |

⇒ See "Digital outputs" [page 83]

### 5.1.5 Service parameters for heating up program

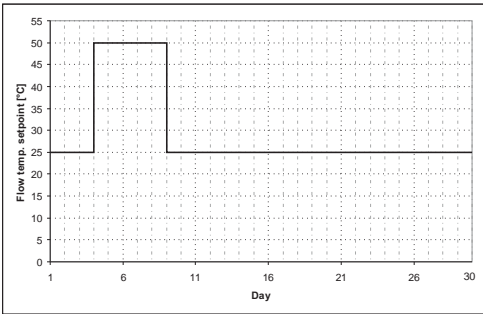


| Parameter  |      | Description  |
|--|------|--|
| Heating up program active                          | NO   | <p>If this parameter is activated, the 30-day program that has been set starts. After the 30 days, the heating circuit that has been set operates based on the set heating times again.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The heating times of the selected heating circuit are automatically set to 0:00-24:00 and the external temperature heating limit is ignored.</li> <li><input type="checkbox"/> In order that enough heat is always available to the heating circuit, the boiler and/or storage tank loading times must be set to 0:00-24:00. When using a firewood boiler, a corresponding heat supply must be ensured.</li> </ul> |
| Current day of the heating up program              | 1    | Shows the current day of the heating program that is running   |
| For which heating circuit should the program apply | 1    | <p>This parameter determines which heating circuit is supplied by the heating up program. Heating circuit 1 ... 18</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Only one heating circuit can be selected.</li> </ul>  |
| Which heating up program is used                   | 1    | There are set options for the progression of the flow temperature in heating up programs 1 – 6. With heating up program 7 the flow temperature can be selected freely.   |
| Outfeed setpoint for all days in program 7         | 35°C | If heating up program 7 is active, the selected heating circuit is adjusted to the specified flow temperature.   |

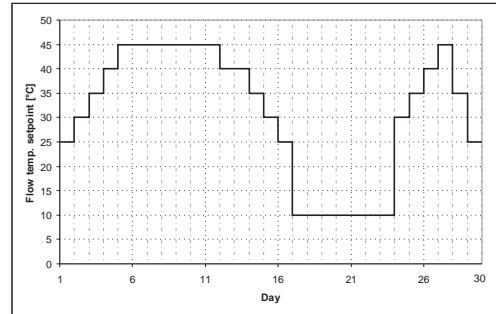
⇒ See "Heating up programs" [page 53]

*Heating up programs*

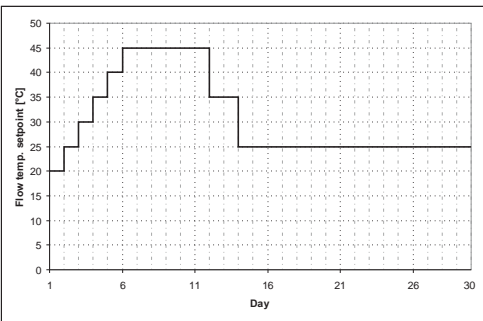
Heating up program 1:



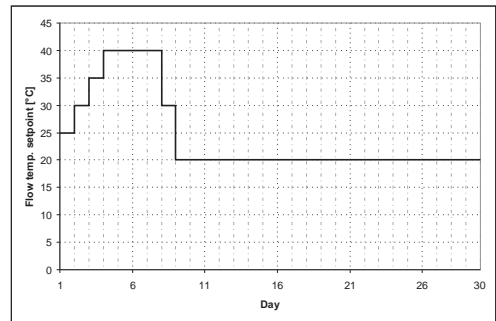
Heating up program 2:



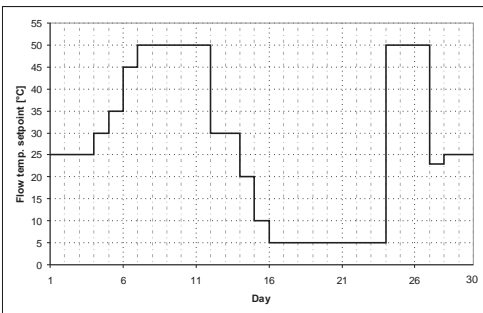
Heating up program 3:



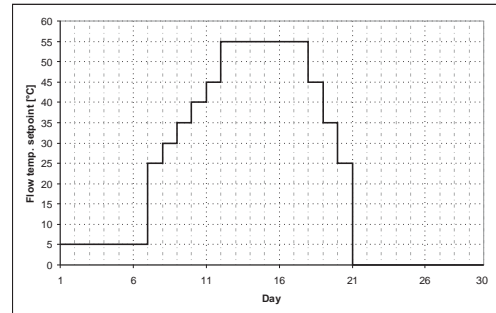
Heating up program 4:



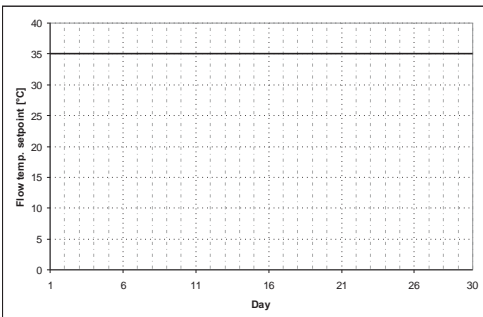
Heating up program 5:



Heating up program 6:

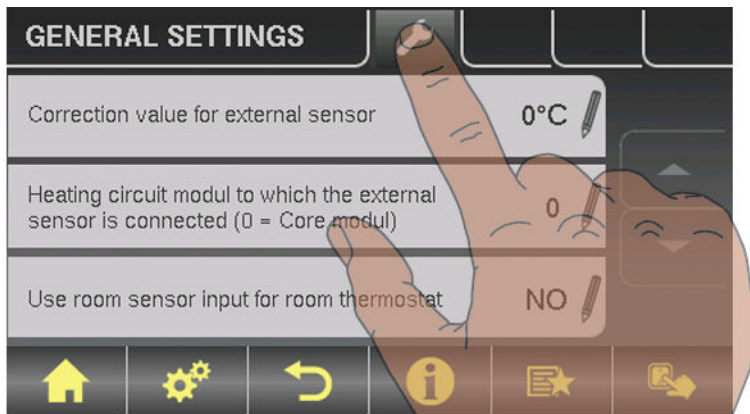


Heating up program 7:



The heating up programs listed are non-binding recommendations. If the heating up program is to be used for floor screed drying, you must consult the manufacturer of the floor finish and/or the installer

### 5.1.6 General Settings

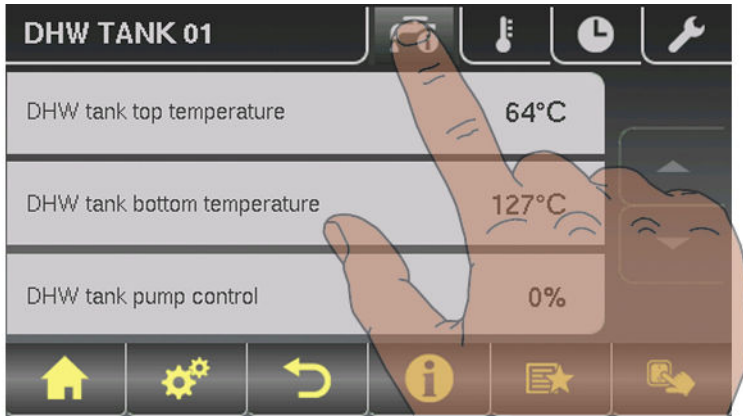


| Parameter  |     | Description  |
|--|-----|--|
| Correction value for external sensor   | 0°C | If the outside temperature sensor shows an incorrect value, the value can be adjusted using this parameter.  |
| Heating circuit module to which the external sensor is connected (0 = core module) | 0   | If the outside temperature sensor is not connected to the core module, the address of the relevant heating circuit module +1 must be set here. (Sensor 1 on relevant module) |
| Use room temperature sensor input for room thermostat                              | NO  | If room thermostats are used instead of room temperature sensors, this parameter must be set to YES.   |

## 5.2 Menu - Water

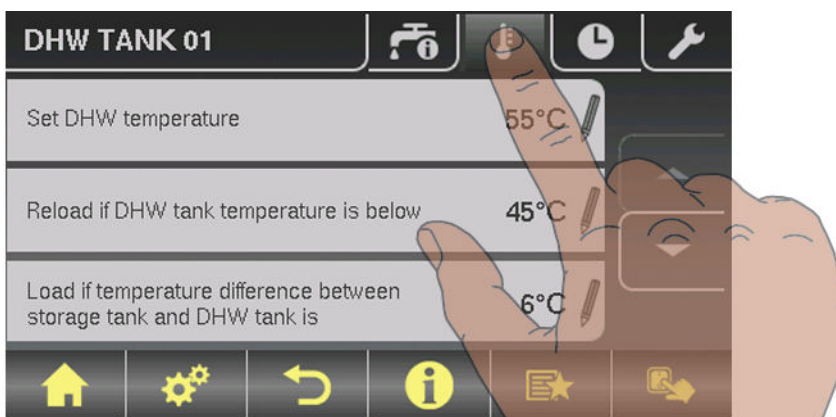
⇒ See "Navigation within the system menu" [page 31]

### 5.2.1 Status displays for the DHW tank



| Parameter                   |      | Description  |
|-----------------------------|------|--|
| DHW tank top temperature    | 60°C | Current temperature in the top part of the DHW tank. The DHW tank is heated during the loading times until the specified parameter, "Set DHW temperature", is reached. |
| DHW tank bottom temperature | 55°C | Current temperature in the lower part of the DHW tank. (Parameter only available with solar element)   |
| DHW tank pump control       | 0%   | Specifies the speed of the DHW tank pump as a percentage of the maximum speed  |

### 5.2.2 Temperature settings of the DHW tank



| Parameter                               |      | Description  |
|---|------|--|
| DHW setpoint                            | 55°C | When this DHW tank temperature is reached the DHW tank loading pump switches off.          |
| Reload if DHW tank temperature is below | 45°C | Reloading of the DHW tank is authorised when the DHW tank temperature is below this level. |



|   |     |   |
|---|-----|---|
| Load if temperature difference between storage tank and DHW tank is | 6°C | When the storage tank top temperature is above the DHW tank temperature by this value, the DHW tank loading pump is released.<br>(Only for systems with storage tanks)  |
| Load if temperature difference between boiler and DHW tank is       | 6°C | Initial value of DHW tank loading. The boiler temperature must be higher than the DHW tank temperature by this value so that the DHW tank loading process begins.<br>(Only for systems without storage tanks) |

### 5.2.3 Heating times of the DHW tank



⇒ See "Setting times" [page 35]

### 5.2.4 Service parameters of the DHW tank



| Parameter                        |     | Description   |
|----------------------------------|-----|---|
| Residual heat use                | NO  | Function can only be used with systems with return mixer and no storage tank. This diverts the residual energy to the DHW tank, the "Above Boiler temp pumps start" parameter is ignored. The pump is activated at minimum speed until the boiler temperature is lower than the DHW tank temperature + 3°C. |
| Only load DHW tank once a day    | NO  | If this parameter is set to "YES", repeated heating on one day is prevented.  |
| Legionella heating activated     | YES | The DHW tank is heated to at least 65°C once a week.  |
| Which day for legionella heating | MO  | Day of the week on which the Legionella heating is carried out.   |

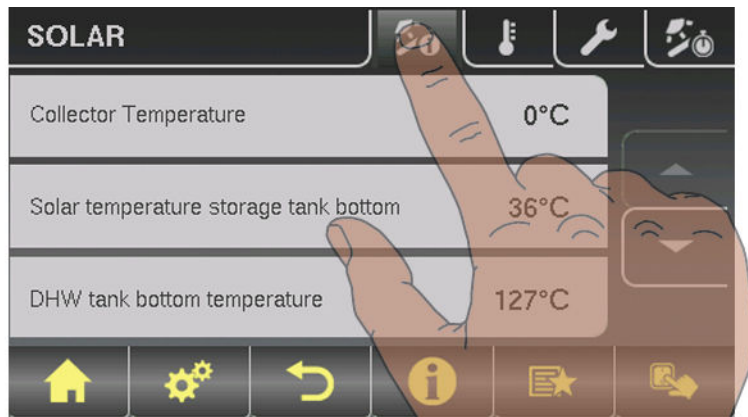


| Parameter  |             | Description  |
|--|-------------|--|
| Which storage tank or heat distributor supplies the heat to this DHW tank (0 = boiler) | 1           | When using several storage tanks or heat distributors, the source of heat for DHW tank loading is selected here.<br>If only one storage tank or heat distributor is used, leave the parameter at the default setting of 1.<br><b>NOTE:</b> Only valid for multiple house systems.  |
| DHW tanks run-on (this parameter applies for all DHW tanks)                            | 0m          | Run-on time for all DHW tanks  |
| Which sensor is used for top DHW tank 1  | 0.3         | Bus address of the sensors and pumps used.<br>⇒ See "Setting the module address" [page 20]   |
| Which sensor is used for solar reference DHW tank 1                                    | 0.4         |  |
| Which pump is used for DHW tank 1  | 0.2         |  |
| PWM setting for DHW tank pump  | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PWM / field pump</li> <li>▪ PWM / solar pump</li> <li>▪ PWM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> Properties of the respective setting:<br>⇒ See "PWM / 0 - 10V settings" [page 102] |
| Minimum DHW tank pump speed  | 45%         | Adjustment of the minimum speed to the pump type. (Set the pump mode according to pump manufacturer's instructions)  |
| Maximum DHW tank pump speed  | 100%        | If you need to limit the maximum speed of the DHW tank pump for systemic reasons, you can do so by adjusting this parameter.   |

## 5.3 Menu - Solar

⇒ See "Navigation within the system menu" [page 31]

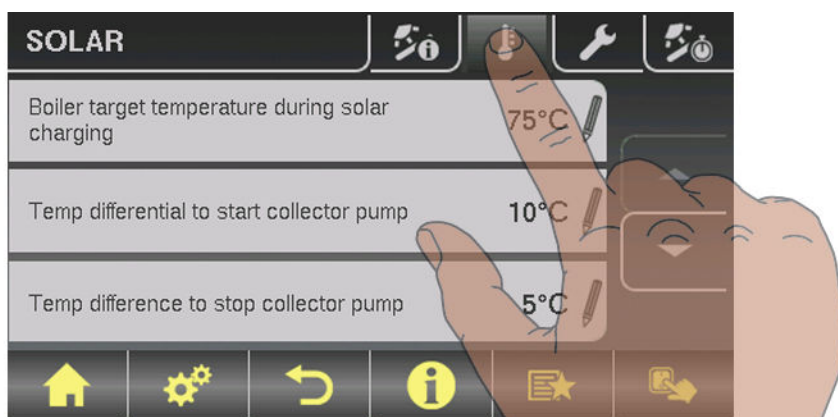
### 5.3.1 Status displays for the solar system



| Parameter  |      | Description   |
|--|------|---|
| Collector Temperature  | 80°C | Current temperature at collector.   |
| Solar temperature bottom storage tank                              | 43°C | Current temperature at solar sensor at bottom of storage tank.  |
| Collector return feed temperature                                  | 50°C | Current temperature at collector return.<br>(Only for systems 12, 13)   |
| Current output of Solar WMZ [kW]                                   | 0.00 | Displays current output of solar collector.   |
| DFL Sensor [l/h]   | 0    | Display of the water quantity currently being pumped through the solar collector.<br><b>NOTE:</b> Display is active only if an external volume flow sensor is used and it has been activated in the controller. |
| Today's yield [kWh]  | 0    | Heat quantity that has been supplied by the solar panel system today  |
| Total yield [kWh]  | 0    | Heat quantity that has been supplied since activation of the solar panel system   |
| DHW tank bottom temperature  | 39°C | Current temperature at the solar reference sensor in the DHW tank.  |
| Heat exchanger sec. return feed temperature (line to storage tank) | 78°C | Current temperature at heat exchanger flow on the secondary side. (only for systems 12, 13)   |
| Collector pump runtime   | 1 h  | Specifies the runtime of the collector pump.  |
| Collector pump control   | 52%  | Specifies the speed of the collector pump as a percentage of maximum speed.   |
| Pump between heat exchanger and storage tank                       | 100% | Current speed of the pump between heat exchanger and storage tank (only for systems 12, 13)   |

