warmando **Hydraulic Station**
Operating and Installation Instructions

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1. Foreword

Warning

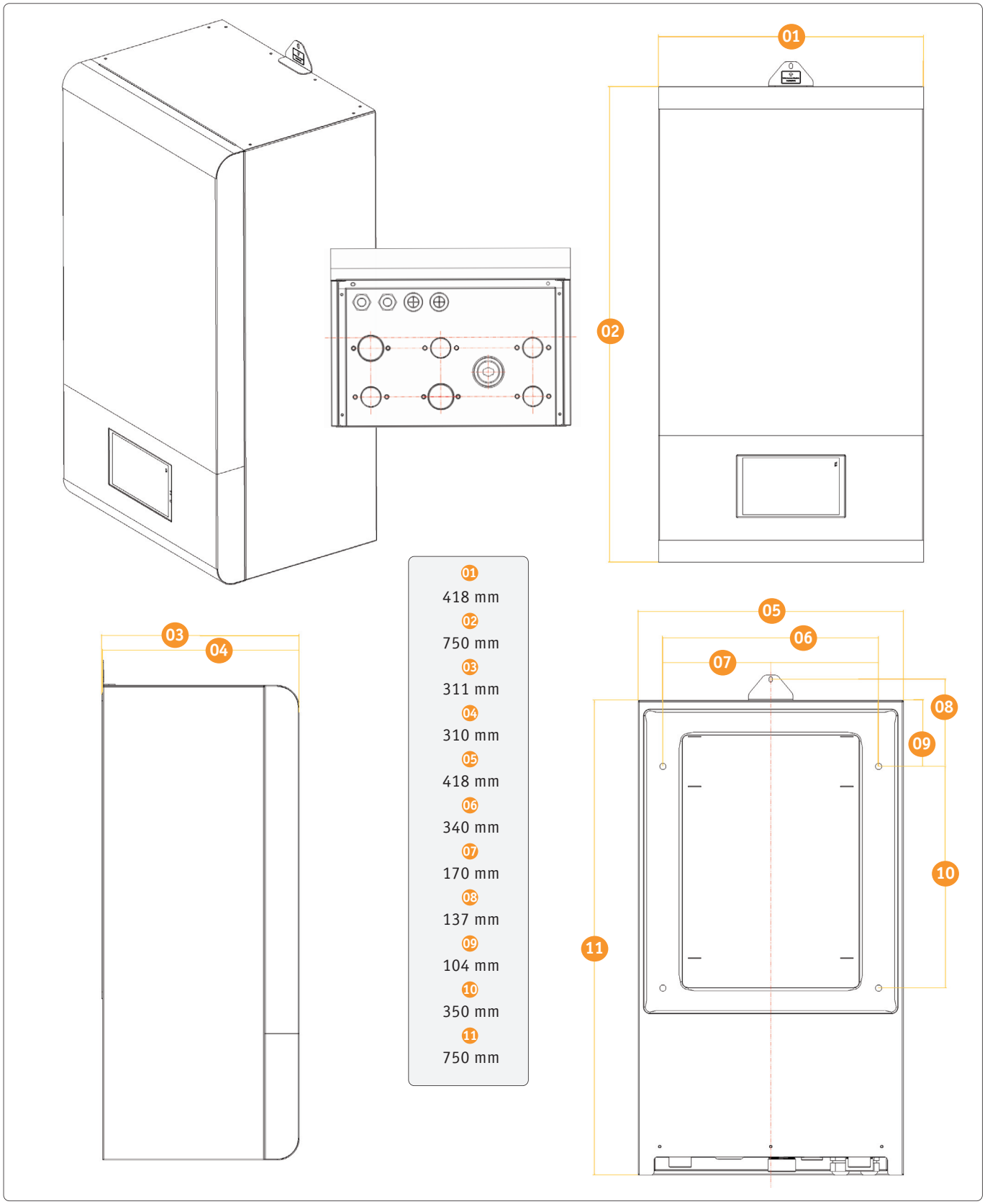
- Disconnect the power supply before touching any electrical connections.
- When the control cabinet door is open, live parts can easily be touched accidentally.
- When the control cabinet door is open, never leave the device unattended during installation or maintenance.
- Do not touch the water pipes during or immediately after operation. The pipes may be hot. To avoid injury, allow the pipes to cool to normal temperature or always wear protective gloves.
- Do not touch any electrical components with wet fingers; this can result in electric shock.
- Disconnect the power supply to the device before touching any electrical parts.

Danger

- Tear open and dispose of plastic packaging bags to prevent children from playing with them. Children playing with plastic bags can suffocate, which can be life-threatening.
- Safely dispose of packaging materials such as nails and other metal or wooden parts that could cause injury.
- Have your dealer or qualified personnel perform the installation according to these instructions. Do not install the unit yourself. Improper installation may result in water leaks, electric shocks, or fires.
- Use only the specified accessories and components for installation. Using other parts may result in water leaks, electric shocks, fires, or the unit falling.
- The device must be mounted firmly and securely to the wall. Tipping over or falling of the device can result in serious injuries or property damage.
- Ensure that all electrical work is carried out by qualified personnel in accordance with local laws and regulations, as well as these instructions, and using a separate circuit. Overloading the circuit or improper electrical installation can result in electric shock or fire.
- Be sure to install a residual current device (RCD/GFCI) in accordance with local laws and regulations. The absence of an RCD can cause electric shocks and fires.
- Ensure all cables are securely routed. Use the specified cables and ensure that the terminals and cables are protected from water and other external elements. Incomplete connections or fastenings can cause a fire.
- When connecting the power supply, route the cables so that the control cabinet door can be securely closed. If the control cabinet door is not properly closed, it can lead to overheating of components, electric shocks, or fires.
- After completing the installation work, check for refrigerant leaks.
- Never touch leaking refrigerant, as this can cause severe frostbite. Do not touch the refrigerant lines during and immediately after operation, as they can be hot or cold depending on the condition of the refrigerant flowing through the lines, compressor, and other parts of the refrigerant circuit. Touching the refrigerant lines poses a risk of burns or frostbite. To avoid injury, allow the lines time to cool to normal temperature or wear protective gloves if you must touch them.
- Do not touch the internal components (pump, auxiliary heater, etc.) during and immediately after operation. Contact with the internal components can cause burns. To avoid injury, allow the internal components time to cool to normal temperature or wear protective gloves if you must touch them.

2. Overview

2.1. Dimensions



01
418 mm
02
750 mm
03
311 mm
04
310 mm
05
418 mm
06
340 mm
07
170 mm
08
137 mm
09
104 mm
10
350 mm
11
750 mm

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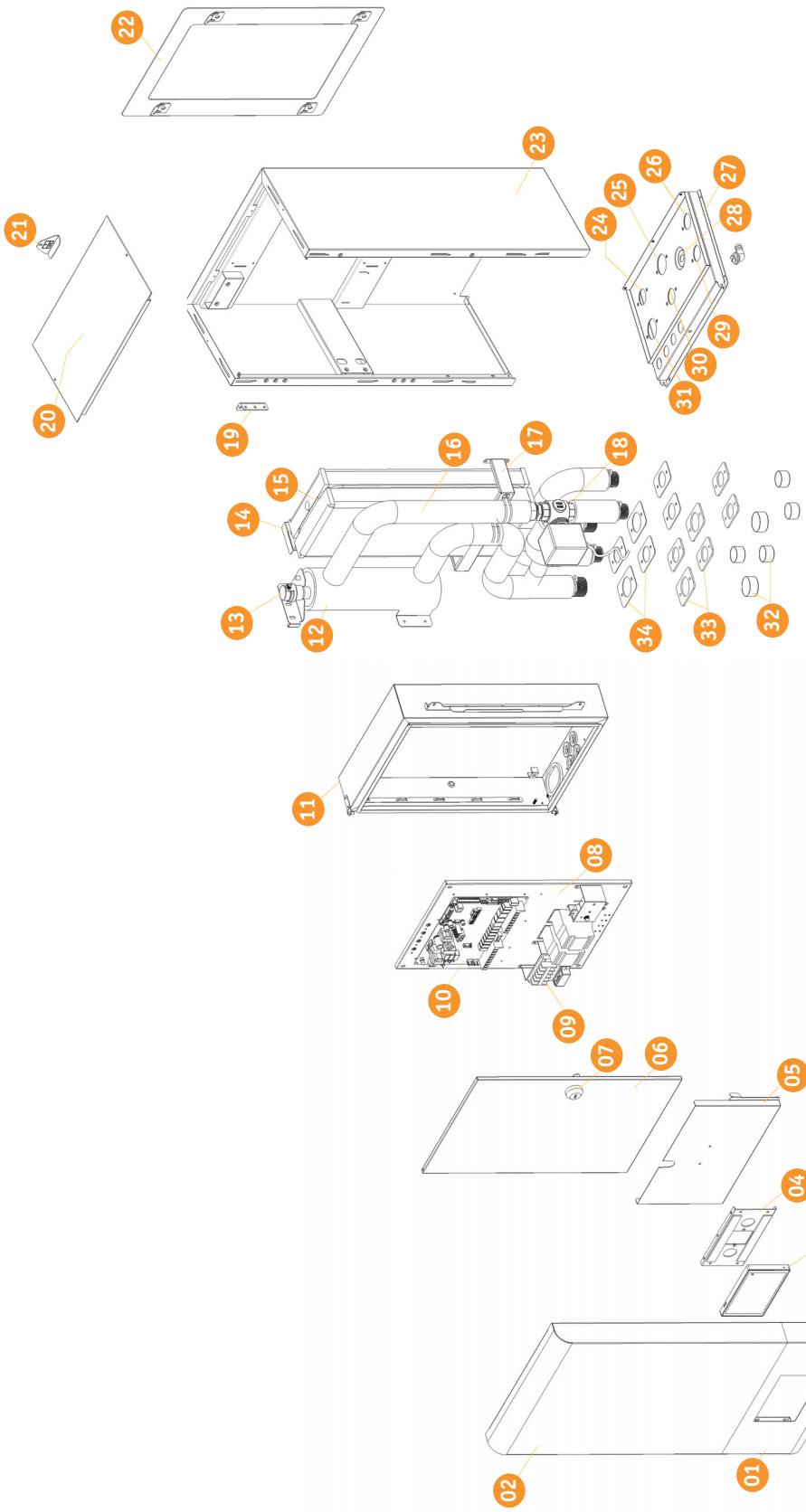
3. Components



01 Front cover
02 Controller cover
03 Control unit (display)
04 Mounting frame (display)
05 Hydraulic unit cover
06 Control cabinet door
07 Combination lock
08 Base plate
09 Power connection
10 Main circuit board
11 Control cabinet
12 Electric heater
13 Automatic air vent
14 Expansion vessel bracket
15 Expansion vessel
16 Hydraulic unit
17 Hydraulic unit bracket
18 3-way valve
19 Hinge
20 Top cover
21 Anti-slip lock
22 Mounting frame
23 Base frame
24 Domestic hot water flow
25 Heat pump return
26 Heating flow
27 Bottom cover
28 Condensate drain
29 Heating return
30 Domestic hot water return
31 Heat pump flow
32 Protective caps
33 Gaskets
34 Mounting flange

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4. Installation and connection

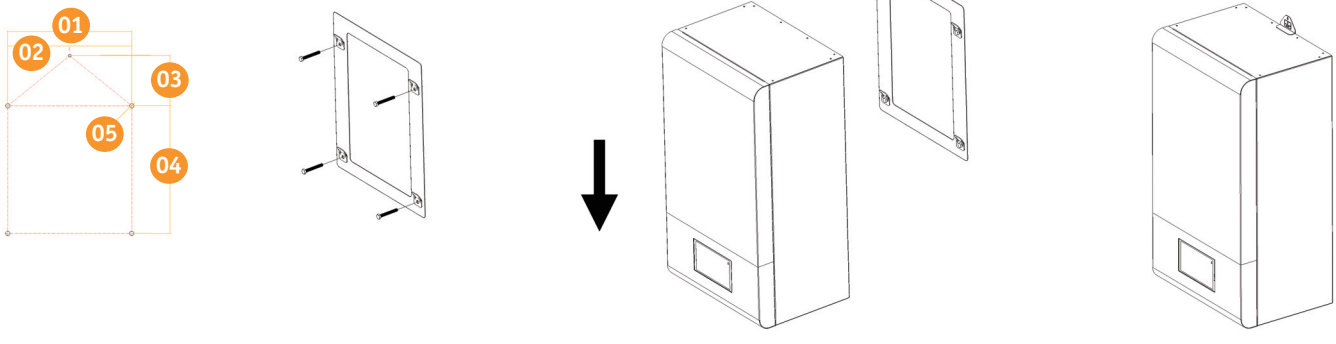
4.1. Installation

The hydraulic unit must be wall-mounted.

· First, drill the mounting holes in the wall according to the drilling diagram for the hydraulic unit. The included mounting frame can help you with this.

· Properly attach the mounting frames to the wall. Ensure the mounting frame is flush and level.

· Hang the hydraulic unit in the mounting frame.



01	02	03	04	05
340 mm	170 mm	137 mm	350 mm	4 x ø 12 mm

1. When installing the hydraulic station, the retaining clip must be fitted to prevent slipping or falling.

2. Threaded fittings are recommended for the water connections of the hydraulic station to simplify disassembly for future maintenance.

3. The hydraulic station's electric auxiliary heater has a safety temperature limiter. If this limiter is tripped, it must be manually reset in the control cabinet.

4. Please ensure that the circulation pump is functioning correctly during operation to prevent overloading the electric auxiliary heater due to a insufficient water circulation.

5. When wall-mounting the hydraulic station, ensure it is level to prevent tipping and related problems.

6. The automatic air vent should be closed after proper bleeding and commissioning of the system. Otherwise, it is recommended to take appropriate measures, such as the installation of gas detectors or other safety devices.

4.2. Technical data

Integrated electric heating element	Voltage	Switch-off current	Class
9 kW	400 V	5 mA	3N ~ 400 V, 3 x 2,000 W 3N ~ 400 V, 3 x 1,000 W

4.3. Before electrical connection

Warning

- Fuses and main switches must be installed in accordance with applicable local laws and regulations.
- Disconnect the power supply before connecting.
- Only copper wire may be used.
- The cables must not be crushed and must be protected from contact with conduits and sharp edges.
- Observe the minimum bending radius of the installed cables.
- Ensure that the terminals are tightened with a maximum torque of 5 Nm.
- All electrical installation work must be carried out by a qualified electrician and comply with applicable local laws and regulations.
- The electrical installation must be carried out according to the wiring diagram supplied with the unit and the following instructions.
- Always use a separate circuit for connecting the hydraulic station.
- Always ensure equipotential bonding. Do not connect the grounding to water pipes or surge protection devices. Incomplete grounding can result in electric shock.
- Always install a residual current device (RCD) (30 mA). Otherwise, there is a risk of electric shock.
- Make sure to install the required fuses or circuit breakers.

