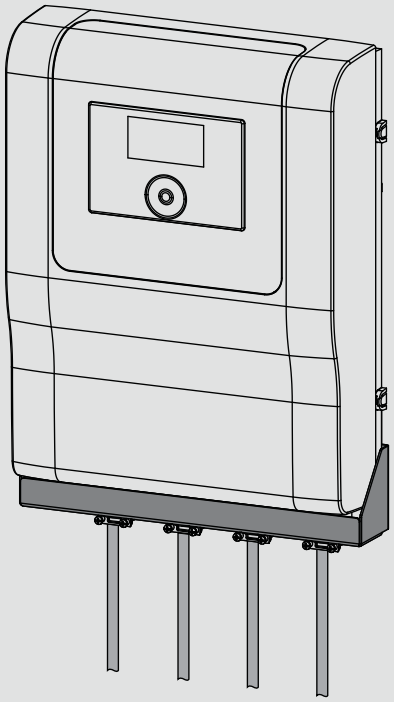
COMMISSIONING

Heat pump manager

» WPM



STIEBEL ELTRON

CONTENTS

COMMISSIONING

1. General information

These instructions are intended for qualified contractors.

1.1 Relevant documents

- 🕮 WPM operating instructions
- 🕮 Heat pump operating and installation instructions
- 🕮 Operating and installation instructions for system components
- 🕮 WPM system notification list

Note
Please see device's operating instructions for information on the "Guarantee" and "Environment and recycling".

1.2 Safety instructions

1.2.1 Structure of safety instructions

KEYWORD Type of risk
Here, possible consequences are listed that may result from failure to observe the safety instructions.
▶ Steps to prevent the risk are listed.

1.2.2 Symbols, type of risk

Symbol	Type of risk
	Injury
	Electrocution

1.2.3 Keywords

KEYWORD	Meaning
DANGER	Failure to observe this information will result in serious injury or death.
WARNING	Failure to observe this information may result in serious injury or death.
CAUTION	Failure to observe this information may result in non-serious or minor injury.

1.3 Other symbols in this documentation

Note
General information is identified by the adjacent symbol.
▶ Read these texts carefully.

Symbol	Meaning
	Material losses (appliance damage, consequential losses and environmental pollution)
	Appliance disposal

▶ This symbol indicates that you have to do something. The action you need to take is described step by step.

□□■ **These symbols show you the software menu level (in this example level 3).**

1.4 Units of measurement

Note
All measurements are given in inches (mm) unless stated otherwise.

2. Safety

Only a qualified contractor should carry out installation, commissioning, maintenance and repair of the appliance.

2.1 Instructions, standards and regulations

Note
Observe all applicable national and regional regulations and instructions.

2.2 General safety instructions

We guarantee trouble-free function and operational reliability only if original accessories and spare parts intended for the appliance are used.

2.3 Notes

- The appliance should only be operated once it is fully installed and all safety equipment has been fitted.

2.4 Test symbols

See type plate on the appliance.

3. Appliance description

The WPM heat pump manager is the main controller of the extendible WPM system. The device assists the control of one direct heating circuit and two heating circuits with mixer. Two heat pumps can be operated in a parallel array. The device provides a 230 V fault contact for external pick-up of system faults. High efficiency circulation pumps can be connected directly via relay outputs or PWM outputs. The PCB of the WPM is located in a wall mounting enclosure that can also accommodate other components such as the relay for the top-hat rail. The entire system is operated via the integral programming unit with Touch-Wheel. An internet interface and Smart Home interfaces are available as options.

Parallel array control

Up to 6 heat pump stages can be controlled for heat generation.

The maximum permitted configuration for parallel array control is subject to the type of heat pump you are using.

- 6 single compressor heat pumps
- From the third connected heat pump upwards, a WPE heat pump extension must be used

Function overview

- The 4-wire data BUS enables rapid installation and system extension using the WPE heat pump extension
- Control of a second heat source for DHW and heating
- Demand-dependent control of different circulation pumps
- Input of the system and heat pump frost limits
- At least 10 h power reserve for the clock
- Automatic pump kick control
- Reset option
- Stored notification list with precise fault code indication on the display, including date, time and heat pump index
- Fast and precise fault diagnosis with a system analyzer including temperature scanning of heat pumps and peripherals without additional equipment
- Default settings for time switch programs for all heating and DHW circuits

Product name	Part number
WPM	205311

3.1 Accessories

The following accessories can be installed for additional control of the heat pump.

3.1.1 FET remote control

The FET digital remote control enables one heating zone to be controlled. The remote control measures the relative humidity and room temperature.

3.1.2 Internet Service Gateway ISG

The Internet Service Gateway (ISG) is an Ethernet gateway in a wall mounting enclosure and is connected into the LAN (local area network).

The device enables the operation, adjustment and checking of heat pump system data via the browser of a computer, laptop or tablet in the local home network.

If the customer so wishes, data from the device can be transferred to our SERVICEWELT portal automatically over the internet.

3.1.3 WPE heat pump extension

The WPE heat pump extension supplements the WPM system with additional functions. These additional functions can be adjusted on the programming unit of the WPM heat pump manager.

The WPE heat pump extension provides:

- Two additional heating circuits with mixer
- A swimming pool controller for primary and secondary integration of a swimming pool
- Two additional 0...10V interfaces
- Two differential controllers
- Switching outputs

The WPE heat pump extension:

- Allows parallel arrays of up to six heat pumps
- Supplements the basic functions of the WPM heat pump manager with options for connecting a building management system

4. Appliance compatibility

Note
Some heat pumps should not be connected directly to the heat pump manager.

- ▶ With these heat pumps, use an indoor unit in which the heat pump manager is factory-fitted.
- ▶ Observe the information in the heat pump documentation.

5. Connecting external components

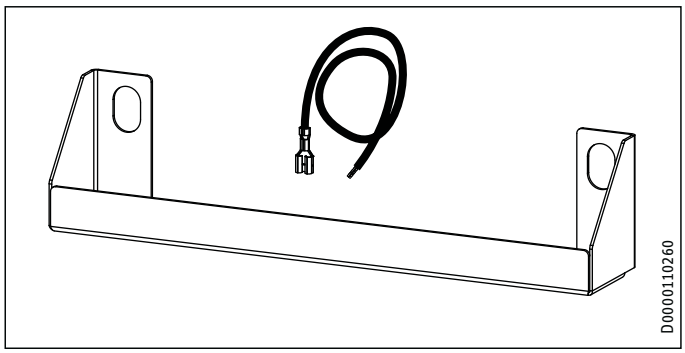
WARNING Electrocution
Carry out all electrical connection and installation work in accordance with national and regional regulations.

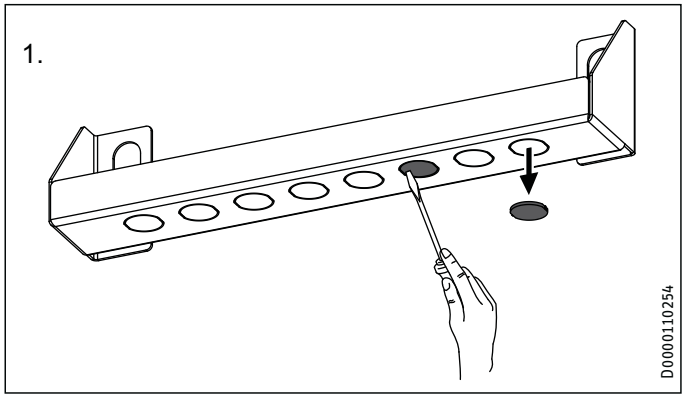
WARNING Electrocution

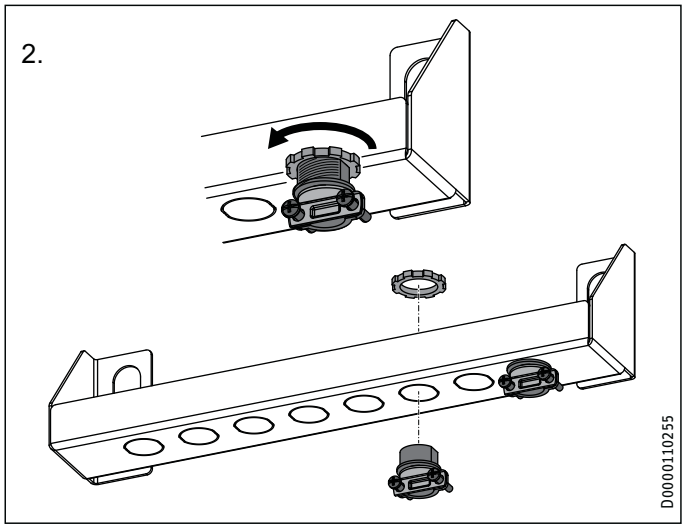
- ▶ **Isolate the heat pump from the power supply when carrying out any work.**

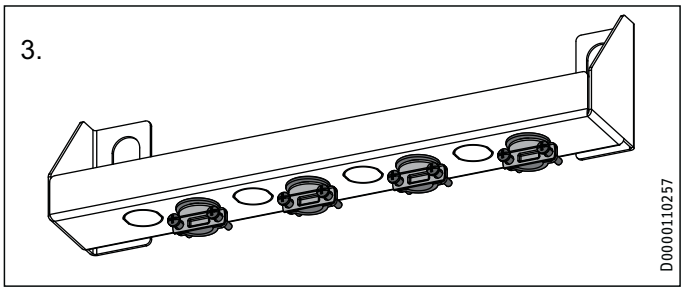
Connecting external components

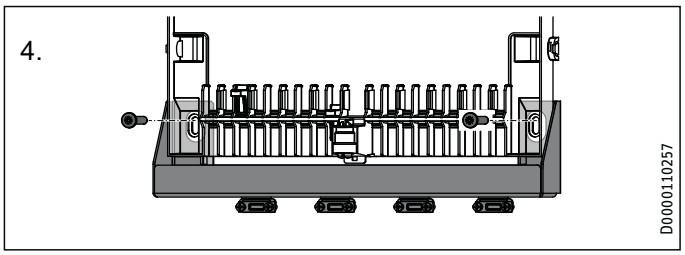
WARNING Electrocution
Only components that operate with safety extra low voltage (SELV) and that ensure secure separation from the mains voltage supply may be connected to the low voltage terminals of the appliance.
Connecting other components can make parts of the appliance and connected components live.
- **Only use components which have been approved by us.**

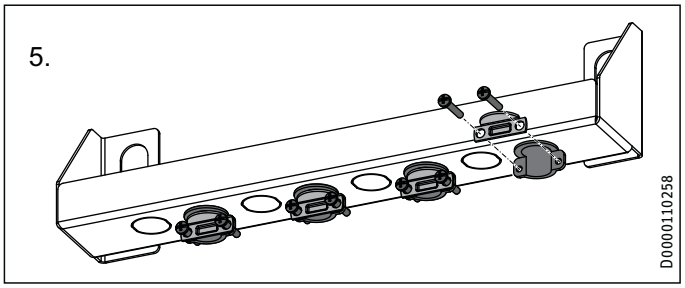


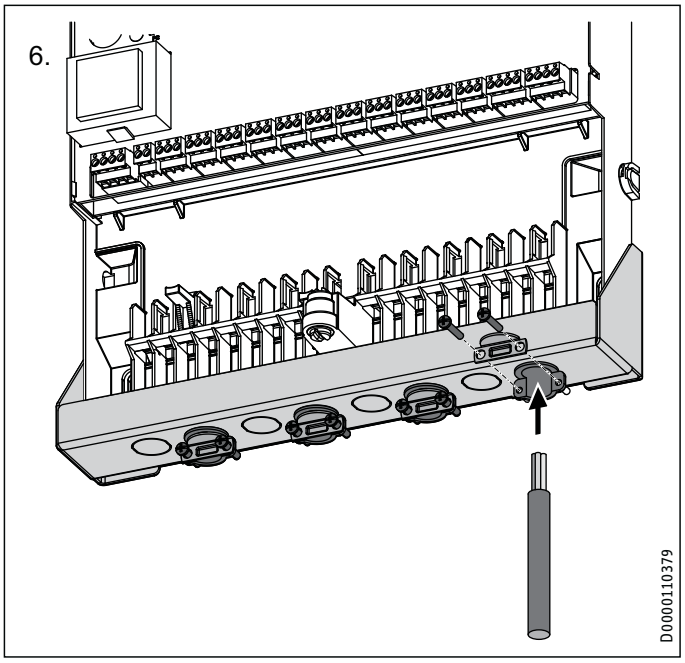


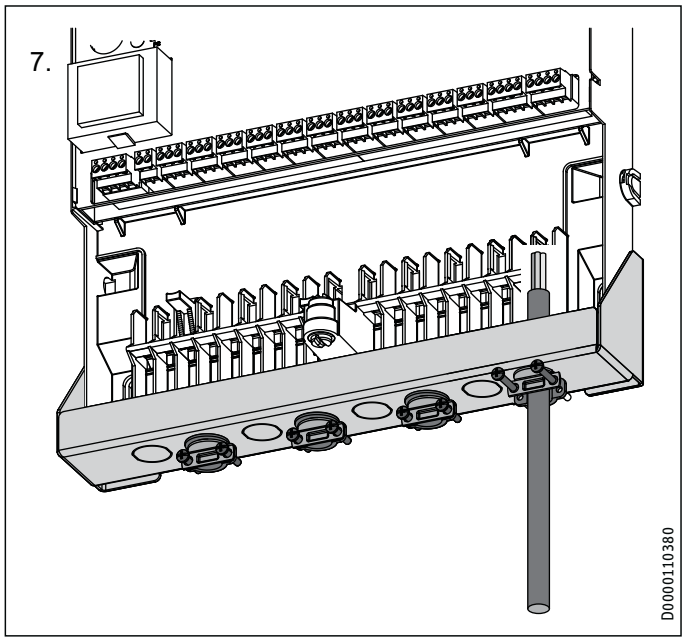












5.1 Sensor installation

▶ Connect all of the required sensors before commissioning the appliance.

5.1.1 AF PT outside temperature sensor

The temperature sensors have a significant influence on the function of your heating system. Therefore ensure sensors are correctly positioned and well insulated.

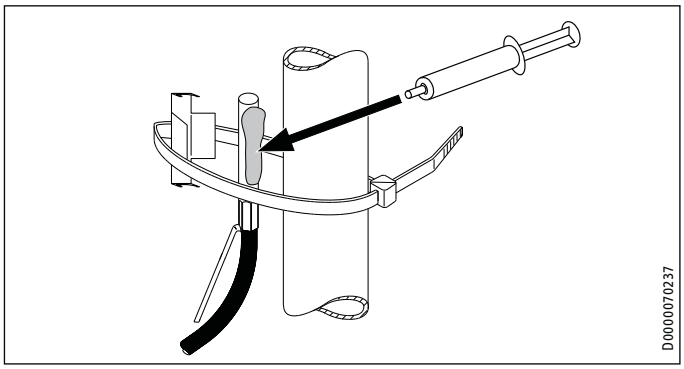
Install the outside temperature sensor on a north or north-eastern wall. Minimum clearances: 98″ (2.5 m) above the ground, and 39″ (1 m) to the side of windows and doors. The outside temperature sensor should be freely exposed to the elements but not placed in direct sunlight. Never mount the outside temperature sensor above windows, doors or air ducts. Do not route the sensor cable with any power supply cable to avoid EMC problems.

Installation:

▶ Pierce the cable grommet at the appropriate place using a pointed object.
▶ Insert the cable grommet into the recess on the sensor retainer.
▶ Pass a lead through the cable grommet.
▶ Connect the lead to the terminal.
▶ Tighten the screws on the terminal.
▶ Connect the connecting cable to sensor terminal X1.3.
▶ Press the sensor retainer into the sensor enclosure until it clicks audibly into place.
▶ Secure the sensor enclosure to the wall using a screw and rawl plug.

5.1.2 TAF PT immersion/contact sensor

Installation as contact sensor

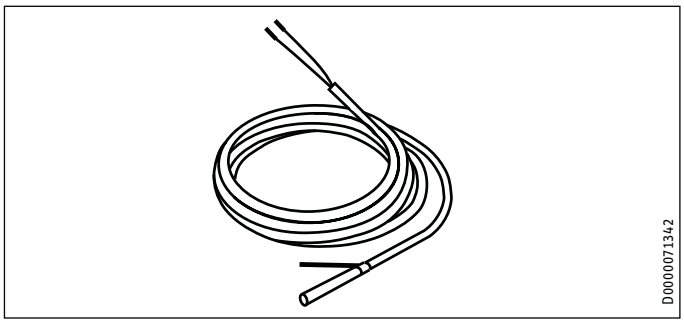


▶ Clean the pipe.