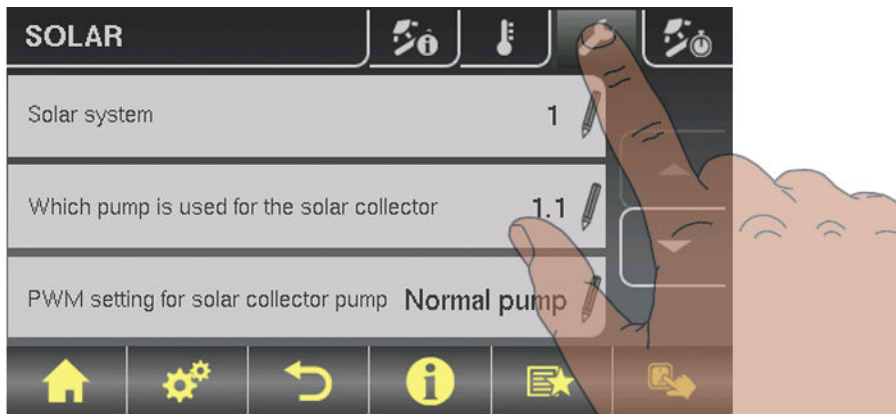
| Parameter                                |    | Description  |
|--|----|--|
| Pump between heat exchanger and DHW tank | 0% | Current speed of the pump between heat exchanger and DHW tank (only for system 12)   |
| Diverter valve for top/bottom coils      | 0% | Current control of the isolating valve on the solar side. If the valve is correctly fitted:<br>0% ... storage tank below<br>100% .. storage tank above<br>If the valve is incorrectly fitted, the output of the isolating valve can be inverted in the Service menu.<br>Service parameters of the solar system (only with system 12, 13) |

### 5.3.2 Temperature settings for the solar system



| Parameter   |       | Description   |
|---|-------|---|
| Boiler target temperature during solar charging                       | 75°C  | Up to this temperature the DHW tank is heated by the solar system.  |
| Temp differential to start collector pump                             | 10°C  | The collector loading pump activates when the collector temperature exceeds the storage or DHW tank temperature by this value.  |
| Temp difference to stop collector pump                                | 5°C   | The collector loading pump switches off when the collector temperature exceeds the storage or DHW tank temperature by this value.   |
| Maximum storage tank bottom temperature during solar charging         | 85°C  | Maximum bottom storage tank temperature at which the collector pump is switched off (only with storage tank).   |
| Minimum collector temperature   | 20°C  | Below this collector temperature the collector pump is switched off.  |
| Heat exchanger - storage tank pump startup delay                      | 120s  | Delay for switching on the pump between heat exchanger and storage tank (only for systems 12, 13).  |
| Heat exchanger - storage tank pump stop delay                         | 240 s | Delay for switching off the pump between heat exchanger and storage tank (only for system 12, 13).  |
| Storage tank top solar setpoint (fast loading until this temperature) | 60°C  | Once the top storage tank sensor reaches the set value during solar charging, the isolating valve switches to bottom storage tank (Only with systems 12, 13).   |
| Collector - storage tank top differential                             | 20°C  | This is the overcharge for the collector pump controller for the top or bottom storage tank temperature.  |
| Collector - heat exchanger sec., out-feed difference                  | 10°C  | This parameter specifies how much the heat exchanger secondary out-feed should be below the collector temperature. If the temperature is too low, the speed of the storage tank or DHW tank pump will be reduced. |
| Collector return - storage tank bottom differential                   | 20°C  | Storage tank bottom plus the set value produces the desired temperature of the collector return. If the collector return is too high, the storage tank pump speed is reduced.                                     |

### 5.3.3 Service parameters of the solar system

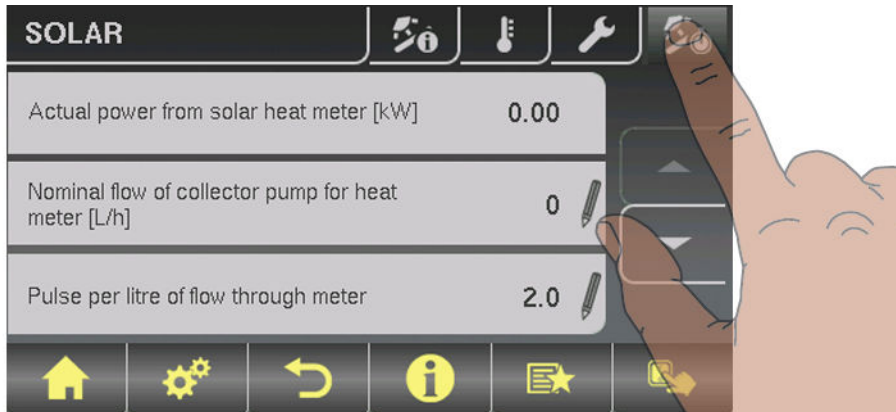


| Parameter   |             | Description  |
|---|-------------|--|
| Solar system  | 1           | Specifies the type of solar system. The parameter should be set according to the solar diagram.<br><b>1:</b> Solar panel system only on domestic hot water tank<br><b>2:</b> Solar panel system only on storage tank<br><b>3:</b> Solar panel system with switch valve (switch from domestic hot water tank to storage tank, or between top and bottom solar elements with the H3 hygienic solar layered tank)<br>Observe the information on the solar panel system in the "Lambdatronic S 3200 energy systems" documents. |
| Which pump is used for the solar collector                                    | 1.1         | Bus address of the pump that is used.<br>⇒ See "Setting the module address" [page 20]<br>Observe the information on the solar panel system in the "Lambdatronic S 3200 energy systems" documents.  |
| PDM setting for solar collector pump  | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PDM / field pump</li> <li>▪ PDM / solar pump</li> <li>▪ PDM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> Properties of the respective setting:<br>⇒ See "PWM / 0 - 10V settings" [page 102]   |
| Minimum collector pump speed  | 45%         | Adjustment of the minimum speed to the pump type. (Set the pump mode according to pump manufacturer's instructions)  |
| Maximum collector pump speed  | 100%        | If you need to limit the maximum speed of the collector pump for systemic reasons, you can do so by adjusting this parameter.  |
| Collector monitoring → Collector pump is switched on every 30 min. for 10 sec | NO          | If this parameter is active the collector pump is switched on every 30 minutes for 10 seconds. If the collector sensor detects an increase in temperature, the pump is kept on.<br>This function is active from 10:00am - 7:00pm and the threshold value of the collector temperature, from which this function is active, is dynamically adjusted.  |

| Parameter  |             | Description  |
|--|-------------|--|
| For solar to store and DHW tank, the DHW tank has priority | YES         | <p>YES: The DHW tank is charged until the temperature setpoint is reached, and only then is the storage tank supplied.</p> <p>NO: The DHW tank is charged until the temperature difference between the collector and the DHW tank is no longer sufficient. When the temperature difference has fallen too low, the storage tank is supplied with heat for 20 minutes. Then the collector pump is stopped for 20 minutes and a check is carried out to see if the temperature difference is now sufficient for DHW tank charging.</p> |
| Solar charging to which store                              | 1           | Defines the storage tank to which the solar charging takes place.  |
| Solar charging to which DHW tank                           | 1           | Defines the DHW tank to which the solar charging takes place.  |
| Which sensor is used for the solar collector               | 1.1         | <p>Bus addresses of the sensors used, depending on the system</p> <p>⇒ See "Setting the module address" [page 20]</p>  |
| Which sensor is used for the storage tank reference        | 0.2         | <p>Observe the information on the solar panel system in the "Lambdatronic S 3200 energy systems" documents.</p>  |
| Which sensor is used for the heat exchanger sec. flow?     | 1.4         |  |
| Which sensor is used for the collector return              | 1.5         |  |
| Which pump is used for the solar isolating valve           | 1.2         |  |
| Which pump is used for storage tanks - heat exchanger      | 2.1         |  |
| PDM setting for the storage tank - heat exchanger pump     | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PDM / field pump</li> <li>▪ PDM / solar pump</li> <li>▪ PDM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> <p>Properties of the respective setting:<br/>⇒ See "PWM / 0 - 10V settings" [page 102]</p>   |
| Which pump is used for DHW tanks - heat exchanger          | 2.2         | <p>Bus addresses of the sensors used, depending on the system</p> <p>⇒ See "Setting the module address" [page 20]</p> <p>Observe the information on the solar panel system in the "Lambdatronic S 3200 energy systems" documents.</p>  |
| PDM setting for the DHW tank - heat exchanger pump         | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PDM / field pump</li> <li>▪ PDM / solar pump</li> <li>▪ PDM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> <p>Properties of the respective setting:<br/>⇒ See "PWM / 0 - 10V settings" [page 102]</p>   |
| Invert isolating valve                                     | NO          | For DHW tank loading through the collector, the isolating valve is activated with 230V. If the valve switches incorrectly, the way it is controlled can be adjusted using this parameter.  |

| Parameter                                  |      | Description   |
|--|------|---|
| Is a PT1000 sensor used as a solar sensor? | NO   | Basic setting for the sensor type used:<br>NO: Solar sensor - Froling<br>YES: Sensor PT1000 |
| Collector pump control Kp value            | 1.00 | Control parameter for collector pump  |
| Collector pumps control Tn value           | 300s |   |

### 5.3.4 Solar heat meter



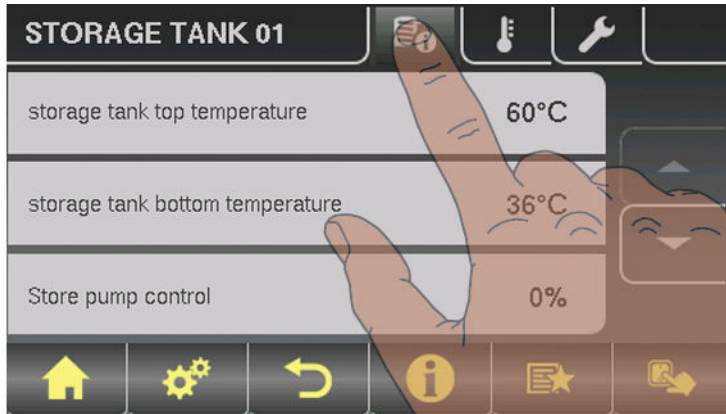
| Parameter   |      | Description   |
|---|------|---|
| Outfeed: 0 °C / Return: NA<br>P: 0.0kW / DFL: 0<br>Today: 0 kWh<br>Total: 0 kWh |      | Solar heat meter:<br>Outfeed: Flow temperature of the solar panel system<br>Return: Return of the solar panel system<br>P: Current output of the solar panel system<br>DFL: Flow-through of the solar panel system<br>Today: Heat quantity that has been supplied by the solar panel system today<br>Total: heat quantity that has been supplied since activation of the solar panel system |
| Collector Temperature   | 80°C | Current temperature at collector.   |
| Collector return feed temperature   | 50°C | Current temperature at collector return.  |
| Current output of Solar WMZ [kW]  | 0.00 | Displays current output of solar collector.   |
| DFL Sensor [l/h]  | 0    | Display of the water quantity currently being pumped through the solar collector.<br><b>NOTE:</b> Display is active only if an external volume flow sensor is used and it has been activated in the controller.   |
| Today's yield [kWh]   | 0    | Heat quantity that has been supplied by the solar panel system today  |
| Total yield [kWh]   | 0    | Heat quantity that has been supplied since activation of the solar panel system   |
| Nominal flow of collector pump for heat meter [L/h]                             | 0    | Sets the nominal flow of the collector pump used.<br>This setting can be ignored if using an external flow meter.   |
| Pulses per litre from the flow sensor   | 2.0  | If an external flow meter is used, adjust this value according to the device used. [0.5 – 5 pulses/L]   |
| Which sensor is used for the collector return                                   | 1.5  | Bus addresses of the sensors used, depending on the system<br>⇒ See "Setting the module address" [page 20]  |

|  |     |  |
|--|-----|--|
| Which sensor is used for heat meter flow temperature | 1.3 | If a flow temperature sensor is used for the heat meter in addition to the collector sensor, set the sensor address accordingly.<br>Bus addresses of the sensors used, depending on the system<br>⇒ <a href="#">See "Setting the module address" [page 20]</a> |
| Is an external flow through counter used             | NO  | If an external volume flow sensor is used in the collector return, set this parameter to "YES".  |

## 5.4 Menu - Storage tank

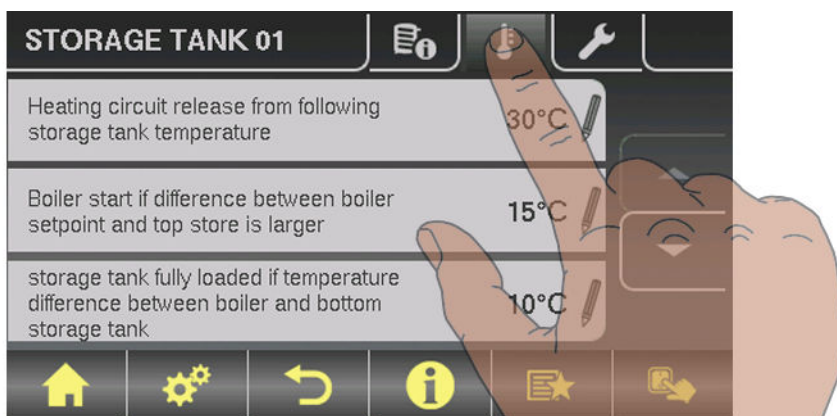
⇒ See "Navigation within the system menu" [page 31]

### 5.4.1 Status displays of the storage tank



| Parameter                       |      | Description  |
|---------------------------------|------|--|
| Storage tank top temperature    | 58°C | Current temperature at top storage tank sensor.  |
| Storage tank middle temperature | 53°C | Current temperature at middle storage tank sensor (depending on configuration).            |
| Storage tank bottom temperature | 50°C | Current temperature at bottom storage tank sensor.   |
| Store pump control              | 50%  | Specifies the current speed of the storage tank pump as a percentage of the maximum speed. |
| Store charge                    | 25%  | Shows the current storage tank charge.   |

### 5.4.2 Temperature settings for the storage tank

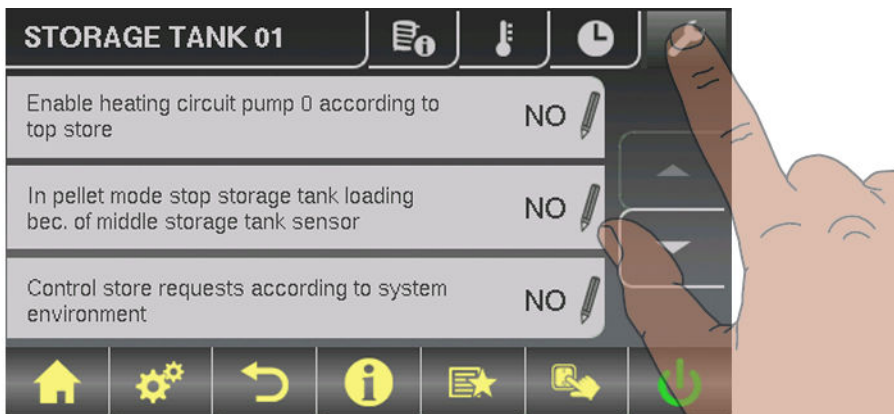


| Parameter   |      | Description   |
|---|------|---|
| Heating circuit release from following storage tank temperature | 30°C | Minimum value of storage tank top temperature for heating circuit release in combinations with a storage tank |

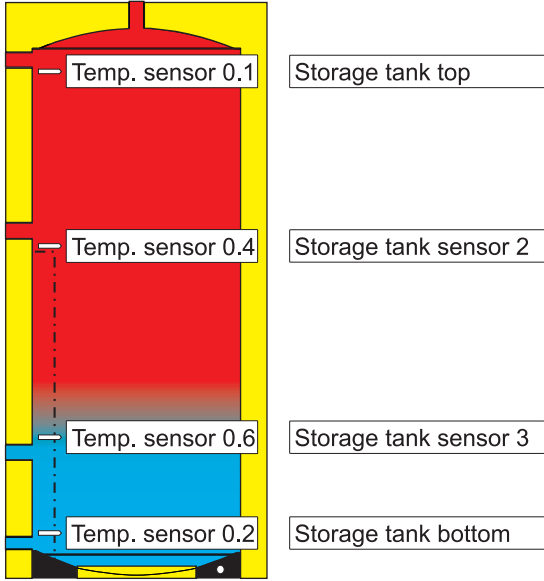


|   |      |   |
|---|------|---|
| Temperature difference between boiler and border layer  | 20°C | If the option, "Middle storage tank temperature sensor installed" and the parameter, "Mid store controller active" have been set to "YES", the controller attempts keep the temperature of the "middle store" sensor to the value of the boiler temperature setpoint minus the temperature difference set here, by regulating the speed of the storage tank pump. |
| Boiler start if difference between boiler setpoint and top store is larger                                  | 15°C | If the difference between the top store and the boiler setpoint is greater than the specified value, the boiler starts.   |
| Load storage tank completely if temperature difference between boiler and bottom storage tank is lower than | 10°C | Temperature difference between boiler and storage tank temperature to enable storage tank loading.  |
| Top store temp. when the start-up relief valve switches to bottom store                                     | 60°C | If the temperature set is exceeded at sensor 0.1 the start relief valve switches to bottom storage tank   |
| Storage tank charge is 100% at boiler setpoint parameter  | 4°C  | 100% storage tank charge is calculated from the specified boiler temperature setpoint minus the specified value.  |
| Store charge is 0% at the following temperature (absolute value)  | 30°C | If the average temperature in the storage tank is less than the specified value, the storage tank has a charge of 0%.   |