Precautions before installation

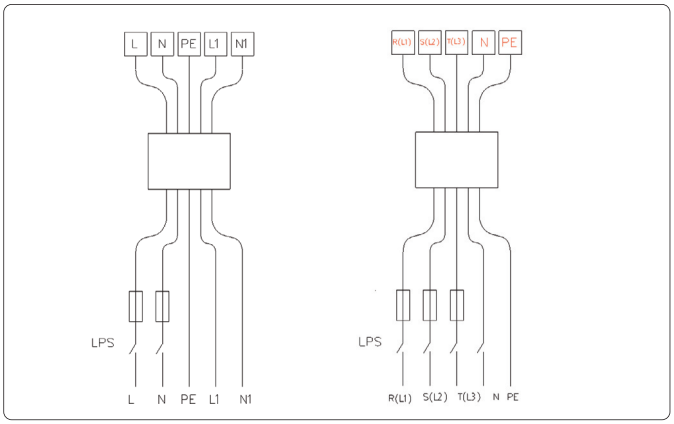
- Secure the cables so that they do not touch the heating pipes (especially the high-pressure side).
- When installing the residual current device (RCD), ensure that it is a Type B (all-current sensitive) to prevent unnecessary tripping.

4.4. Electrical connection

The residual current device (RCD) must have a rated residual current of 30 mA. Please use cables with the correct number of conductors and cross-section. The current-carrying capacity is based on the maximum permissible operating temperature of the conductor (105 °C/70 °C) and the nominal ambient temperature (40 °C/25 °C). This assumes installation in air. Cross-sectional specifications for the conductor diameters can be found in the table below.

Maximum operating current of the device (A)	Cross-sectional area of the conductors (AWG)	Maximum operating current of the device (A)	Cross-sectional area of the conductors (AWG)
≤ 3.0	≥ 24	≥ 15	≥ 14
≤ 4.6	≥ 22	≥ 21	≥ 12
≤ 6.5	≥ 20	≥ 28	≥ 10
≤ 8.5	≥ 18	≥ 40	≥ 8
≤ 11	≥ 16	≥ 55	≥ 6

- Use H07RN-F cable for the power supply, all cables, except the temperature sensor and display connection cable, must be connected to the power supply side The device must be grounded.
- All external devices with metallic housings must be grounded.
- The maximum current of the signal outputs on the main board must not exceed 0.2 A. If this limit is exceeded, a coupling relay must be used.
- Terminals “AHS1, AHS2”, “DFR1, DFR2”, and “ERR1, ERR2” are switching outputs.

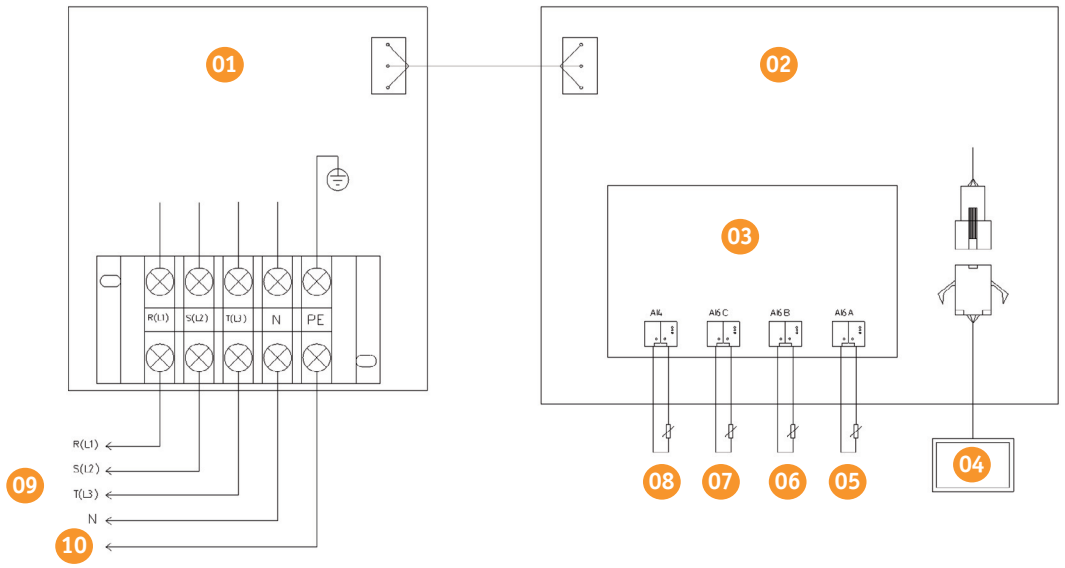


- Terminals “DI2, G” and “SG, EVU, G” are switching inputs.

Installation – Wiring

Slide the front cover upwards and remove the hydraulic unit cover. Connect the included 5 m communication cable to the Warmondo heat pump.

If needed, you can extend the communication cable by another 5 m using the included extension cable.



01 Heat pump
02 Hydraulic station
03 Main board
04 Display
05 Heat pump return temperature sensor
06 Domestic hot water storage tank temperature sensor
07 Underfloor heating flow temperature sensor
08 Solar flow temperature sensor
09 Power supply 230 V~/50 Hz or 400 V 3N~/50 Hz
10 Grounding

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5. System Wiring

Open the hydraulic unit.

1. Remove the two screws on the underside of the hydraulic unit and slide the front cover upwards.
2. Disconnect the connector between the display and the mainboard.
3. Remove another screw to slide the hydraulic unit cover upwards.

5.1. Terminals

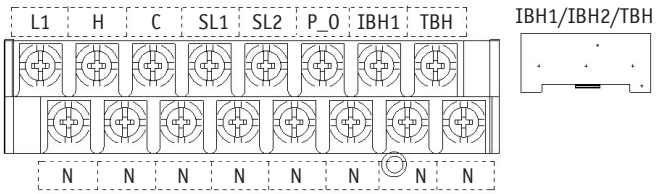
Installation Instructions

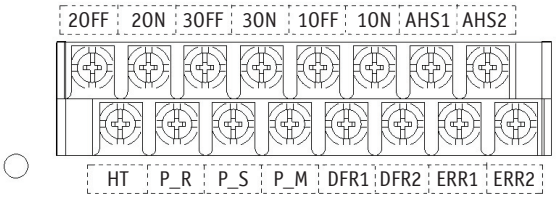
Use a conductor cross-section of 20 AWG/0.75 mm².

Output Type 1: Potential-free contact
Output Type 2: Contact provides a 230 V signal (max. 0.2 A).
If this value is exceeded, a coupling relay must be used.

Input Type 3: Potential-free contact 230 V (max. 0.2 A)

In the following diagrams, the wiring points are labeled as follows: „●“





Label	Terminals
2OFF	3-way valve (heating)
2ON	3-way valve (cooling)
3OFF	3-way mixing valve (open)
3ON	3-way mixing valve (closed)
1OFF	3-way valve (hot water)
1ON	3-way valve (heating water)
HT	Frost protection heater
P_R	Circulation pump
P_S	Solar pump
P_M	Heating circuit pump (mixed, zone B)
H-L1	Thermostat (heating signal)
C-L1	Thermostat (cooling signal)
P_O	Heating circuit pump (unmixed, zone A)

Label	Terminals
AHS1	External heat source
AHS2	
DFR1	Defrost indicator
DFR2	
ERR1	Fault indicator
ERR2	
SL1	Solar signal
SL2	
DI2-G	External on/off
SG-G	Smart grid
EVU-G	Utility/Energy Supplier
G	
TBH	Electric hot water heater

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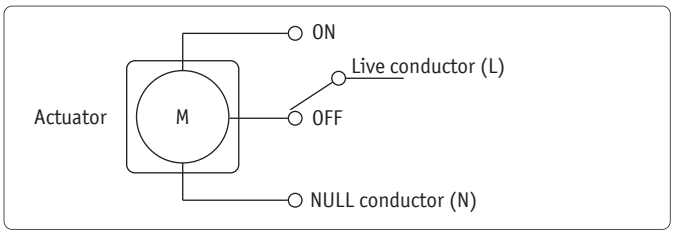
5.2. 3-way valves

Please use a 3-way mixing valve with a three-wire actuator in the pump group for the mixed heating circuit. The wiring diagram for the 3-way mixing valve is shown in the following diagram.



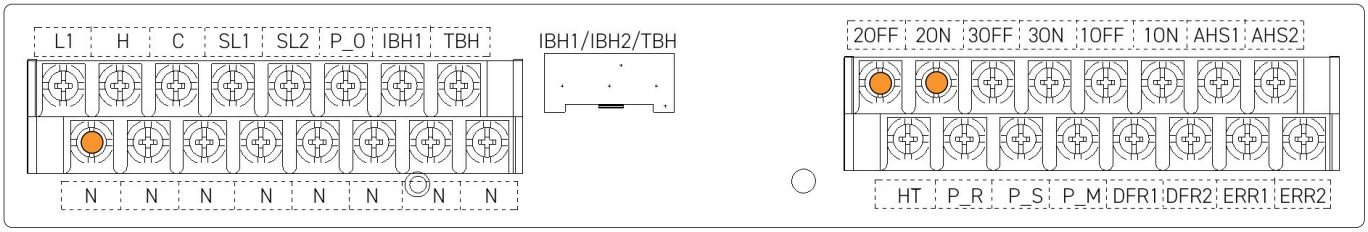
Wiring of the 3-way solenoid valve (Type 2)

The 3-way solenoid valve is used to switch the heating and cooling water circuits of the heat pump.

When the heat pump is in cooling mode, there is an output voltage of 230 V at terminal 2OFF, but none at terminal 2ON.

When the heat pump is in heating mode, there is an output voltage of 230 V at terminal 2ON, but none at terminal 2OFF.

Before commissioning the heat pump, please ensure the 3-way solenoid valve is correctly installed electrically and hydraulically.

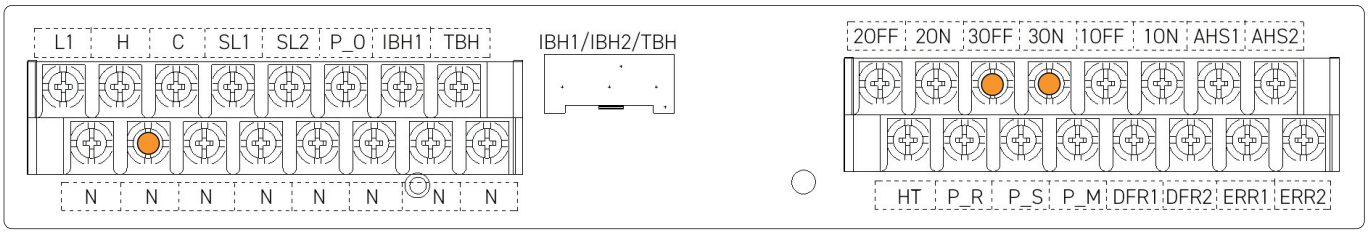


Wiring of the 3-way mixing valve (Type 2)

The 3-way mixing valve is used to regulate the flow temperature of the underfloor heating system (mixed heating circuit, Zone B).

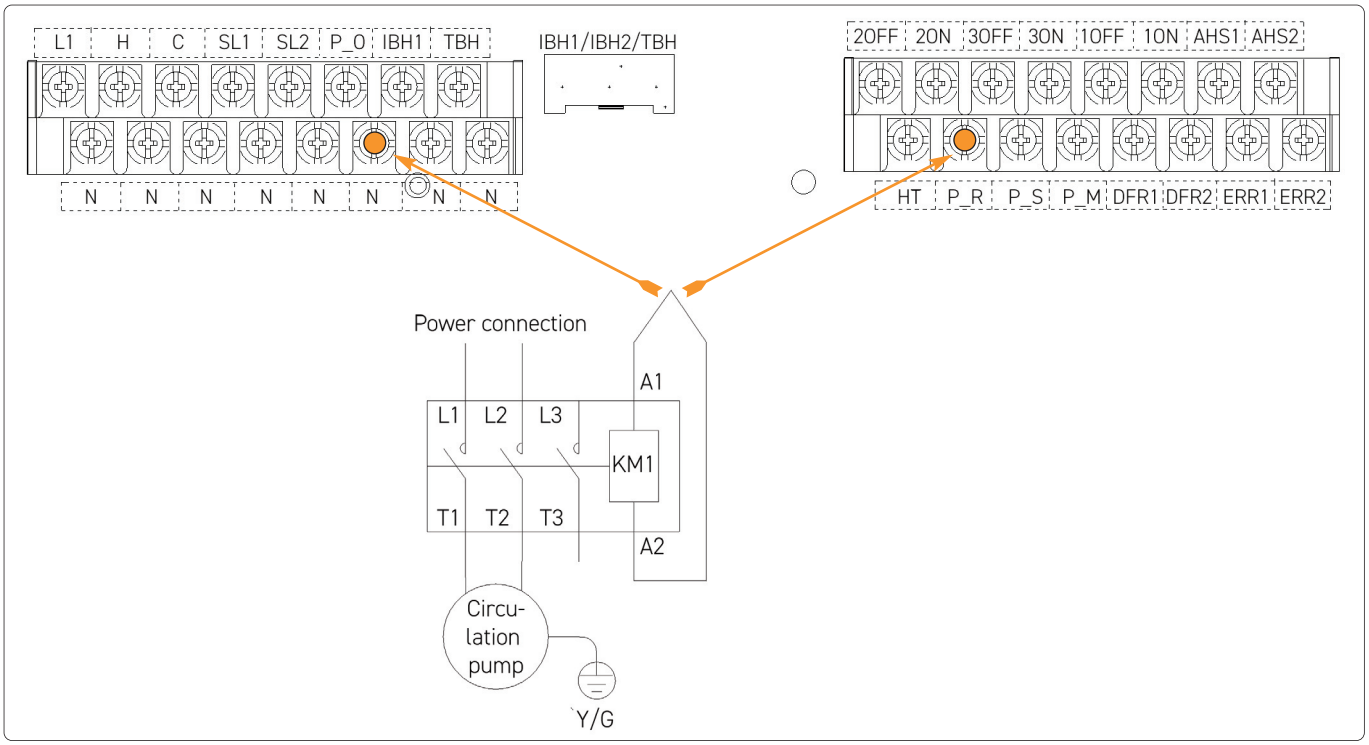
If the flow temperature is too high, the terminal 3ON is activated and the 3-way mixing valve closes. If the flow temperature is too low, the terminal 3OFF is activated and the 3-way mixing valve opens.

Before commissioning the heat pump, ensure the 3-way mixing valve is correctly installed electrically and hydraulically.