Note
The recesses on the retaining clip are of different sizes.

▶ Press the smaller recess on the retaining clip into one of the notches on the sensor.
▶ Press the larger recess of the retaining clip onto the sensor.
▶ Apply heat conducting paste to the sensor.
▶ Secure the sensor with the retaining clip and the cable tie.

Installation as an immersion sensor



The immersion sensor is required for the sensor well in the buffer cylinder.

▶ Press the spring downwards. The spring is used for fixing the sensor in the sensor well.
▶ Apply heat conducting paste to the sensor.
▶ Push the sensor into the sensor well.

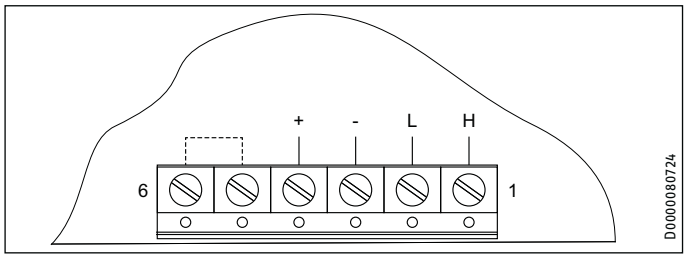
5.1.3 Sensor resistance values

Temperature in °F	Temperature in °C	PT 1000 sensor Resistance in Ω
-22	- 30	882
- 4	- 20	922
14	-10	961
32	0	1000
50	10	1039
68	20	1078
77	25	1097
86	30	1117
104	40	1155

Temperature in °F	Temperature in °C	PT 1000 sensor Resistance in Ω
122	50	1194
140	60	1232
158	70	1271
176	80	1309
194	90	1347
212	100	1385
230	110	1423
248	120	1461

5.2 FET remote control

FET connection array



The FET digital remote control enables convenient operation of one heating zone.

- ▶ Attach the remote control to one of the CAN B terminals.
- ▶ Observe the FET operating instructions.

5.3 Internet Service Gateway ISG

The Internet Service Gateway ISG enables you to operate the heat pump within your local home network and via the internet when you are away.

- ▶ Attach the Internet Service Gateway to one of the CAN B terminals (not one marked "+").
- ▶ Observe the ISG operating instructions.

The ISG is not supplied with power by the heat pump.

6. Commissioning

Only qualified contractors may carry out any adjustments to the heat pump manager (see list in the chapter "Settings / Setting parameters" in the heat pump manager commissioning instructions), commission the device and instruct the system user in its use.

Commissioning must be carried out in accordance with these installation instructions and the operating and installation instructions of all components belonging to the heat pump system.

6.1 Bus initialization

Connecting the bus cable not only establishes the electrical connection for system communication. As part of commissioning, connecting the bus cable will also assign the appliance-specific address required for switching the heat pump.

6.1.1 General information

Note
The control panel for each heat pump provides space for the connection of two 3-core BUS cables, i.e. the BUS cable between the heat pumps is wired in parallel.

Note
In a parallel array, heat pumps designed to heat DHW must always be initialized first. The remaining heat pumps can then be connected in any order.

Note
All necessary sensors must be connected before the voltage is connected to the WPM. Any sensors connected later will not be recognized by the WPM.
Example: No DHW parameters, programs or temperatures are displayed if the DHW cylinder sensor was not connected at the time of commissioning. No values can be programmed for these parameters.

Note
If incorrectly initialized, all IWS (internal heat pump controllers) must be reset and reinitialized (see chapter "Reset options / Reinitializing the IWS").

Note
The entire heat pump system will be shut down if the BUS cable between the WPM and the heat pump is interrupted.

6.1.2 Sequence for BUS connection

For the bus connection it is essential that you carry out the steps below in the order described:

- ▶ Connect the WPM to the mains voltage.
- ▶ Connect the WPE (if installed) to the mains voltage.
- ▶ Connect the internal heat pump controller (IWS) to the mains voltage.
- ▶ Leave the mains voltage to the compressor and emergency/ booster heater switched off, so that the heat pump does not start up uncontrolled during initialization.

In the DIAGNOSIS / SYSTEM menu, all connected BUS subscribers and their respective software versions are shown under BUS SUBSCRIBER.

After completing initialization of the heat pump, use the DIAGNOSIS / SYSTEM menu under HEAT PUMP TYPES to check that all connected heat pumps are being displayed.

6.2 System configuration through parameter settings

If the system is operating incorrectly, you should first check the parameter settings (see chapter "Settings / Parameter summary").

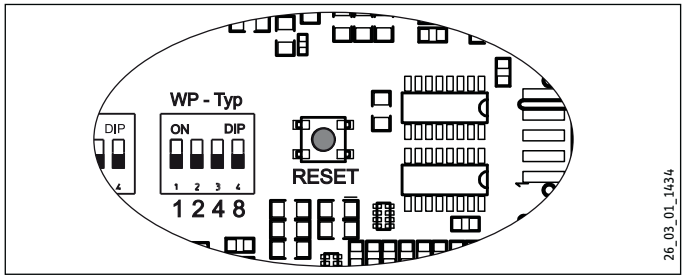
6.3 Reset options

6.3.1 Reinitializing the IWS

This reset should be performed if the system was commissioned or initialized incorrectly.

To do so, proceed as follows:

- ▶ Switch OFF the mains voltage to the WPM.
- ▶ Switch OFF the mains voltage to the WPE (if installed).
- ▶ Switch OFF the mains voltage to the heat pump.
- ▶ Disconnect the BUS connections.
- ▶ Switch ON the mains voltage to the heat pump.
- ▶ Hold the reset key until the two outer LEDs are constantly illuminated.
- ▶ Release the reset key. The IWS has now been reset and is ready for renewed initialization.



- ▶ Switch the mains voltage to the components back ON.
- ▶ Carry out BUS initialization (see chapter "Commissioning / BUS initialization").
- ▶ Reset the system-specific parameters for the WPM and WPE.

6.3.2 Heat pump reset

This reset should be performed if a heat pump-specific fault or hardware fault occurs five times in the space of two hours' runtime.

- ▶ Activate the HEAT PUMP RESET parameter in the COMMISSIONING menu.

The fault is cleared. The heat pump is ready to be returned to use.

7. Commissioning wizard

The device has a commissioning wizard that will take you through the most important settings the first time it is started.

- ▶ Follow the instructions on the display.

8. Menu

Note
Not all appliance parameters and values are displayed in the different menus; it depends which heat pump type and accessories are connected.

8.1 Expert access code

Certain menu items are protected by a code. The factory-set code is: 1 0 0 0.

Note
The menu items shown in grey are visible only if the WPE heat pump extension is connected.

8.2 Menu structure

- ■ INFO
  - ☐■ SYSTEM
  - ☐■ HEAT PUMP
- ■ DIAGNOSIS
  - ☐■ SYSTEM STATUS
  - ☐■ HEAT PUMP STATUS
  - ☐■ HEAT PUMP ANALYSIS
  - ☐■ SYSTEM
  - ☐■ INTERNAL CALCULATION
  - ☐■ NOTIFICATIONLIST
  - ☐■ RELAY TEST SYSTEM
  - ☐■ RELAY TEST HEAT PUMP
- ■ PROGRAMS
  - ☐■ HEATING PROGRAM
  - ☐■ DHW PROGRAM
  - ☐■ COOLING PROGRAM
  - ☐■ PARTY PROGRAM
  - ☐■ HOLIDAY PROGRAM
  - ☐■ HEAT-UP PROGRAM
  - ☐■ PASTEURISATION PROGRAM
  - ☐■ DHW CIRCULATION PROGRAM
  - ☐■ SWIMMING POOL PROGRAM
  - ☐■ SILENT PROGRAM 1
  - ☐■ SILENT PROGRAM 2
- ■ SETTINGS
  - ☐■ VIEW
  - ☐■ GENERAL
  - ☐■ FAVOURITES
  - ☐■ HEATING
  - ☐■ DHW
  - ☐■ HYBRID MODULE
  - ☐■ COOLING
  - ☐■ SWIMMING POOL
  - ☐■ DIFFERENTIAL CONTROLLER 1
  - ☐■ DIFFERENTIAL CONTROLLER 2
  - ☐■ THERMOSTAT FUNCTION 1
  - ☐■ THERMOSTAT FUNCTION 2
- ■ COMMISSIONING
  - ☐■ SOURCE
  - ☐■ HEATING
  - ☐■ DHW
  - ☐■ COMPRESSOR
  - ☐■ SILENT MODE
  - ☐■ I/O CONFIGURATION
  - ☐■ EMERGENCY OPERATION
  - ☐■ RESET

8.3 Menu description

■ INFO

In the INFO menu you can check set and actual values for temperatures, flow rates and pressures in the heating system and heat pump.

Note
Please note that actual and set values can only be displayed if the appropriate sensors are connected.

□■ SYSTEM

□□■ ROOM TEMPERATURE	
□□□■ FET 1	
□□□□■ ACTUAL TEMPERATURE FET 1 Actual room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ SET TEMPERATURE FET 1 Set room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ RELATIVE HUMIDITY FET 1	%
□□□□■ DEW POINT TEMPERATURE FET 1 Dew point temperature (displayed only if FET remote control is connected)	°C
□□□■ FET 2	
□□□□■ ACTUAL TEMPERATURE FET 2 Actual room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ SET TEMPERATURE FET 2 Set room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ RELATIVE HUMIDITY FET 2	%
□□□□■ DEW POINT TEMPERATURE FET 2 Dew point temperature (displayed only if FET remote control is connected)	°C
□□□■ FET 3	
□□□□■ ACTUAL TEMPERATURE FET 3 Actual room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ SET TEMPERATURE FET 3 Set room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ RELATIVE HUMIDITY FET 3	%
□□□□■ DEW POINT TEMPERATURE FET 3 Dew point temperature (displayed only if FET remote control is connected)	°C
□□□■ FET 4	
□□□□■ ACTUAL TEMPERATURE FET 4 Actual room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ SET TEMPERATURE FET 4 Set room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ RELATIVE HUMIDITY FET 4	%
□□□□■ DEW POINT TEMPERATURE FET 4 Dew point temperature (displayed only if FET remote control is connected)	°C
□□□■ FET 5	
□□□□■ ACTUAL TEMPERATURE FET 5 Actual room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ SET TEMPERATURE FET 5 Set room temperature for the allocated heating circuit (displayed only if FET remote control is connected)	°C
□□□□■ RELATIVE HUMIDITY FET 5	%
□□□□■ DEW POINT TEMPERATURE FET 5 Dew point temperature (displayed only if FET remote control is connected)	°C

□□■ HEATING	
□□□■ OUTSIDE TEMPERATURE	°C
□□□■ ACTUAL TEMPERATURE HK 1 Actual heating circuit temperature, heating circuit 1	°C
□□□■ SET TEMPERATURE HK 1 Set heating circuit temperature, heating circuit 1 (HK1). With fixed value control, the fixed temperature is displayed.	°C
□□□■ ACTUAL TEMPERATURE HK 2 Actual heating circuit temperature, heating circuit 2	°C
□□□■ SET TEMPERATURE HK 2 Set heating circuit temperature, heating circuit 2 (HK2). With fixed value control, the fixed temperature is displayed.	°C
□□□■ ACTUAL TEMPERATURE HK 3 Actual heating circuit temperature, heating circuit 3	°C
□□□■ SET TEMPERATURE HK 3 Set heating circuit temperature, heating circuit 3 (HK3). With fixed value control, the fixed temperature is displayed.	°C
□□□■ ACTUAL TEMPERATURE HK 4 Actual heating circuit temperature, heating circuit 4	°C
□□□■ SET TEMPERATURE HK 4 Set heating circuit temperature, heating circuit 4 (HK4). With fixed value control, the fixed temperature is displayed.	°C
□□□■ ACTUAL TEMPERATURE HK 5 Actual heating circuit temperature, heating circuit 5	°C
□□□■ SET TEMPERATURE HK 5 Set heating circuit temperature, heating circuit 5 (HK5). With fixed value control, the fixed temperature is displayed.	°C
□□□■ ACTUAL FLOW TEMPERATURE WP	°C
□□□■ ACTUAL FLOW TEMPERATURE NHZ	°C
□□□■ ACTUAL RETURN TEMPERATURE WP	°C
□□□■ ACTUAL FLOW TEMPERATURE	°C
□□□■ ACTUAL RETURN TEMPERATURE	°C
□□□■ SET FIXED TEMPERATURE	°C
□□□■ ACTUAL BUFFER TEMPERATURE	°C
□□□■ SET BUFFER TEMPERATURE	°C
□□□■ HEATING PRESSURE	bar
□□□■ FLOW RATE	l/min
□□□■ SYSTEM FROST PROTECTION	°C

□□■ DHW	
□□□■ ACTUAL TEMPERATURE Actual DHW temperature	°C
□□□■ SET TEMPERATURE Set DHW temperature	°C
□□□■ FLOW RATE	l/min

□□■ HYBRID MODULE	
□□□■ ACTUAL TEMPERATURE 2ND HEAT GENERATOR	°C
□□□■ SET TEMPERATURE 2ND HEAT GENERATOR	°C
□□□■ ACTUAL MIXER TEMPERATURE 2ND HEAT GENERATOR	°C
□□□■ SET MIXER TEMPERATURE 2ND HEAT GENERATOR	°C

☐☐■ COOLING	
☐☐☐■ ACTUAL TEMPERATURE	°C
☐☐☐■ SET TEMPERATURE	°C
☐☐☐■ ACTUAL TEMPERATURE KK1 Actual cooling circuit temperature, cooling circuit 1 (KK1)	°C
☐☐☐■ SET TEMPERATURE KK1 Set cooling circuit temperature, cooling circuit 1 (KK1)	°C
☐☐☐■ ACTUAL TEMPERATURE KK2 Actual cooling circuit temperature, cooling circuit 2 (KK2)	°C
☐☐☐■ SET TEMPERATURE KK2 Set cooling circuit temperature, cooling circuit 2 (KK2)	°C
☐☐☐■ ACTUAL TEMPERATURE KK3 Actual cooling circuit temperature, cooling circuit 3 (KK3)	°C
☐☐☐■ SET TEMPERATURE KK3 Set cooling circuit temperature, cooling circuit 3 (KK3)	°C
☐☐☐■ ACTUAL TEMPERATURE KK4 Actual cooling circuit temperature, cooling circuit 4 (KK4)	°C
☐☐☐■ SET TEMPERATURE KK4 Set cooling circuit temperature, cooling circuit 4 (KK4)	°C
☐☐☐■ ACTUAL TEMPERATURE KK5 Actual cooling circuit temperature, cooling circuit 5 (KK5)	°C
☐☐☐■ SET TEMPERATURE KK5 Set cooling circuit temperature, cooling circuit 5 (KK5)	°C

☐☐■ EXTERNAL HEAT SOURCE	
☐☐☐■ ACTUAL TEMPERATURE	°C
☐☐☐■ SET TEMPERATURE	°C
☐☐☐■ DUAL MODE TEMP HZG Heating dual mode point	°C
☐☐☐■ APPLICATION LIMIT HZG Heating application limit	°C
☐☐☐■ DUAL MODE TEMP WW DHW dual mode point	°C
☐☐☐■ APPLICATION LIMIT WW DHW application limit	°C
☐☐☐■ RUNTIME	Hours

☐☐■ ELECTRIC REHEATING	
☐☐☐■ DUAL MODE TEMP HZG Heating dual mode point	°C
☐☐☐■ APPLICATION LIMIT HZG Heating application limit	°C
☐☐☐■ DUAL MODE TEMP WW DHW dual mode point	°C
☐☐☐■ APPLICATION LIMIT WW DHW application limit	°C

☐☐■ SOURCE	
☐☐☐■ SOURCE TEMPERATURE	°C
☐☐☐■ MIN SOURCE TEMPERATURE	°C
☐☐☐■ SOURCE PRESSURE	bar

☐☐■ DHW CIRCULATION	
☐☐☐■ ACTUAL TEMPERATURE	°C
☐☐☐■ SET TEMPERATURE	°C

☐☐■ SWIMMING POOL	
☐☐☐■ ACTUAL TEMPERATURE	°C
☐☐☐■ SET TEMPERATURE	°C
☐☐☐■ ACTUAL TEMPERATURE FIXED VALUE	°C
☐☐☐■ SET TEMPERATURE FIXED VALUE	°C

☐☐■ DIFFERENTIAL CONTROLLER 1	
☐☐☐■ SENSOR TEMPERATURE 1	°C
☐☐☐■ MINIMUM TEMPERATURE	°C
☐☐☐■ SENSOR TEMPERATURE 2	°C
☐☐☐■ MAXIMUM TEMPERATURE	°C

☐☐■ DIFFERENTIAL CONTROLLER 2	
☐☐☐■ SENSOR TEMPERATURE 1	°C
☐☐☐■ MINIMUM TEMPERATURE	°C
☐☐☐■ SENSOR TEMPERATURE 2	°C
☐☐☐■ MAXIMUM TEMPERATURE	°C

☐☐■ THERMOSTAT FUNCTION 1	
☐☐☐■ SENSOR TEMPERATURE	°C
☐☐☐■ SET TEMPERATURE	°C

☐☐■ THERMOSTAT FUNCTION 2	
☐☐☐■ SENSOR TEMPERATURE	°C
☐☐☐■ SET TEMPERATURE	°C

☐■ HEAT PUMP

Note
The power consumption is calculated on the basis of process data from the heat pump. This output data cannot be used for invoicing purposes. In combination with the amount of heat, the data gives an approximate energy statement.
Not available on all heat pump types.