5.4.3 Service parameters of the storage tank



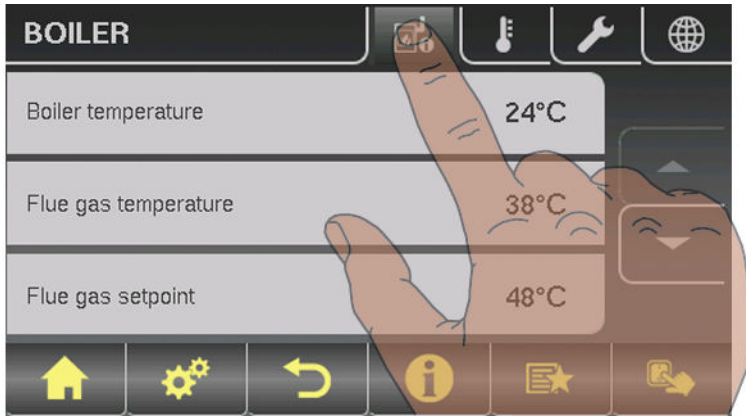
| Parameter  |    | Description  |
|--|----|--|
| Enable heating circuit pump 0 according to top store               | NO | NO: Release of heating circuit pump 0 from boiler temperature<br>Temperature settings for the boiler<br>Parameter "Minimum boiler temperature to release all pumps".<br>YES: Release of heating circuit pump 0 from top storage tank temp.<br>Temperature settings for the storage tank<br>Parameter "Heating circuit release from following storage tank temperature" |
| Residual heat use  | NO | The residual energy is diverted to the DHW tank, the parameter "Pumps start at" is ignored. The pump is activated at minimum speed until the boiler temperature is lower than the bottom storage tank temperature + 3°C.<br><b>NOTE:</b> Only possible with return temperature control using mixing valve!   |
| Mid store controller active?<br>If No the sensor is only a display | NO | NO<br>Middle storage tank temperature sensor is used to display the temp.<br>YES<br>Middle storage tank temperature sensor is used for the border layer loading function.  |

|   |             |   |
|---|-------------|---|
| Which sensor is used for storage tank top                         | 0.1         | Parameter display depends on the system.<br>Observe the information on the hydraulic system in the "Lambdatronic S 3200 energy systems" documents.  |
| Which sensor is used for storage tank sensor 2                    | 0.4         |   |
| Which sensor is used for storage tank sensor 3                    | 0.6         |   |
| Which sensor is used for middle storage tank                      | 0.6         |   |
| Which sensor is used for bottom storage tank                      | 0.2         |   |
| Which pump is used for the storage tank                           | 0.1         |   |
| PDM setting for storage tank pump                                 | Normal pump |   |
| Minimum storage tank pump speed                                   | 45%         | Adjustment of the minimum speed to the pump type. (Set the pump mode according to pump manufacturer's instructions)   |
| Maximum storage tank pump speed                                   | 100%        | If you need to limit the maximum speed of the storage tank pump for systemic reasons, you can do so by adjusting this parameter.  |
| Refill calculation active (sensors have to be assigned correctly) | NO          | For a recommendation regarding the amount of fuel required to load up the layered tank to appear on the display when opening the insulated door, set this parameter to "YES".   |
| Is a hygienic layered tank used?                                  | NO          | If a hygienic layered tank (combi tank) is used, this parameter must be set to "YES".   |
| Volume of storage tank used                                       | 2000 L      | To calculate the amount of firewood required to load the layered tank, enter the volume of the layered tank installed here.   |
| Pump outlet for store relief valve                                | 8.1         | This outlet remains active until an adjustable temperature has been reached at the top storage tank so that only the top part of the storage tank needs to be heated. Once this temperature has been reached, the outlet becomes inactive and the entire store volume is available to the boiler. |
| Invert pump outlet for store relief valve                         | NO          | If the valve switches incorrectly, the way it is controlled can be adjusted using this parameter.   |

## 5.5 Menu - Boiler

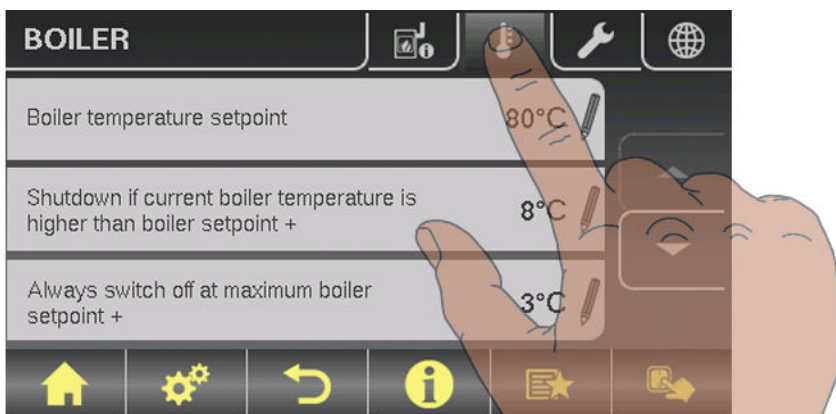
⇒ See "Navigation within the system menu" [page 31]

### 5.5.1 Status displays for the boiler



| Parameter                      |       | Description   |
|--------------------------------|-------|---|
| Boiler temperature             | 80°C  | Display of the current values for the relevant parameter.<br>:<br>: |
| Flue gas temperature           | 176°C |   |
| Flue gas setpoint              | 178°C |   |
| Boiler control variable        | 95%   |   |
| ID fan control                 | 80%   |   |
| ID fan speed                   | 2350U |   |
| Primary air                    | 0%    |   |
| Position of primary air flap   | 6%    |   |
| Secondary air                  | 99%   |   |
| Position of secondary air flap | 95%   |   |
| Sensor 1                       | 66°C  |   |
| Return feed sensor             | 58°C  |   |

### 5.5.2 Temperature settings for the boiler



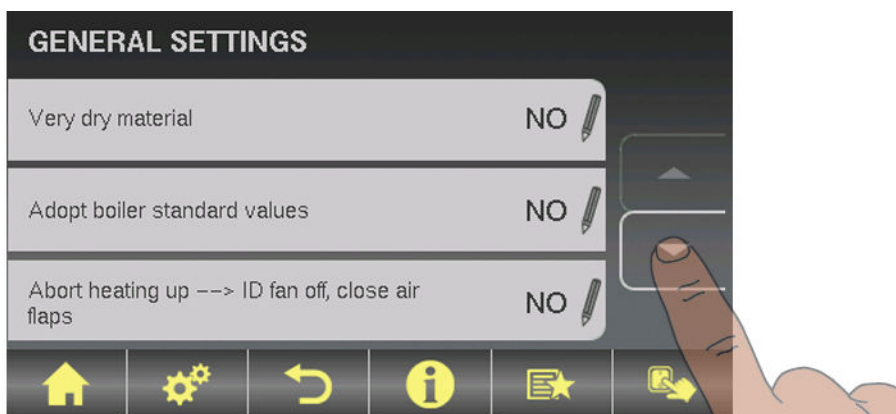
| Parameter   |      | Description  |
|---|------|--|
| Boiler temperature setpoint   | 80°C | The boiler temperature is regulated to this temperature.   |
| Shutdown if current boiler temperature is higher than boiler setpoint + | 5°C  | If the boiler temperature exceeds the setpoint by this parameter value, the boiler switches to "slumber" status.   |
| Always switch off at maximum boiler setpoint +                          | 3°C  | If the boiler temperature exceeds the maximum setpoint by this parameter, the boiler switches to "slumber" status. The heating circuit and store loading pump will also begin to run to cool the boiler. |
| Minimum boiler temperature to release all pumps                         | 65°C | The pumps are activated at this boiler temperature. (Hysteresis 2°C)   |
| Minimum return temperature  | 60°C | The minimum temperature required of the return to the boiler.  |

### 5.5.3 Service parameters of the boiler



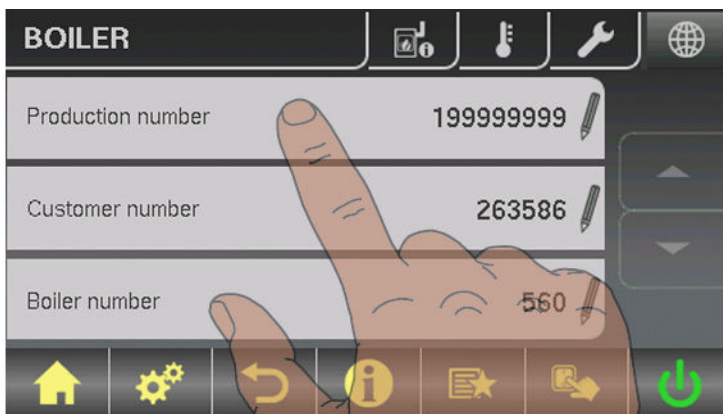
| Parameter                          |       | Description  |
|------------------------------------|-------|--|
| Mixer runtime                      | 240 s | Set mixer runtime of the mixer in use.<br><input type="checkbox"/> Recommendation to reduce mixer vibration<br>Do not set to < 150 s |
| Output fire off message using HKP0 | NO    | If the boiler changes to "Off" status, the HKP0 output is closed.  |

### 5.5.4 General Settings



| Parameter   |     | Description   |
|---|-----|---|
| Very dry material (w < 15%) parameter adopt next line | NO  | If this parameter is set to "YES" and then the parameter "Adopt boiler standard values" is set to "YES", the parameters are automatically adjusted for very dry firewood. |
| Adopt boiler standard values                          | NO  | If this parameter is set to "YES", the current parameters for the selected boiler are set. After the values have been adopted the parameter jumps to "NO".                |
| Abort heating up --> ID fan off, close air flaps      | NO  | If this parameter is set to "YES", the boiler heating up process can be aborted.<br>NOTE: Criteria for "Off" status must be fulfilled.                                    |
| Modem installed                                       | NO  | If the boiler has a modem for data transfer, this value must be set to "YES".   |
| Memory cycle of data logger                           | 5 s | Do not change this value!<br>This is the memory cycle used for saving data onto the data logger.  |
| Send a line break when ASCII data output on COM2      | NO  |   |
| COM 2 is used as a MODBUS interface                   | NO  | YES:<br>The COM 2 interface can be used for connection with a MODBUS (RTU / ASCII)<br>NO:<br>The COM 2 interface sends the most important boiler values every second      |
| MODBUS address  | 2   | Adjustable parameters for MODBUS  |
| MODBUS protocol (1 – RTU / 2 – ASCII)                 | 1   |   |
| Set hours since last maintenance to 0                 | NO  | To reset the counter "Hours since last maintenance", this parameter must be set to "YES". After the has been reset, the parameter jumps to "NO".                          |

### Operator data

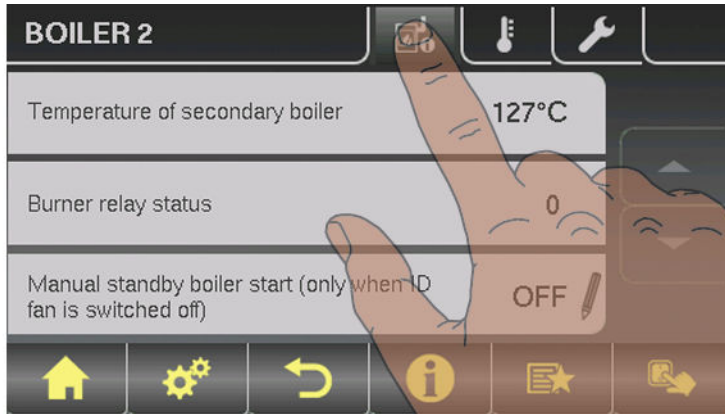


| Parameter     |           | Description  |
|---------------|-----------|--|
| Facility name | 199999999 | For unique identification of the boiler on the froeling-connect.com server, the facility number listed on the identification plate must be set here. |
| Customer no.  | 263586    | If both the customer and the boiler number are set, they are automatically transferred into the commissioning report when it is saved.               |
| Boiler number | 560       |  |

## 5.6 Menu - Boiler 2

⇒ See "Navigation within the system menu" [page 31]

### 5.6.1 Status displays for the backup boiler



| Parameter   |      | Description   |
|---|------|---|
| Temperature of standby boiler                                     | 23°C | Display of the current temperature of the standby boiler                                      |
| Burner relay status   | 0    | Shows the current status of the burner relay  |
| Manual start of standby boiler (only when ID fan is switched off) | OFF  | When the parameter is activated the standby boiler starts.<br>Warning! Burner blockage noted. |

### 5.6.2 Temperature settings for the backup boiler



| Parameter  |      | Description   |
|--|------|---|
| Standby boiler start delay                                     | 10 m | Start delay of the burner relay if the boiler fails (the boiler status is off, fault or shut down and the boiler temperature is 5°C below the setpoint). In storage mode the burner relay, however, only comes on when the storage tank has cooled down.<br>(Top storage tank temperature is lower than the highest required temperature) |
| Standby boiler start, if storage tank top temperature is below | 20°C | Temperature at the top of the storage tank, which the temperature must fall below for the standby boiler to be activated  |



|  |      |   |
|--|------|---|
| Standby boiler minimum runtime                                 | 5 m  | Standby boiler minimum runtime  |
| Minimum temperature of standby boiler                          | 55°C | Minimum temperature of the standby boiler for release of standby boiler unloading output.   |
| Temperature difference between standby boiler and storage tank | 10°C | Minimum temperature difference between standby boiler and storage tank, which releases secondary boiler unloading output.                 |
| Oil valve shut delay   | 30s  | The switching back of the isolating valve is delayed by the specified time.   |
| Standby boiler delivery temperature                            | 95°C | If the standby boiler exceeds the specified temperature, the isolating valve switches and skims the boiler (only with hydraulic system 3) |

### 5.6.3 Service parameters of the backup boiler



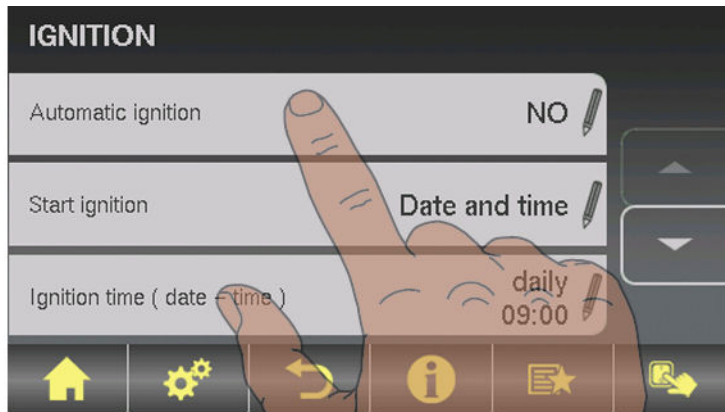
| Parameter  |             | Description  |
|--|-------------|--|
| Control backup boiler variably to the target value                                 | YES         | If the backup boiler has no independent control, the main control takes over control of the boiler setpoints of the backup boiler.   |
| Which sensor is used for standby boiler<br>Which sensor is used for back-up boiler | 0.5         | Bus address of the sensor used.<br>⇒ See "Setting the module address" [page 20]<br>Observe the information on hydraulic systems in the "Lambdatronic S 3200 energy systems" documents.   |
| Which output is used for unloading backup boiler                                   | Pump 1      |  |
| PWM setting for solar collector pump   | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PWM / field pump</li> <li>▪ PWM / solar pump</li> <li>▪ PWM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> Properties of the respective setting:<br>⇒ See "PWM / 0 - 10V settings" [page 102] |
| Minimum speed of boiler 2 pump   | 45%         | Adjustment of the minimum speed to the pump type. (Set the pump mode according to pump manufacturer's instructions)  |
| Maximum speed of boiler 2 pump   | 100%        | If you need to limit the maximum speed of the boiler 2 pump for systemic reasons, you can do so by adjusting this parameter.   |
| Invert backup boiler isolating valve   | NO          | For DHW tank loading through the backup boiler, the isolating valve is activated with 230V. If the valve switches incorrectly, this parameter can be adjusted.   |

| Parameter                         |            | Description  |
|-----------------------------------|------------|--|
| Which second boiler is installed? | Oil boiler | Standby boiler type:<br>- - OIL BOILER<br>- MANUALLY FED<br>- AUT. FED<br>- GAS BOILER |
| Burner relays                     | A 0        |  |