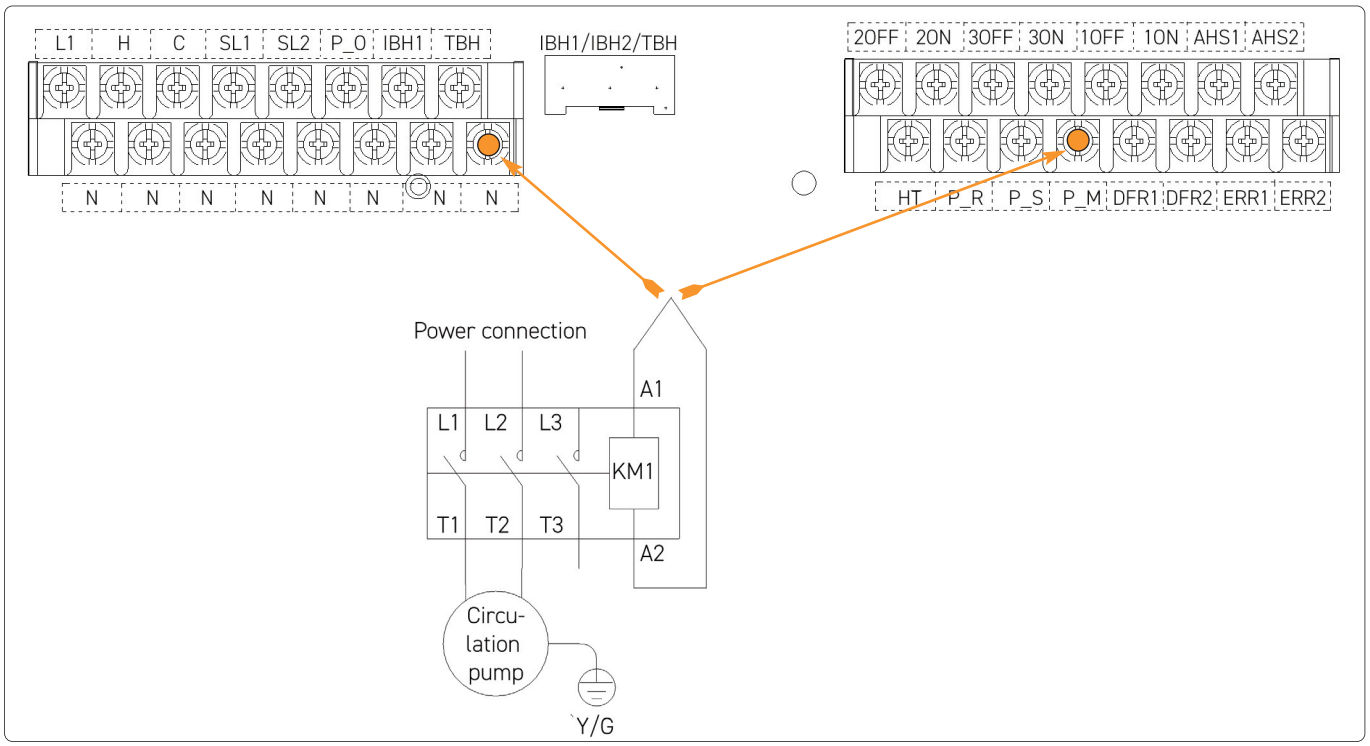


5.3. Pumps

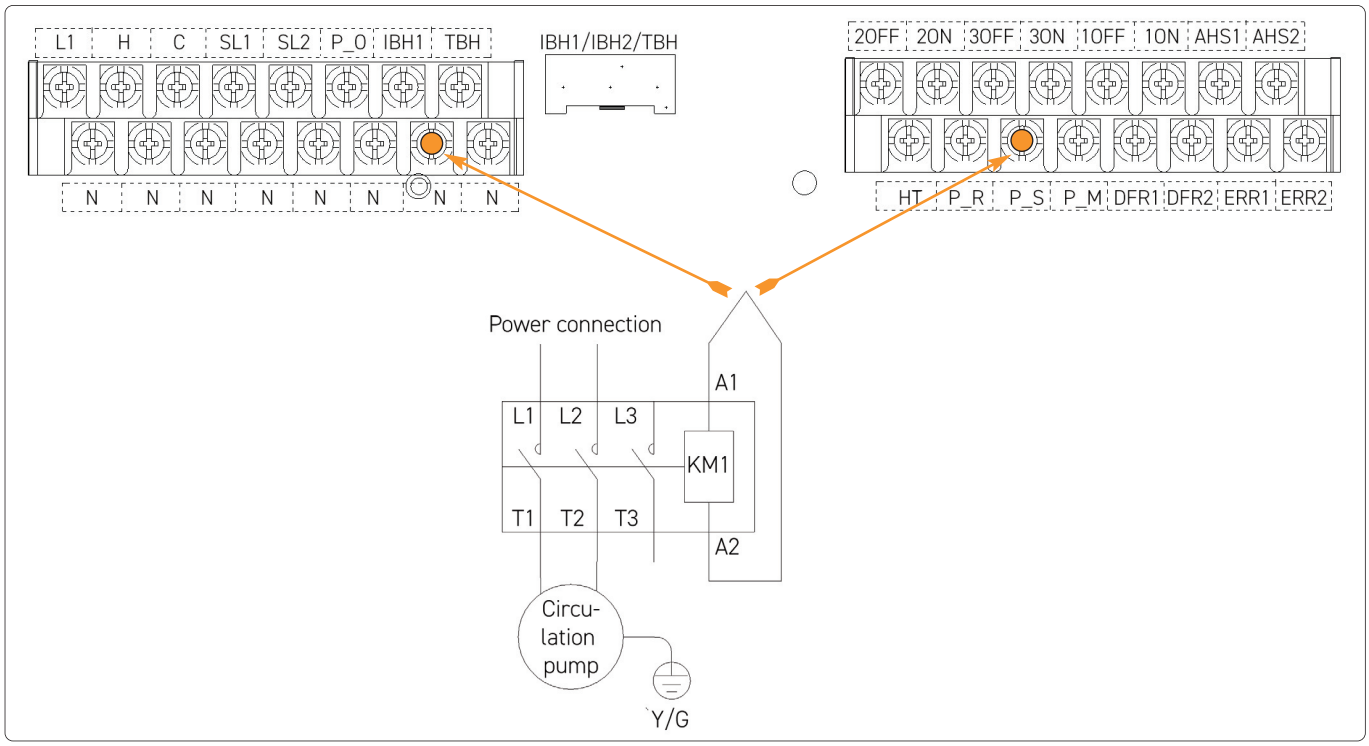
Circulation pump (Type 2)



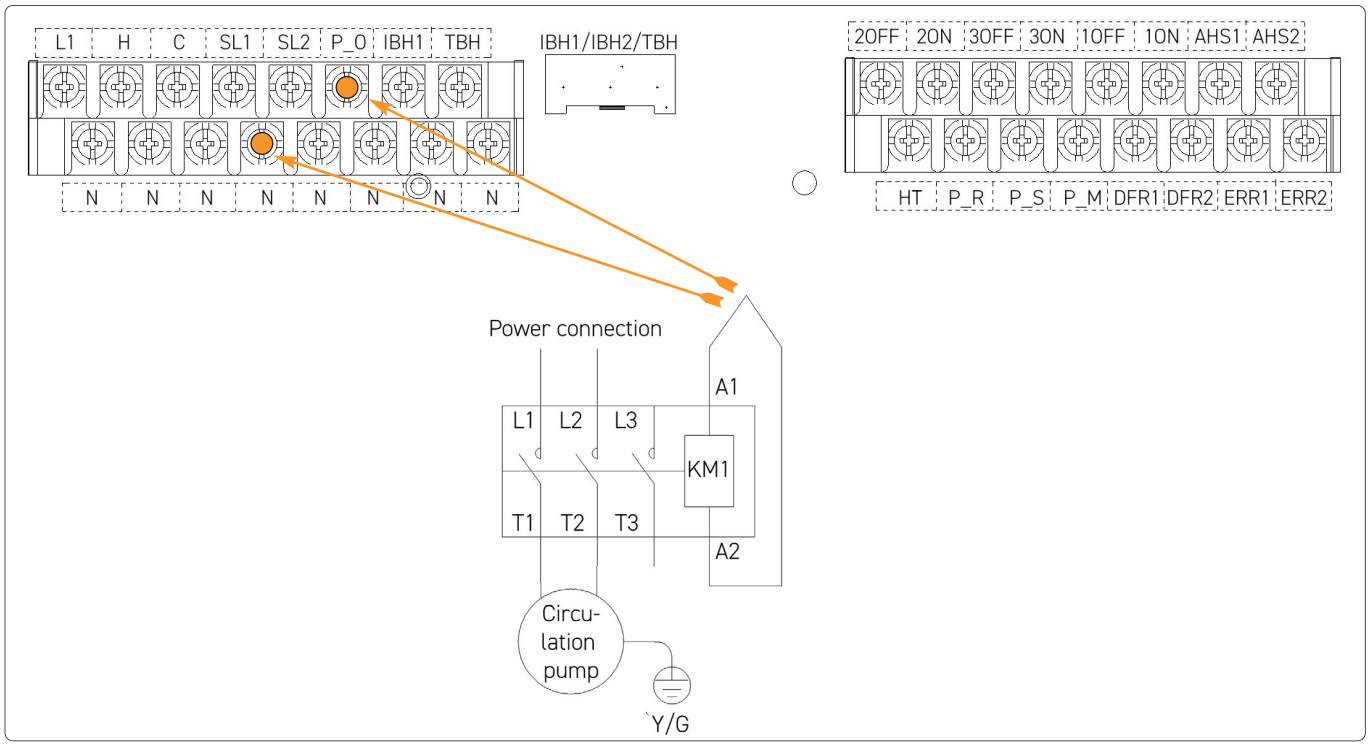
Heating circuit pump (mixed, zone B), (Type 2)



Solar pump (Typ 2)



Heating circuit pump (unmixed, Zone A), (Type 2)



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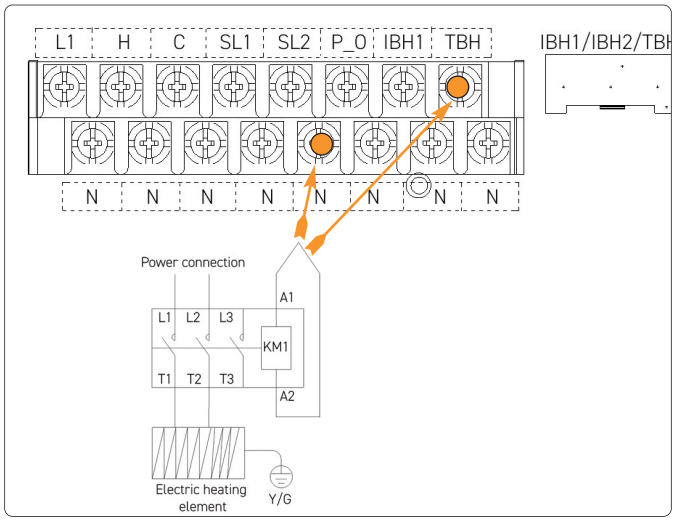
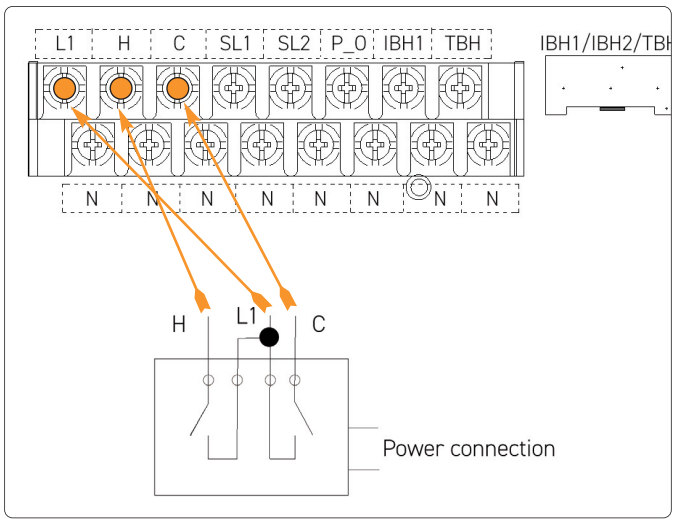
5.4. Electric heating element for hot water (Type 2)



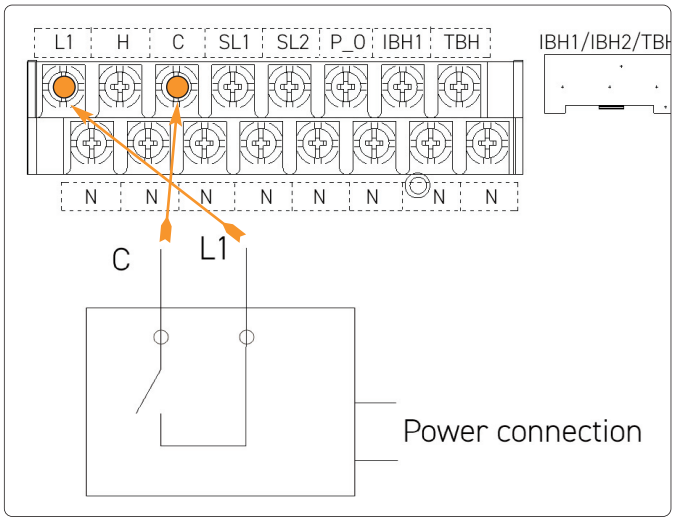
5.5. Selection of control mode (Type 3)

Wiring point "L1" supplies power to the control mode selector. It does not supply power directly to the main circuit board. The control mode selection between heating and cooling can be made via a room thermostat or a terminal block. Depending on the application, there are three ways to make the selection.

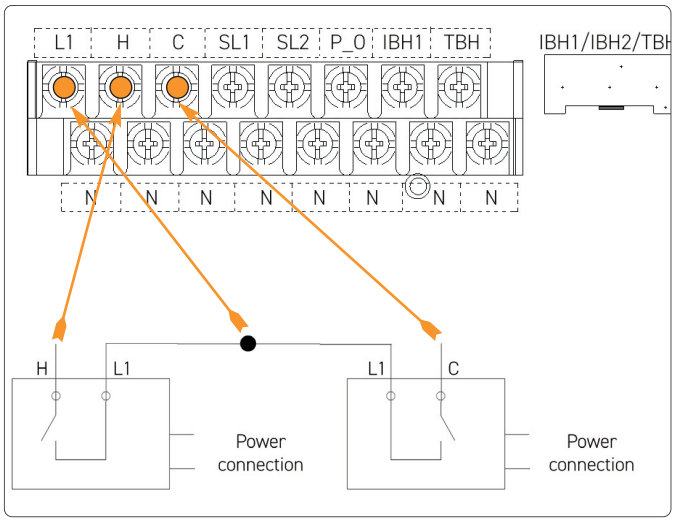
Method 1: When "Control Type Selection" is set to "one mixed heating circuit".
(a) When contact "C" is closed, "Zone A" is activated for cooling operation.
(b) When contact "C" is open and contact "H" is closed, "Zone A" is activated for heating operation.
(c) "Zone A" is deactivated when both contact "C" and contact "H" are open.



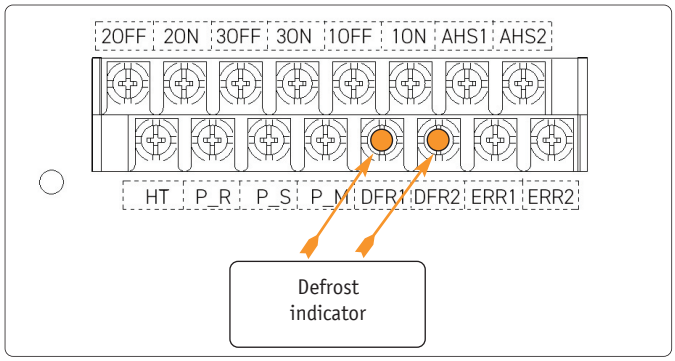
Method 2: When the control mode is set to "one mixed heating circuit".
(a) When contact "C" is closed, "Zone A" is switched on.
(b) When contact "C" is open, "Zone A" is switched off.