☐☐■ PROCESS DATA	
☐☐☐■ RETURN TEMPERATURE	°C
☐☐☐■ FLOW TEMPERATURE	°C
☐☐☐■ FROST PROTECTION TEMP	°C
☐☐☐■ OUTSIDE TEMPERATURE	°C
☐☐☐■ EXHAUST AIR TEMPERATURE	°C
☐☐☐■ EVAPORATOR TEMPERATURE	°C
☐☐☐■ RECUPERATOR TEMPERATURE	°C
☐☐☐■ COMPRESSOR INLET TEMPERATURE	°C
☐☐☐■ COMP SUCTION GAS TEMP	°C
☐☐☐■ COMP SUCTION GAS TEMP ND	°C
☐☐☐■ COMP SUCTION GAS TEMP HD	°C
☐☐☐■ INTERMEDIATE INJ TEMP	°C
☐☐☐■ HOT GAS TEMPERATURE	°C
☐☐☐■ CONDENSER TEMPERATURE	°C
☐☐☐■ OIL SUMP TEMPERATURE	°C
☐☐☐■ LOW PRESSURE	bar
☐☐☐■ MEAN PRESSURE	bar
☐☐☐■ HIGH PRESSURE	bar
☐☐☐■ DIFF PRESSURE VOLT INPUT	V
☐☐☐■ DIFFERENTIAL PRESSURE	mbar
☐☐☐■ WP WATER FLOW RATE	l/min
☐☐☐■ INVERTER CURRENT ND	A
☐☐☐■ INVERTER CURRENT HD	A
☐☐☐■ INVERTER CURRENT	A
☐☐☐■ INVERTER VOLTAGE	V
☐☐☐■ SPEED ND	Hz
☐☐☐■ SET SPEED ND	Hz
☐☐☐■ SPEED HD	Hz

□□□■ SET SPEED HD	Hz
□□□■ ACTUAL COMPRESSOR SPEED	Hz
□□□■ SET COMPRESSOR SPEED	Hz
□□□■ REL FAN RATE	%
□□□■ ACTUAL FAN SPEED	Hz
□□□■ SET FAN SPEED	Hz
□□□■ EVAPORATOR INLET TEMPERATURE	°C
□□□■ EVAPORATOR OUTLET TEMPERATURE	°C
□□□■ EXPANSION VALVE INLET TEMPERATURE	°C
□□□■ HEAT SOURCE RETURN TEMPERATURE	°C
□□□■ HEAT SOURCE FLOW TEMPERATURE	°C
□□□■ HEAT SOURCE PRESSURE	bar
□□□■ HEAT SOURCE PUMP RATE	W

□□■ AMOUNT OF HEAT	
□□□■ VD HEATING DAY Amount of compressor heat generated in heating mode since 00:00 of the current day.	kWh
□□□■ VD HEATING TOTAL Total amount of compressor heat generated in heating mode.	MWh
□□□■ VD DHW DAY Amount of compressor heat generated in DHW mode since 00:00 of the current day.	kWh
□□□■ VD DHW TOTAL Total amount of compressor heat generated in DHW mode.	MWh
□□□■ NHZ HEATING TOTAL Total amount of booster heat generated in heating mode.	MWh
□□□■ NHZ DHW TOTAL Total amount of booster heat generated in DHW mode.	MWh

□□■ POWER CONSUMPTION	
□□□■ VD HEATING DAY Amount of electric compressor output in heating mode since 00:00 of the current day.	kWh
□□□■ VD HEATING TOTAL Total amount of electric compressor output in heating mode.	MWh
□□□■ VD DHW DAY Amount of electric compressor output in DHW mode since 00:00 of the current day.	kWh
□□□■ VD DHW TOTAL Total amount of electric compressor output in DHW mode.	MWh

□□■ RUNTIME	
□□□■ VD HEATING	Hours
□□□■ VD 1 HEATING Runtime of compressor 1 in heating mode.	Hours
□□□■ VD 2 HEATING Runtime of compressor 2 in heating mode.	Hours
□□□■ VD 1/2 HEATING Runtime of compressor 1 and 2 in heating mode.	Hours
□□□■ VD DHW	Hours
□□□■ VD 1 DHW Runtime of compressor 1 in DHW mode.	Hours
□□□■ VD 2 DHW Runtime of compressor 2 in DHW mode.	Hours
□□□■ VD 1/2 DHW Runtime of compressor 1 and 2 in DHW mode.	Hours
□□□■ VD COOLING	Hours
□□□■ VD DEFROST Runtime of compressor 1 in cooling mode.	Hours
□□□■ VD 1 DEFROST Runtime of compressor 1 in defrost mode.	Hours
□□□■ VD 2 DEFROST Runtime of compressor 2 in defrost mode.	Hours
□□□■ NHZ 1 Runtime of electric emergency/booster heater in booster stage 1.	Hours
□□□■ NHZ 2 Runtime of electric emergency/booster heater in booster stage 2.	Hours
□□□■ NHZ 1/2 Runtime of electric emergency/booster heater in booster stages 1 and 2.	Hours
□□□■ DEFROST TIME	Minutes
□□□■ PASSIVE COOLING	Hours

□□■ STARTS	
□□□■ COMPRESSOR	
□□□■ COMPRESSOR 1	
□□□■ COMPRESSOR 2	
□□□■ DEFROST STARTS	

■ DIAGNOSIS

For heating system and heat pump troubleshooting and analysis, you can call up all important process data and BUS subscribers under DIAGNOSIS and carry out a relay test.

□■ SYSTEM STATUS
□□■ WPM
□□□■ HEATING CIRCUIT PUMP 1
□□□■ HEATING CIRCUIT PUMP 2
□□□■ HEATING CIRCUIT PUMP 3
□□□■ BUFFER CHARGING PUMP 1
□□□■ BUFFER CHARGING PUMP 2
□□□■ DHW CHARGING PUMP
□□□■ SOURCE PUMP
□□□■ DEFROST
□□□■ FAULT OUTPUT
□□□■ DHW CIRCULATION PUMP
□□□■ WE 2 DHW
□□□■ WE 2 HEATING
□□□■ COOLING
□□□■ MIXER OPEN, HTG CIRCUIT 2
□□□■ MIXER CLOSE, HTG CIRCUIT 2
□□□■ MIXER OPEN, HTG CIRCUIT 3
□□□■ MIXER CLOSE, HTG CIRCUIT 3
□□□■ NHZ 1
□□□■ NHZ 2
□□□■ NHZ 3
□□□■ POWER-OFF
□□□■ MIXER OPEN 2ND HEAT GENERATOR
□□□■ MIXER CLOSE 2ND HEAT GENERATOR
□□□■ HEAT SOURCE 2
□□□■ HEAT PUMP DIVERTER VALVE
□□□■ 2ND HEAT GENERATOR PUMP
□□□■ 2ND HEAT GENERATOR DIVERTER VALVE
□□■ WPE
□□□■ HEATING CIRCUIT PUMP 4
□□□■ HEATING CIRCUIT PUMP 5
□□□■ BUFFER CHARGING PUMP 3
□□□■ BUFFER CHARGING PUMP 4
□□□■ BUFFER CHARGING PUMP 5

Menu: DIAGNOSIS

□□□■ BUFFER CHARGING PUMP 6
□□□■ OUTPUT DIFFERENTIAL CONTROLLER 1
□□□■ OUTPUT DIFFERENTIAL CONTROLLER 2
□□□■ POOL PUMP, PRIMARY
□□□■ POOL PUMP, SECONDARY
□□□■ MIXER OPEN, HTG CIRCUIT 4
□□□■ MIXER CLOSED, HTG CIRCUIT 4
□□□■ MIXER OPEN, HTG CIRCUIT 5
□□□■ MIXER CLOSED, HTG CIRCUIT 5

□□■ HEAT PUMP STATUS
□□■ REMAINING IDLE TIME
□□■ COMPRESSOR
□□■ COMPRESSOR ND
□□■ COMPRESSOR HD
□□■ COMPRESSOR 1
□□■ COMPRESSOR 2
□□■ BOOSTER HEATER STAGE 1
□□■ BOOSTER HEATER STAGE 2
□□■ BOOSTER HEATER STAGE 1/2
□□■ REFRIGERANT CIRCUIT DIVERTER VALVE
□□■ PRESSURE COMPENSATION
□□■ OIL COMPENSATION
□□■ OIL SUMP HEATING
□□■ HEAT PUMP FAN
□□■ AUXILIARY HEATER
□□■ OUTPUT COMPRESSOR ON
□□■ EXTERNAL FAULT
□□■ HD LIMITER
□□■ HD/TEMPERATURE MONITOR
□□■ DEFROST SIGNAL
□□■ CENTRAL INPUT
□□■ INVERTER POWER SUPPLY
□□■ FAULT
□□■ FORCED HEATING
□□■ COOLING MODE
□□■ FLOAT SWITCH
□□■ BRINE PRESSURE SWITCH
□□■ SAFETY CHAIN OK
□□■ HEAT SOURCE PUMP
□□■ PASSIVE COOLING VALVE, HEATING
□□■ PASSIVE COOLING VALVE, COOLING
□□■ CASING VENTILATION

□□■ HEAT PUMP ANALYSIS
□□■ SET SUPERHEATING
□□■ ACTUAL SUPERHEATING V
□□■ CONTROL DEVIATION
□□■ P FACTOR
□□■ I FACTOR
□□■ D FACTOR
□□■ PRE-CTRL OPENING EXV
□□■ OPENING EXV
□□■ SET SUPERHTG SG V HD
□□■ ACTUAL SUPERHTG SG V HD
□□■ P FAKT V-HD
□□■ I FAKT V-HD
□□■ D FAKT V-HD
□□■ SET SUPERHTG SG V ZE
□□■ ACTUAL SUPERHTG SG V ZE
□□■ P FAKT ZE
□□■ I FAKT ZE
□□■ D FAKT ZE
□□■ V OPENING EXV ZE
□□■ OPENING EXV
□□■ SUPERCOOLING COND
□□■ ACTUAL SUPERHEATING REK
□□■ INTERMEDIATE INJ PRESSURE
□□■ ACTUAL SUPERHEATING ZE
□□■ AMBIENT TEMP. INVERTER
□□■ TEMP. INV. COMPRESSOR
□□■ TEMPERATURE INV. FAN
□□■ MOTOR CURRENT
□□■ BYPASS VALVE OPENING LVL
□□■ SUPERHEATING ADAPTATION
□□■ SUPERCOOLING EXPANSION VALVE INLET
□□■ OPERATING MODE REFRIGERANT CIRCUIT CONTROLLER
□□■ OPERATING MODE PASSIVE COOLING
□□■ SET SUPERHEATING, SUCTION GAS, COMPRESSOR
□□■ ACTUAL SUPERHEATING, SUCTION GAS, COMPRESSOR
□□■ COMPRESSOR SPEED LIMIT

□□■ SYSTEM
□□■ BUS SUBSCRIBER
□□□■ SUBSCRIBER
□□□■ SOFTWARE
□□■ HEAT PUMP TYPE
□□□■ TYPE
□□□■ DIP

□□■ INTERNAL CALCULATION
□□■ INTERVAL
□□■ LIVE STAGES

□□■ NOTIFICATIONLIST

□□■ RELAY TEST SYSTEM
□□■ WPM
□□□■ OUTPUT X2.3
□□□■ OUTPUT X2.4
□□□■ OUTPUT X2.5
□□□■ OUTPUT X2.6
□□□■ OUTPUT X2.7
□□□■ OUTPUT X2.8
□□□■ OUTPUT X2.9
□□□■ OUTPUT X2.10
□□□■ OUTPUT X2.11
□□□■ OUTPUT X2.12
□□□■ OUTPUT X2.13
□□□■ OUTPUT X2.14.1
□□□■ OUTPUT X2.14.2
□□□■ OUTPUT X2.15.1
□□□■ OUTPUT X2.15.2
□□□■ DRAIN HYD
□□□■ NHZ 1
□□□■ NHZ 2
□□□■ NHZ 3
□□□■ WE 2 MIN OUTPUT
□□□■ WE 2 MAX OUTPUT
□□■ WPE
□□□■ OUTPUT X4.3
□□□■ OUTPUT X4.4

□□□■ OUTPUT X4.5
□□□■ OUTPUT X4.6
□□□■ OUTPUT X4.7
□□□■ OUTPUT X4.8
□□□■ OUTPUT X4.9
□□□■ OUTPUT X4.10
□□□■ OUTPUT X4.11
□□□■ OUTPUT X4.12
□□□■ OUTPUT X4.13
□□□■ OUTPUT X4.14.1
□□□■ OUTPUT X4.14.2
□□□■ OUTPUT X4.15.1
□□□■ OUTPUT X4.15.2

□■ RELAY TEST HEAT PUMP
□□■ DEFROST
□□■ FAN
□□■ NHZ 1
□□■ NHZ 2
□□■ OIL SUMP
□□■ COMPRESSOR
□□■ STEPPER MOTOR PHASE 1
□□■ STEPPER MOTOR PHASE 2
□□■ STEPPER MOTOR PHASE 3
□□■ STEPPER MOTOR PHASE 4
□□■ STEPPER MOTOR PHASE 1 ZE
□□■ STEPPER MOTOR PHASE 2 ZE
□□■ STEPPER MOTOR PHASE 3 ZE
□□■ STEPPER MOTOR PHASE 4 ZE
□□■ RIBBON HEATER
□□■ EXTERNAL COMPRESSOR ON
□□■ EXTERNAL FAULT
□□■ EX VALVE CENTRE POSITION
□□■ HEAT SOURCE PUMP
□□■ PASSIVE COOLING VALVE, HEATING
□□■ PASSIVE COOLING VALVE, COOLING

■ PROGRAMS

Here you can set all the times for the different programs and start the heat-up program.

Setting pairs of switching times

In most programs, you can set three pairs of switching times per day or block of days. The switching time pairs are shown on the display, to the right of the clock. Each switching time pair consists of a start time and an end time. After a switching time pair has expired, the heat pump switches to the operating mode applicable at the time.

Periods around midnight

Switching time pairs can be programmed only up to 24:00. If you want to choose periods that extend beyond midnight, you will need to set an additional switching time pair for the following day.

Deleting switching time pairs

By resetting the start time to "--:--", the associated end time is automatically reset.

□■ HEATING PROGRAM
□□■ HEATING CIRCUIT 1
□□■ HEATING CIRCUIT 2
□□■ HEATING CIRCUIT 3
□□■ HEATING CIRCUIT 4
□□■ HEATING CIRCUIT 5

□■ DHW PROGRAM

□■ COOLING PROGRAM

□■ PARTY PROGRAM
□□■ HOURS

□■ HOLIDAY PROGRAM
□□■ HOLIDAYS BEGINNING
□□■ HOLIDAYS ENDING

□■ HEAT-UP PROGRAM
□□■ HEATING CIRCUIT SELECTION
□□□■ HEATING CIRCUIT 1
□□□■ HEATING CIRCUIT 2
□□□■ HEATING CIRCUIT 3
□□□■ HEATING CIRCUIT 4
□□□■ HEATING CIRCUIT 5
□□■ SETTINGS
□□□■ LOW END TEMPERATURE
□□□■ DURATION BASE TEMP
□□□■ MAXIMUM TEMPERATURE
□□□■ MAX TEMPERATURE DURATION
□□□■ RISE PER DAY

□■ PASTEURISATION PROGRAM
□□■ START TIME
□□■ DAYS

□■ DHW CIRCULATION PROGRAM

□■ SWIMMING POOL PROGRAM

□■ SILENT PROGRAM 1

□■ SILENT PROGRAM 2

□■ HEATING PROGRAM

Select HEATING PROGRAM to determine the times during which rooms should be heated to the set comfort value. In the periods in between, heating takes place to the set ECO value. The times are determined individually for each available heating circuit.