## 5.7 Menu - Ignition

⇒ See "Navigation within the system menu" [page 31]



| Parameter          |               | Description   |
|--------------------|---------------|---|
| Automatic Ignition | YES           | Parameter for switching automatic ignition on/off   |
| Start ignition     | Date and time | Determines how ignition takes place <ul style="list-style-type: none"> <li>▪ <b>Date and time:</b> see parameter "Ignition time"</li> <li>▪ <b>In approx. 15 min:</b> ignition takes place immediately after "Preventilation" status</li> <li>▪ <b>Ext. release:</b> If the boiler release contact is closed at the core module, ignition starts</li> <li>▪ <b>Buffer tank min:</b> see parameter "Ignition time"</li> <li>▪ <b>Storage tank &lt; outfeed max:</b> see parameter "Ignition time"</li> </ul> |

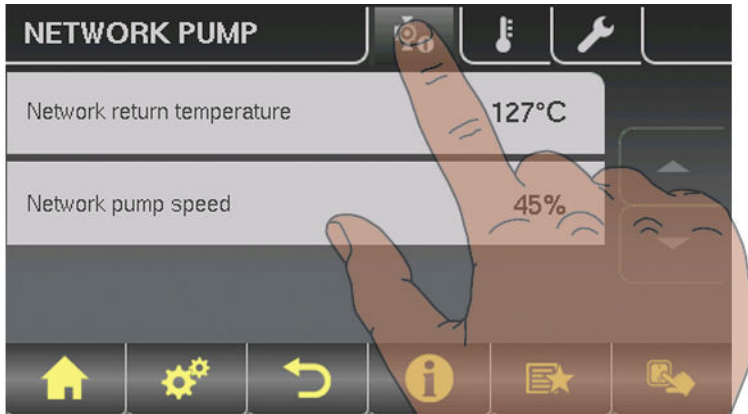
| Parameter                   |               | Description   |
|-----------------------------|---------------|---|
| Ignition time (date - time) | 05/10 – 20:00 | <p>Day (date or daily) and time setting for the start of ignition. The parameter is only active when the "Start ignition" parameter is set to "Date and time", "Buffer tank min" or "Buffer &lt; f.flow".</p> <p><b>NOTICE! The specified date must not be more than two calendar months in the future and not more than two months in the past!</b></p> <p><b>NOTICE! The boiler status must generally be "Ignition wait" for ignition to start. Follow the instructions for heating up with the automatic ignition.</b></p> <p>Heating up with automatic ignition</p> <p><b>"Date and time" method:</b><br/>Ignition starts at the specified time exactly. If the parameter is set to "daily" instead of the date, ignition starts every day at the specified time.</p> <p><b>"Buffer tank min" method:</b><br/>The ignition process starts if heat is requested from the storage tank from the specified time (parameter "Boiler start if difference between boiler setpoint and top store is larger"). The period applies from the specified time until 24:00 h on the specified date. If the specified time is not subsequently changed and ignition is not disabled, the store loading criterion applies daily from the specified time.</p> <p><b>"Buffer &lt; f.flow" method:</b><br/>The maximum flow temperature required by the system environment (e.g. heating circuit) is compared with the current storage tank temperature from the specified time. If the top storage tank temperature falls below the maximum flow temperature setpoint, the ignition process starts. The period applies from the specified time until 24:00 h on the specified date. If the specified time is not subsequently changed and ignition is not disabled, the start criterion applies daily from the specified time.</p> |
| Maximum ign. duration       | 15 m          | Specifies how long the ignition procedure should last. "Heating" status must be reached within this time.   |

⇒ See "Temperature settings for the storage tank" [page 64]

## 5.8 Menu - Network pump

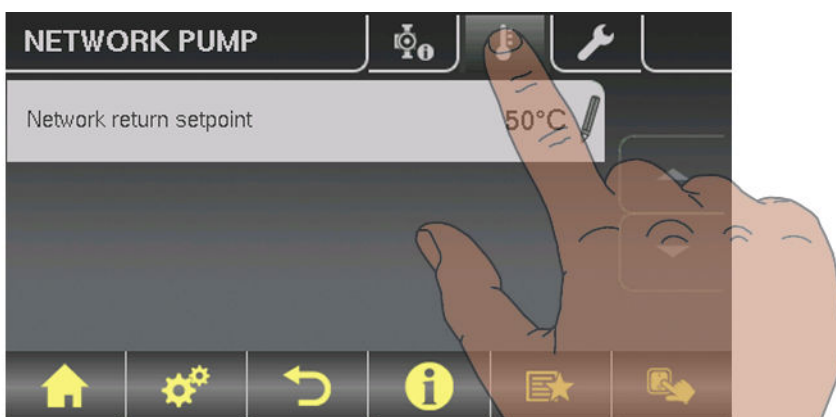
⇒ See "Navigation within the system menu" [page 31]

### 5.8.1 Network pump status displays



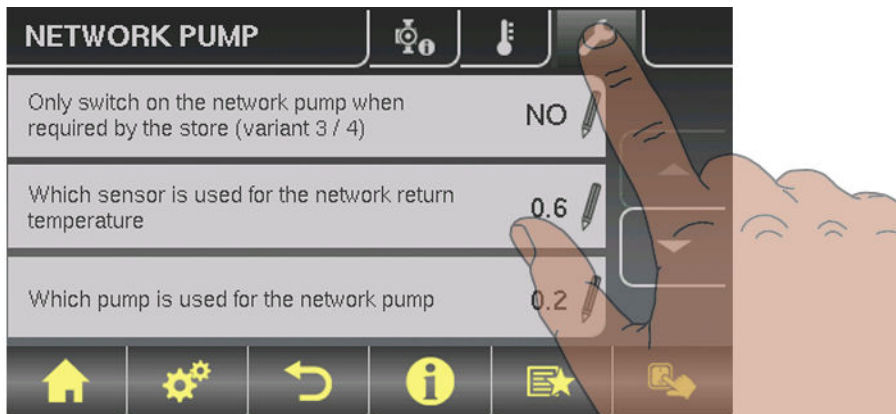
| Parameter                   |      | Description   |
|-----------------------------|------|---|
| Network return temperature  | 40°C | Display of the current values for the relevant parameter. Position of the sensors and pumps depending on the system used:<br>Note the information on multiple house diagrams in the "Lambdatronic S 3200 energy systems" documents. |
| Network pump speed          | 60%  |   |
| Return temperature feeder 1 | 0°C  |   |
| Speed, feeder 1             | 0%   |   |
| Return temperature feeder 2 | 0°C  |   |
| Speed, feeder pump 2        | 0%   |   |

### 5.8.2 Network pump temperature settings



| Parameter                               |      | Description   |
|---|------|---|
| Network return temperature setpoint     | 50°C | Settings for the desired network temperature setpoints. Position of the sensors depending on the system used:<br>Note the information on multiple house diagrams in the "Lambdatronic S 3200 energy systems" documents. |
| Return temperature setpoint at feeder 1 | 50°C |   |
| Return temperature setpoint at feeder 2 | 50°C |   |

### 5.8.3 Service parameters for the network pump



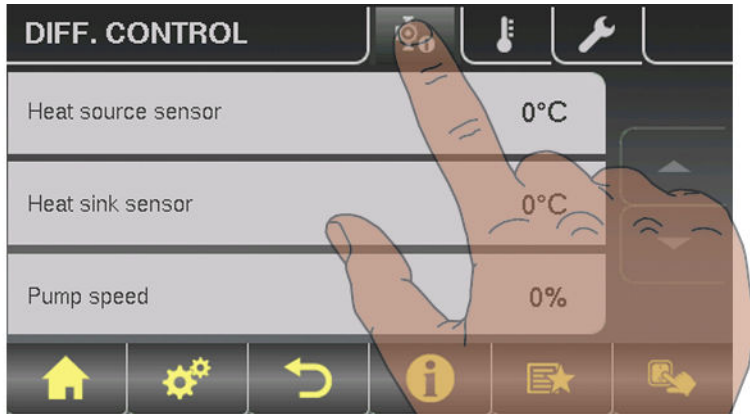
| Parameter   |             | Description  |
|---|-------------|--|
| Only switch on the network pump when required by the store (variant 3 / 4 only) | NO          | <p>YES:<br/>The network pump switches on, if there is a requirement from a storage tank.</p> <p>NO:<br/>The network pump switches on, if there is a requirement from a storage tank, a DHW tank or a heating circuit.</p> <p><b>With variant 3 only storage tanks 2, 3 and 4 are considered.</b></p>   |
| Which sensor is used for the network return temperature                         | 0.6         | <p>Bus addresses of the sensors used, depending on the system</p> <p>⇒ See "Setting the module address" [page 20]</p>  |
| Which pump is used for the network pump   | 0.2         | <p>Observe the information on hydraulic systems in the "Lambdatronic S 3200 energy systems" documents.</p>   |
| PWM setting for network pump  | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PWM / field pump</li> <li>▪ PWM / solar pump</li> <li>▪ PWM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> <p>Properties of the respective setting:<br/>⇒ See "PWM / 0 - 10V settings" [page 102]</p> |
| Minimum speed of network pump   | 45%         | Adjustment of the minimum speed to the pump type. (Set the pump mode according to pump manufacturer's instructions)  |
| Maximum speed for network pump  | 100%        | If you need to limit the maximum speed of the storage tank pump for systemic reasons, you can do so by adjusting this parameter.   |
| Which sensor is used for feeder 1   | 1.6         | <p>Bus addresses of the sensors used, depending on the system</p> <p>⇒ See "Setting the module address" [page 20]</p>  |
| Which pump is used for feeder 1   | 1.1         | Observe the information on hydraulic systems in the "Lambdatronic S 3200 energy systems" documents.  |

| Parameter                       |             | Description   |
|---------------------------------|-------------|---|
| PWM setting for feeder pump 1   | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PWM / field pump</li> <li>▪ PWM / solar pump</li> <li>▪ PWM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> <p>Properties of the respective setting:<br/> ⇒ See "PWM / 0 - 10V settings" [page 102]</p> |
| Minimum speed for feeder pump 1 | 45%         | Adjustment of the minimum speed to the pump type. (Set the pump mode according to pump manufacturer's instructions)   |
| Maximum speed for feeder pump 1 | 100%        | If you need to limit the maximum speed of the storage tank pump for systemic reasons, you can do so by adjusting this parameter.  |

## 5.9 Menu - Difference regulator

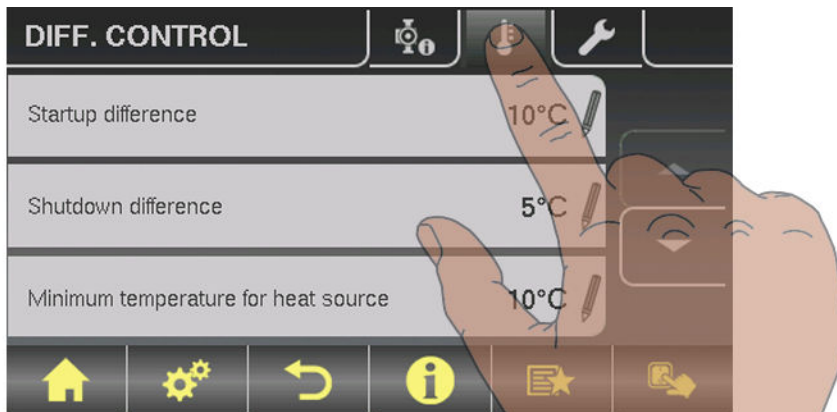
⇒ See "Navigation within the system menu" [page 31]

### 5.9.1 Status displays for the difference regulator



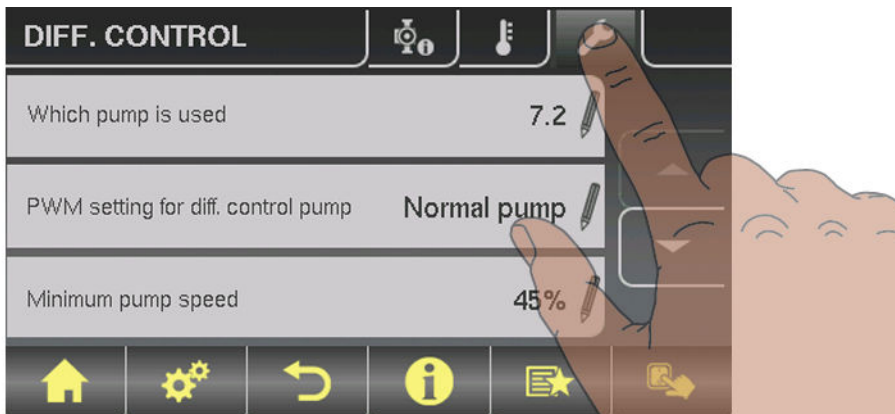
| Parameter          |      | Description  |
|--------------------|------|--|
| Heat source sensor | 70°C | Current temperature of the heat source (heat distributor, e.g. storage tank) |
| Heat sink sensor   | 60°C | Current temperature of the heat sink (user, e.g. DHW tank)                   |
| Pump speed         | 45%  | Current pump speed   |

### 5.9.2 Temperature settings for the difference regulator



| Parameter                           |       | Description  |
|-------------------------------------|-------|--|
| Startup difference                  | 10°C  | If the temperature difference between the heat source and the heat sink exceeds this value, the pump activates           |
| Shutdown difference                 | 5°C   | If the temperature difference between the heat source and the heat sink falls below this value, the pump is deactivated. |
| Minimum temperature for heat source | 10°C  | Temperature settings for regulating range of the differential temperature regulating output.                             |
| Maximum temperature for heat sink   | 100°C | The standard settings of 10°C or 100°C are selected so that the values in normal operation stay outside a limit.         |

5.9.3 Service parameters for the difference regulator

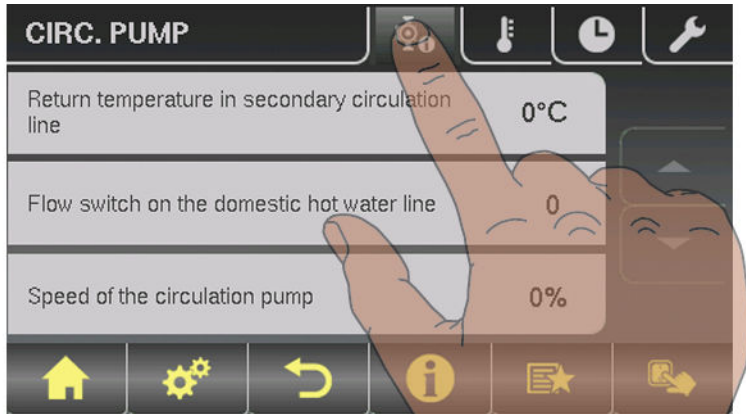


| Parameter                                |             | Description  |
|--|-------------|--|
| Which pump is used                       | 7.2         | Bus addresses of the sensors used, depending on the system<br>⇒ See "Setting the module address" [page 20]<br>Observe the information on hydraulic systems in the "Lambdatronic S 3200 energy systems" documents.  |
| PDM setting for diff. controller pump    | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PDM / field pump</li> <li>▪ PDM / solar pump</li> <li>▪ PDM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> Properties of the respective setting:<br>⇒ See "PWM / 0 - 10V settings" [page 102] |
| Minimum pump speed                       | 45%         | Adjustment of the minimum speed to the pump type. (Set the pump mode according to pump manufacturer's instructions)  |
| Maximum pump speed                       | 100%        | If you need to limit the maximum speed of the diff. controller pump for systemic reasons, you can do so by adjusting this parameter.   |
| Which sensor is used for the heat source | 7.5         | Bus addresses of the sensors used, depending on the system<br>⇒ See "Setting the module address" [page 20]   |
| Which sensor is used for the heat sink   | 7.6         | Observe the information on hydraulic systems in the "Lambdatronic S 3200 energy systems" documents.  |
| Sensor monitoring                        | YES         | If relatively low temperatures (< 5°C) occur when using the diff. controller, setting the parameter to "NO" suppresses the error message   |