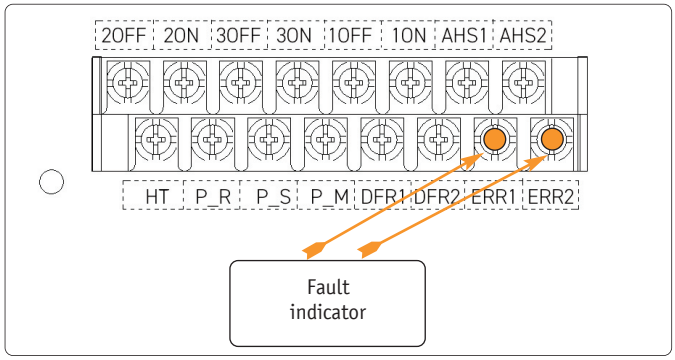
Method 3: When the control mode is set to "two mixed heating circuits."
a. When contact "C" is closed, "Zone A" switches on.
b. When contact "C" is open, "Zone A" switches off.
c. When contact "H" is closed, "Zone B" switches on.
d. When contact "H" is open, "Zone B" switches off.
Note: Zone B is for heating operation only.



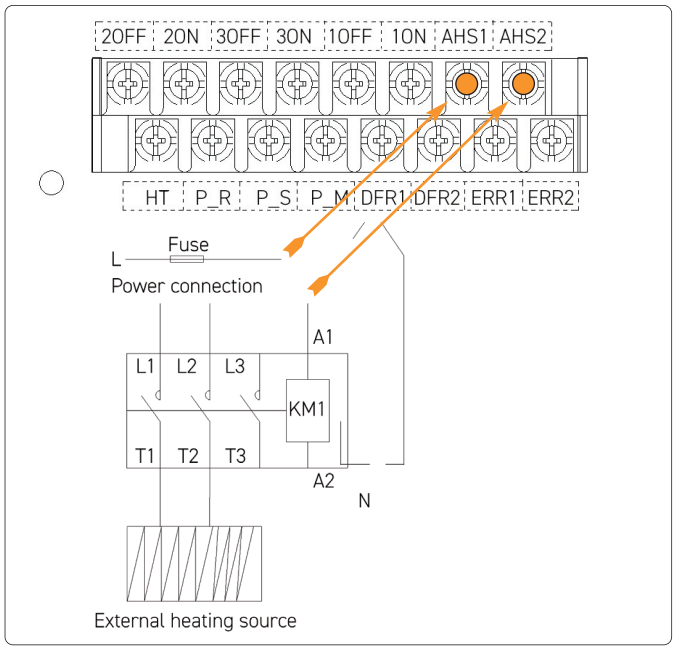
5.6. Defrost indicator (Type 2)



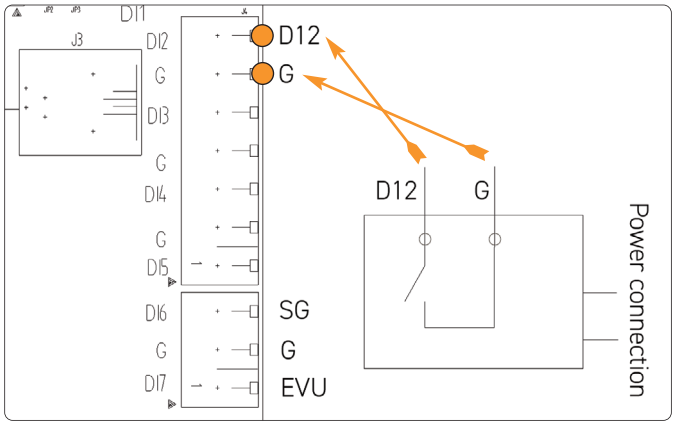
5.7. Fault indicator (Type 2)



5.8. External heat source (Type 2)

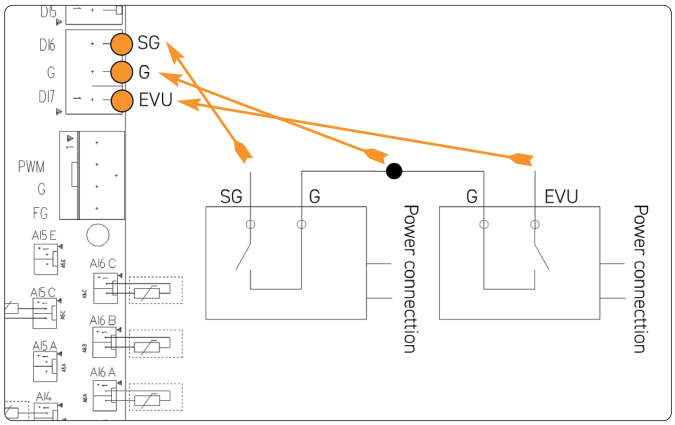


5.9. External On/Off (Type 3)



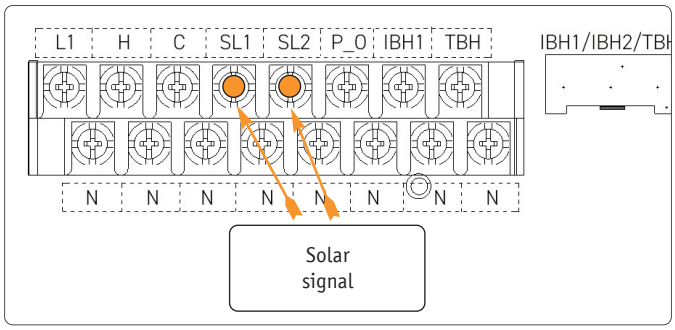
5.10. Smart grid or utility (Type 3)

The wiring of the smart grid is shown in the following diagram; SG is the signal of the smart grid and EVU is the shutdown signal from the energy supplier.



5.11. Solar signal (Type 3)

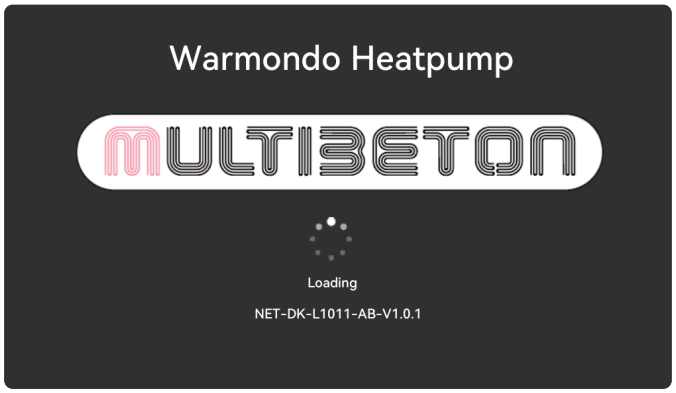
(230 V power supply, L and N) If the solar temperature sensor is deactivated, the solar signal must be used to start and stop the solar pump.

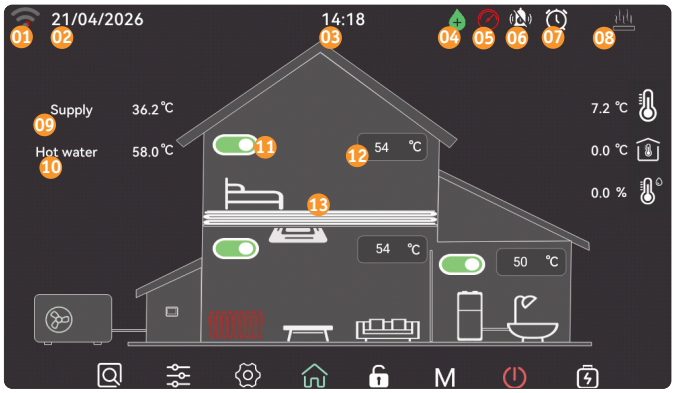


6. Controller

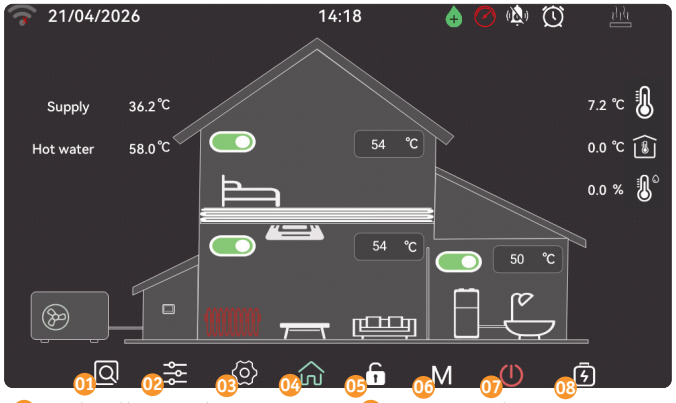
6.1. User interface description

The following welcome screen is displayed when the device is switched on.

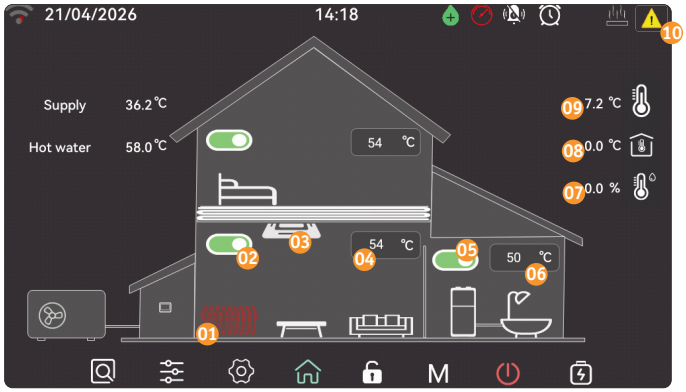




01 Wi-Fi
02 Date
03 Time
04 Hot Water Disinfection
05 Performance Test
06 Heat Pump Whisper Mode
07 Time Programs
08 Auxiliary Heating Element
09 Current Heat Pump Temperature
10 Current Hot Water Temperature
11 Zone B On/Off
12 Setpoint Temperature Zone B
13 Zone B Heating



01 Hydraulic Overview
02 Status
03 Configuration
04 Main Screen
05 Screen Lock
06 Operating Mode
07 On/Off
08 Statistics



01 Heating Zone A
02 On/Off Zone A
03 Cooling Zone A
04 Setpoint Temperature Zone A
05 Hot Water On/Off
06 Setpoint Temperature Hot Water
07 Humidity
08 Indoor Temperature
09 Outdoor Temperature
10 Error

The symbols

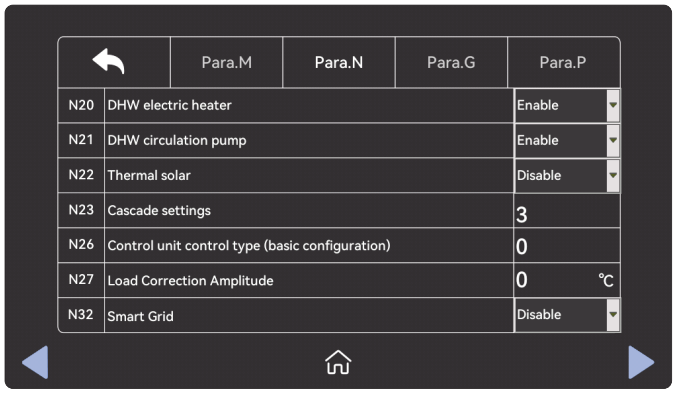
- Wi-Fi: Connected
- Wi-Fi light flashing: Network setup
- Domestic Hot Water Mode: On
- Zone B: On/Off
- Zone A: On/Off
- Error message
- Compressor preheating: On/Off
- Whisper mode: On/Off
- Timer programs: On/Off
- External heat source: On/Off
- Solar signal: On/Off
- Domestic Hot Water heating element: On/Off
- Auxiliary heating element: On/Off
- Defrost: On/Off
- Frost protection: On/Off
- Setback: On/Off
- Silent mode: On/Off
- Eco mode: On/Off
- Performance test: On/Off
- Refrigerant recovery: On/Off
- Domestic Hot Water disinfection: On/Off
- Smart Grid 1: On/Off
- Smart Grid 2: On/Off
- Smart Grid 3: On/Off
- Smart Grid 4: On/Off

6.2. User manual

To adjust parameters and view error messages, you need the code "168". Parameter changes are only saved when the heat pump is switched off. "" stands for On, "" for Off.

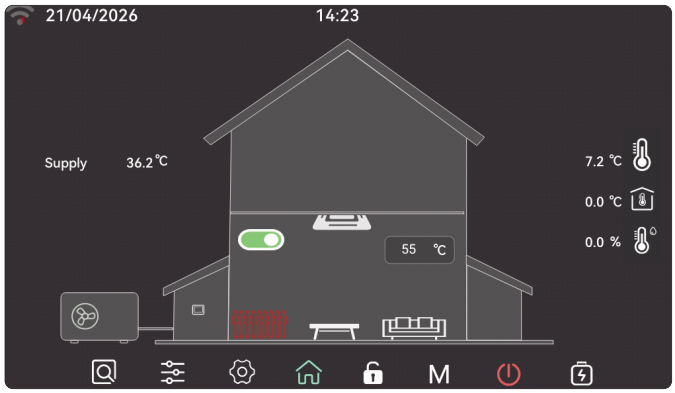
6.2.1. Selection of mixed heating circuits

Set the parameter “N26” to “0” (Zone A) for one mixed heating circuit, and to “2” (Zone B) for two mixed heating circuits.



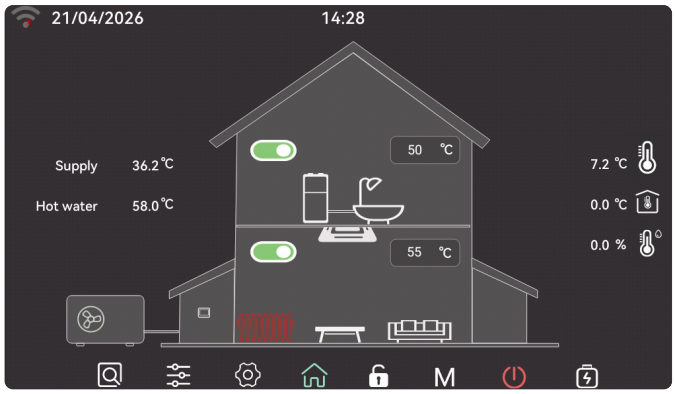
6.2.2. Heating without hot water, one heating circuit

Set parameter “N11” to “deactivate”.