Note
You can set the set values for each heating circuit under SETTINGS / HEATING / HEATING CIRCUIT / COMFORT TEMPERATURE and ECO TEMPERATURE.

☐■ DHW PROGRAM

Select DHW PROGRAM to determine the times during which DHW should be heated to the set comfort value. In the periods in between, DHW is heated to the set ECO value.

Note
You can adjust the set values under SETTINGS / DHW / DHW TEMPERATURES / COMFORT TEMPERATURE or ECO TEMPERATURE.

☐■ COOLING PROGRAM

Use the COOLING PROGRAM menu item to select the times during which cooling to the SET ROOM TEMPERATURE should take place. In the periods in between, no cooling occurs. The times are determined individually for the available cooling circuits.

Note
You can select the set values for the relevant cooling circuit under menu item SETTINGS / COOLING / COOLING CIRCUIT / SET ROOM TEMPERATURE.

☐■ PARTY PROGRAM

Note
In the start display, party mode is not displayed.

Select PARTY PROGRAM, to extend by a few hours the period in which the heat pump provides room heating to comfort temperature. After the period has expired, the heat pump switches to the operating mode applicable at the time.

Note
You can adjust the set values under SETTINGS / HEATING / HEATING CIRCUIT / COMFORT TEMPERATURE or ECO TEMPERATURE.

☐■ HOLIDAY PROGRAM

In the holiday program, the heat pump provides room heating up to the ECO temperature for a freely adjustable period. The set room temperature is reduced to the ECO temperature. Frost protection for DHW heating remains active. After the period has expired, the heat pump switches to the operating mode applicable at the time.

The start day of the holiday period begins at 00:00. The final day of the holiday period ends at 24:00.

The program can be terminated before the end of the set time period by changing the operating mode to COMFORT MODE or PROGRAMMED OPERATION.

☐■ HEAT-UP PROGRAM

Use the heat-up program to dry your screed with a defined temperature profile. To prevent damage to the appliance and/or the installation, observe the following:

- ▶ Perform hydronic balancing of the underfloor heating system.
- ▶ Open all lines of the underfloor heating system.

The heating output required for the floor heating program may exceed the design output of the heat pump. As a result, it may not be possible to achieve the required flow temperature with the heat pump. For problem-free heating/screed drying, therefore, we recommend using an external mobile electric heating appliance.

If screed drying with the heat pump, you will need to activate the electric emergency/booster heater.

During the period that the heat-up program is enabled, the EMERGENCY OPERATION mode is not available.

Heating occurs over a definable period to an adjustable temperature sequence. After a heat-up program has finished, the heat pump switches to the last operating mode selected.

Note
During the period that the heat-up program is enabled, the heat pump will reach maximum output more frequently. The energy demand and noise level will be higher than in normal operation.

Material losses
Incorrect settings can cause damage to the heat pump or screed. With ground source heat pumps, the heat source can also be damaged.
- ▶ Please note the differences between air source heat pumps and ground source heat pumps described below.

Air source heat pumps

By operating at the output limit, the evaporator can defrost frequently due to the high cooling capacity. If the heating system has not been hydronically balanced or if not all heating lines are open, defrosting faults can occur at heating circuit temperatures below 77 °F (25 °C). This is due to protective functions which are intended to prevent the condenser from freezing.

Ice can form on the fan and air ducts even at temperatures above the freezing point, which can lead to noise or, in extreme cases, to the fan becoming blocked.

- ▶ If the fan is blocked, adjust the LOWER APP LIMIT HZG to a value above the current outside temperature.
- ▶ For heat pumps with output-dependent control, limit the heating output of the heat pump in menu “SETTINGS / SILENT MODE / OUTPUT REDUCTION / OUTPUT” to 75 %.
- ▶ Once the ice has melted, set parameter LOWER APP LIMIT HZG back to its initial value.
- ▶ Set the heating output of the heat pump in menu “SETTINGS / SILENT MODE / OUTPUT REDUCTION / OUTPUT” back to its initial value.

☐☐■ HEATING CIRCUIT SELECTION

Select HEATING CIRCUIT SELECTION to select the heating circuit required for the heat-up program.

In the heat pump manager, heating circuit 1 and heating circuits 2 and 3 can be selected. If the WPE heat pump extension is installed

in the system, heating circuit 1 or heating circuits 2 to 5 can be selected.

When heating circuits 2 to 3 or 2 to 5 are in operation, the mixer regulates the flow temperature in the selected heating circuit to the set values.

If only the direct heating circuit 1 is operational, the set values are reduced by 5 K (9 °F) to even out temperature differences in the buffer cylinder.

If the system is operated without a buffer cylinder, a distinction must be drawn between inverter heat pumps and on/off heat pumps.

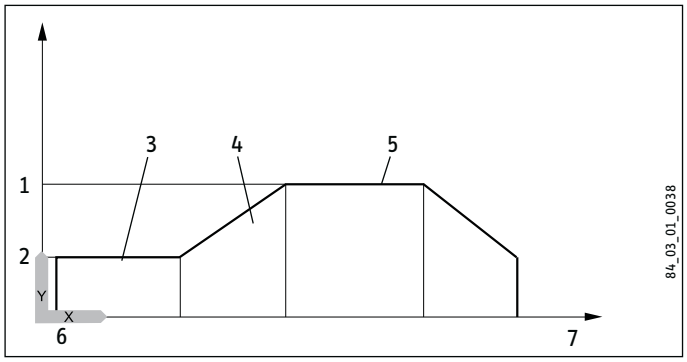
Inverter heat pumps without buffer cylinder

The internal sensor on the heat pump controls the heating circuit temperature by balancing the flow and return temperature. A sensor must not be connected to the heat pump manager for this purpose. Buffer charging pump 1 acts as heating circuit pump 1.

The heat pump extension has no function here.

□□■ SETTINGS

Material losses
Incorrect settings can cause damage to the heat pump or screed. The temperatures and time periods must be specified by the screed contractor responsible.
- ▶ Ask the screed contractor responsible for the details required.



Y Temperature
X Time
1 Maximum temperature (MAXIMUM TEMPERATURE)
2 Low end temperature (LOW END TEMPERATURE)
3 Duration of low end temperature (DURATION BASE TEMP)
4 Rise K/day (RISE PER DAY)
5 Duration of maximum temperature (MAX TEMPERATURE DURATION)
6 Start
7 End

Note
On expiry of the period over which the screed is heated to maximum temperature, the temperature is reduced in equal steps to the low end temperature.

Six parameters are available to determine the temperatures and periods for the heat-up program. These parameters can be adjusted sequentially as soon as the heat-up program is activated.
- ▶ Set the program to ON using the Touch-Wheel. Confirm the selection with OK.
- ▶ Use the Touch-Wheel to select the parameter you want to set. Confirm the selection with OK.
- ▶ Use the Touch-Wheel to set the desired value. Confirm the selection with OK.
- ▶ Adjust the other parameters in the same way.

□□□■ LOW END TEMPERATURE

Here you can set the temperature to which the screed is initially heated.

□□□■ DURATION BASE TEMP

Here you can set how long the LOW END TEMPERATURE is maintained.

□□□■ MAXIMUM TEMPERATURE

Here you can set the maximum temperature to which the screed is heated.

□□□■ MAX TEMPERATURE DURATION

Here you can set how long the MAXIMUM TEMPERATURE is maintained.

□□□■ RISE PER DAY

Here you can set by how many degrees Kelvin the temperature rises before the MAXIMUM TEMPERATURE is reached.

□■ PASTEURISATION PROGRAM

Note
For the PASTEURISATION PROGRAM, an emergency/booster heater or external heat source must be connected.

In menu item PASTEURISATION PROGRAM, you can specify the days and times at which the DHW cylinder heats the content to the highest value.

□□■ START TIME

Here you can specify the start time at which the DHW cylinder heats the content to the highest value.

□□■ DAYS

Here you can set the days on which the DHW cylinder heats the content to the highest value.

☐■ DHW CIRCULATION PROGRAM

Select DHW CIRCULATION PROGRAM to determine the times during which the DHW circulation pump is controlled according to the time program.

☐■ SWIMMING POOL PROGRAM

Select SWIMMING POOL PROGRAM to determine the times during which swimming pool water heating should take place. Outside those times, the swimming pool water heating will be switched off.

Note
You can adjust the set value under SETTINGS / SWIMMING POOL / SET TEMPERATURE.

☐■ SILENT PROGRAM 1

Select SILENT PROGRAM 1 to determine the times during which the heat pump is set to a reduced noise mode.

By reducing the fan speed, the noise level of the heat pump is reduced. On certain heat pumps, the compressor power may also be reduced.

☐■ SILENT PROGRAM 2

Note
When SILENT PROGRAM 2 is enabled, operating costs will be higher.

Select SILENT PROGRAM 2 to determine the times during which the heat pump is switched off. The internal emergency/booster heater or external heat source takes over the heating and DHW heating operations.

■ SETTINGS

Here, in addition to the general settings (e.g. time), you can set all of the system-specific parameters for heating, cooling and DHW modes.

☐■ VIEW

☐■ GENERAL
☐☐■ TIME / DATE

☐☐■ SET SUMMER TIME
☐☐☐■ DAY BEGINNING
☐☐☐■ DAY ENDING

☐☐■ LANGUAGE

☐☐■ CONTRAST

☐☐■ BRIGHTNESS

☐☐■ TOUCH SENSITIVITY

☐☐■ TOUCH ACCELERATION

☐■ FAVOURITES

☐■ HEATING
☐☐■ HEATING CIRCUIT 1
☐☐☐■ COMFORT TEMPERATURE
☐☐☐■ ECO TEMPERATURE
☐☐☐■ MINIMUM TEMPERATURE
☐☐☐■ ROOM INFLUENCE
☐☐☐■ HEATING CURVE RISE
☐☐☐■ HEATING CURVE VIEW

☐☐■ HEATING CIRCUIT 2
☐☐☐■ COMFORT TEMPERATURE
☐☐☐■ ECO TEMPERATURE
☐☐☐■ MINIMUM TEMPERATURE
☐☐☐■ MAXIMUM TEMPERATURE
☐☐☐■ MIXER DYNAMICS
☐☐☐■ ROOM INFLUENCE
☐☐☐■ HEATING CURVE RISE
☐☐☐■ HEATING CURVE VIEW

☐☐■ HEATING CIRCUIT 3
☐☐☐■ COMFORT TEMPERATURE
☐☐☐■ ECO TEMPERATURE
☐☐☐■ MINIMUM TEMPERATURE
☐☐☐■ MAXIMUM TEMPERATURE
☐☐☐■ MIXER DYNAMICS
☐☐☐■ ROOM INFLUENCE
☐☐☐■ HEATING CURVE RISE
☐☐☐■ HEATING CURVE VIEW

☐☐■ HEATING CIRCUIT 4
☐☐☐■ COMFORT TEMPERATURE
☐☐☐■ ECO TEMPERATURE
☐☐☐■ MINIMUM TEMPERATURE
☐☐☐■ MAXIMUM TEMPERATURE
☐☐☐■ MIXER DYNAMICS
☐☐☐■ ROOM INFLUENCE
☐☐☐■ HEATING CURVE RISE
☐☐☐■ HEATING CURVE VIEW

☐☐■ HEATING CIRCUIT 5
☐☐☐■ COMFORT TEMPERATURE
☐☐☐■ ECO TEMPERATURE
☐☐☐■ MINIMUM TEMPERATURE
☐☐☐■ MAXIMUM TEMPERATURE
☐☐☐■ MIXER DYNAMICS
☐☐☐■ ROOM INFLUENCE
☐☐☐■ HEATING CURVE RISE
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☐☐■ STANDARD SETTING
☐☐☐■ BUFFER OPERATION
☐☐☐■ SUMMER MODE
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☐☐☐☐■ OUTSIDE TEMPERATURE
☐☐☐☐■ BUILDING HEAT BUFFER
☐☐☐■ FLOW PROP HEATING CIRC
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Menu: SETTINGS

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□□■ EXTERNAL HEAT SOURCE
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□■ HYBRID MODULE
□□■ 2ND HEAT GENERATOR TYPE
□□□■ GAS CONDENSING
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□□■ TYPE OF OPTIMISATION
□□□■ ECO DRIVE
□□□■ ECONOMICAL
□□□□■ PEAK TARIFF PRICE
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□□□□■ GAS PRICE
□□□□■ OIL PRICE
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□□□□■ ELECTRICITY CO2 EMISSIONS
□□□□■ GAS CO2 EMISSIONS
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□□■ HEAT PUMP SETTING
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□■ COOLING (with FET)
□□■ COOLING

□□■ COOLING MODE
□□□■ PASSIVE COOLING
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□□■ COOLING CIRCUIT 1
□□□■ COOLING TYPE
□□□■ SET ROOM TEMPERATURE
□□□■ INCREASE COOLING CURVE
□□□■ START TEMPERATURE

□□□■ COOLING CURVE VIEW

□□■ COOLING CIRCUIT 2
□□□■ COOLING TYPE
□□□■ SET ROOM TEMPERATURE
□□□■ INCREASE COOLING CURVE
□□□■ START TEMPERATURE
□□□■ COOLING CURVE VIEW

□□■ COOLING CIRCUIT 3
□□□■ COOLING TYPE
□□□■ SET ROOM TEMPERATURE
□□□■ INCREASE COOLING CURVE
□□□■ START TEMPERATURE
□□□■ COOLING CURVE VIEW

□□■ COOLING CIRCUIT 4
□□□■ COOLING TYPE
□□□■ SET ROOM TEMPERATURE
□□□■ INCREASE COOLING CURVE
□□□■ START TEMPERATURE
□□□■ COOLING CURVE VIEW

□□■ COOLING CIRCUIT 5
□□□■ COOLING TYPE
□□□■ SET ROOM TEMPERATURE
□□□■ INCREASE COOLING CURVE
□□□■ START TEMPERATURE
□□□■ COOLING CURVE VIEW

□■ SWIMMING POOL
□□■ SWIMMING POOL
□□□■ DEMAND
□□□□■ 230 V INPUT
□□□□■ SENSOR INPUT
□□□□□■ SET TEMPERATURE
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□□□□□■ FIXED VALUE

□■ DIFFERENTIAL CONTROLLER 1
□□■ DIFFERENTIAL CONTROLLER 1
□□■ START DIFFERENTIAL
□□■ HYSTERESIS
□□■ MINIMUM TEMPERATURE
□□■ MAXIMUM TEMPERATURE
□□■ STOP DELAY

□■ DIFFERENTIAL CONTROLLER 2
□□■ DIFFERENTIAL CONTROLLER 2
□□■ START DIFFERENTIAL
□□■ HYSTERESIS
□□■ MINIMUM TEMPERATURE
□□■ MAXIMUM TEMPERATURE
□□■ STOP DELAY

□■ THERMOSTAT FUNCTION 1
□□■ THERMOSTAT FUNCTION 1
□□■ SET TEMPERATURE
□□■ HYSTERESIS

□■ THERMOSTAT FUNCTION 2
□□■ THERMOSTAT FUNCTION 2
□□■ SET TEMPERATURE
□□■ HYSTERESIS

□■ VIEW

In this menu item, you can determine what faults are displayed in the message list. Depending on the code entered, the message list will display faults relevant either to the qualified contractor or to the service department. If no code is entered, only faults relevant to the device user are displayed in the message list.

Entering the code will also unlock the code-protected parameters for a specified period.

□■ GENERAL

□□■ TIME / DATE

Select TIME / DATE to set the current time, year, month and day.

□□■ SET SUMMER TIME

Select SET SUMMER TIME, to set the summer time dates.

Summertime is factory-set to begin on March 25th and end on October 25th.

□□□■ DAY BEGINNING

Set the beginning of summer time here.

□□□■ DAY ENDING

Set the end of summer time here.

□□■ LANGUAGE

Select LANGUAGE to change the system language.

□□■ CONTRAST

Select CONTRAST to adjust the display contrast.

□□■ BRIGHTNESS

Select BRIGHTNESS to adjust the display brightness.