## 5.10 Menu - Circulation pump

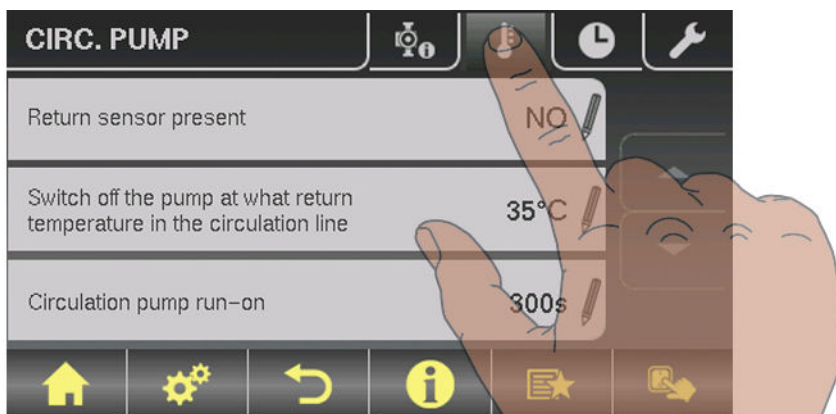
⇒ See "Navigation within the system menu" [page 31]

### 5.10.1 Status displays for the circulation pump



| Parameter                                  |      | Description  |
|--|------|--|
| Return temperature in circulation line     | 45°C | Shows the current temperature at the return sensor of the circulation line. If the parameter "Return sensor present" is set to "NO", 0°C is permanently displayed. |
| Flow switch on the domestic hot water line | 1    | Shows the current status of the flow sensor.<br>0 ... No flow at the valve<br>1 ... Valve registers flow   |
| Speed of the circulation pump              | 100% | Current circulation pump speed   |

### 5.10.2 Temperature settings for the circulation pump





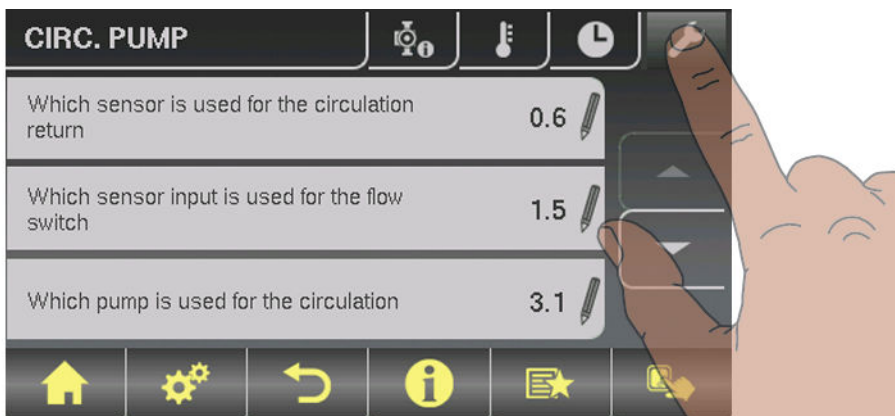
| Parameter  |      | Description  |
|--|------|--|
| Is a return sensor (present)?  | YES  | <p>YES:<br/>The circulation pump is controlled according to time program and temperature at the sensor. In conjunction with the use of a flow valve, the circulation pump is also activated at a signal from the flow valve.</p> <p>NO:<br/>The circulation pump is controlled according to time program. In conjunction with the use of a flow valve, the circulation pump is also activated at a signal from the flow valve.</p> <p><b>Connect the flow sensor as the return sensor!</b></p> |
| Switch off the pump at what return temperature in the circulation line | 50°C | <p>Parameter only relevant when a return sensor is used!<br/>If the set temperature is reached, the circulation pump shuts down.</p>   |
| Circulation pump run-on  | 300s | <p>Parameter only when a flow valve is used!<br/>If the flow valve does not register any more flow, the circulation pump carries on running for the time set.</p>  |

### 5.10.3 Time settings for the circulation pump



⇒ See "Setting times" [page 35]

### 5.10.4 Service parameters of the circulation pump

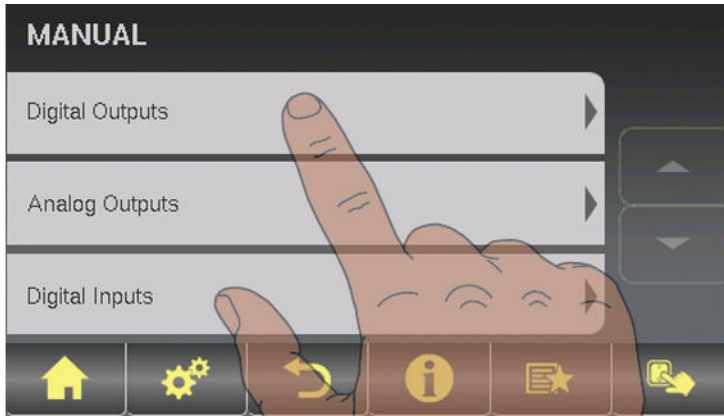


| Parameter                                       |             | Description  |
|---|-------------|--|
| Which sensor is used for the circulation return | 0.6         | Bus addresses of the sensors and pumps used, depending on the system<br>⇒ See "Setting the module address" [page 20]   |
| Which sensor input is used for the flow switch  | 1.5         | Observe the information on hydraulic systems in the "Lambdatronic S 3200 energy systems" documents.  |
| Which pump is used for the circulation          | 3.1         |  |
| PWM settings for the circulation pump           | Normal pump | <ul style="list-style-type: none"> <li>▪ Normal pump</li> <li>▪ PWM / field pump</li> <li>▪ PWM / solar pump</li> <li>▪ PWM field pump + valve</li> <li>▪ 0 – 10V / field pump</li> <li>▪ 0 – 10V / solar pump</li> <li>▪ 0 – 10V field pump + valve</li> </ul> Properties of the respective setting:<br>⇒ See "PWM / 0 - 10V settings" [page 102] |
| Minimum speed of the circulation pump           | 45%         | Adjustment of the minimum speed to the pump type. (Set the pump mode according to pump manufacturer's instructions)  |
| Maximum speed of the circulation pump           | 100%        | If you need to limit the maximum speed of the circulation pump for systemic reasons, you can do so by adjusting this parameter.  |

### 5.11 Menu - Manual

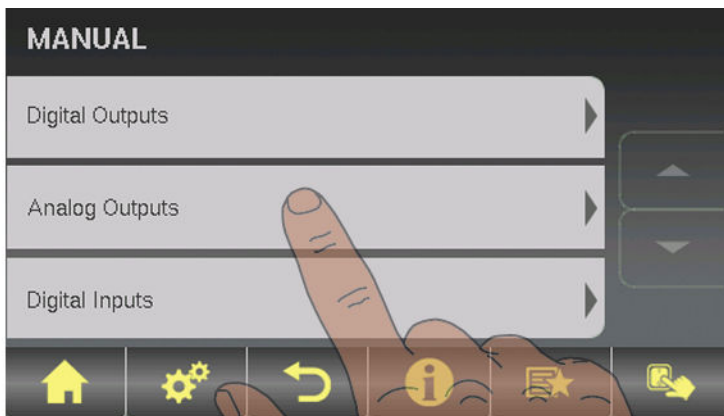
⇒ See "Navigation within the system menu" [page 31]

#### 5.11.1 Digital outputs



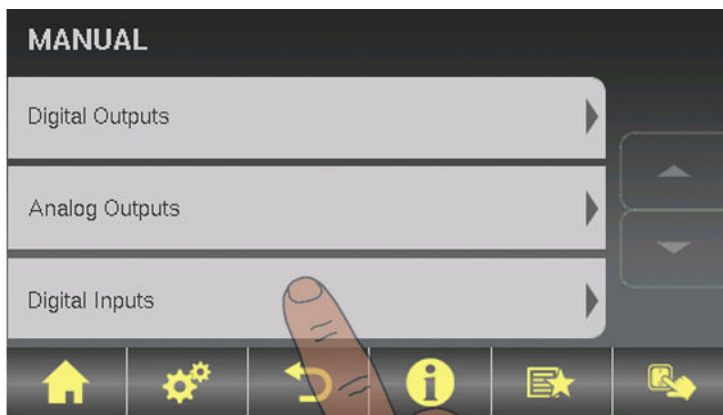
| Parameter                      |     | Description   |
|--------------------------------|-----|---|
| Heating Circuit 1 Mixer OPEN   | A 0 | Used to test the digital outputs and is intended only for service technicians. The parameters displayed vary depending on the configuration<br><b>A ... automatic</b><br><b>-A 0 ... automatic, OFF</b><br><b>-A 1 ... automatic, ON</b><br><br><b>0 ... MANUAL, OFF</b><br><b>1 ... MANUAL, ON</b> |
| Heating Circuit 1 Mixer CLOSED | A 0 |   |
| Lambda probe heating           | A 0 |   |
| Heating circuit pump 0         | A 0 |   |
| Valve for condenser            | A 0 |   |

#### 5.11.2 Analogue outputs



| Parameter             |                                | Description  |
|-----------------------|--------------------------------|--|
| Primary air           | Actual value:<br>20%<br>A 18%  | Used to test the analogue outputs and is intended only for service technicians. The parameters displayed vary depending on the configuration<br><br><b>A ... automatic</b><br><b>-A 0% ... automatic, OFF</b><br><b>-A 1% - 100% ... automatic, with % value ON</b><br><br><b>0% ... manual, OFF</b><br><b>1% - 100% ... manual, with corresponding % value ON</b> |
| Secondary air         | Actual value:<br>5%<br>A 5%    |  |
| ID Fan                | Actual value: 0<br>rpm<br>A 0% |  |
| Pump 1 on core module | A 0%                           |  |
| Pump 0.1              | A 0%                           |  |
| Pump 0.2              | A 0%                           |  |
| :                     |                                |  |
| :                     |                                |  |
| Pump 7.1              | A 0%                           |  |
| Pump 7.2              | A 0%                           |  |

### 5.11.3 Digital inputs

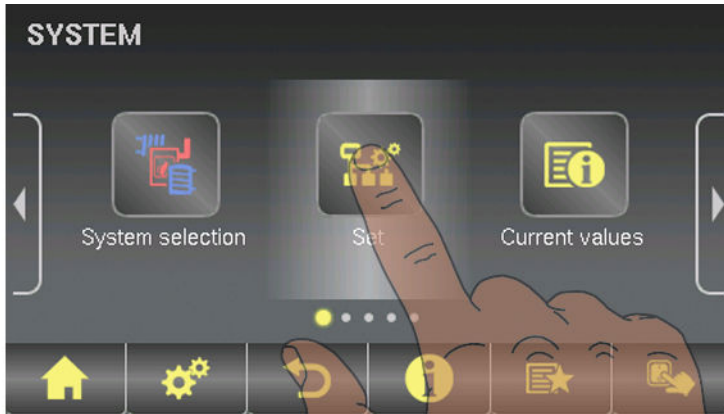


| Parameter           |     | Description   |
|---------------------|-----|---|
| Door switch         | A 0 | Used to test the digital inputs and intended only for service technicians. The parameters displayed vary depending on the configuration.<br><br><b>A ... Automatic</b><br><br><b>-A 0 ... Automatic, OFF</b><br><b>-A 1 ... Automatic, ON</b><br><br><b>0... Manual, OFF</b><br><b>1 ... Manual, ON</b> |
| Hi-limit stat input | A 0 |   |
| E-stop input        | A 0 |   |
| Boiler enable       | A 0 |   |

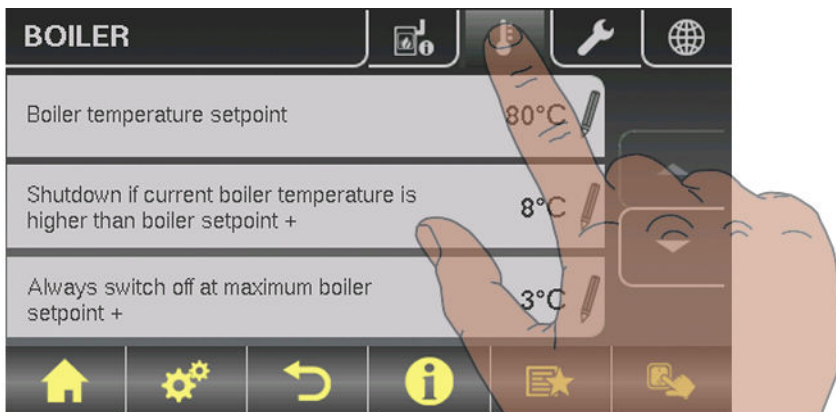
## 5.12 Menu - System

⇒ See "Navigation within the system menu" [page 31]

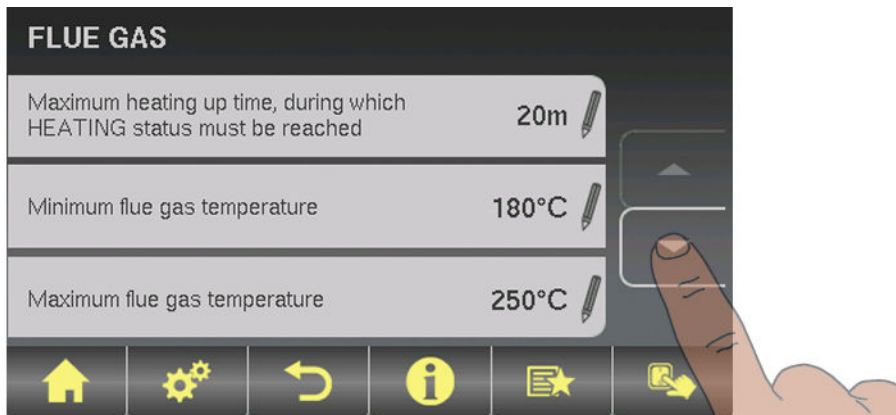
### 5.12.1 Setting



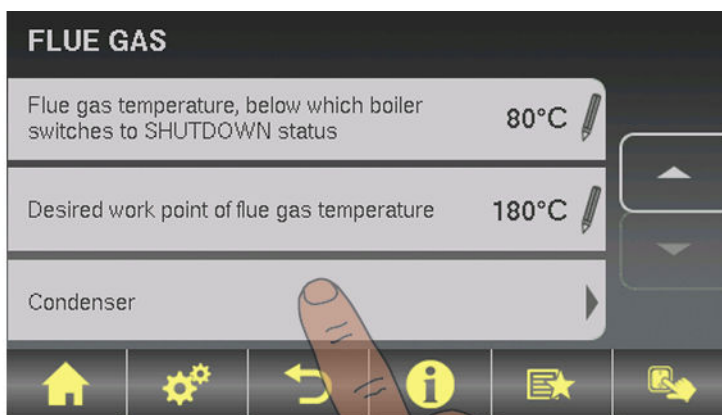
#### *Adjustable parameters: Boiler temperature*



| Parameter   |      | Description  |
|---|------|--|
| Boiler temperature setpoint   | 80°C | The boiler temperature is regulated to this temperature.   |
| Shutdown if current boiler temperature is higher than boiler setpoint + | 5°C  | If the boiler temperature exceeds the setpoint by this parameter value, the boiler switches to "slumber" status.   |
| Always switch off at maximum boiler setpoint +                          | 3°C  | If the boiler temperature exceeds the maximum setpoint by this parameter, the boiler switches to "slumber" status. The heating circuit and store loading pump will also begin to run to cool the boiler. |
| Minimum boiler temperature to release all pumps                         | 65°C | The pumps are activated at this boiler temperature. (Hysteresis 2°C)   |
| Minimum return temperature  | 60°C | The minimum temperature required of the return to the boiler.  |