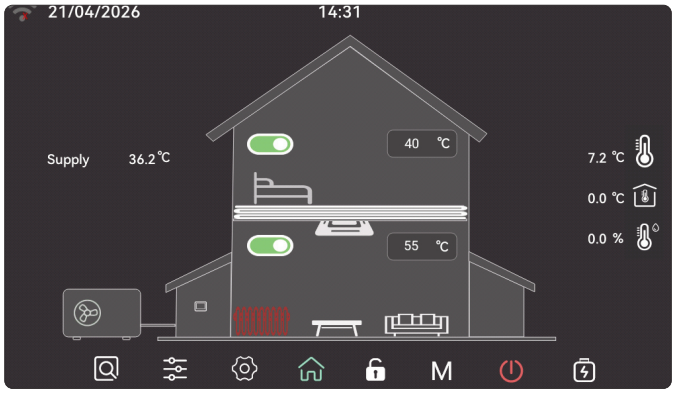
6.2.3. Heating with hot water, one heating circuit

Set the parameter “N11” to “activate”.



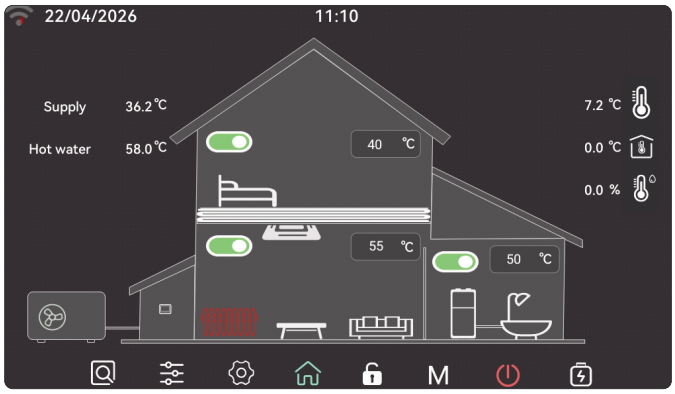
6.2.4. Heating without hot water, two mixed heating circuits

Set parameter “N26” to “2” (Zone B) for two mixed heating circuits. Set parameter “N11” to “deactivate”. 6.2.3. Heating with hot water, one mixed heating circuit.
Set parameter “N11” to “activate”.



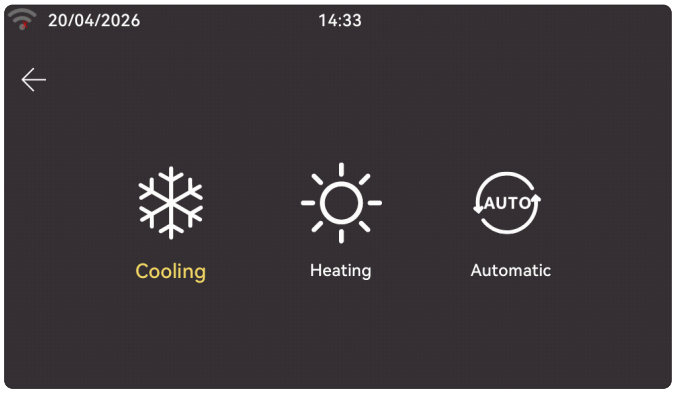
6.2.5. Hot water heating, two mixed heating circuits

Set parameter “N26” to “2” (Zone B) for two mixed heating circuits. Set parameter “N11” to “activate”.



6.2.6. Selecting the operating mode

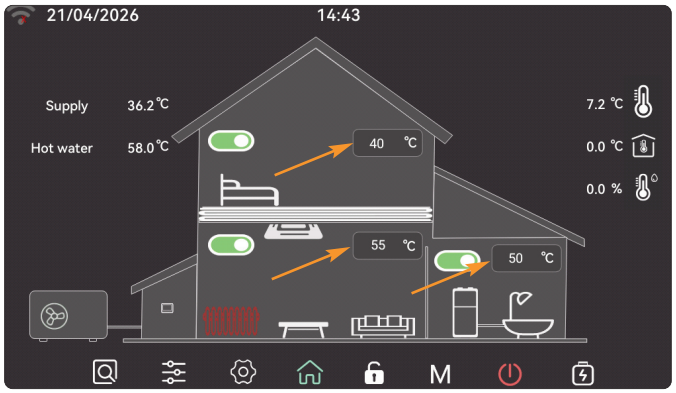
In the menu item “Operating mode M”, select the desired operating mode (cooling, heating or automatic).



6.2.7. Setting the target temperatures

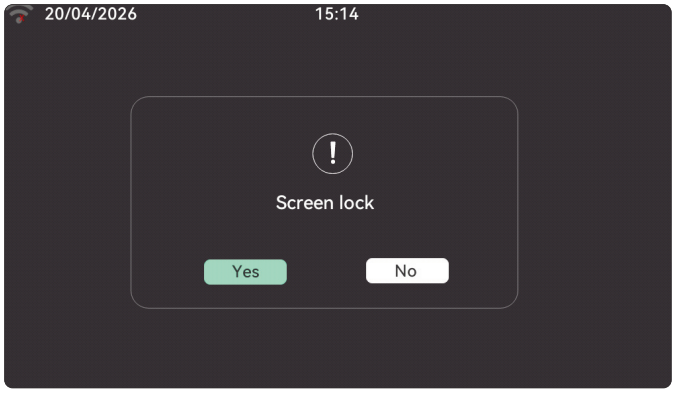
The desired target temperatures are set by pressing on the temperature fields. If the heat pump is controlled via heating curves, temperature changes will not be applied.

Setting limits: Hot water 30 – 75 °C
Heating 30 – 80 °C
Cooling 5 – 30 °C

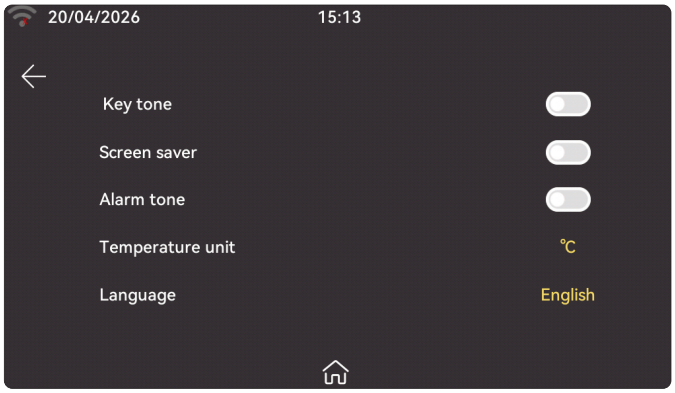


6.2.8. Lock/Unlock

Press the controller “” to lock or unlock.

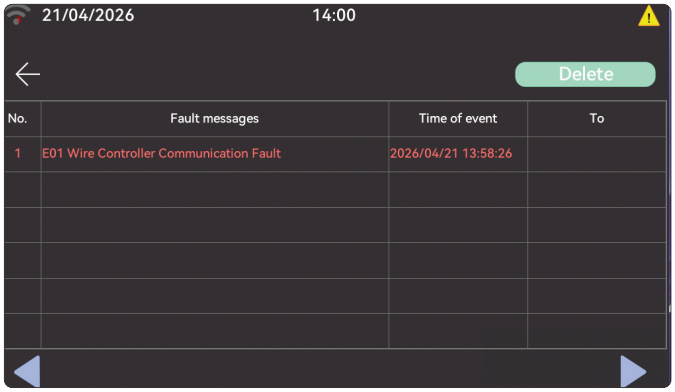


6.2.9. Screen saver on/off



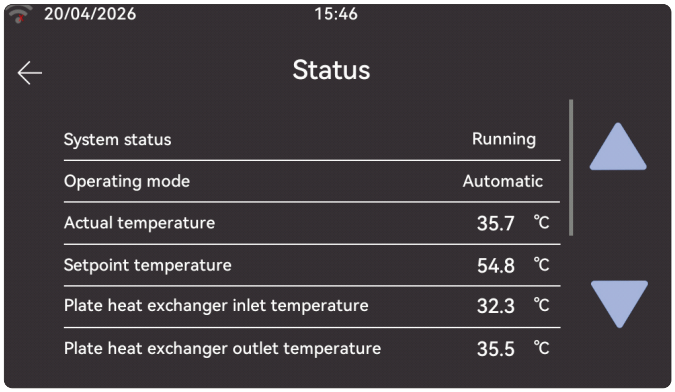
6.2.10. Error messages

If the heat pump has an error, this is indicated by the symbol “”. Click on the symbol “” to open the message. To reset the error messages, press “Clear”.



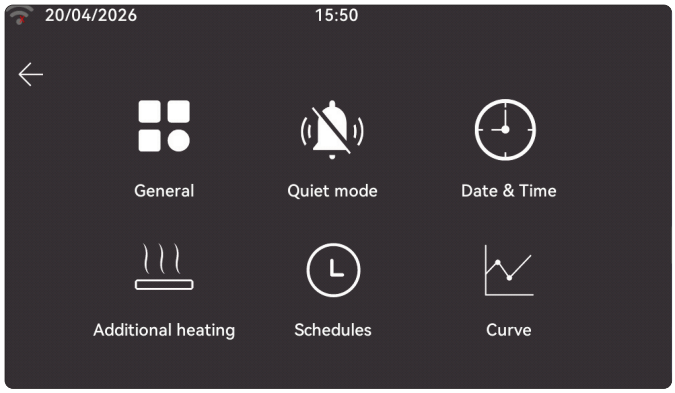
6.2.11. Status display

Press “Status” to display the relevant data for the heat pump.



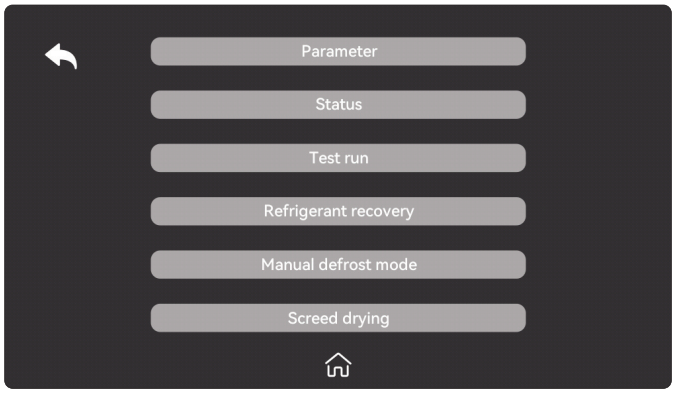
6.2.12. Configuration

Press “Configuration” to view and configure the relevant data of the heat pump.



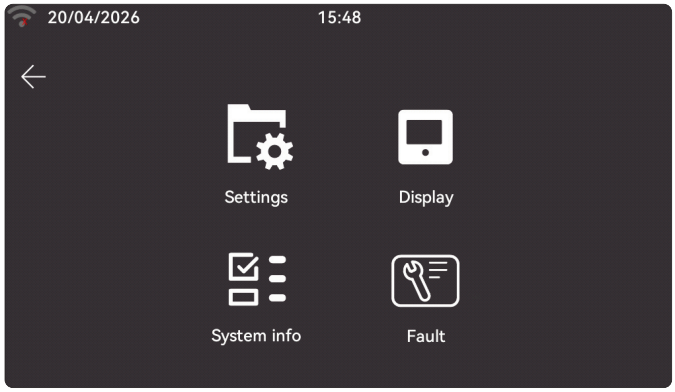
· **Parameters**

Press the "Parameters" menu item to make changes to the heat pump configuration.



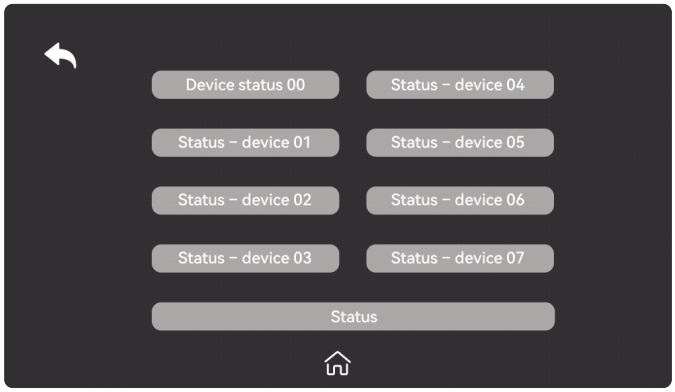
6.2.13. General

On the settings interface, press the "General ⊞" button.



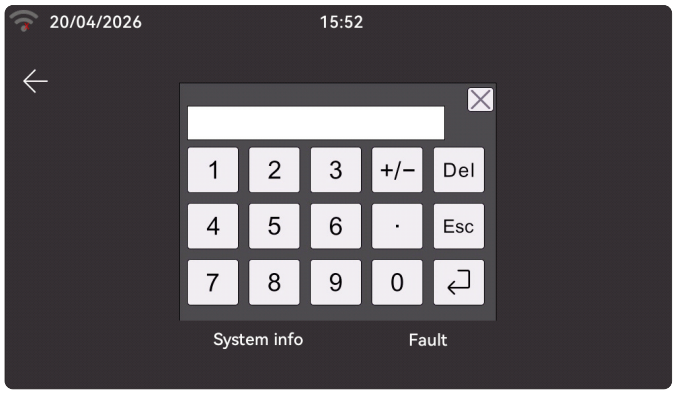
· **Status**

Press “Status” to view the status.



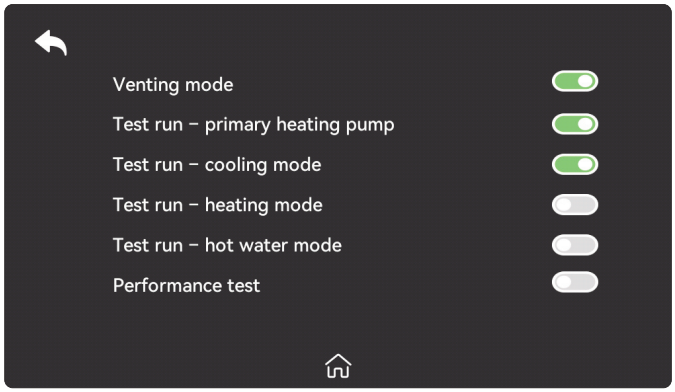
6.2.13.1. Settings

To restore factory settings, press the "Settings ⚙" button in the "General" menu and enter the password "400866".

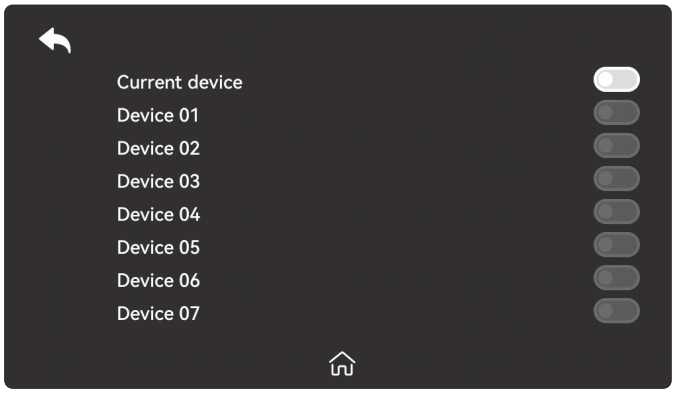


· **Test operation**

Press “Test operation” to run various tests.