□□■ TOUCH SENSITIVITY

Select TOUCH SENSITIVITY to adjust the touch sensitivity of the Touch-Wheel and the sensor keys.

□□■ TOUCH ACCELERATION

Select TOUCH ACCELERATION to adjust the speed of reaction of the Touch-Wheel and the sensor keys.

□■ FAVOURITES

Select FAVOURITES to select up to six temperatures that will be displayed in the main display. These temperatures will be displayed sequentially in groups of three.

□■ HEATING

□□■ HEATING CIRCUIT 1 | HEATING CIRCUIT 2 | HEATING CIRCUIT 3 | HEATING CIRCUIT 4 | HEATING CIRCUIT 5

With all heating circuit menu items, you can specify the parameters independently of one another.

Note
If the WPE heat pump extension is connected, you can specify separate values for heating circuit 4 and heating circuit 5.

□□□■ COMFORT TEMPERATURE

Select COMFORT TEMPERATURE to set the set room temperature for comfort mode. When the heat pump is in comfort mode (see PROGRAMS / HEATING PROGRAM or operating mode COMFORT MODE), the heat pump heats the heating water to the value set here.

□□□■ ECO TEMPERATURE

Select ECO TEMPERATURE to set the set room temperature for ECO mode. When the heat pump is in ECO mode (see PROGRAMS / HEATING PROGRAM or operating mode ECO MODE), the heat pump heats the heating water to the value set here.

□□□■ MINIMUM TEMPERATURE

The set MINIMUM TEMPERATURE is safeguarded by the controller of the relevant heating circuit.

The minimum temperature ensures, with underfloor heating for example, that the screed/substrate is never too cold.

□□□■ MAXIMUM TEMPERATURE

The set MAXIMUM TEMPERATURE limits the permissible flow temperature in heating circuit 2.

The limit has priority over a higher set flow temperature calculated by the heat pump manager.

□□□■ MIXER DYNAMICS

Using this value, the control characteristics or the effect of mixer runtime on the controller can be adjusted.

Mixer runtime [s]	WPM setting
100	150
200	100
300	50

□□□■ ROOM INFLUENCE

Only in conjunction with a remote control.

In this menu item you set the degree of influence that the outside temperature or current room temperature has on the control unit.

With weather-compensated control, the room is heated in relation to the outside temperature and the set heating curve.

With room temperature-dependent control, the room is heated consistently to the temperature set on the remote control.

Setting	Weather-compensated control	Room temperature-dependent control
0	100	0
25	75	25
50	50	50
100	0	100

Heating circuit pump control with remote control

▶ Set the ROOM INFLUENCE to a value greater than 0.

If the actual room temperature is higher than the set room temperature plus 1.8 °F (1 K), the heating circuit pump is switched off.

If the actual room temperature is lower than the set room temperature, the heating circuit pump is switched on.

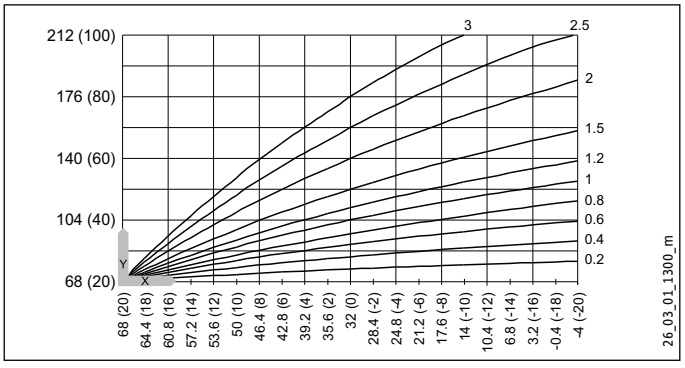
□□□■ HEATING CURVE RISE

Menu item HEATING CURVE RISE enables you to set one heating curve each for heating circuits 1, 2 and 3. If a heat pump extension is connected, this also applies to heating circuits 4 and 5.

Recommendation:

Heating circuit	Heating curve rise		Set room temperature	
	Area heating	Radiator heating system		
1	0.4	1.1	68 °F	20°C
2	0.6	0.9	68 °F	20°C
3	0.6	0.9	68 °F	20°C
4	0.6	0.9	68 °F	20°C
5	0.6	0.9	68 °F	20°C

If you select a temperature in the SETTINGS / HEATING / STANDARD SETTING under the parameter FIXED VALUE OPERATION menu, heating curve 1 is not displayed. The display will show SET FIXED TEMPERATURE with the relevant temperature.

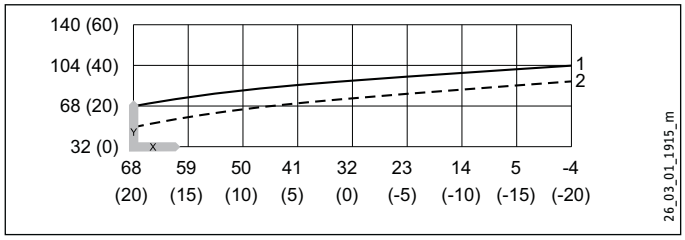


X Outside temperature, °F (°C)
Y Heating circuit 1, heat pump return temperature, °F (°C)

Heating circuit 2, heat pump flow temperature °F (°C)

□□□■ HEATING CURVE VIEW

The graphic that appears on the display shows the current heating curves for the comfort and ECO modes.



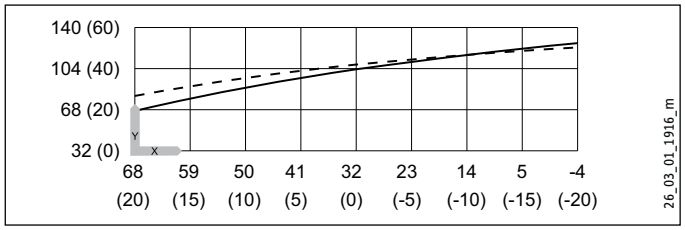
X Outside temperature, °F (°C)
Y Return / flow temperature, °F (°C)
1 Comfort mode
2 ECO mode

Adapting a heating curve

Example: During spring and autumn, at outside temperatures of between 41 °F and 59 °F (+5 °C and +15 °C), the room temperature is too low even with the radiator valves fully open. At an outside temperature of approx. 32 °F (0 °C), the set room temperature will be achieved. The heating curve is set to 1.0, relating to a room temperature of 68 °F (20 °C).

With a parallel shift of the heating curve accompanied by a reduction of the curve, the heating performance of the system is corrected.

The dotted line shows the heating curve reduced to 0.83 and the set room temperature of 74 °F (23.2 °C), increased by 7.5 °F (3.2 °C).



X Outside temperature, °F (°C)
Y Return / flow temperature, °F (°C)

□□■ STANDARD SETTING

□□□■ BUFFER OPERATION

This parameter is used to determine the basic system configuration and thus the overall behavior of the system.

If a buffer cylinder is used:

▶ Set the parameter to ON. Confirm the selection with OK. The buffer charging pump is also actuated with the compressor. After a delay, the compressor is started.

If no buffer cylinder is used:

▶ Connect the heating circuit pump to the X2.6 connection.

▶ Set the parameter to OFF. Confirm the selection with OK. The heating circuit pump runs continuously.

Note
An incorrect setting can lead to malfunctions.

□□□■ SUMMER MODE

□□□□■ SUMMER MODE

With this parameter, automatic shutdown of heating mode can be activated in summer.

With a building insulation value of 0 (see parameter BUILDING HEAT BUFFER): If the current outside temperature exceeds the set outside temperature (see parameter OUTSIDE TEMPERATURE), the system switches to summer mode. If the current outside temperature falls below the set outside temperature, the system switches to heating mode.

With a building insulation value of 1-3 (see parameter BUILDING HEAT BUFFER): If the outside temperature averaged over a specified period exceeds the set outside temperature (see parameter OUTSIDE TEMPERATURE), the system switches to summer mode. If the outside temperature averaged over a specified period falls below the set outside temperature, the system switches to heating mode.

When the parameter FIXED VALUE OPERATION is enabled, summer mode is deactivated for heating circuit 1. Heating circuits 2-5 are not affected by this.

□□□□■ OUTSIDE TEMPERATURE

▶ Using the Touch-Wheel, set the temperature at which the system should switch on or off.

□□□□■ BUILDING HEAT BUFFER

Select BUILDING HEAT BUFFER to specify the type of building with regard to insulation and heat loss. Changeover to and from summer mode is quicker or slower depending on the building type.

- Setting "0" = uninsulated
  The outside temperature is compared directly with the set temperature trigger point.
- Setting "1" = light insulation
  Outside temperature is captured over a 24 hour period. An average is calculated from the data.
  Typically: Wood construction with rapid heat transfer and little or no thermal insulation.
- Setting "2" = medium insulation
  Outside temperature is captured over a 48 hour period. An average is calculated from the data.
  Typically: Brick construction with thermal insulation and average heat transfer.
- Setting "3" = heavy insulation
  The outside temperature is captured over a 72 hour period. An average is calculated from the data.
  Typically: Building with very slow heat transfer, e.g. very thick brick walls.

If the calculated outside temperature ≥ the set outside temperature, all heating circuits will switch to summer mode. Summer mode relates solely to the central heating function.

With fixed value control, summer mode is disabled for heating circuit 1. Summer mode remains active for all other heating circuits.

Changing the set temperature on remote controls will have no effect. The system will continue to run in summer mode.

□□□■ FLOW PROP HEATING CIRC

Note
The control characteristics cannot be defined for heating circuits with mixer and operation with buffer cylinders.

Select FLOW PROP HEATING CIRC to specify the temperature measurements on which the control characteristics of the system are based.

Control characteristics can be based on the return temperature, the flow temperature or on a specified combination of the two temperatures. The relationship between flow and return temperature can be set in any proportions.

Example:

Setting	Control	Flow [%]	Return [%]
0	Return temperature control	0	100
30		30	70
50		50	50
80		80	20
100	Flow temperature control	100	0

□□□■ MAXIMUM RETURN TEMP

Select MAXIMUM RETURN TEMP to specify the temperature at which the heat pump switches off in heating mode. This defines when the heat pump is switched off for safety reasons, based on the return temperature. In DHW mode the return temperature is not scanned.

The idle time is specified in the parameter IDLE TIME (in the COMMISSIONING / COMPRESSOR menu).

No fault message is shown on the display when this value is reached.

□□□■ MAXIMUM FLOW TEMPERATURE

Select MAXIMUM FLOW TEMPERATURE to specify the temperature at which the heat pump switches off in heating mode. This defines when the heat pump is switched off for safety reasons, based on the flow temperature.

The idle time is specified in the parameter IDLE TIME (in the COMMISSIONING / COMPRESSOR menu).

No fault message is shown on the display when this value is reached.

□□□■ FIXED VALUE OPERATION

Note
If fixed value operation is active, cooling mode is not possible.

Inverter heat pumps

In menu item FIXED VALUE OPERATION, you can specify the temperature to which the set heating circuit temperature should be regulated with selected flow proportion. The outside temperature, set program times and summer mode do not affect this.

Fixed value operation relates solely to the control characteristics of heating circuit 1.

It is used, for example, on systems in which a constant flow temperature is required, such as air heating systems.

□□□■ FROST PROTECTION

Select FROST PROTECTION to specify the outside temperature at which the frost protection function is activated.

Frost protection function prevents freezing of pipework, open heating circuits and radiators as well as the heat pump.

The heating circuit pumps are started when the temperature falls below the frost protection temperature.

The circulation pumps are switched off when the temperature exceeds the frost protection temperature.

Material losses
The frost protection function cannot protect fully sealed heating circuits and radiators from ice formation, damage and consequential harm.

- ▶ Ensure that all heating circuits are slightly open and set the thermostatic valve to at least the frost protection setting.

□□■ PUMP CYCLES

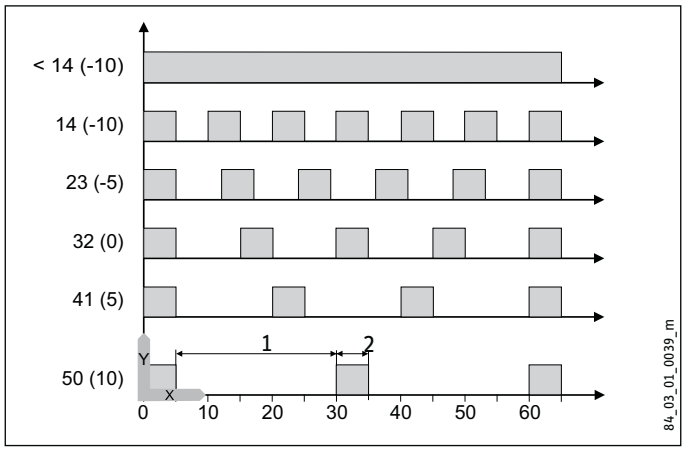
This parameter affects the behavior of the heat pump in heating circuit 1.

OFF

The heat pump operates continuously. It shuts down only when SUMMER MODE is active.

ON

The heating circuit pump switches on and off according to the outside temperature.



X Time in minutes
Y Outside temperature in °F (°C)
1 Pause
2 Pump runtime

□□■ EXTERNAL HEAT SOURCE

In this menu item, you can specify the parameters of an external heat source.

An electric threaded immersion heater in the buffer cylinder or a boiler connected to the heating flow in modulating mode (PWM or 0-10 V interface) can be used as an external heat source.

□□□■ OFF

▶ Set the parameter to OFF if you are not connecting an external heat source to the system.

□□□■ THREADED IMMERSION HEATER

▶ Set this parameter to ON if an electric threaded immersion heater is installed in the buffer cylinder.

▶ Temperature sensor X1.10, incorporated in the threaded immersion heater in the buffer cylinder, captures the temperature at the buffer cylinder output to the external heat source's heating system.

The external heat source is actuated at temperatures below the set DUAL MODE TEMP HZG; its actuation is load-dependent, as the last stage of a heat pump parallel array.

Conditions for activation:

- The temperature falls below the dual mode temperature.
- The heat pump is in operation.
- The actual temperature of the external heat source is lower than the set temperature. The set temperature of the threaded immersion heater is equal to the buffer cylinder set temperature.

Conditions for deactivation:

- The actual temperature of the external heat source is higher than the set temperature. The set temperature of the threaded immersion heater is equal to the buffer cylinder set temperature plus the heating curve gap (parameter HEATING CURVE GAP).

The actual and set temperature of the external heat source can be checked in the INFO / SYSTEM / EXTERNAL HEAT SOURCE menu.

□□□■ BOILER

▶ Set this parameter to ON if a gas/oil boiler is installed in the system.

▶ Temperature sensor X1.10 captures the temperature in the boiler flow.

▶ Connect sensor X1.6 to the heating flow of the boiler mixer circuit.

The external heat source is actuated at temperatures below the set DUAL MODE TEMP HZG; its actuation is load-dependent, as the last stage of a heat pump parallel array.

The mixer is controlled according to the set temperature. The set temperature is calculated from the buffer cylinder set temperature plus the heating curve gap. The mixer is released if the actual temperature of the external heat source is higher than the set temperature.

Conditions for activation:

- The temperature falls below the dual mode temperature.
- The heat pump is in operation.
- The temperature must be at least 5 K lower than the set boiler temperature (parameter SET BOILER TEMPERATURE).

Conditions for deactivation:

- The maximum boiler set temperature has been reached.

The actual and set temperature of the external heat source can be checked in the INFO / SYSTEM / EXTERNAL HEAT SOURCE menu.

□□□■ HZG PWM

▶ Set this parameter to ON if an external heat generator is installed in the system with a PWM interface.

The external heat generator is connected to terminal X1.16.

Temperature sensor X1.10 captures the temperature in the external heat generator flow.

▶ Connect sensor X1.6 to the heating flow of the external heat generator.

The external heat source is actuated at temperatures below the set DUAL MODE TEMP HZG; its actuation is load-dependent, as the last stage of a heat pump parallel array.

The external heat generator regulates the temperature to the calculated set value (set buffer temperature + heating curve gap (HEATING CURVE GAP)).

Conditions for activation:

- The temperature falls below the dual mode temperature.

- The heat pump is in operation.
- The set temperature (set buffer temperature + heating curve gap) has not been reached.

Conditions for deactivation:

- The set temperature (set buffer temperature + heating curve gap) has been reached.

□□□■ HZG 0-10 V

▶ Set this parameter to ON if an external heat source is installed in the system with a 0 -10 V interface.

The external heat generator is connected to terminal X1.16.

Temperature sensor X1.10 captures the temperature in the external heat generator flow.