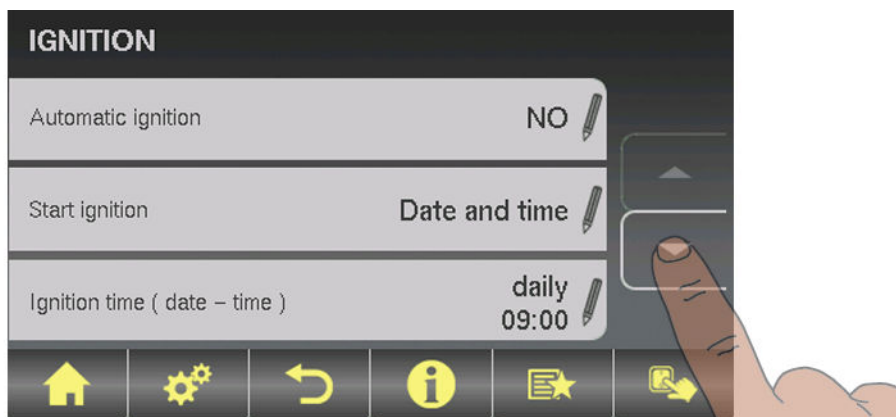
**Adjustable Parameters: Flue Gas**

| Parameter   |       | Description   |
|---|-------|---|
| Maximum heating up time, during which HEATING status must be reached              | 10m   |   |
| Minimum flue gas temperature  | 120°C | Min. setpoint for the flue gas temperature. Lowest load point for continuous operation  |
| Max. flue gas temperature   | 250°C | Max. setpoint for the flue gas temperature. Highest load point for sufficiently good level of efficiency.                             |
| Start increase of flue gas temperature  | 20°C  | Value, by which the flue gas temperature setpoint is increased when heating up.   |
| Minimum difference between flue gas temperature and boiler temperature in HEATING | 15°C  | Condition for "Heating" status  |
| Flue gas temperature, below which boiler switches to OFF status                   | 80°C  | If the flue gas temperature is below this value for the duration of the maximum heating up time, the boiler switches to "Off" status. |
| Desired work point of flue gas temperature  | 180°C |   |

**Calorific value HE**

| Parameter  |      | Description   |
|--|------|---|
| Calorific value heat exchanger installed                         | NO   | If this parameter is set to "YES", the cleaning program is activated for the calorific value heat exchanger.  |
| Calorific value heat exchanger Cleaning interval (Heating hours) | 30 h | Specifies the number of heating hours after which the calorific value heat exchanger is cleaned.  |
| Calorific value heat exchanger Cleaning duration                 | 60 s | Specifies the duration of the cleaning.   |
| On-time of spray valve. Overall cycle 20 sec                     | 100% | The entire cleaning process is set with the "Calorific value heat exchanger cleaning duration" parameter. The cleaning time is regarded as the time in which the spray valve is active. Pause times (spray valve off) are not included in the cleaning time.<br>Example:<br>100% = spray valve active for the specified time<br>75% = spray valve active for 15 sec and 5 sec pause |
| Flue gas condenser Heating: 0 min Washing processes: 0           |      | Shows the current values.   |

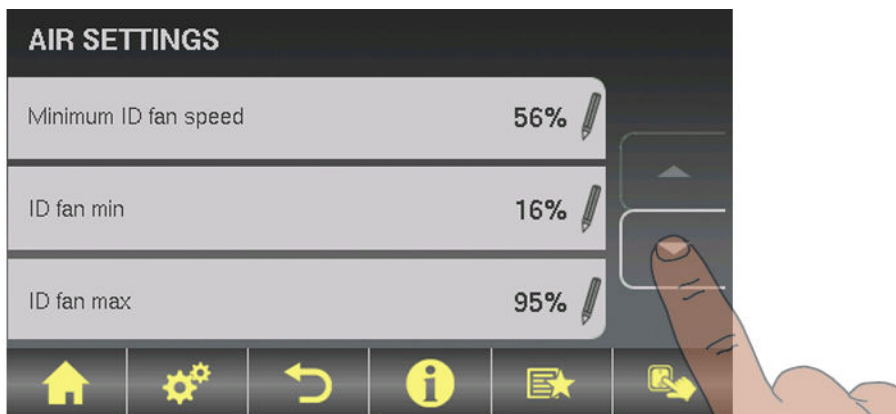
**Adjustable parameters - Ignition**



| Parameter          |               | Description   |
|--------------------|---------------|---|
| Automatic Ignition | YES           | Parameter for switching automatic ignition on/off   |
| Start ignition     | Date and time | Determines how ignition takes place <ul style="list-style-type: none"> <li>▪ <b>Date and time:</b> see parameter "Ignition time"</li> <li>▪ <b>In approx. 15 min:</b> ignition takes place immediately after "Preventilation" status</li> <li>▪ <b>Ext. release:</b> If the boiler release contact is closed at the core module, ignition starts</li> <li>▪ <b>Buffer tank min:</b> see parameter "Ignition time"</li> <li>▪ <b>Storage tank &lt; outfeed max:</b> see parameter "Ignition time"</li> </ul> |

| Parameter                   |               | Description   |
|-----------------------------|---------------|---|
| Ignition time (date - time) | 05/10 – 20:00 | <p>Day (date or daily) and time setting for the start of ignition. The parameter is only active when the "Start ignition" parameter is set to "Date and time", "Buffer tank min" or "Buffer &lt; f.flow".</p> <p><b>NOTICE! The specified date must not be more than two calendar months in the future and not more than two months in the past!</b></p> <p><b>NOTICE! The boiler status must generally be "Ignition wait" for ignition to start. Follow the instructions for heating up with the automatic ignition.</b></p> <p>Heating up with automatic ignition</p> <p><b>"Date and time" method:</b><br/>Ignition starts at the specified time exactly. If the parameter is set to "daily" instead of the date, ignition starts every day at the specified time.</p> <p><b>"Buffer tank min" method:</b><br/>The ignition process starts if heat is requested from the storage tank from the specified time (parameter "Boiler start if difference between boiler setpoint and top store is larger"). The period applies from the specified time until 24:00 h on the specified date. If the specified time is not subsequently changed and ignition is not disabled, the store loading criterion applies daily from the specified time.</p> <p><b>"Buffer &lt; f.flow" method:</b><br/>The maximum flow temperature required by the system environment (e.g. heating circuit) is compared with the current storage tank temperature from the specified time. If the top storage tank temperature falls below the maximum flow temperature setpoint, the ignition process starts. The period applies from the specified time until 24:00 h on the specified date. If the specified time is not subsequently changed and ignition is not disabled, the start criterion applies daily from the specified time.</p> |
| Maximum ign. duration       | 15 m          | Specifies how long the ignition procedure should last. "Heating" status must be reached within this time.   |

### Adjustable Parameters: Air settings

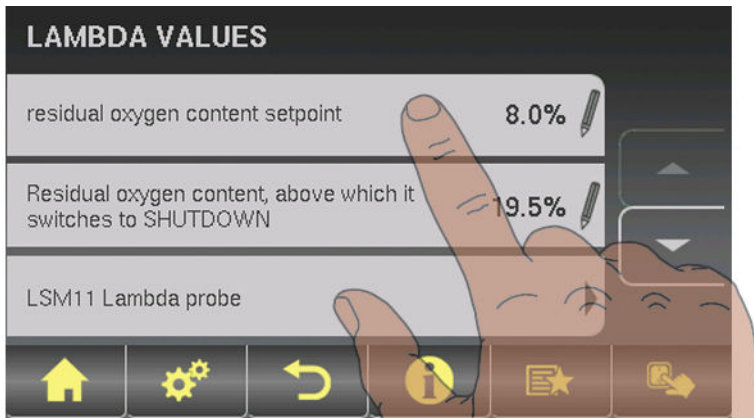


| Parameter            |     | Description  |
|----------------------|-----|--|
| Minimum ID fan speed | 35% | Adjusts the minimum speed of the fan used              |
| ID fan min           | 16% | Base point for setting the ID fan characteristic curve |
| ID fan max           | 85% | End point for setting the ID fan characteristic curve  |



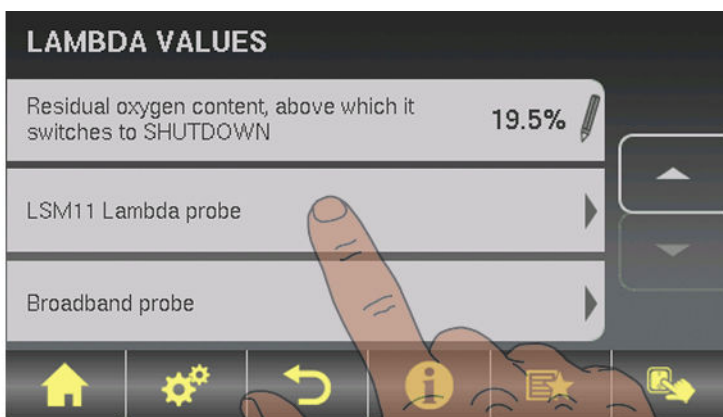
|  |      |  |
|--|------|--|
| Minimum primary air                    | 20%  | Minimum opening of the primary air flap  |
| Minimum secondary air in heating       | 10%  | Minimum opening of the secondary air flap during "Heating" status  |
| Primary air during slumber             | 20%  | Opening of the primary air flap in "Slumber" status  |
| Safety time for checking for air leaks | 90m  | In "Heating" status, if the secondary air is 0% and the flue gas temperature is over 100°C the safety time starts. If, within this time, the two values do not change, a warning is displayed. |
| Primary air opening at 0% signal       | 3%   |  |
| Primary air opening at 100% signal     | 100% |  |
| Secondary air opening at 0% signal     | 3%   |  |
| Secondary air opening at 100% signal   | 100% |  |

**Adjustable parameters: Lambda values**



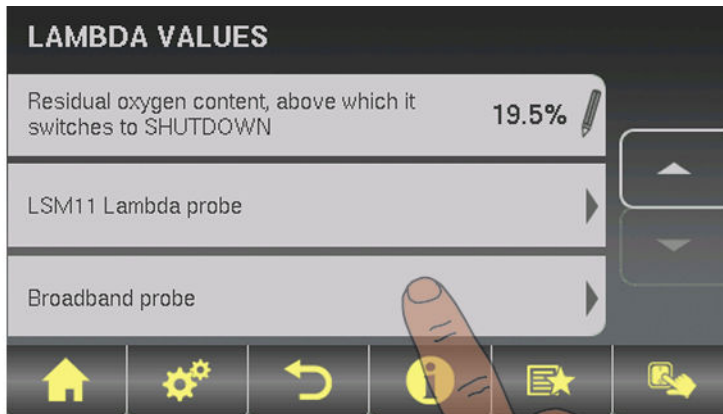
| Parameters  |       | Description  |
|---|-------|--|
| Residual oxygen content setpoint                                    | 8.0%  | The air dampers are regulated according to this target value.  |
| Residual oxygen content, above which it switches to SHUTDOWN status | 19.5% | If the residual oxygen content at "Heating" status rises above this value, after the maximum heating up time has elapsed the control switches to "Off" status. |

**Adjustable parameters: Lambda values - LSM11 Lambda probe**



| Parameter                      |         | Description  |
|--------------------------------|---------|--|
| Residual oxygen content        | 1.9%    | Shows the current values for the relevant Lambda probe parameter |
| Lambda probe voltage measured  | 52.00 m |  |
| Lambda probes correction value | 0.0     |  |
| Lambda probe voltage corrected | 52.00 m |  |

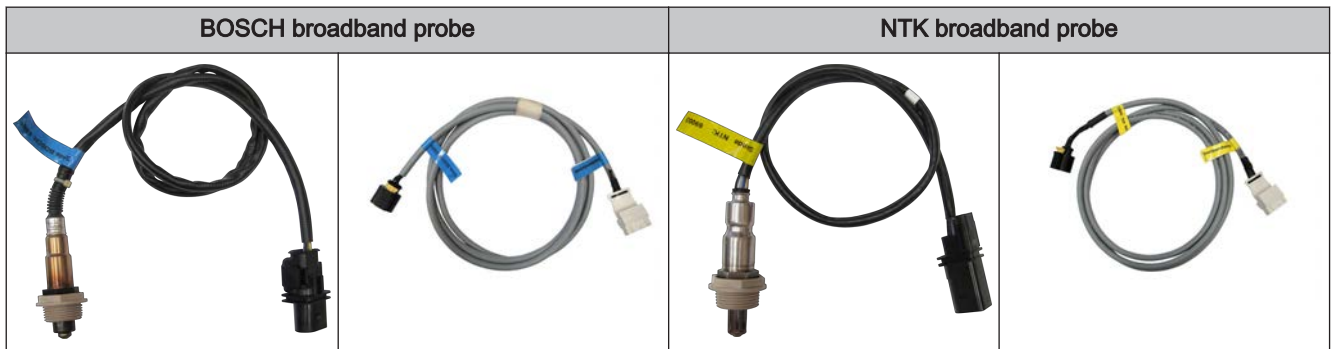
**Adjustable parameters: Lambda values – Broadband probe**



| Parameter  |        | Description   |
|--|--------|---|
| Residual oxygen content  | 1.9%   | Displays the current value  |
| Broadband probe types<br>(1...BOSCH / 2...NTK)<br>(3...LSM11 input)      | 1      | Defines the probe type used   |
| Broadband probe calibration<br>(probe must be at<br>21% O <sub>2</sub> ) | NO     | After activation of the lambda probe heating, the lambda probe can be calibrated using this value.<br>CAUTION: The probe must be at 21% O <sub>2</sub> (air). |
| Broadband probe heating current  | 0.00A  | Display of the current values for the relevant broadband probe parameter  |
| Broadband probe heating voltage  | 0.00V  |   |
| Broadband probe Nernst<br>voltage  | 0.000V |   |
| Broadband probe pump current   | 0.000m |   |
| Broadband probe internal resistance                                      | 0R     |   |

### Determining the probe type

The type of probe installed must be determined before starting calibration. To this end, coloured stickers (BOSCH = blue, NTK= yellow) are affixed to the connection cable of the probe, as well as to each end of the extension cable.



Once the type of probe has been determined, the parameters need to be adjusted accordingly in the controller.

### Starting calibration

- Set the type of probe used
  - BOSCH = 1, NTK = 2

For boilers with manual loading:

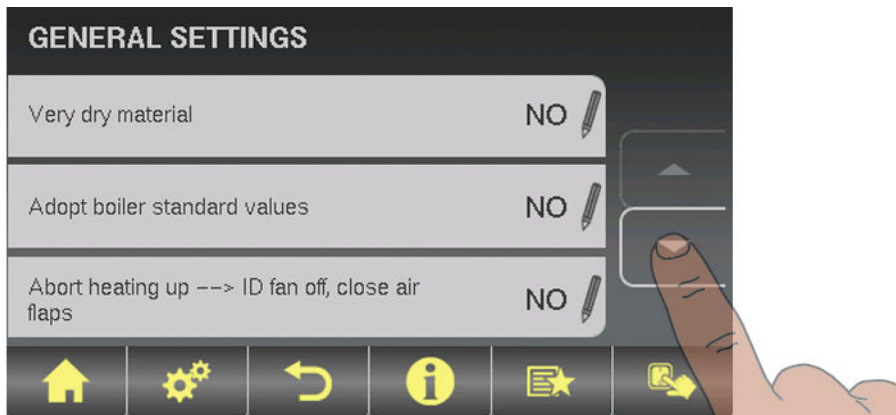
- Open the insulated door
  - Before starting calibration, the insulated door must be open for at least 3 - 4 minutes so that the probe is warm enough and the boiler is sufficiently ventilated

For boilers with automatic loading:

- Boiler must be switched off
  - Status "Boiler OFF" or "Standby"
- Set "Lambda probe heating" parameter in the "Manual" - "Digital outputs" menu to "1"
  - Heat Lambda probe for at least 2 minutes

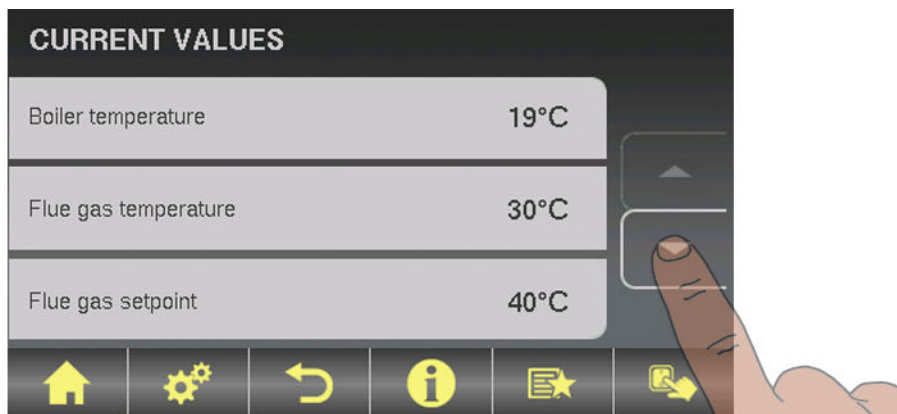
Calibrate probe:

- Go to parameter "Broadband probe calibration"
- Set parameter to "YES" and press the enter key
  - Automatic calibration of the broadband probe begins
  - Once calibration is complete the parameter is automatically set to "NO" and the broadband probe is ready for use

*Adjustable parameters: General settings*

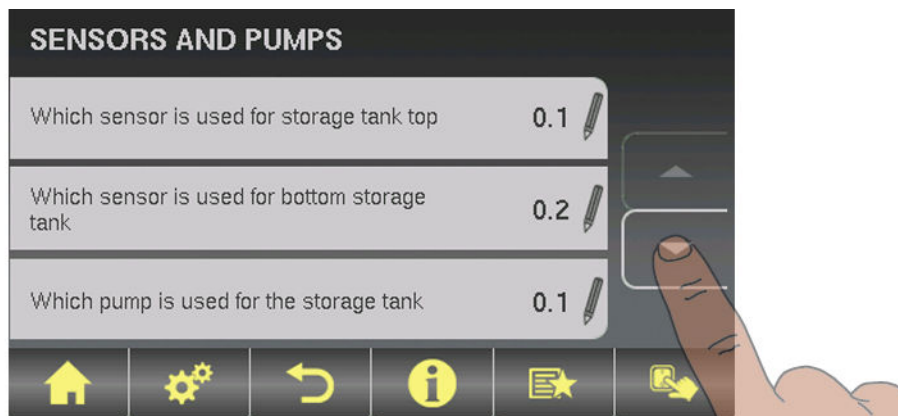
| Parameter   |     | Description   |
|---|-----|---|
| Very dry material (w < 15%) parameter adopt next line | NO  | If this parameter is set to "YES" and then the parameter "Adopt boiler standard values" is set to "YES", the parameters are automatically adjusted for very dry firewood. |
| Adopt boiler standard values                          | NO  | If this parameter is set to "YES", the current parameters for the selected boiler are set. After the values have been adopted the parameter jumps to "NO".                |
| Abort heating up --> ID fan off, close air flaps      | NO  | If this parameter is set to "YES", the boiler heating up process can be aborted.<br>NOTE: Criteria for "Off" status must be fulfilled.                                    |
| Modem installed                                       | NO  | If the boiler has a modem for data transfer, this value must be set to "YES".   |
| Memory cycle of data logger                           | 5 s | Do not change this value!<br>This is the memory cycle used for saving data onto the data logger.  |
| Send a line break when ASCII data output on COM2      | NO  |   |
| COM 2 is used as a MODBUS interface                   | NO  | YES:<br>The COM 2 interface can be used for connection with a MODBUS (RTU / ASCII)<br>NO:<br>The COM 2 interface sends the most important boiler values every second      |
| MODBUS address  | 2   | Adjustable parameters for MODBUS  |
| MODBUS protocol (1 – RTU / 2 – ASCII)                 | 1   |   |
| Set hours since last maintenance to 0                 | NO  | To reset the counter "Hours since last maintenance", this parameter must be set to "YES". After the has been reset, the parameter jumps to "NO".                          |

5.12.2 Current values



| Parameter   |          | Description   |
|---|----------|---|
| Boiler temperature  | 77°C     | Display of the current values for the relevant parameter.<br>:<br>: |
| Flue gas temperature                                      | 210°C    |   |
| Flue gas setpoint   | 212°C    |   |
| Boiler control variable                                   | 99%      |   |
| ID fan control  | 75%      |   |
| ID fan speed  | 2230 rpm |   |
| Primary air   | 20%      |   |
| Position of primary air flap                              | 19%      |   |
| Secondary air   | 5%       |   |
| Position of secondary air flap                            | 4%       |   |
| Flue gas temperature after calorific value heat exchanger | 160°C    |   |
| Outside air temperature                                   | 23°C     |   |
| Board temperature   | 33°C     |   |
| Return sensor   | 61°C     |   |
| Service hours   | 26 h     |   |
| Service hours in slumber                                  | 1 h      |   |
| Ignition service hours                                    | 0 h      |   |
| Ignition starts   | 0        |   |
| Software version<br>Version: 50.04<br>Build: 05.09        |          |   |
| Cust. no.: 263586<br>Boiler no.: 560                      |          |   |
| Service hours of boiler 2 (burner contact)                | 2        |   |

## 5.12.3 Sensors and pumps

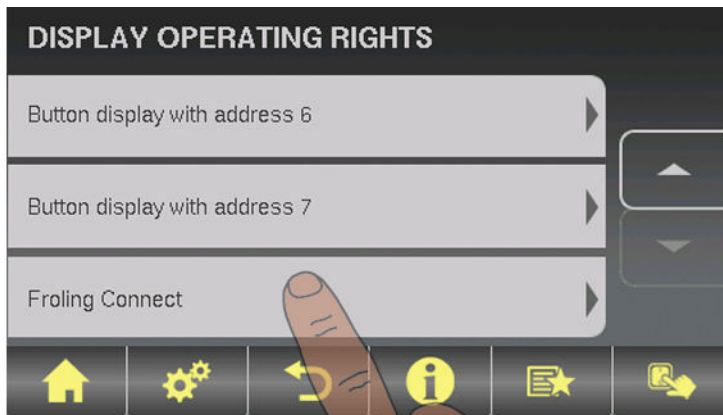


| Parameter   |        | Description  |
|---|--------|--|
| Which sensor is used for storage tank top           | 0.1    | Setting the bus addresses of the sensors and pumps used<br>⇒ See "Setting the module address" [page 20]<br>The display of the parameters varies depending on the system set.<br>Note the information on hydraulic systems in the "Lambdatronic S 3200 energy systems" documents. |
| Which sensor is used for bottom storage tank        | 0.2    |  |
| Which pump is used for the storage tank             | 0.1    |  |
| Which sensor is used for the backup boiler          | 0.5    |  |
| Which output is used for unloading standby boiler   | Pump 1 |  |
| Which sensor is used for the storage tank reference | 0.2    |  |
| Which pump is used for the solar collector          | 1.1    |  |
| Which pump is used for the solar isolating valve    | 1.2    |  |
| Which sensor is used for top DHW tank 1             | 0.3    |  |
| Which sensor is used for solar reference DHW tank 1 | 0.4    |  |
| Which sensor is used for bottom DHW tank 1          | 0.3    |  |
| Which pump is used for DHW tank 1                   | 0.2    |  |

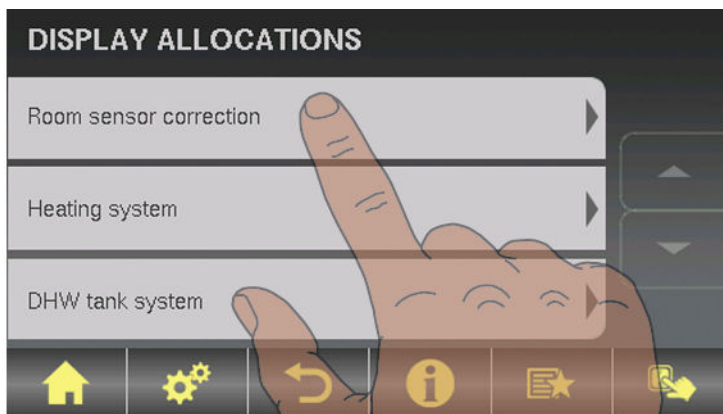
## 5.12.4 Display operating rights



| Parameter                          |                          | Description   |
|------------------------------------|--------------------------|---|
| HEATING SYSTEM:                    |                          |   |
| Allow access to heating circuit 1  | <input type="checkbox"/> | Allocate access rights for changing heating circuit parameters to the individual controls.<br>Tap the respective heating circuit to activate the access rights of the heating circuit for the control. This is indicated when the "Confirm" icon appears. |
| :                                  |                          |   |
| Allow access to heating circuit 18 | <input type="checkbox"/> |   |
| DHW TANK SYSTEM                    |                          |   |
| Allow access to DHW tank 01        | <input type="checkbox"/> | Allocate access rights for changing DHW tank parameters to the individual controls.<br>Tap the respective boiler to activate the access rights of the DHW tank for the control. This is indicated when the "Confirm" icon appears.                        |
| :                                  |                          |   |
| Allow access to DHW tank 08        | <input type="checkbox"/> |   |
| STORAGE TANK SYSTEM:               |                          |   |
| Allow access to storage tank 01    | <input type="checkbox"/> | Allocate access rights for changing storage tank parameters to the individual controls.<br>Tap the respective storage tank to activate the access rights of the storage tank for the control. This is indicated when the "Confirm" icon appears.          |
| :                                  |                          |   |
| Allow access to storage tank 04    | <input type="checkbox"/> |   |
| SOLAR SYSTEM:                      |                          |   |
| Allow access to Solar 01           | <input type="checkbox"/> | Allocate access rights for changing solar system parameters to the individual controls.<br>Tap Solar 01 to activate the access rights of the solar system for the control. This is indicated when the "Confirm" icon appears.                             |

**Froeling Connect**

| Parameter                                 |    | Description   |
|---|----|---|
| Password for boiler display               | -1 | For connection via froeling-connect.com using a touch display, a separate password must be issued for each touch display. When using a touch display for a connection via froeling-connect.com, users have the same operating rights via the online portal as on the touch display. |
| Password for touch display with address 1 | -1 |   |
| :   |    |   |
| Password for touch display with address 7 | -1 |   |

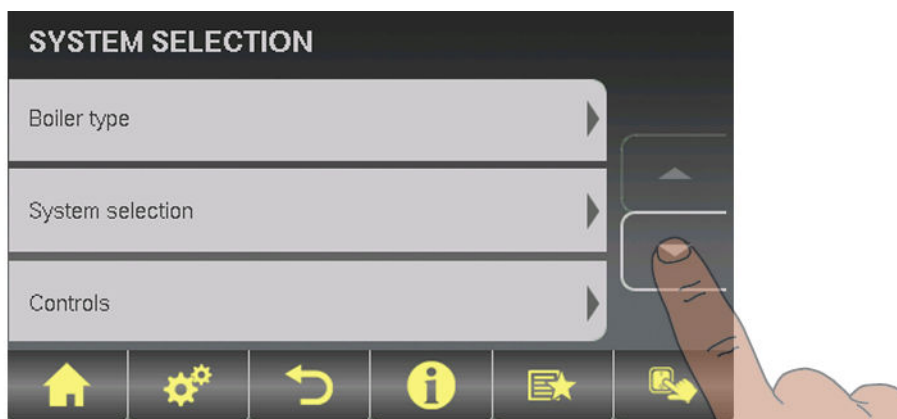
**5.12.5 Display allocation**

| Parameter   |     | Description   |
|---|-----|---|
| ROOM SENSOR CORRECTION:                                     |     |   |
| Deviation of room sensor from touch display with address 1  | 0°C | If the current room temperature does not match the displayed/evaluated value, this parameter can be used to adjust the evaluation of the room temperature sensor. |
| :   |     |   |
| Deviation of room sensor from touch display with address 7  | 0°C |   |
| Deviation of room sensor from button display with address 1 | 0°C |   |
| :   |     |   |



| Parameter  |      | Description  |
|--|------|--|
| Deviation of room sensor from button display with address 7                  | 0°C  |  |
| HEATING SYSTEM:  |      |  |
| Touch display with address 1 is allocated to the following heating circuit:  | None | Allocates the relevant control (address 1 - 7) to a particular heating circuit. WARNING! The parameters are set to "none" at the factory, so the heating circuit functions (room temperature sensor, party mode, setback mode, ...) are not possible on this control by default! |
| :  |      |  |
| Touch display with address 7 is allocated to the following heating circuit:  | None |  |
| Button display with address 1 is allocated to the following heating circuit: | None |  |
| :  |      |  |
| Button display with address 7 is allocated to the following heating circuit: | None |  |
| DHW TANK SYSTEM:   |      |  |
| Touch display with address 1 is allocated to the following DHW tank:         | None | Allocates the relevant control (address 1 - 7) to a particular DHW tank. WARNING! The parameters are set to "none" at the factory, so the hot water functions (function key) are not possible on this control by default!  |
| :  |      |  |
| Touch display with address 7 is allocated to the following DHW tank:         | None |  |
| Button display with address 1 is allocated to the following DHW tank:        | None |  |
| :  |      |  |
| Button display with address 7 is allocated to the following DHW tank:        | None |  |

### 5.12.6 System selection

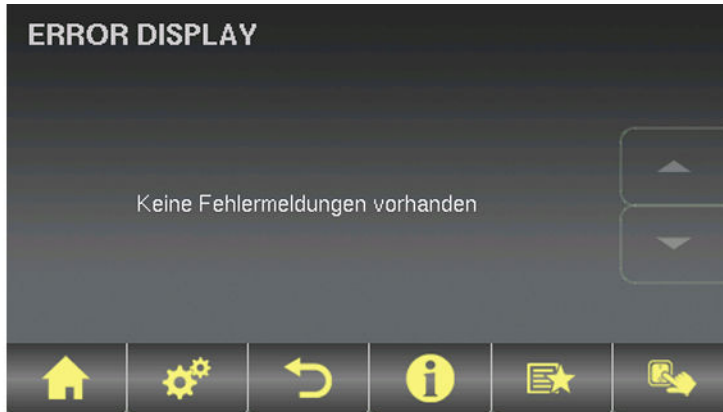


⇒ See "Setting the system selection" [page 40]

## 5.13 Menu - Diagnostics

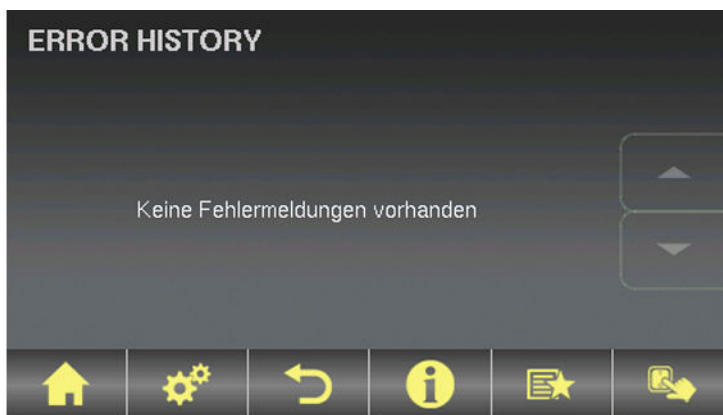
⇒ See "Navigation within the system menu" [page 31]

### 5.13.1 Error display



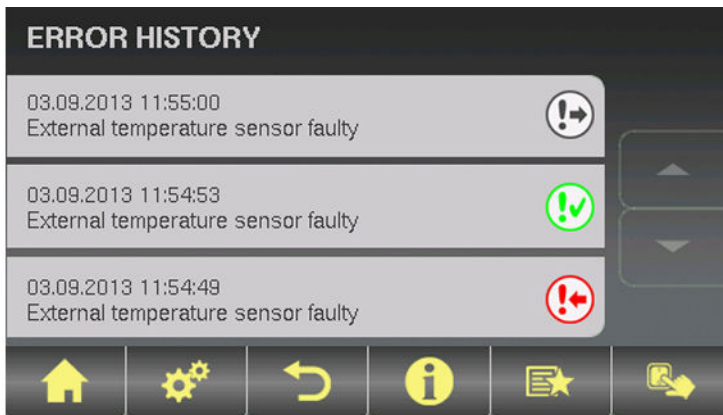
⇒ See "Troubleshooting" [page 104]




### 5.13.2 Error history



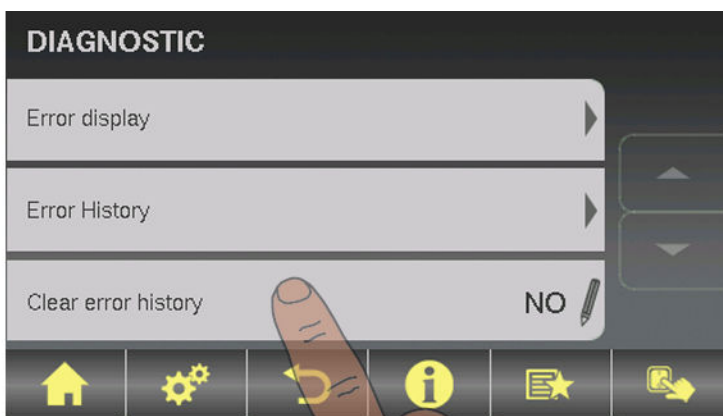
⇒ See "Troubleshooting" [page 104]

Any error messages still saved in the error history will be displayed with the relevant error text and the time they occurred.