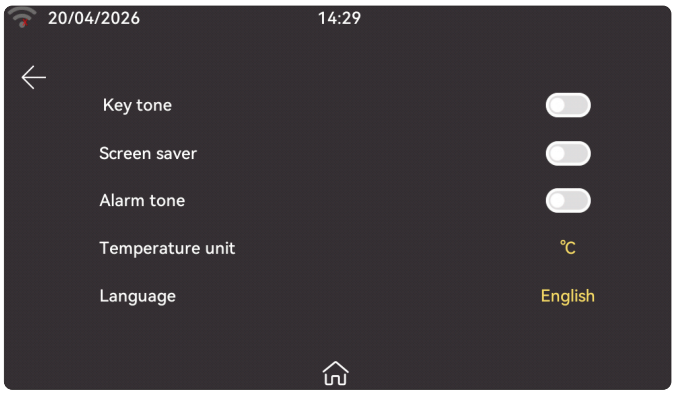
· **Defrosting operation (manual)**



· **Screed heating program**

6.2.13.2. Display

In the menu, press the "Display" button.

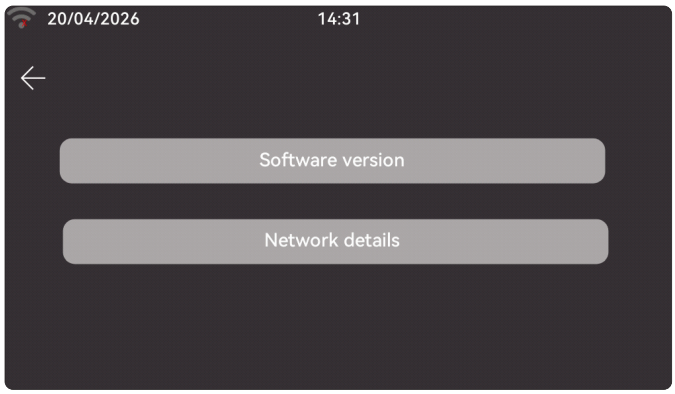


· **Temperature unit**

· **Language selection**

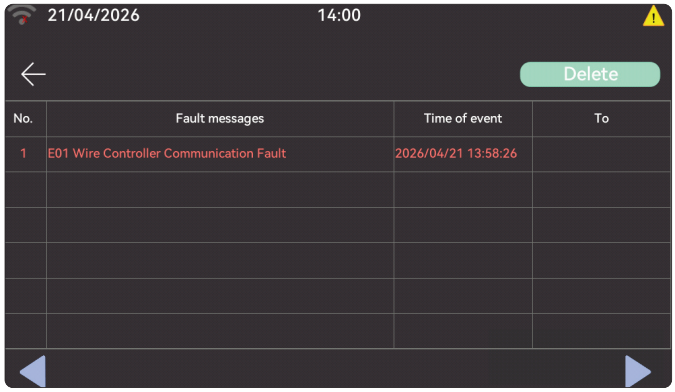
6.2.13.3. Informations

In the menu, press the “Information ” button.



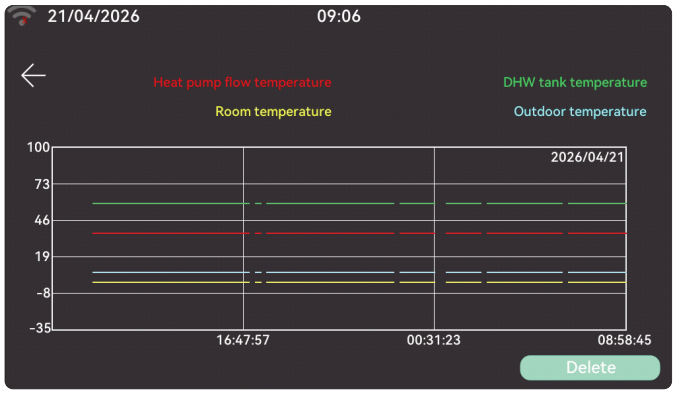
6.2.13.4. Error Messages

In the menu, press the “Error Messages ” button.



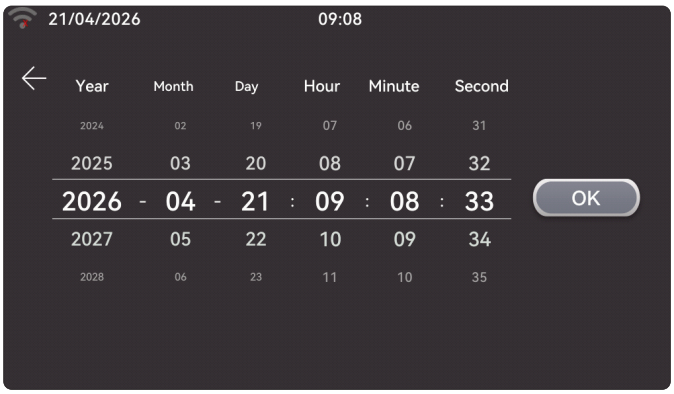
6.2.14. Graphs

Press the "Graphs " button. Temperature data is recorded every 20 minutes and saved hourly. Data is not saved for shorter measurement intervals. The temperature curve has a memory function to store the state after the device is switched off.



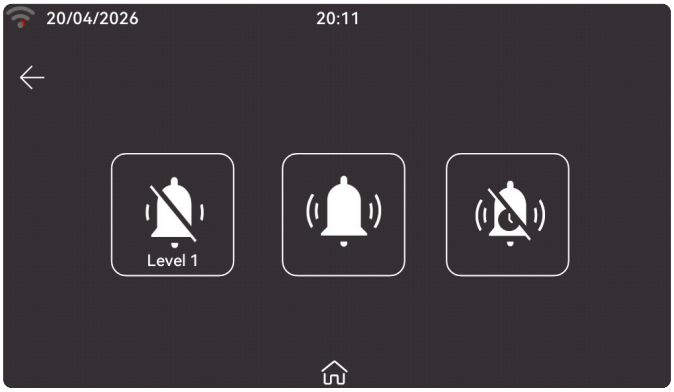
6.2.15. Time setting

Press the "Time setting " button.

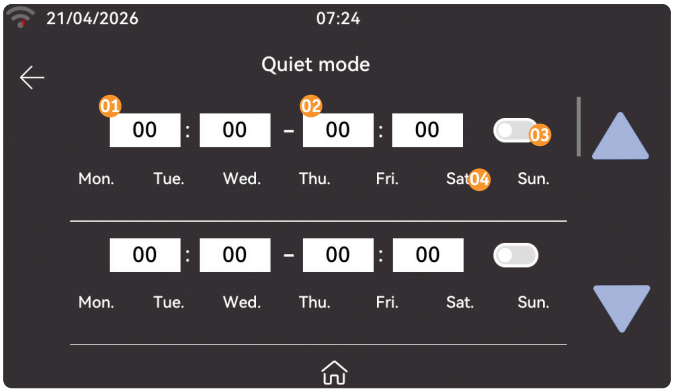


6.2.16. Silent mode

Press the "Silent Mode " button



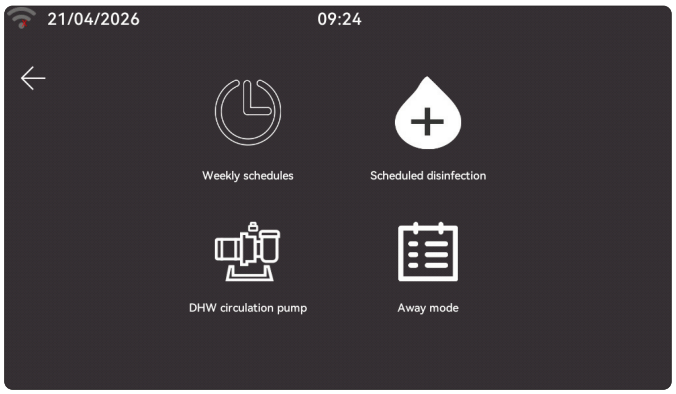
Pressing this button repeatedly allows you to choose between "Level 1 " and "Level 2 ". " " indicates that the device is not muted. " " indicates that the device is muted. Press "Timer Mode " to access the settings.

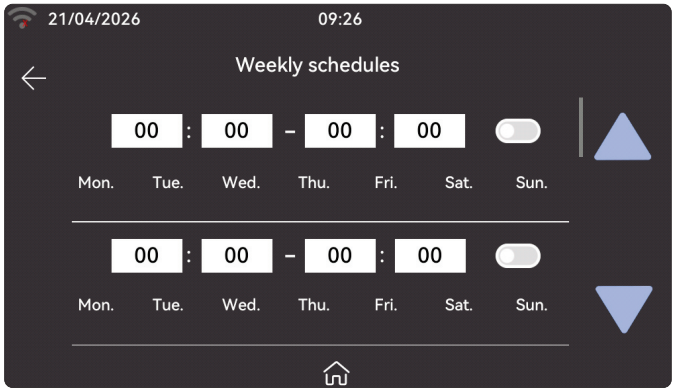


01 Mute start time
02 End time of the mute
03 While the mute function is active, the background is green; while it is inactive, it is grey.
04 Press MON – SUN to select the day of the week for the timer. The selected day will be highlighted in red after pressing.

6.2.17. Weekly schedules

Press the "Weekly schedules" button.





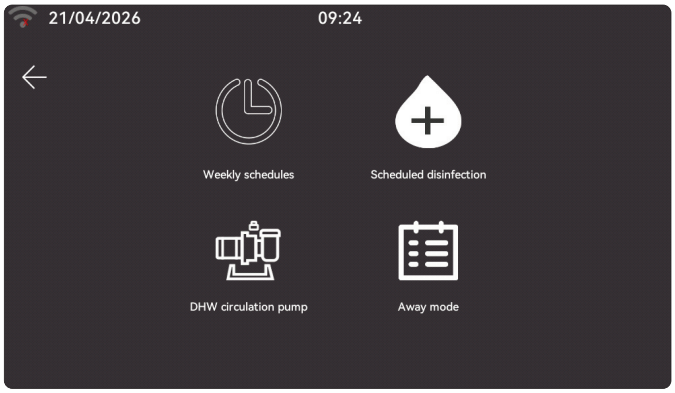
Note: If the switch-on time matches the switch-off time, the time period cannot be executed. If the timer is disabled or the corresponding week has not been selected, the time period cannot be executed. If the time settings overlap, the opening or closing time will be based on the earliest time.

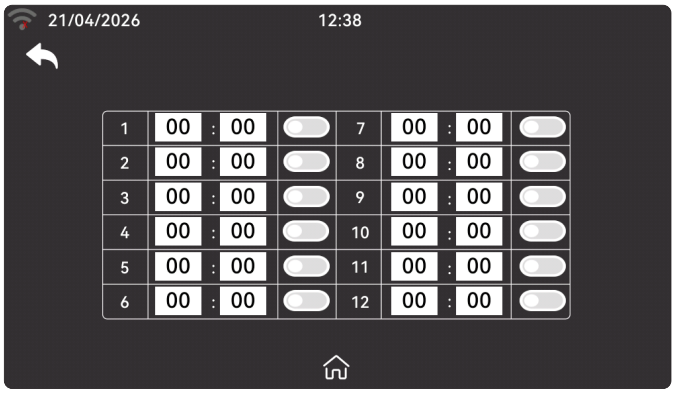
6.2.17.1. Time-controlled disinfection

First, activate the parameter "G01". Click the button to turn on the disinfection function.

6.2.17.2. Turn on hot water circulation

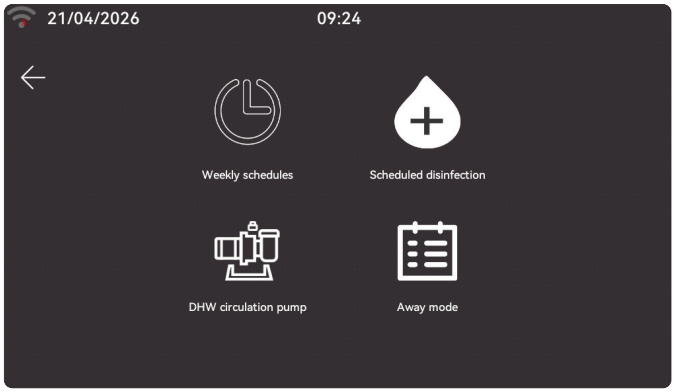
First, activate the parameters (“N21” and “P08”). Then press the button “” to activate the function.





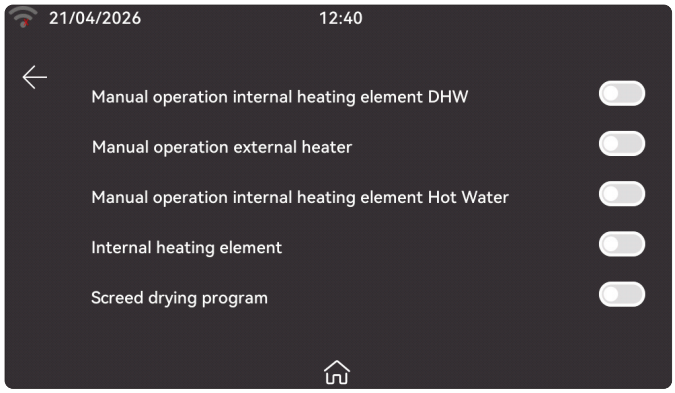
6.2.17.3. Lowering mode

Press the button “” to select holiday mode or night setback. Operating requirements: The unit must be in heating mode; otherwise, holiday mode cannot be activated.



6.2.18. Auxiliary heating

In the configuration menu, press "Auxiliary Heater " to access the settings for the auxiliary heaters.



6.2.18.1. Internal heating element for hot water

Hot water operation must be activated via parameters "N11" and "M39", hot water or heating & hot water.

6.2.18.2. External heat generator

The heat generator must be switched on via the parameters "M40" and "N37". If the set temperature falls below a certain level, the heat pump switches on the external heat generator.

6.2.18.3. Internal heating element for heating water

The heating water operation must be switched on via the parameter "M39", Heating or Heating & Hot Water.

6.2.18.4. External heating element for hot water

This function can be selected if an external heating element for hot water preparation is installed in the buffer storage tank.

6.2.19. Preheating and heating

6.2.19.1. Preheat

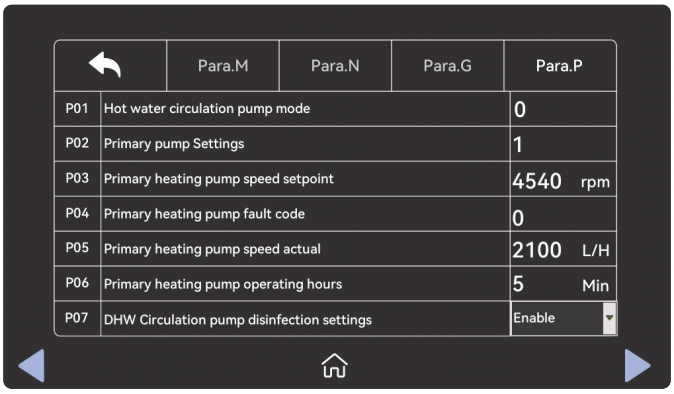
The preheating function is active for a duration of 10 minutes.