▶ Connect sensor X1.6 to the heating flow of the external heat generator.

The external heat source is actuated at temperatures below the set DUAL MODE TEMP HZG; its actuation is load-dependent, as the last stage of a heat pump parallel array.

The external heat generator regulates the temperature to the calculated set value (set buffer temperature + heating curve gap (HEATING CURVE GAP)).

Conditions for activation:

- The temperature falls below the dual mode temperature.
- The heat pump is in operation.
- The set temperature (set buffer temperature + heating curve gap) has not been reached.

Conditions for deactivation:

- The set temperature (set buffer temperature + heating curve gap) has been reached.

□□□□■ HEATING CURVE GAP

In conjunction with a threaded immersion heater

With this parameter you can set how large the temperature differential to the set heating curve has to be in order to switch off again the threaded immersion heater serving as an external heat source.

In conjunction with a boiler

With this parameter you can set how large the temperature differential to the set heating curve has to be in order to feed the desired flow temperature into the heating system. The desired flow temperature is calculated from the heating circuit set temperature (buffer cylinder set temperature) and the heating curve gap that is set here. The boiler mixer circuit is controlled according to the flow temperature.

In conjunction with an external heat generator with a PWM or 0-10 V interface

With this parameter, you can set how large the temperature deviation from the set heating curve has to be in order to switch the external heat generator off again.

□□□□■ SET BOILER TEMPERATURE

Note

▶ Set this parameter if you are using a cast iron boiler, in order to prevent the formation of condensate. Observe the boiler manufacturer's instructions.

With this parameter you can set how high the temperature in the boiler should be.

□□□□■ BLOCKING TIME EVU

During a tariff blocking time by the power supply utility, the heat pump cannot meet a heat demand. With this parameter, you can specify the behavior of the external heat source during blocking time.

OFF

During blocking time, the external heat source assumes responsibility for heating even above the dual mode temperature.

1-10 hours

If the external heat source is not to assume responsibility for heating during a blocking time, the required blocking time can be specified in hours.

▶ Set the number of hours of blocking time after which the external heat source should assume responsibility for heating. Confirm the selection with OK.

□□□□■ LOWER APP LIMIT HZG

With this parameter, you can specify the lower application limit of the heat pump. Below the outside temperature that is set here, the heat pump is shut down. Heating demand will be covered by the external heat source alone.

□□□□■ DUAL MODE TEMP HZG

With this parameter, you can specify the dual mode temperature of the heat pump. Below this set outside temperature, the external heat source may back up the heat pump if the heating output has not been reached. The external heat source assumes responsibility for heating demand jointly with the heat pump.

□□□□■ HZG PWM

With this parameter you can set how quickly the external heat source/gas burner corrects a deviation in temperature. The smaller the value, the quicker control is restored.

□□□□■ HZG 0-10 V

With this parameter you can set how quickly the external heat source/gas burner corrects a deviation in temperature. The smaller the value, the quicker control is restored.

□□■ ELECTRIC REHEATING

In this menu item, you can specify the parameters of the electric emergency/booster heater.

□□□■ LOWER APP LIMIT HZG

With this parameter, you can specify the lower application limit of the heat pump. Below the outside temperature that is set here, the heat pump is shut down. Heating demand will be covered by the electric emergency/booster heater alone.

□□□■ DUAL MODE TEMP HZG

With this parameter, you can specify the dual mode temperature of the heat pump. Below this set outside temperature, the emergency/booster heater may back up the heat pump if the heating output has not been reached. The electric emergency/booster heater assumes responsibility for heating demand jointly with the heat pump.

□□□■ NUMBER OF STAGES

With this parameter you can specify the maximum number of additional heating levels of the electric emergency/booster heater for heating.

Between 0 and 3 heating levels can be allowed, according to the required heating output.

□□□■ DELAY

With this parameter you can specify how much time must pass (after the temperature has fallen below the dual mode temperature) before the additional heating levels are switched on.

□■ DHW

□□■ DHW TEMPERATURES

□□■ In the menu item for the DHW temperature, you can specify the set temperatures for comfort and ECO modes.

□□□■ COMFORT TEMPERATURE

Select COMFORT TEMPERATURE to set the set DHW temperature for comfort mode. When the heat pump is in comfort mode (see PROGRAMS / DHW PROGRAM), the heat pump heats the DHW to the value set here.

□□□■ ECO TEMPERATURE

Select ECO TEMPERATURE to set the set DHW temperature for ECO mode. When the heat pump is ECO mode (see PROGRAMS / DHW PROGRAM), the heat pump heats the DHW to the value set here.

□□■ STANDARD SETTING

□□□■ DHW MODE

With this parameter, you can specify the type of DHW heating. Three types of DHW heating are available:

- Priority operation
- Parallel operation
- Partial priority operation

□□□□■ PRIORITY OPERATION

If you enable priority operation, the heat pump specified for DHW and the corresponding DHW charging pump are switched on in response to DHW demand.

The remaining heat pumps in the parallel array are switched off for heating mode.

□□□□■ PARALLEL OPERATION

If you enable parallel operation, the DHW charging pump and associated buffer charging pump are switched on in response to DHW demand.

The remaining heat pumps in the parallel array are switched off for heating mode.

□□□□■ PARTIAL PRIORITY

If you enable partial priority operation, the heat pump specified for DHW and the corresponding DHW charging pump are switched on in response to DHW demand.

The remaining heat pumps in the parallel array are switched on for heating mode.

□□□■ DHW HYSTERESIS

With this parameter, you can specify the switching hysteresis for DHW heating.

▶ Set how large the temperature differential to the set DHW temperature has to be in order to start DHW heating.

DHW heating starts when the temperature falls below the set DHW temperature minus the hysteresis.

Once the set DHW temperature is reached, DHW heating ceases.

□□□■ DHW STAGES

With this parameter you can set the number of heat pump stages for DHW heating.

□□□■ AUTOMATIC DHW CONTROL

Note
If you want to use automatic DHW control, all DHW stages must be allowed.

If automatic DHW control is enabled, then depending on the outside temperature and the load required, all DHW stages can be activated.

□□□□■ OUTSIDE TEMPERATURE

The heating output of an air/water heat pump decreases as the outside temperature falls. DHW heating always starts with the first stage. To meet the energy demand for DHW heating, additional DHW stages are automatically enabled subject to the outside temperature set here.

▶ Set the outside temperature from which the additional DHW stages should be enabled.

□□□■ WW LEARNING FUNCTION

With this parameter you can set whether the set DHW temperature is adjusted automatically during DHW heating.

ON

If the heat pump is shut down by the HP sensor (high pressure sensor) or due to the maximum hot gas temperature, DHW heating is terminated. The set DHW temperature is overwritten with the current actual DHW temperature. The new set DHW temperature is then applied to DHW mode.

DHW heating takes place solely through the heat pump. The internal electric emergency/booster heater or external heat source remains deactivated.

OFF

When the heat pump is shut down by a limiter function, the internal electric emergency/booster heater or the external heat source is switched on as a reheating stage until the set DHW temperature is reached.

□□□■ COMBI CYLINDER

In this menu item you can set whether a combi or instantaneous water cylinder is installed in the heat pump system.

ON

In order to prevent energy being drawn from the cylinder via the heating circuit pumps during DHW heating, the heating circuit pumps are shut down during this period.

OFF

During DHW heating, the heating circuit pumps remain on.

□□□■ WW OUTPUT WP

Note
The actual output may differ from the selected output depending on the operating point and ambient conditions.

Air/water heat pumps

Different heating outputs from the heat pump for DHW mode can be specified, depending on the outside temperature.

They are set using the parameters WW OUTPUT SUMMER and WW OUTPUT WINTER.

□□□□■ WW OUTPUT SUMMER

With this parameter, you can specify the heat pump output for DHW heating during the summer.

The output can be reduced to optimize heat pump efficiency in DHW mode.

□□□□■ WW OUTPUT WINTER

With this parameter, you can specify the heat pump output for DHW heating during the winter.

To achieve a short heat-up time for DHW heating when the heating energy demand is high, a higher output can be set for DHW mode.

□□□■ MAXIMUM FLOW TEMPERATURE

With this parameter, you can specify a maximum flow temperature. When the set flow temperature is reached, the compressor is switched off and the idle time is set.

□□□■ PASTEURISATION

ON

If pasteurisation is activated, the contents of the DHW cylinder are heated to the temperature that can be set here. You define the time at which the heating takes place in the PROGRAMS / PASTEURISATION PROGRAM menu. The high DHW temperature kills off any legionella bacteria in the water.

Once the temperature set here has been reached, the set DHW temperature is returned to the value stored in the SETTINGS / DHW TEMPERATURES menu.

Proper pasteurisation can take place only if it is ensured that the heat pump system reaches the necessary set temperature.

Pasteurisation can only occur if the electric emergency/booster heater is connected, or EXTERNAL HEAT SOURCE has been defined for DHW heating. The parameter WW LEARNING FUNCTION must be set to OFF.

OFF

No pasteurisation takes place.

□□□□■ SET TEMPERATURE

In this menu item you can set the temperature for pasteurisation. The factory setting is 140 °F (60 °C).

□□■ ELECTRIC REHEATING

In the case of electric reheating, the emergency/booster heater is activated for DHW heating according to the setting (parameters DUAL MODE TEMP WW and LOWER APP LIMIT WW).

□□□■ DUAL MODE TEMP WW

Dual mode temperature of the heat pump for DHW heating.

Below this outside temperature, the electric emergency/booster heater is switched on for DHW heating, subject to load.

□□□■ LOWER APP LIMIT WW

Lower application limit of the heat pump for DHW heating.

The heat pump is switched off at outside temperatures below the selected lower DHW application limit. The electric emergency/booster heater alone provides DHW heating.

□□■ EXTERNAL HEAT SOURCE

When this function is activated, no DHW circulation function can be used.

□□□■ **OFF**

▶ Choose this setting if there is no external heat source installed in the heat pump system.

□□□■ **SUPPORTED**

The external heat source backs up the heat pump during DHW heating below the dual mode point (parameter DUAL MODE TEMP WW). To control the external heat source to cover a DHW demand in this setting, output X2.11 is switched.

□□□■ **ALONE**

At this setting, the external heat source alone will provide DHW heating below the dual mode point. To control the external heat source to cover a DHW demand in this setting, output X2.11 is switched.

□□□■ **INDEPENDENT**

At this setting, only the external heat source will provide DHW heating, regardless of the dual mode point. To control the external heat source to cover a DHW demand, outputs X2.8 and X2.11 are switched.

Once this setting has been selected, the DHW STAGES parameter must be set to "0", as the heat pump no longer provides DHW heating.

□□□□■ **DUAL MODE TEMP WW**

Dual mode temperature (outside temperature) of the heat pump for DHW heating.

Depending on the parameter set (SUPPORTED, ALONE, INDEPENDENT), the second heat source is responsible for DHW heating.

□□□□■ **LOWER APP LIMIT WW**

Lower application limit of the heat pump for DHW heating.

The heat pump is switched off at outside temperatures below the selected lower DHW application limit. The second heat source is solely responsible for DHW heating.

□□□□■ **WW PWM**

This is where you determine the percentage output with which the second heat source will provide DHW heating.

□□□□■ **WW 0-10 V**

This is where you determine the percentage output with which the second heat source will provide DHW heating.

□□■ **DHW CIRCULATION**

With the DHW circulation function, DHW can quickly be delivered to the draw-off points. The DHW circulation pump pumps hot water through the DHW circulation line to the draw-off points to rapidly make hot water available there. At the same time, however, the DHW cylinder cools down.

□□□■ **DEMAND**

The DHW circulation function can be requested in various ways.

▶ Choose the conditions that activate the DHW circulation function.

□□□□■ **PROGRAM**

To minimize cooling, the DHW circulation pump is controlled via a time program so that the pump runs only in the specified periods. Three switching times can be set per day. Equally, it is possible to set a block pattern for the whole week, for weekdays or for weekends.

▶ Set the times in the PROGRAMS / DHW CIRCULATION PROGRAM menu.

□□□□■ **PROGRAM + INPUT**

The DHW circulation pump is linked to the time program and the input. A pressure sensor must be installed in the DHW circulation line. If water pressure drops due to the use of a draw-off point, the sensor switches a relay. This switching output is linked to the DHW circulation sensor input and the sensor earth, so the switching is recognized as a short circuit and thus the pump switches on.

▶ Set the times in the PROGRAMS / DHW CIRCULATION PROGRAM menu.

□□□□■ **PROGRAM + SENSOR**

The DHW circulation pump is linked to the time program and the input. If the temperature measured by the DHW circulation sensor falls below the set temperature during the set times, the pump is switched on.

▶ Set the times in the PROGRAMS / DHW CIRCULATION PROGRAM menu.

□□□□□■ **SET TEMPERATURE**

In this menu item you can set the set temperature for the DHW circulation function.

If the temperature falls below the set temperature, the DHW circulation pump starts.

□□□□□■ **HYSTERESIS**

If the sum of the DHW circulation temperature and the set hysteresis is greater than the set temperature, the DHW circulation pump is switched off.

□■ **HYBRID MODULE**

If a hybrid module is used to integrate a second heat generator, you can make the necessary settings here.

□□■ **2ND HEAT GENERATOR TYPE**

In this menu, you set the type of external heat generator.

□□□■ **GAS CONDENSING**

▶ Activate this parameter if this is your external heat generator.

□□□■ GAS NON-CONDENSING

▶ Activate this parameter if this is your external heat generator.

□□□■ OIL CONDENSING

▶ Activate this parameter if this is your external heat generator.

□□□■ OIL NON-CONDENSING

▶ Activate this parameter if this is your external heat generator.

□□■ 2ND HEAT GENERATOR SETTING

□□□■ SET TEMPERATURE

This parameter is a shutdown condition.

The set temperature is the temperature at which the second heat generator is switched off in heating mode.

□□□■ HYSTERESIS

This parameter is a start condition.

If the actual temperature of the second heat generator is less than or equal to the set temperature minus a hysteresis, the second heat generator is switched on when there is a heat demand.

Please note that this temperature-dependent start condition is also linked with a time-dependent condition (see “IDLE TIME”).

□□□■ MIXER DYNAMICS

With this value, the control characteristics of the installed mixer can be adjusted.

Setting	Effect
< 100	Faster control characteristics
100	Standard value
> 100	Slower control characteristics

□□□■ HEATING CURVE GAP

The heating curve gap indicates the target temperature to which the mixer is to be controlled in heating mode with the second heat generator. The target temperature is equal to the sum of the set heating circuit temperature and the heating curve gap. The heating curve gap is intended to prevent mixer opening levels that are too small and to improve heat transfer from the second heat generator.

□□□■ SOFT START TEMPERATURE

This parameter is only relevant for non-condensing appliances.

When the burner is switched on, the feed pump of the second heat generator is not activated until the soft start temperature plus a hysteresis of 9 °F (5 K) has been reached. The feed pump of the second heat generator is switched off when the soft start temperature is undershot.

The default setting for this parameter is 109 °F (43 °C).

Example:

Switch on: T ≥109 + 9 = 118 °F (T ≥43 + 5 = 48 °C)

Switch off: T < 109 °F (T < 43 °C)

□□□■ DELAY

This parameter is a comfort function.

If the heat pump does not reach the required set heating circuit temperature in heating mode within this time, the second heat generator is switched on in place of the heat pump, even though this conflicts with the optimization criteria.

□□□■ IDLE TIME

This parameter is a time-dependent start criterion for the second heat generator. The parameter, plus a hysteresis, indicates when the burner may be switched back on after the last shutdown.

The idle time and hysteresis together produce a time-dependent and temperature-dependent criterion for burner start control.

□□■ TYPE OF OPTIMISATION

The heating system can be optimized in its dual mode operation.

▶ Adjust the values regularly.

□□□■ ECO DRIVE

With this parameter, you can set the balance between ecological and economical operation.

Setting	Effect
0	Purely economical operation (based on accrued costs)
10	Purely ecological operation (based on anticipated CO_2 emissions)

□□□■ ECONOMICAL

In this menu, you enter the parameters for economical optimization of the dual mode point.

□□□□■ PEAK TARIFF PRICE

▶ Enter the current electricity tariff price.

□□□□■ OFF-PEAK TARIFF PRICE

▶ Enter the current electricity tariff price.

□□□□■ GAS PRICE

▶ Enter the current gas price.

□□□□■ OIL PRICE

▶ Enter the current oil price.

□□□■ ECOLOGICAL

In this menu, you enter the parameters for ecological optimization of the dual mode point.