-  This is the time the error occurred.
-  This is the time the error was acknowledged.
-  This is the time the error was rectified.

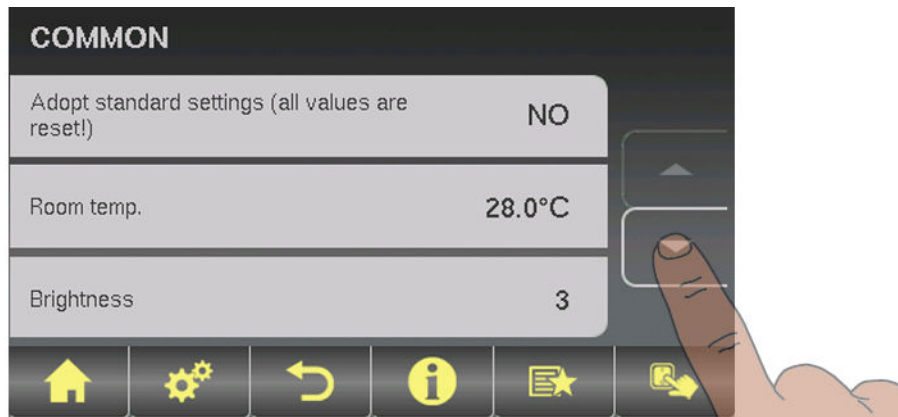
### 5.13.3 Clear error history



## 5.14 Menu - Display settings

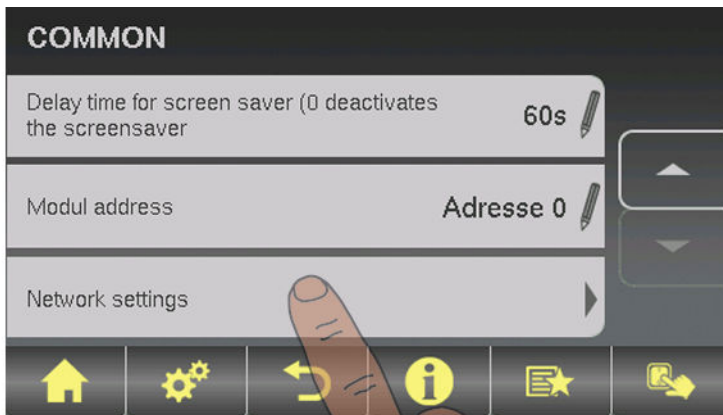
⇒ See "Navigation within the system menu" [page 31]

### 5.14.1 General



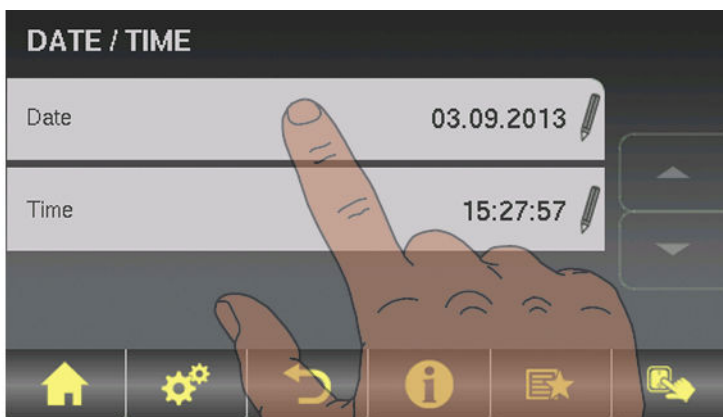
| Parameter  |              | Description  |
|--|--------------|--|
| Adopt standard settings (all values are reset)     | NO           | Adopting standard factory settings. This resets all parameters! After resetting the parameters, the boiler must be reset; otherwise, boiler functioning is no longer guaranteed.   |
| Room temperature                                   | 26.0°C       | Shows the current room temperature   |
| Brightness   | 72           | Light sensor's evaluation of the current brightness in the room for adjusting the backlight.   |
| Maximum backlight                                  | 80%          | The brighter it is in the room, the more the background of the touch display is illuminated. This is where you can limit the maximum backlight.  |
| Minimum backlight                                  | 20%          | The darker it is in the room, the less the background of the touch display is illuminated. This is where you can set the minimum backlight.  |
| Delay for screensaver (0 disables the screensaver) | 60 s         | If the screen of the touch display is not touched within the set time, the screensaver will activate and the control will go dark. To disable the screensaver, set the delay time to "0".  |
| Module address                                     | Address<br>0 | This is where you can change the module address if it is incorrectly set.<br>Module address 0: Boiler console<br>Module address 1-7: respective RBG Touch<br>Once you have changed the module address, you will need to restart the boiler controller (switch main switch on boiler off and on). |

*Network settings*



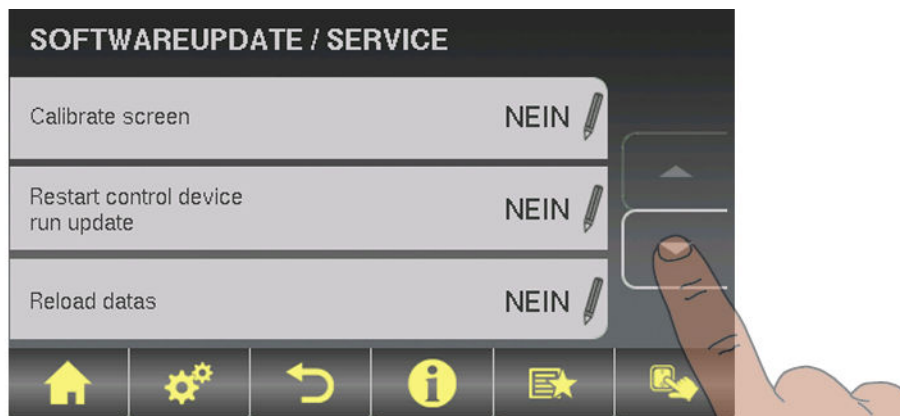
| Parameter        |               | Description   |
|------------------|---------------|---|
| Use DHCP         | ON            | IP address of touch control is automatically obtained from the network.                     |
| IP address       | 192.168.0.10  | If the parameter "Use DHCP" is set to "NO", the adjacent settings are released for editing. |
| Subnet mask      | 255.255.255.0 |   |
| Default gateway: | 0.0.0.0       |   |
| DNS server       | 0.0.0.0       |   |

**5.14.2 Date / Time**



⇒ See "Setting the date/time" [page 37]

### 5.14.3 Software update / Service



⇒ See "Updating the software of the touch control" [page 26]

## 5.15 PWM / 0 - 10V settings

| Description  |
|--|
| <ul style="list-style-type: none"><li>▪ <b>Normal pump (pump with load-tap changer)</b><br/>Set when a standard pump a switching valve with RC element is run at the respective output. When using a switching valve, set the minimum speed of the output to 100%. When a pump is used, it is controlled at the 230V output using pulse packets.</li><li>▪ <b>PDM / field pump</b><br/>There is a permanent power supply of 230V at the output for the high efficiency pump. The pump is controlled using pulse duration modulation at the respective PDM output.</li><li>▪ <b>PDM / Solar pump</b><br/>Here again, the pump is controlled by means of pulse duration modulation at the respective PDM output. In this case, however, the characteristic line is inverted and can only be used for specially marked high efficiency solar pumps.</li><li>▪ <b>PDM field Pump+valve</b><br/>The signal for the field pump is emitted at the PDM output. If the signal exceeds 2%, the 230V output is switched on. If the signal is below 2% for more than 4 minutes, the output is switched off again.</li><li>▪ <b>0 – 10V / field pump</b></li><li>▪ <b>0 – 10V / solar pump</b></li><li>▪ <b>0 – 10V field Pump+valve</b><br/>The same functions that apply with PDM apply to the parameter values with 0-10V. The only difference is that instead of pulse duration modulation, a 0-10V signal is used to control the pump.</li></ul> |

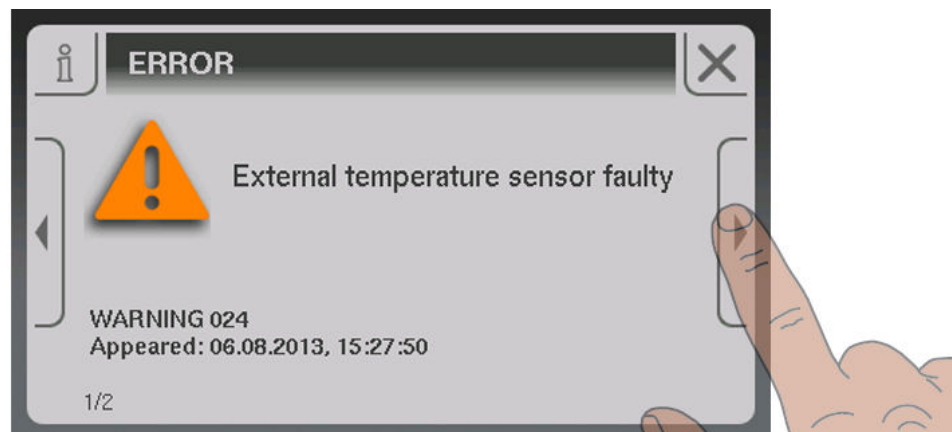
## 6 Troubleshooting

The term "fault" is a collective term for warnings, errors and alarms. The boiler reacts differently to the three types of message:

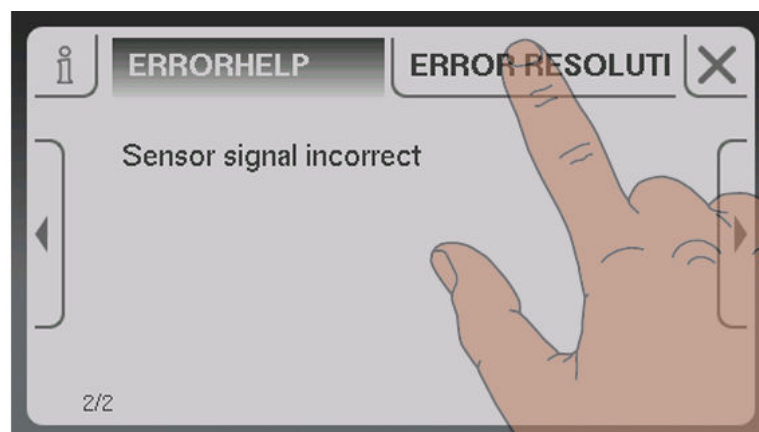
|                |  |
|----------------|--|
| <b>WARNING</b> | In case of warnings the status LED flashes orange and the boiler initially continues controlled operation.   |
| <b>ERROR</b>   | When there is an error, the status LED flashes red, the boiler follows the shutdown procedure and remains in "Off" status until the problem is resolved.               |
| <b>ALARM</b>   | An alarm triggers a system emergency stop. The status LED flashes red, the boiler switches off immediately and the heating circuit controller and pumps remain active. |

A window with the corresponding fault text will also appear. Pressing the Cancel icon takes you back to the basic display. If the quick select icon and the warning triangle flash alternately, there is still a fault. The "Error display" button will now appear in the quick menu.

### 6.1 Procedure for fault messages

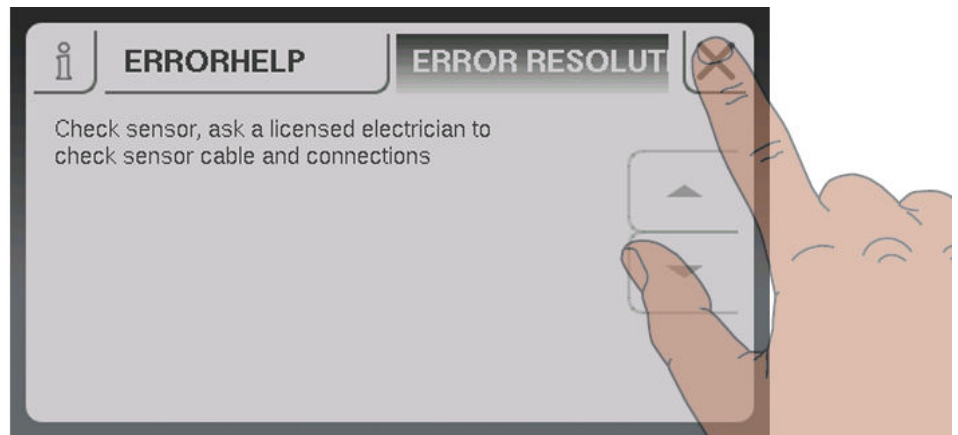


If you open the window with the respective fault text, the right arrow will take you to possible causes of the fault.





Tapping "Solution" will also display action to be taken to resolve the problem. If there are several options available, these will be listed one below the other.



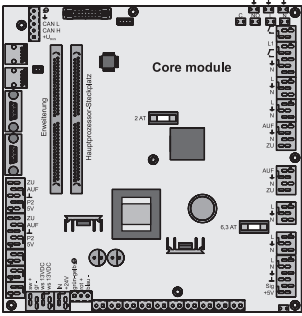
Once the fault has been resolved, tap the Cancel icon to return to the basic display.

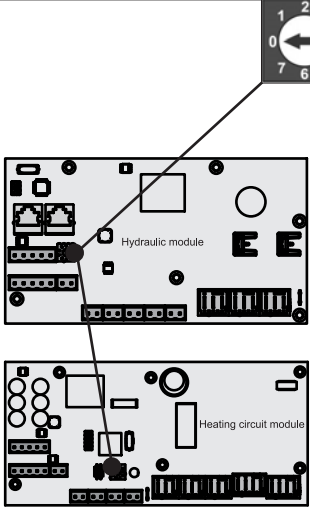
## 7 Setting protocol


The following tables show which heating components are allocated to the connections. Below the heating circuit number it notes the heating area, for which this heating circuit is used. The relevant connected unit should be noted next to the pumps or sensors.


Example: Module address = 2;

|  |  |
|--|--|
| First heating circuit: <b>07</b><br><u>Workshop radiator</u> | Pump <b>2.1</b> <u>Collector pump</u><br>Sensor <b>2.1</b> <u>Collector sensor</u> |
|--|--|

|  |  |   |
|--|--|---|
|  | <b>Core module</b>                           |   |
|  | First heating circuit: 01<br>_____<br>_____  | Connection heating circuit pump 0 as burner relays<br>Heating circuit pump 0<br>_____                             |
|  | Second heating circuit: 02<br>_____<br>_____ | Pump 1 used as return feed lift pump<br>Pump 1 output as switch valve (boiler 1 - boiler 2)<br>Pump 1 as<br>_____ |

|   |  |                  |
|---|--|------------------|
|  | <b>Set module address: 0</b>   |                  |
|   | Heating circuit module   | Hydraulic module |
| First heating circuit: 03<br>_____<br>_____   | Pump 0.1 _____<br>Pump 0.2 _____<br>Sensor 0.1 _____<br>Sensor 0.2 _____<br>Sensor 0.3 _____ |                  |
| Second heating circuit: 04<br>_____<br>_____  | Sensor 0.4 _____<br>Sensor 0.5 _____<br>Sensor 0.6 _____                                     |                  |

|  <b>Set module address: 1</b> |  |
|--|--|
| Heating circuit module   | Hydraulic module   |
| First heating circuit: 05<br>_____   | Pump 1.1 _____<br>Pump 1.2 _____<br>Sensor 1.1 _____<br>Sensor 1.2 _____<br>Sensor 1.3 _____<br>Sensor 1.4 _____<br>Sensor 1.5 _____<br>Sensor 1.6 _____ |
| Second heating circuit: 06<br>_____  | Sensor 1.2 _____<br>Sensor 1.3 _____<br>Sensor 1.4 _____<br>Sensor 1.5 _____<br>Sensor 1.6 _____   |

|  <b>Set module address: 2</b> |  |
|--|--|
| Heating circuit module   | Hydraulic module   |
| First heating circuit: 07<br>_____   | Pump 2.1 _____<br>Pump 2.2 _____<br>Sensor 2.1 _____<br>Sensor 2.2 _____<br>Sensor 2.3 _____<br>Sensor 2.4 _____<br>Sensor 2.5 _____<br>Sensor 2.6 _____ |
| Second heating circuit: 08<br>_____  | Sensor 2.2 _____<br>Sensor 2.3 _____<br>Sensor 2.4 _____<br>Sensor 2.5 _____<br>Sensor 2.6 _____   |

|                    |   |
|--------------------|---|
| <b>Final check</b> | Bus cable correctly connected (see "Connecting the bus cable")<br>Addressing correctly carried out and recorded<br>Jumper placed at the last module |
|--------------------|---|