6.2.19.2. Screed heating program

The screed heating program can be individually configured.

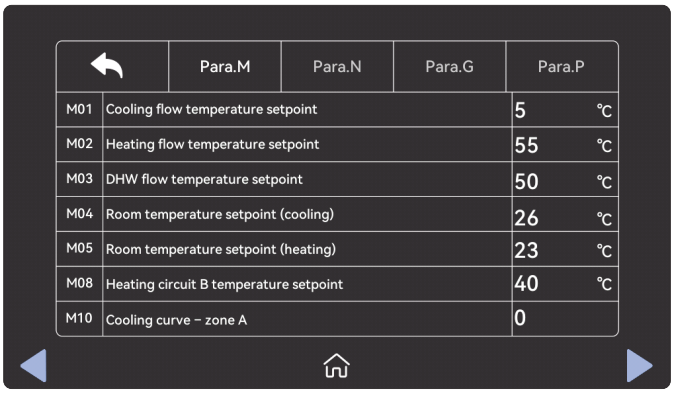
6.2.20. Hot water circulation pump

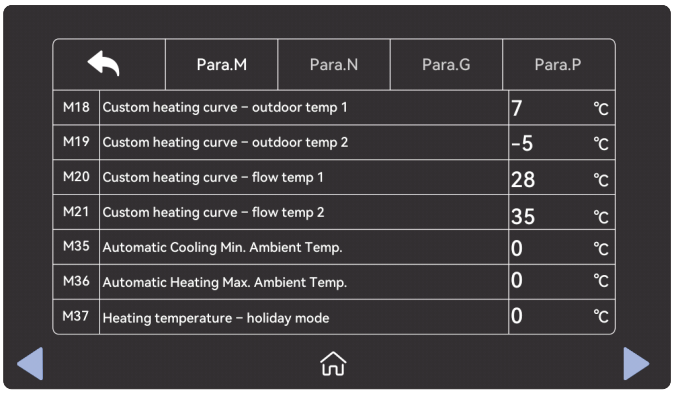
The parameter "P01" controls the circulation pump. Setting it to "1" activates intermittent operation. Setting it to "0" activates continuous operation.



6.2.21. Climate curves

Setting the climate curves using the parameters “M10 – M21”.





6.2.21.1. Heating climate curves

Outside temperature °C	**≤-20**	**-19**	**-18**	**-17**	**-16**	**-15**	**-14**	**-13**	**-12**	**-11**	**-10**	**-9**	**-8**	**-7**	**-6**	**-5**	**-4**
Low-temperature curve 1	38	38	38	38	38	37	37	37	37	37	37	36	36	36	36	36	36
Low-temperature curvee 2	37	37	37	37	37	36	36	36	36	36	36	35	35	35	35	35	35
Low-temperature curve 3	36	36	36	35	35	35	35	35	35	34	34	34	34	34	34	33	33
Low-temperature curve 4	35	35	35	34	34	34	34	34	34	33	33	33	33	33	33	32	32
Low-temperature curve 5	34	34	34	33	33	33	33	33	33	32	32	32	32	32	32	31	31
Low-temperature curve 6	32	32	32	32	31	31	31	31	31	31	31	31	30	30	30	30	30
Low-temperature curve 7	31	31	31	31	30	30	30	30	30	30	30	30	29	29	29	29	29
Low-temperature curve 8	29	29	29	29	28	28	28	28	28	28	28	28	27	27	27	27	27
High-temperature curve 1	55	55	55	55	54	54	54	54	54	54	54	54	53	53	53	53	53
HHigh-temperature curve 2	53	53	53	53	52	52	52	52	52	52	52	52	51	51	51	51	51
High-temperature curve 3	52	52	52	52	51	51	51	51	51	51	51	51	50	50	50	50	50
High-temperature curve 4	50	50	50	50	49	49	49	49	49	49	49	49	48	48	48	48	48
High-temperature curve	48	48	48	48	47	47	47	47	47	47	47	47	46	46	46	46	46
High-temperature curve	45	45	45	45	44	44	44	44	44	44	44	44	43	43	43	43	43
High-temperature curve	43	43	43	43	42	42	42	42	42	42	42	42	41	41	41	41	41
High-temperature curve	40	40	40	40	39	39	39	39	39	39	39	39	38	38	38	38	38

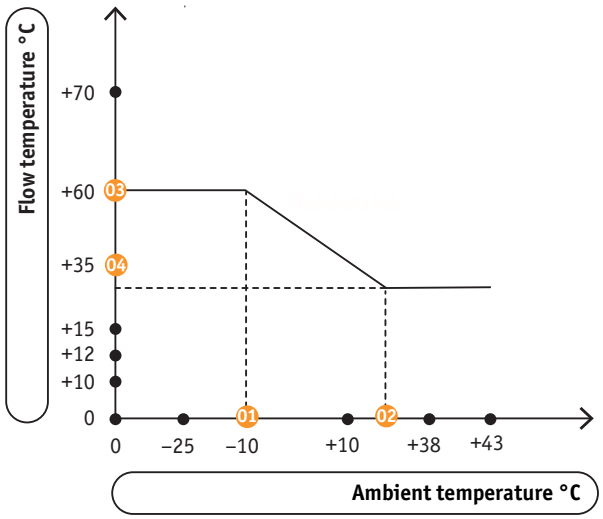
Outside temperature °C	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
Low-temperature curve 1	35	35	35	35	35	35	34	34	34	34	34	34	33	33	33	33	33
Low-temperature curve 2	34	34	34	34	34	34	33	33	33	33	33	33	32	32	32	32	32
Low-temperature curve 3	33	33	33	33	32	32	32	32	32	32	31	31	31	31	31	31	30
Low-temperature curve 4	32	32	32	32	31	31	31	31	31	31	30	30	30	30	30	30	29
Low-temperature curve 5	31	31	31	31	30	30	30	30	30	30	29	29	29	29	29	29	28
Low-temperature curve 6	30	30	30	29	29	29	29	29	29	29	28	28	28	28	28	28	27
Low-temperature curve 7	29	29	29	28	28	28	28	28	28	28	27	27	27	27	27	27	26
Low-temperature curve 8	27	27	27	26	26	26	26	26	26	26	26	25	25	25	25	25	25
High-temperature curve 1	53	53	53	53	53	52	52	52	52	52	52	52	52	51	51	51	51
High-temperature curve 2	51	51	51	51	51	50	50	50	50	50	50	50	50	49	49	49	49
High-temperature curve 3	50	50	50	50	50	49	49	49	49	49	49	49	49	48	48	48	48
High-temperature curve 4	48	48	48	48	48	47	47	47	47	47	47	47	47	46	46	46	46
High-temperature curve 5	46	46	46	46	46	45	45	45	45	45	45	45	45	44	44	44	44
High-temperature curve 6	43	43	43	43	43	42	42	42	42	42	42	42	42	41	41	41	41
High-temperature curve 7	41	41	41	41	41	40	40	40	40	40	40	40	40	39	39	39	39
High-temperature curve 8	38	38	38	38	38	37	37	37	37	37	37	37	37	36	36	36	36

Outside temperature °C	**14**	**15**	**16**	**17**	**18**	**19**	**≥20**
Low-temperature curve 1	33	32	32	32	32	32	32
Low-temperature curve 2	32	31	31	31	31	31	31
Low-temperature curvee 3	30	30	30	30	30	29	29
Low-temperature curve 4	29	29	29	29	29	28	28
Low-temperature curve 5	28	28	28	28	28	27	27
Low-temperature curve 6	27	27	27	27	27	26	26
Low-temperature curve 7	26	26	26	26	26	25	25
Low-temperature curve 8	25	25	24	24	24	24	24
High-temperature curve 1	51	51	50	50	50	50	50
High-temperature curve 2	49	49	48	48	48	48	48
High-temperature curve 3	48	48	47	47	47	47	47
High-temperature curve 4	46	46	45	45	45	45	45
High-temperature curvee 5	44	44	43	43	43	43	43
High-temperature curve 6	41	41	40	40	40	40	40
High-temperature curve 7	39	39	38	38	38	38	38
High-temperature curve 8	36	36	35	35	35	35	35

6.2.21.2. Heating climate curve user-defined

a) Users can activate any curve according to the following graph.
b) Users can define the curve parameters themselves.
The parameters are set as follows:
Ambient temperature 01 ,
Ambient temperature 02 ,
Flow temperature 03 ,
Flow temperature 04 .

The target temperature value is calculated according to the linear relationship y = kx + b.



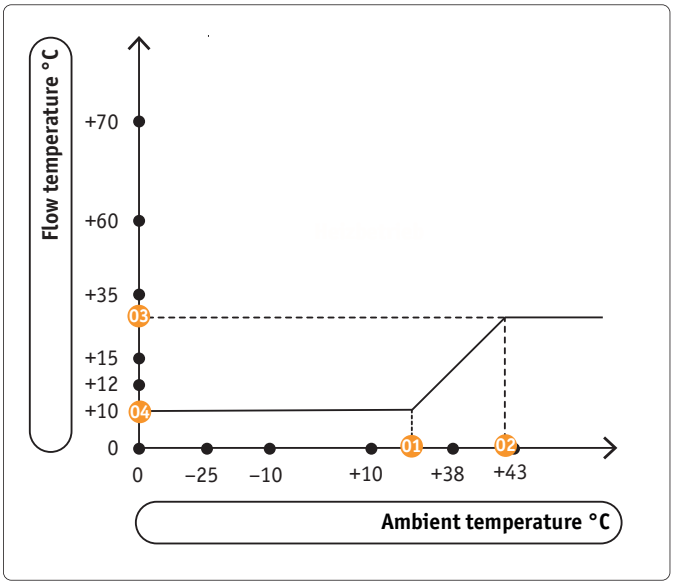
6.2.21.3. Cooling climate curves

Outside temperature °C	**-10 to 15**	**15 to 22**	**22 to 30**	**more than 30**
Low-temperature curve 1	16	11	8	5
Low-temperature curve 2	17	12	9	6
Low-temperature curve 3	18	13	10	7
Low-temperature curve 4	19	14	11	8
Low-temperature curve 5	20	15	12	9
Low-temperature curve 6	21	16	13	10
Low-temperature curve 7	22	17	14	11
Low-temperature curve 8	23	18	15	12
High-temperature curve 1	20	18	17	16
High-temperature curve 2	21	19	18	17
High-temperature curve 3	22	20	19	17
High-temperature curve 4	23	21	19	18
High-temperature curve 5	24	21	20	18
High-temperature curve 6	24	22	20	19
High-temperature curve 7	25	22	21	19
High-temperature curve 8	25	23	21	20

6.2.21.4. Cooling climate curve user-defined

a) Users can activate any curve according to the following graph.
b) Users can define the curve parameters themselves.
The parameters are set as follows:
Ambient temperature 01,
Ambient temperature 02,
Flow temperature 03,
Flow temperature 04.

The target temperature value is calculated according to the linear relationship y = kx + b.



6.3. Appendix

6.3.1. Paramaters

Note: Parameters can only be changed when the heat pump is powered off; otherwise, a successful parameter change is not possible.

Code	Parameter	Unit	Selection
N01	Performance level	/	0 = Standard, 1 = Highest level 2 = Eco, 3 = Auto
N02	Operating mode	/	0 = Heating only, 1 = Heating and cooling 2 = Cooling only
N04	Four-way valve	/	0 = Valve open during heating 1 = Valve open during cooling
N05	External on/off switch	/	0 = Switch, 1 = Pushbutton
N07	Parameter storage during network failure	/	0 = Deactivate, 1 = Activate
N08	Restart after power outage	/	0 = Deactivate, 1 = Activate
N11	Hot water	/	0 = Deactivate, 1 = Activate
N20	External heating element for hot water	/	0 = Deactivate, 1 = Activate
N21	Circulation pump	/	0 = Deactivate, 1 = Activate
N22	Solar thermal system	/	0 = Deactivate, 1 = Activate
N23	Setting the connection switch	/	0 = Deactivate 1 = Connection established 2 = Connection terminated 3 = Switch on/off via controller 4 = Control hot water heating element via controller 5 = Control external heat source via controller
N26	Selection of mixed heating circuits	/	0 = One heating circuit, 1 = Two heating circuits
N32	Smart-Grid	/	0 = Deactivate, 1 = Activate
N36	Flow temperature sensor for underfloor heating	/	0 = Deactivate, 1 = Activate
N37	Total flow temperature sensor for external heat source	/	0 = Deactivate, 1 = Activate
N38	EVU signal	/	0 = Normally open 1 = Normally closed
N39	SG-Ready signal	/	0 = Normally open 1 = Normally closed

Code	Parameter	Unit	Selection
N41	Flow temperature sensor for solar thermal system	/	0 = Deactivate, 1 = Activate
N48	Cooling system selection Zone A	/	0 = Radiator, 1 = Convector 2 = Underfloor heating
N49	Heating system selection Zone A	/	0 = Radiator, 1 = Convector 2 = Underfloor heating
M01	Cooling temperature range	°C	15 – 35
M02	Heating temperature range	°C	0 – 85
M03	Hot water temperature range	°C	0 – 80
M08	Fixed temperature range for heating (Zone B)	°C	40 – 60
M10 or M12	Cooling curve Zone A or Cooling curve Zone B	/	0 = Deactivate 1 = Low temperature curve 1 2 = Low temperature curve 2 3 = Low temperature curve 3 4 = Low temperature curve 4 5 = Low temperature curve 5 6 = Low temperature curve 6 7 = Low temperature curve 7 8 = Low temperature curve 8 9 = High temperature curve 1 10 = High temperature curve 2 11 = High temperature curve 3 12 = High temperature curve 4 13 = High temperature curve 5 14 = High temperature curve 6 15 = High temperature curve 7 16 = High temperature curve 8 17 = Custom curve 9
M11 or M13	Heating curve Zone A or Heating curve Zone B	/	0 = Deactivate 1 = Low temperature curve 1 2 = Low temperature curve 2 3 = Low temperature curve 3 4 = Low temperature curve 4 5 = Low temperature curve 5 6 = Low temperature curve 6 7 = Low temperature curve 7 8 = Low temperature curve 8 9 = High temperature curve 1 10 = High temperature curve 2 11 = High temperature curve 3 12 = High temperature curve 4 13 = High temperature curve 5 14 = High temperature curve 6 15 = High temperature curve 7 16 = High temperature curve 8 17 = Custom curve 9