□□□□■ ELECTRICITY CO2 EMISSIONS

▶ Enter the emissions value of your electricity tariff.

□□□□■ GAS CO2 EMISSIONS

This is a standard value. The value does not normally need to be changed.

□□□□■ OIL CO2 EMISSIONS

This is a standard value. The value does not normally need to be changed.

□□■ HEAT PUMP SETTING

□□□■ LOWER APP LIMIT

With this parameter, you can specify the lower application limit of the heat pump. Below the outside temperature that is set here, the heat pump is shut down. Heating demand will be covered by the external heat source alone.

□□□■ BLOCKING TIME EVU

During the power supply utility's blocking time, the heat pump cannot meet the heating demand. With this parameter, you can specify the behavior of the external heat source during blocking time.

OFF

During blocking time, the external heat source assumes responsibility for heating even above the dual mode temperature.

1-10 hours

If the external heat generator is not to provide heating during a tariff blocking time, the required start delay can be specified in hours.

▶ Set the number of hours of tariff blocking time until the external heat generator should start providing heating. Confirm the selection with OK.

□■ COOLING

Note
Depending on the heat pump, a buffer cylinder may be required for cooling.
▶ Observe the details in the operating and installation instructions for the heat pump.

Note
When a swimming pool water heating demand is issued, cooling mode is interrupted, and swimming pool water heating begins.

Note
When there is DHW demand, cooling mode is interrupted and DHW heating starts. Air source heat pump parallel arrays are the exception.

Conditions for cooling operation

- The system must be in summer mode.
- At least one digital FET remote control must be connected to the heat pump manager. Please note that you can only use the digital remote control in the system.
- All cooling parameters must be set.
- Depending on the heat pump, a cooling sensor may be required.

Cooling mode with the FET remote control

The digital FET remote control unit is equipped with dew point monitoring, and can be used with fan convectors and area heating systems (e.g. underfloor/wall heating systems, cooling ceilings).

Note
If more than one digital FET remote control is connected, an additional cooling circuit can be specified for each remote control.

Cooling and DHW heating with air/water heat pump parallel arrays

With an air/water heat pump parallel array, cooling and DHW heating can take place in parallel.

▶ In the SETTINGS / DHW / STANDARD SETTING / DHW MODE menu, set the parameter PARTIAL PRIORITY to ON.

The heat pump specified for DHW and the corresponding DHW charging pump are switched on in response to DHW demand.

The remaining heat pumps in the parallel array provide cooling.

□□■ COOLING

Here you can switch the cooling function of the heat pump on or off.

□□■ COOLING MODE

□□□■ PASSIVE COOLING

Passive cooling is possible only with brine/water heat pumps.

Cooling takes place initially with the heating circuit pump. Controller output X2.13 is switched on. Additional zone valves or diverter valves can be actuated with controller output X2.13, for example.

If after 60 seconds the actual flow temperature is higher than the set flow temperature, the source and buffer charging pumps are started.

On parallel arrays, the additional source and buffer charging pumps are switched on one after the other if the flow temperature cannot be further reduced. Whether these additional pumps are activated depends on the set dynamics (DYNAMICS PASSIVE).

□□□■ ACTIVE COOLING

Control characteristics with brine/water heat pumps

Cooling initially takes place passively (see PASSIVE COOLING). If the flow temperature cannot be further reduced by passive cooling, the compressor also starts.

On parallel arrays, the additional source and buffer charging pumps and compressor are switched on one after the other if the flow temperature cannot be further reduced. Whether these additional pumps are activated depends on the set dynamics (DYNAMICS ACTIVE or DYNAMICS PASSIVE).

Control characteristics with air/water heat pumps

Cooling takes place initially with the heating circuit pump. Controller output X2.13 is switched on. Additional zone valves or diverter valves can be actuated with controller output X2.13, for example.

If after 60 seconds the actual flow temperature is higher than the set flow temperature, the buffer charging pump and compressor are started.

On parallel arrays, the additional buffer charging pumps and compressor are switched on one after the other if the flow temperature cannot be further reduced. Whether these additional pumps and compressors are activated depends on the dynamics setting (DYNAMICS ACTIVE).

□□■ STANDARD SETTING

□□□■ COOLING STAGES

Select the number of heat pumps enabled for cooling mode.

□□□■ COOLING LIMIT

With this parameter, the lower application limit for cooling mode is specified. If the outside temperature is below the set application limit, cooling mode is deactivated.

□□□■ COOLING CAPACITY

With this parameter, the maximum cooling capacity of the heat pump is specified in kW.

□□□■ FLOW TEMP HYSTERESIS

If the sum of the flow temperature and the set hysteresis is greater than the set temperature, the compressor is switched on.

□□□■ DYNAMICS ACTIVE

This parameter specifies how quickly the individual heat pumps in a parallel array start. The higher the set dynamics, the slower the downstream heat pumps start up.

Dynamics with air/water heat pumps

- Dynamic 1
  If the first compressor has been running for 10 minutes and the current flow temperature is higher than the set flow temperature with a hysteresis of 0.9 °F (0.5 K), the next downstream heat pump starts.
- Dynamics 10
  If the first compressor has been running for 30 minutes and the current flow temperature is higher than the set flow temperature with a hysteresis of 3.6 °F (2 K), the next downstream heat pump starts.

Note
With the other available values (2 to 9), the hysteresis is interpolated correspondingly.

□□□■ AREA COOLING / FAN COOLING

Area cooling

In the case of area cooling, the cooling of the building takes place by means of the available underfloor or wall heating. In order to monitor relative humidity, an FET remote control for the heating circuit must be connected.

Fan cooling

In the case of fan cooling, the cooling of the building takes place by means of fan convectors. In order to monitor room temperature, a FET remote control for the heating circuit must be connected.

□□□□■ SET FLOW TEMPERATURE

Area cooling

The mixer regulates the flow temperature set here.

Fan cooling

When this temperature has been reached during cooling, the compressor is switched off. Under passive cooling, the source and buffer charging pumps are also switched off.

□□□□■ FLOW TEMP HYSTERESIS

If the sum of the flow temperature and the set hysteresis is greater than the set temperature, the compressor is switched on.

□□□□■ SET ROOM TEMPERATURE

The heat pump cools the room down to the room temperature set here minus a fixed hysteresis of 3.6 °F (2 K).

□□□□■ DYNAMICS ACTIVE

See description above.

□□□□■ DYNAMICS PASSIVE

See description above.

□□■ COOLING CIRCUIT 1 / 2 / 3 / 4 / 5

□□□■ COOLING TYPE

Here you can specify whether the cooling circuit is used for fan or area cooling.

□□□■ SET ROOM TEMPERATURE

The heat pump cools the room down to the room temperature set here minus a fixed hysteresis of 3.6 °F (2 K).

□□□■ INCREASE COOLING CURVE

With the INCREASE COOLING CURVE menu item, you can select a cooling curve for each of the cooling circuits.

The set flow temperature is calculated from the cooling curve, outside temperature and start temperature.

The minimum flow temperature depends on the type of cooling and whether a buffer cylinder is installed.

Type of cooling	Minimum flow temperature [°F]	[°C]
Fan cooling with buffer cylinder	52	11
Fan cooling without buffer cylinder	48	9
Area cooling	59	15

□□□■ START TEMPERATURE

The heat pump starts cooling at the room temperature that is set here.

□□□■ COOLING CURVE VIEW

The graphic that appears on the display shows the current cooling curve.

□■ SWIMMING POOL

With the swimming pool function, the swimming pool water is heated to a set temperature by means of a heat exchanger. The pump connected to terminal X4.12 pumps the heating water from a buffer cylinder through the heat exchanger. The pump connected to terminal X4.13 pumps the water into the swimming pool.

The heat pump can also heat the swimming pool without a buffer cylinder. The pump connected to terminal X4.12 pumps the heating water through the heat exchanger. The pump connected to terminal X4.13 pumps the water into the swimming pool.

□□■ SWIMMING POOL

▶ Set whether the swimming pool function should be switched on or off.

□□□■ DEMAND

The swimming pool function can be requested in various ways. In order for swimming pool water heating to begin, the set conditions must be met and the SWIMMING POOL PROGRAM (in the PROGRAMS menu) must be active.

▶ Choose the conditions that activate the swimming pool function.

□□□□■ 230 V INPUT

Heating of the swimming pool water can be requested via an external signal. As soon as a 230 V signal is received at input X4.2, heating of the swimming pool water commences.

□□□□■ SENSOR INPUT

If the temperature measured by swimming pool sensor X3.5 is lower than the sum of the set temperature and hysteresis, heating of the swimming pool water is started.

□□□□□■ SET TEMPERATURE

With this parameter you can set the set temperature for the swimming pool.

□□□□□■ HYSTERESIS

The value set here specifies the temperature difference from the set temperature at which heating of the swimming pool water commences.

□□□□□■ BUFFER OPERATION

If a sensor is connected to terminal X3.4, swimming pool mode is possible without a buffer cylinder. The swimming pool sensor X3.4 is responsible for switching the heat pump on and off.

□□□□□■ FIXED VALUE

In this menu item you set the temperature required in the heat exchanger in order to reach the set temperature in the swimming pool.

□■ DIFFERENTIAL CONTROLLER 1 / 2

With the WPE heat pump extension, two differential controllers working independently of one another can be set up, each controlling one output (X4.10 and X4.11). Output X4.10 is controlled via differential sensors 1.1 (X3.9) and 1.2 (X3.10). Output X 4.11 is controlled via differential sensors 2.1 (X 3.11) and 2.2 (X 3.12).

Example for output X4.10

The differential controller function can be used, for example, to connect a water-bearing stove to a system with a buffer cylinder. Here differential sensor 1.1 (X3.9) is positioned inside the water chamber of the stove. Differential sensor 1.2 (X3.10) is located in the buffer cylinder. If the differential between X3.9 and X3.10 exceeds the set start differential and the maximum and minimum temperature limits are satisfied, output X4.10 is switched on. A pump connected to output X4.10 supplies the water heated in the stove to the buffer cylinder.

□□■ DIFFERENTIAL CONTROLLER 1 / 2

▶ Set the parameter to ON or OFF.

□□■ START DIFFERENTIAL

Here you can set the temperature differential which must prevail between both sensors in order to switch on the associated output (X4.10 or X4.11). If the start differential set here is exceeded, the associated output is switched on.

□□■ HYSTERESIS

Example for output X4.10

With this parameter you can specify the extent to which the temperatures from differential sensors 1.1 and 1.2 can converge. For the purposes of the calculation, the hysteresis set here is subtracted from the set start differential. Only when the temperature differential has reached the start differential minus the set hysteresis does the output switch off.

□□■ MINIMUM TEMPERATURE

Example for output X4.10

Here you can set the minimum temperature that must be present at differential sensor 1.1 for the pump to start, once the start differential has been reached.

Note
Differential sensor 1.1 must be installed at the heat source (e.g. the water chamber of the stove).

□□■ MAXIMUM TEMPERATURE

Example for output X4.10

Here you can set the maximum temperature that must be present at differential sensor 1.2.

If the temperature at differential sensor 1.2 is higher than the maximum temperature, output X4.10 is switched off.

Note
Differential sensor 1.2 must be installed at the heat store (e.g. buffer cylinder).

□□■ STOP DELAY

Example for output X4.10

This parameter specifies a run-on time for the pump (output X4.10).

□■ THERMOSTAT FUNCTION 1 / 2

With the WPE heat pump extension, two thermostat functions working independently of one another can be set up, each controlling one output (X4.10 and X4.11). Output X4.10 is controlled via thermostatic sensor 1 (X3.9). Output X 4.11 is controlled via thermostatic sensor 2 (X 3.11).

□□■ THERMOSTAT FUNCTION 1 / 2

▶ Set the parameter to ON or OFF.

□□■ SET TEMPERATURE

Example for output X4.10

You can set a temperature here. If this temperature is exceeded, the output (X4.10) is switched on.

□□■ HYSTERESIS

Example for output X4.10

You can set a temperature deviation here. If the actual temperature falls below the set temperature by this value, the output (X4.10) is switched off.

■ COMMISSIONING

□■ SOURCE
□□■ MIN SOURCE TEMPERATURE
□□■ SOURCE MEDIUM
□□□■ ETHYLENE GLYCOL
□□□■ WATER
□□□■ GROUNDWATER MODULE
□□■ MAX. SOURCE EXTRACTION RATE

□■ CHARGING PUMP CONTROL
□□■ STANDBY
□□□■ TYPE OF CONTROL
□□□□■ MINIMUM PUMP RATE
□□□□■ AVERAGE PUMP RATE
□□□□■ MAXIMUM PUMP RATE
□□□□■ ADJUSTABLE PUMP RATE
□□□■ SET VALUES
□□□□■ PUMP RATE

□□■ HEATING
□□□■ TYPE OF CONTROL
□□□□■ MINIMUM PUMP RATE
□□□□■ AVERAGE PUMP RATE
□□□□■ MAXIMUM PUMP RATE
□□□□■ ADJUSTABLE PUMP RATE
□□□□■ SPREAD CONTROL
□□□■ SET VALUES
□□□□■ PUMP RATE
□□□□■ SPREAD

□□■ DHW
□□□■ TYPE OF CONTROL
□□□□■ MINIMUM PUMP RATE
□□□□■ AVERAGE PUMP RATE
□□□□■ MAXIMUM PUMP RATE
□□□□■ ADJUSTABLE PUMP RATE
□□□□■ SPREAD CONTROL
□□□■ SET VALUES
□□□□■ PUMP RATE
□□□□■ SPREAD

□□■ COOLING
□□□■ TYPE OF CONTROL
□□□□■ MINIMUM PUMP RATE
□□□□■ AVERAGE PUMP RATE
□□□□■ MAXIMUM PUMP RATE
□□□□■ ADJUSTABLE PUMP RATE
□□□□■ SPREAD CONTROL
□□□■ SET VALUES
□□□□■ PUMP RATE
□□□□■ SPREAD

□□■ DEFROST
□□□■ TYPE OF CONTROL
□□□□■ MINIMUM PUMP RATE
□□□□■ AVERAGE PUMP RATE
□□□□■ MAXIMUM PUMP RATE
□□□□■ ADJUSTABLE PUMP RATE
□□□□■ SPREAD CONTROL
□□□■ SET VALUES

Menu: COMMISSIONING

□□□□■ PUMP RATE
□□□□■ SPREAD

□□■ STANDARD SETTING
□□□■ MINIMUM PUMP RATE
□□□■ MAXIMUM PUMP RATE

□■ HEATING
□□■ CONTROLLER DYNAMICS
□□■ HYSTERESIS
□□■ SPREAD CONTROL
□□□■ SET SPREAD
□□□■ MAXIMUM PUMP RATE
□□□■ STANDBY PUMP RATE
□□■ HEATING CIRC PUMP RATE

□■ DHW
□□■ DHW PUMP RATE

□■ COMPRESSOR
□□■ MINIMUM DEFROST TIME
□□■ START DEFROST
□□■ IDLE TIME
□□■ MAXIMUM CURRENT
□□■ MINIMUM RUNTIME
□□■ POWERDEFROST
□□■ HEATING SYSTEM SIZING
□□□■ DESIGN TEMPERATURE
□□□■ HEAT DEMAND
□□■ CONSTANT OUTPUT
□□■ CONDENSATE RIBBON HEATER
□□□■ OUTSIDE TEMPERATURE
□□■ QUICK START