Code	Parameter	Unit	Selection
M14	Custom cooling curve, outside temperature 1	°C	-5 – 46
M15	Custom cooling curve, outside temperature 2	°C	-5 – 46
M16	Custom cooling curve, flow temperature 1	°C	5 – 25
M17	Custom cooling curve, flow temperature 2	°C	5 – 25
M18	Custom heating curve, outside temperature 1	°C	-25 – 35
M19	Custom heating curve, outside temperature 2	°C	-25 – 35
M20	User-defined heating curve, flow temperature 1	°C	25 – 65
M21	User-defined heating curve, flow temperature 2	°C	25 – 65
M35	Automatic switching Heating/Cooling	°C	20 – 29
M36	Automatic activation Heating	°C	10 – 17
M37	Flow temperature heating holiday mode	°C	20 – 25
M38	Hot water flow temperature, holiday mode	°C	20 – 25
M40	External heat source	/	0 = Disabled, 1 = Heating only 2 = Hot water only, 3 = Heating & hot water
P01	Hot water circulation pump	/	0 = Continuous operation, 1 = Intermittent operation 2 = Stop when temperature is reached
P02	Primary heating circuit pump	/	1 = Speed control, 2 = Flow control 3 = On/Off, 4 = Power control
P03	Primary heating circuit pump target speed	rpm	1.000 – 4.500
P04	Primary heating circuit pump manufacturer	/	0 – 4 (1 = Default setting)
P05	Primary heating circuit pump actual speed	/	0 – 4.500
P06	Hot water circulation pump runtime	min	5 – 120
P07	Hot water disinfection via circulation pump	/	0 = Deactivate, 1 = Activate
P08	Hot water circulation pump	/	0 = Deactivate, 1 = Activate
G01	Time-controlled disinfection	/	0 = Deactivate, 1 = Activate
G02	Target temperature disinfection	°C	60 – 70
G03	Maximum disinfection cycle	min	90 – 300
G04	Disinfection time	min	5 – 60

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6.3.2. Error messages

Code	Description	Reasons	Solutions
E01	Communication error between indoor and outdoor unit	1. The connection between the indoor and outdoor units is faulty. 2. Fault in the indoor unit. 3. Fault in the outdoor unit. 4. Communication and power cables are too close together and are causing interference.	1. Check the connection. 2. Replace the display in the indoor unit. 3. Route the communication cable separately from the power cable.
E03	High-pressure compressor	1. Check for refrigerant leaks 2. The EEV is dirty, clogged, or damaged. 3. Damage to the compressor bearing, leading to friction of the mechanical parts and an increase in exhaust gas temperature. 4. High-pressure switch fault 5. Mainboard fault 6. Compressor fault	1. Refill refrigerant 2. Clean/replace the EEV 3. Replace the compressor 4. Replace the high-pressure switch 5. Replace the main circuit board 6. Replace the compressor
E04	Low-pressure compressor	1. Insufficient water flow 2. Low inlet temperature of the chilled water 3. Refrigerant leakage or insufficient refrigerant charge 4. Limescale deposits in the evaporator	1. Check the temperature difference between the flow and return lines of the outdoor unit. 2. Check the installation of the indoor and outdoor units. 3. Check the outdoor unit for refrigerant leaks and refill if necessary. 4. Descale the heat exchanger.
E06	Communication error with the frequency converter	1. The communication and power cables are too close together and are causing interference. 2. The connection between the mainboard and the frequency converter is faulty. 3. Mainboard fault 4. Frequency converter fault	1. Route the communication cable separately from the power cable. 2. Check the cable connections. 3. Replace the mainboard. 4. Replace the frequency converter.

Code	Description	Reasons	Solutions
E10	Faulty flow temperature sensor for underfloor heating	1. The wiring is loose/damaged. 2. Faulty temperature sensor 3. Faulty mainboard	1. Rewiring/replacement of cables 2. Replacement of the temperature sensor 3. Replacement of the mainboard
E11	Temperature sensor error Total flow temperature Temperature sensor error Total outdoor unit outlet Temperature sensor error Plate heat exchanger outlet Temperature sensor error Heat pump flow temperature		
E12	Temperature sensor error Hot water Temperature sensor error Upper buffer tank Temperature sensor error Lower buffer tank		
E13	Temperature sensor error Indoor		
E14	Temperature sensor error Outdoor		
E16	Temperature sensor error Exhaust side		
E21	EEPROM data error	Data processing errors	Restart
E24	Return temperature too high	1. The wiring is loose/damaged. 2. The heat exchanger is scaled. 3. The temperature sensor is faulty. 4. The mainboard is faulty.	1. Rewiring/replacement of cables 2. Descaling of the heat exchanger 3. Replacement of the temperature sensor 4. Replacement of the mainboard
E25	Return temperature too low	1. Low water flow 2. Blocked pipes 3. Damage to pipes 4. Faulty temperature sensor	1. Clear the blockage. 2. Check the flow rate of the primary heating circuit pump. 3. Replace the pipe. 4. Replace the temperature sensor.
E26	Error in the delta T between flow and return of the outdoor unit		
E27	Outlet temperature too high		

Code	Description	Reasons	Solutions
E31	High-pressure sensor fault	1. The wiring is loose/damaged. 2. Fault in the high-pressure sensor/low-pressure sensor 3. Fault in the mainboard	1. Rewiring/replacement of cables 2. Replacement of the high-pressure sensor/low-pressure sensor 3. Replacement of the mainboard
E32	Low pressure sensor fault		
E44	Heat exchanger fault, flow temperature	1. The wiring is loose/damaged. 2. Sensor fault. 3. Mainboard fault.	1. Rewiring/replacement of cables 2. Replacement of the sensor 3. Replacement of the mainboard
E55	Intake air temperature sensor error		
E56	Flow temperature sensor error solar thermal system		
E58	Compressor temperature sensor fault		
E59	Intake temperature too low	1. Too much/too little refrigerant 2. Faulty temperature sensor 3. Faulty mainboard	1. Refill refrigerant according to the specifications on the nameplate. 2. Replace the temperature sensor. 3. Replace the mainboard.
E60	Frequent emergency defrosting	1. The outside temperature sensor is damaged. 2. The heat exchanger is dirty and clogged. 3. There is too much/too little refrigerant.	1. Replace the outdoor temperature sensor. 2. Clean the heat exchanger. 3. Refill with refrigerant according to the specifications on the rating plate.
E61	Error in the delta T between intake temperature and exhaust temperature	1. Damage to the inlet and outlet water temperature sensors 2. No flow in the primary heating circuit 3. Blockage or limescale buildup in the heat exchanger 4. Incorrect parameter selection for the primary heating circuit pump 5. Primary heating circuit pump defective or blocked 6. Nominal flow rate too small	1. Replace the temperature sensors 2. Clean or replace the heat exchanger 3. Clean, replace, or properly configure the primary heating circuit pump 4. Adjust the heat pump hydraulics 5. Reset the error message 6. Clean the heat exchanger fins.
E62	Communication error with the fan coil unit	1. Fault in the communication cable 2. Fault in the power supply 3. Fault in the mainboard of the hydraulic station or the convector	1. Check communication cables and replace if necessary 2. Replace power cables 3. Replace the mainboard. of the hydraulic station or convector

Code	Description	Reasons	Solutions
E63	Communication error between indoor and outdoor unit	1. The connection between the indoor and outdoor units is faulty. 2. Fault in the indoor unit. 3. Fault in the outdoor unit. 4. Communication and power cables are too close together and are causing interference.	1. Check the connection. 2. Replace the display in the indoor unit. 3. Route the communication cable separately from the power cable.
E64	Errors in program processing	Program error	Perform an update.
E65	Model setting error	1. Mainboard code error 2. Factory settings not restored correctly	1. Reset the mainboard code 2. Restore factory settings
E66	Error in the system settings	Parameter setting error	Restore factory settings
E67	Overload of the auxiliary heating element	1. Heating element fault 2. Buffer tank damage	1. Check the power supply wiring for the heating element. 2. Repair or replace the buffer tank.
E68	Insufficient water flow in the primary heating circuit	1. No flow in the primary heating circuit 2. Blockage or limescale buildup in the heat exchanger 3. Incorrect parameter selection for the primary heating circuit pump 4. Primary heating circuit pump defective or blocked 5. Nominal flow rate too small	1. Clean or replace the heat exchanger. 2. Clean, replace, or properly configure the primary heating circuit pump. 3. Adjust the heat pump hydraulics. 4. Reset the error message.
E69 E70	Temperature sensor fault Refrigerant gas side Temperature sensor fault Refrigerant liquid side	1. Wiring fault 2. Temperature sensor fault 3. Mainboard fault	1. Rewiring/replacement of cables 2. Replacement of the temperature sensor 3. Replacement of the mainboard
F16	Refrigerant pressure too low	1. Insufficient water flow 2. Insufficient water temperature at the evaporator inlet 3. Refrigerant leakage or insufficient refrigerant charge 4. Limescale deposits in the evaporator	1. Check the temperature difference between the inlet and outlet water and adjust the water flow. 2. Check the installation. 3. Check for leaks or refill with sufficient refrigerant. 4. Remove limescale deposits.

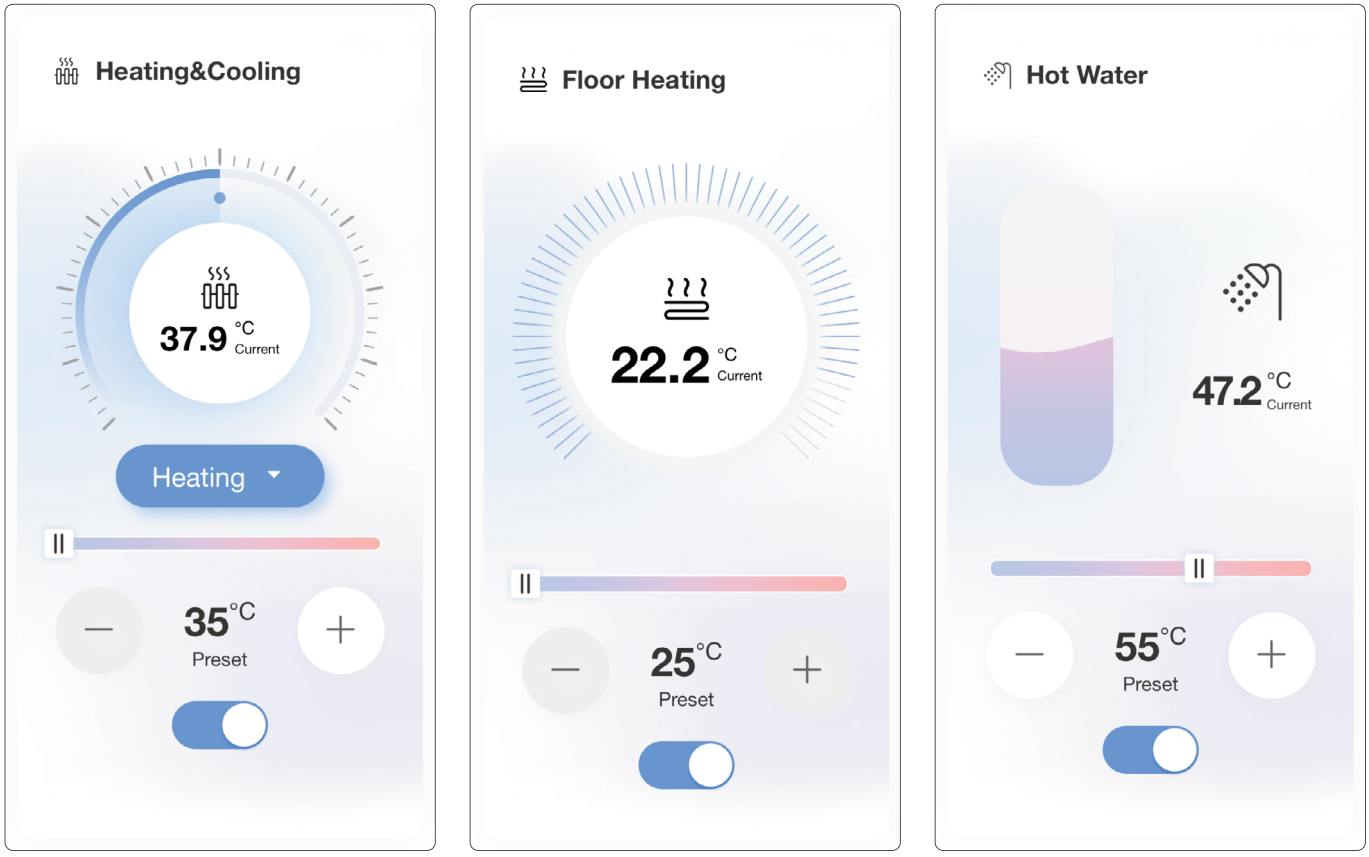
Code	Description	Reasons	Solutions
F17	Refrigerant pressure too high	1. Insufficient water flow 2. Low inlet temperature of the chilled water 3. Refrigerant leakage or insufficient refrigerant charge 4. Limescale deposits in the evaporator	1. Check the temperature difference between the flow and return of the outdoor unit. 2. Check the installation of the indoor and outdoor units. 3. Check the outdoor unit for refrigerant leaks and refill if necessary. 4. Descale the heat exchanger.
F61	Error in the speed monitoring of fan 1 or 2	1. Loose connection cables 2. Problems with the fan motor power supply 3. Mainboard fault 4. Fan motor fault	1. Check the wiring. 2. Replace the power supply. 3. Replace the mainboard. 4. Replace the fan motor.
F62	Fan coil unit malfunction	1. The power consumption does not match the set parameters. 2. Fan coil unit motor is blocked. 3. Fan coil unit is damaged.	1. Check the wiring. 2. Check if the motor is blocked. 3. Clean the fan motor. 4. Replace the fan motor.
F63	Outside temperature prevents compressor start	1. Wiring fault 2. Outdoor temperature sensor fault 3. Mainboard fault	1. Check the wiring 2. Replace the outdoor temperature sensor 3. Replace the mainboard
F64	Frequency converter error	1. Wiring fault 2. Power supply fault 3. Mainboard fault 4. Frequency converter board fault	1. Check the wiring. 2. Check the power supply. 3. Replace the mainboard. 4. Replace the frequency converter board.
F65	Error in the frequency converter parameterisation		
F66	Primary heating circuit pump fault Primary heating circuit pump overload (80%)	1. No flow in the primary heating circuit 2. Blockage or limescale buildup in the heat exchanger 3. Incorrect parameter selection for the primary heating circuit pump 4. Primary heating circuit pump defective or blocked 5. Nominal flow rate too small	1. Clean or replace the heat exchanger. 2. Check the wiring. 3. Replace the primary heating circuit pump. 4. Replace the frequency converter. 5. Replace the mainboard.
F75	R290 sensor error	1. Wiring fault 2. R290 sensor fault 3. Mainboard fault	1. Check the wiring. 2. Replace the R290 sensor. 3. Replace the mainboard.

Code	Description	Reasons	Solutions
F76	R290 leakage alarm	1. Gas leakage 2. External gas sources 3. R290 sensor error	1. Locate and repair the leak 2. Remove external gas sources 3. Replace the R290 sensor
F77	Water flow sensor error	1. Wiring fault 2. Flow sensor fault 3. Mainboard fault	1. Check the wiring. 2. Replace the flow sensor. 3. Replace the mainboard.

7. Eco-Home App

You can view your Warmondo heat pump in the Eco-Home app on your smartphone. Please download the Eco-Home app from the Google Play Store or the Apple App Store.

Please carefully adjust the various settings in the app to ensure the safe and reliable operation of your Warmondo heat pump. If you have any questions, please contact your installer or MULTIBETON Warmondo customer service.



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