□■ SILENT MODE
□□■ FAN REDUCTION
□□■ OUTPUT REDUCTION
□□□■ OUTPUT
□□□■ FAN
□□■ HEAT PUMP OFF

□■ POWER-OFF
□□■ OFF
□□■ HEAT PUMP + ELECTRIC BOOSTER HEATER
□□■ HEAT PUMP
□□■ ELECTRIC BOOSTER HEATER

□■ SYSTEM TYPE

□■ I/O CONFIGURATION
□□■ INPUT X1.13
□□□■ TELEPHONE REMOTE SWITCH
□□□■ HEATING CURVE OPTIMISATN
□□□■ SG READY
□□■ INPUT X1.14
□□□■ OFF
□□□■ EXTERNAL HEATING/COOLING
□□■ INPUT X1.15
□□□■ HEATING
□□□□■ PRESET TEMPERATURE 1 V
□□□□■ PRESET TEMPERATURE 10 V
□□□■ COOLING
□□□□■ PRESET TEMPERATURE 1 V
□□□□■ PRESET TEMPERATURE 10 V
□□■ OUTPUT X1.16
□□□■ FUNCTION
□□□□■ PWM 0%...100%
□□□□■ PWM 100%...0%
□□□□■ 0-10 V
□□□■ PUMP
□□□□■ BUFFER CHARGING PUMP 1
□□□□■ BUFFER CHARGING PUMP 2
□□□□■ HK PUMP 1
□□□□■ HK PUMP 2
□□□□■ HK PUMP 3
□□□□■ DHW CHARGING PUMP
□□□□■ SOURCE PUMP
□□□□■ CHARGING PUMP CONTROL HEATING
□□□■ OUTPUT, PWM
□□□■ OUTPUT, VOLT
□□■ OUTPUT X1.17
□□□■ FUNCTION
□□□□■ PWM 0%...100%
□□□□■ PWM 100%...0%
□□□□■ 0-10 V
□□□■ PUMP
□□□□■ BUFFER CHARGING PUMP 1
□□□□■ BUFFER CHARGING PUMP 2
□□□□■ HK PUMP 1
□□□□■ HK PUMP 2
□□□□■ HK PUMP 3
□□□□■ DHW CHARGING PUMP
□□□□■ SOURCE PUMP
□□□□■ CHARGING PUMP CONTROL DHW
□□□■ OUTPUT, PWM
□□□■ OUTPUT, VOLT
□□■ OUTPUT X2.10
□□□■ FATAL ERROR
□□□■ GENERAL ERROR
□□■ OUTPUT X3.16
□□□■ FUNCTION
□□□□■ PWM 0%...100%
□□□□■ PWM 100%...0%
□□□□■ 0-10 V
□□□■ PUMP
□□□□■ POOL PUMP, PRIMARY
□□□□■ POOL PUMP, SECONDARY
□□□□■ BUFFER CHARGING PUMP 3
□□□□■ BUFFER CHARGING PUMP 4
□□□□■ BUFFER CHARGING PUMP 5
□□□□■ BUFFER CHARGING PUMP 6
□□□□■ HEATING CIRCUIT PUMP 4
□□□□■ HEATING CIRCUIT PUMP 5
□□□■ OUTPUT, PWM
□□□■ OUTPUT, VOLT
□□■ OUTPUT X3.17
□□□■ FUNCTION
□□□□■ PWM 0%...100%
□□□□■ PWM 100%...0%
□□□□■ 0-10 V
□□□■ PUMP

□□□□■ POOL PUMP, PRIMARY
□□□□■ POOL PUMP, SECONDARY
□□□□■ BUFFER CHARGING PUMP 3
□□□□■ BUFFER CHARGING PUMP 4
□□□□■ BUFFER CHARGING PUMP 5
□□□□■ BUFFER CHARGING PUMP 6
□□□□■ HEATING CIRCUIT PUMP 4
□□□□■ HEATING CIRCUIT PUMP 5
□□□■ OUTPUT, PWM
□□□■ OUTPUT, VOLT

□■ EMERGENCY OPERATION

□■ RESET
□□■ HEAT PUMP
□□■ NOTIFICATIONLIST
□□■ SYSTEM
□□■ FET
□□■ WPE

□■ SENSOR CALIBRATION
□□■ ACTUAL FLOW TEMPERATURE WP
□□■ ACTUAL FLOW TEMPERATURE NHZ
□□■ ACTUAL RETURN TEMPERATURE WP

□■ UPDATE

□□□■ ETHYLENE GLYCOL

Note
Only propylene glycol should be used.

□□□■ WATER

□□□■ GROUNDWATER MODULE

□□■ MAX. SOURCE EXTRACTION RATE

In this menu item, you can set the maximum output to be extracted from the heat source, to prevent the heat source from being overloaded.

□■ CHARGING PUMP CONTROL

With these parameters, the operating characteristics and control of the charging pumps can be specified.

□□■ STANDBY / HEATING / DHW / COOLING / DEFROST

Settings can be made for the charging pumps in these operating modes.

□□□■ TYPE OF CONTROL

□□□□■ MINIMUM PUMP RATE

With this parameter, you set the minimum flow rate and therefore the pump rate. The pump rate does not fall below the value set here.

□□□□■ AVERAGE PUMP RATE

With this parameter, you set the average flow rate and therefore the pump rate. The pump rate will not exceed the value set here.

□□□□■ MAXIMUM PUMP RATE

With this parameter, you set the maximum flow rate and therefore the pump rate. The pump rate will not exceed the value set here.

□□□□■ ADJUSTABLE PUMP RATE

With this parameter, you set the flow rate and therefore the pump rate. The pump rate will not exceed the value set here.

□□□□■ SPREAD CONTROL

With this parameter, you can enable or disable spread control.

□□□■ SET VALUES

□□□□■ PUMP RATE

In this menu item you can set the pump rate for the connected pump. The pump rate is used to specify the flow rate.

Please also note the information on flow rate (see the operating instructions for the pump and the chapter “Specification / Data table” in the operating and installation instructions for the heat pump).

□□□□■ SPREAD

▶ Here, you can set the temperature differential between the flow and return sensors.

The heat pump keeps the temperature differential constant at the set value by adjusting the circulation pump flow rate accordingly.

□□■ STANDARD SETTING

□□□■ MINIMUM PUMP RATE

With this parameter, you set the minimum flow rate and therefore the pump rate. The pump rate does not fall below the value set here.

Only applicable to spread control:

The time taken to achieve the set spread can vary on account of this setting.

□□□■ MAXIMUM PUMP RATE

With this parameter, you set the maximum flow rate and therefore the pump rate. The pump rate will not exceed the value set here.

Only applicable to spread control:

The time taken to achieve the set spread can vary on account of this setting.

□■ HEATING

□□■ CONTROLLER DYNAMICS

The CONTROLLER DYNAMICS parameter influences the stabilization speed of the heat pump output controller.

The heat pump output controller functions primarily as an integral controller. The control deviation (the differential between actual and set heating circuit temperatures) is accumulated over time. The result is the integral of the control deviation in Kelvin minutes. Every time the switching value adjustable with this parameter is reached, the output is switched one stage higher or lower.

Example: Where the control deviation is 9 °F (5 K), it takes 10 minutes for the switching value of 90 °Fmin (50 Kmin) to be reached. The compressor, or in a parallel array the next compressor stage, then switches and the integral of the control deviation is reset to zero.

Normally, the preselected CONTROLLER DYNAMICS should be sufficiently fast and operate without oscillation. Heating systems that respond quickly require a lower value, whilst very slow responding systems require a higher value to be set.

□□■ HYSTERESIS

For on/off heat pumps with buffer cylinder, you can set here the start hysteresis for the heat pump.

□□■ SPREAD CONTROL

The flow rate for the circulation pump is controlled automatically by the heat pump.

□□□■ SET SPREAD

▶ Here, you can set the temperature differential between the flow and return sensors.

The heat pump keeps the temperature differential constant at the set value by adjusting the circulation pump flow rate accordingly.

□□□■ MAXIMUM PUMP RATE

With this parameter, you set the maximum flow rate and therefore the pump rate. The pump rate will not exceed the value set here. The time taken to achieve the set spread can vary on account of this setting.

□□□■ STANDBY PUMP RATE

▶ Here, you can set the minimum pump rate for the internal circulation pump while the heat pump is idle.

The pump will run at the output set here as long as the heat pump does not receive a heat demand, as well as during power-OFF periods and idle times.

□□■ HEATING CIRC PUMP RATE

▶ Set the flow rate via the heating circuit pump output. Please also note the information on flow rate (see chapter "Specification / Data table" in the operating and installation instructions for the heat pump).

□■ DHW

□□■ DHW CIRCUIT PUMP RATING

▶ Set the maximum flow rate via the DHW pump output. If noise occurs, reduce the output.

□■ COMPRESSOR

□□■ MINIMUM DEFROST TIME

▶ Set here the defrost time for the heat pump defrost procedure.

The selected time applies to manual or demand-dependent defrosting.

□□■ START DEFROST

Manual defrost can be started only if the heat pump is in operation.

The defrost signal is displayed.

Maximum defrost time

The maximum defrost time for all heat pumps is 20 minutes. Defrosting is terminated after the maximum defrost time has elapsed. The heat pumps are then forced to operate in heating mode for 20 minutes. Only then can a new defrost process be initiated.

□□■ IDLE TIME

To protect the compressor, an idle time is set following shutdown of a heat pump. The default idle time of 10 or 20 minutes (according to heat pump type) should normally not be reduced. Where a reduction is required because of adjustments or repair work, reset the idle time back to 10 or 20 minutes after completing the necessary work.

□□■ MAXIMUM CURRENT

This parameter can be used to limit the maximum power consumed by the heat pump to match it to the power supply conditions at the installation site.

Please note that high flow temperatures or low outside temperatures may cause the heating output to be reduced.

□□■ MINIMUM RUNTIME

Each time the compressor is switched on, a countdown starts using the selected time (in minutes). The controller can only stop the compressor after this time has elapsed, i.e. controller shut-

down can be delayed. One exception is a response by the temperature limiter or pressure switch, which results in an immediate shutdown.

□□■ POWERDEFROST

Power defrost is an extension of the standard defrost process. During intensive defrost, hot air is routed through the fan nozzle.

In this parameter, you can select how often intensive defrost is carried out instead of the standard defrost process.

Example: If the parameter is set to "5", every fifth defrost is a power defrost.

Note
During an intensive defrost, higher operating costs may be incurred.

□□■ HEATING SYSTEM SIZING

The heat demand for the house is set here, taking into consideration the lowest regional temperatures (for example 10 kW heat demand at 7 °F (-14 °C) outside temperature). During operation, the device will use this to calculate the optimum value for heat pump operation.

▶ Refer to the building's heat demand calculation to determine the values.

Please note that if a higher heat demand is set, the efficiency of the overall system will reduce. On the other hand, if the heat demand is set too low, a degree of comfort may be lost.

□□□■ DESIGN TEMPERATURE

▶ Select the design temperature here. This will be the outside temperature (°C) for which heat demand was calculated, in the region where the heat pump is being used.

□□□■ HEAT DEMAND

▶ Select the heat demand calculated for the design temperature here.

□□■ CONSTANT OUTPUT

This parameter determines the heating output as a fixed value, for swimming pool operation and the heat-up program. The output is then controlled to the permanently set output, irrespective of the outside temperature.

□□■ CONDENSATE RIBBON HEATER

The condensate ribbon heater ensures that condensate can drain away even at low outside temperatures.

□□□■ OUTSIDE TEMPERATURE

▶ Set here the outside temperature above which the condensate ribbon heater is switched on.

□□■ QUICK START

During commissioning, you can test the heat pump function by triggering a heat pump quick start. When calling up parameters, OFF is shown on the display. If you set it to ON and press OK, a quick start is initiated. The value on the display visibly counts down from 60 to 0 s. On quick start the display then shows ON.

After that, the heat pump and the associated buffer charging pump are switched on.

□■ SILENT MODE

Reduced noise mode

SILENT MODE is an operating mode for air/water heat pumps in which the sound level of the heat pump is reduced.

Note
Silent mode has an effect on the heating output and efficiency of the heat pump.
When silent mode is active, operating costs will be higher.
In silent mode 2, heating and DHW heating are provided solely via the emergency/booster heater.

▶ In the "PROGRAMS / SILENT PROGRAM 1" menu, set the times when the heat pump should switch to a quieter operating mode.

□□■ FAN REDUCTION

As soon as this parameter is set to ON, while SILENT PROGRAM 1 is enabled, the fan speed of the heat pumps is reduced.

□□■ OUTPUT REDUCTION

As soon as this parameter is set to ON, while SILENT PROGRAM 1 is enabled, the fan speed and the compressor output of the heat pump can be reduced independently of each other by means of the following parameters.

□□□■ OUTPUT

The reduction in the compressor output can be set here in %.

□□□■ FAN

The reduction in the fan speed can be set here in %.

□□■ HEAT PUMP OFF

As soon as this parameter is set to ON, while SILENT PROGRAM 2 is enabled, the heat pump is switched off and the internal or external second heat source takes over the DHW / Central heating function.

□■ POWER-OFF

During a tariff blocking time by the power supply utility, the heat pump cannot meet a heat demand. With this parameter, you can specify the characteristics of the heat pump and the internal reheating stages during a tariff blocking time.

□□■ OFF

No heat generator is blocked during the tariff blocking time.

□□■ HEAT PUMP + ELECTRIC BOOSTER HEATER

During the tariff blocking time, the heat pump and the electric emergency/booster heater are blocked.

□□■ HEAT PUMP

The heat pump is blocked during the tariff blocking time.

□□■ ELECTRIC BOOSTER HEATER

During the tariff blocking time, the electric emergency/booster heater is blocked.

□■ SYSTEM TYPE

If an HMH is installed in the heating system, this value must be set to 1.

□■ I/O CONFIGURATION

□□■ INPUT X1.13

In this menu item, you can set which functions of input X 1.13 should be adopted.

▶ Never apply external voltages.

□□□■ TELEPHONE REMOTE SWITCH

Note
This function can be used only in STANDBY MODE or ECO MODE.

Note
The telephone remote switch is interpreted via inputs X1.13.2 and X1.13.3.

▶ Set this parameter to ON if a telephone remote switch is connected to the input.

If an external signal is present at this input, the heat pump switches to PROGRAMMED OPERATION. When the external signal is no longer present, the heat pump switches back to the previous operating mode.

□□□■ HEATING CURVE OPTIMISATN

Note
This function can be used only in COMFORT MODE, ECO MODE or PROGRAMMED OPERATION.

▶ Assign terminals X1.13.1 and X1.13.2.

▶ The heating curve is matched dynamically to the heat demand of the individual rooms. This involves modifying the preset heating curve by up to 50 % of its original value.

□□□■ SG READY

Note
To be able to use this function, the ISG Internet Service Gateway is required.

Note
This function is available from software version:
- WPM: 449-02
- ISG: 4.10.0.0

▶ Set this parameter to ON to use the SG Ready functions.

▶ Use two potential-free signal relays to jumper the signal inputs.

- X 1.13 1-2: SG Ready input 1
- X 1.13 2-3: SG Ready input 2

Mode	Signal	Function
1	Input 2 jumpered	Heat pump is OFF
2	Inputs open	Standard operation in selected operating mode
3	Input 1 jumpered	Start with increased values (PV surplus)
4	Input 1+2 jumpered	Immediate start with maximum values

□□■ INPUT X1.14

In this menu item you can set how the heat pump behaves if an external voltage signal is present.

□□□■ OFF

▶ Select this parameter if the heat pump should not be controlled via an external voltage signal.

□□□■ EXTERNAL HEATING/COOLING

Note
In order to ensure complete control via the building management system in summer, you have to set SUMMER MODE to OFF (SETTINGS / HEATING / STANDARD SETTING / SUMMER MODE).

▶ Select this parameter if the heat pump should be controlled via an external voltage signal.

Depending on the voltage present, the heat pump starts the heating or cooling mode, or the function is switched off.

Voltage	Effect
0-1 V	OFF
1-5 V	Heating
5-6 V	OFF
6-10 V	Cooling

□□■ INPUT X1.15

Note
To use the input, a voltage of at least 1 V must be present.

In this menu item you can specify a temperature range. Heating or cooling (depending on the setting at input X1.14) will take place to this temperature range.

If no buffer cylinder is installed in the heat pump system (parameter BUFFER OPERATION in the SETTINGS / HEATING / STANDARD SETTING menu set to OFF), the set temperature of heating circuit 1 is determined by the specified temperature range.

If a buffer cylinder is installed in the heat pump system (parameter BUFFER OPERATION in the SETTINGS / HEATING / STANDARD SETTING menu set to ON), the set temperature of the buffer cylinder is determined by the specified temperature range.

□□□■ HEATING

In this menu item you can set the temperatures to be targeted by the heat pump manager if the external voltage signal for heating mode is present.

Note
If a voltage of 2 to 9 V is present, the preset temperatures are interpolated accordingly.

□□□□■ PRESET TEMPERATURE 1 V

▶ Set here the temperature that should be targeted by the heat pump manager if a voltage of 1 V is present at input X1.15.

□□□□■ PRESET TEMPERATURE 10 V

▶ Set here the temperature that should be targeted by the heat pump manager if a voltage of 10 V is present at input X 1.15.

□□□■ COOLING

In this menu item you can set the temperatures to be targeted by the heat pump manager if the external voltage signal for cooling mode is present.

Note
If a voltage of 2 to 9 V is present, the preset temperatures are interpolated accordingly.

□□□□■ PRESET TEMPERATURE 1 V

▶ Set here the temperature that should be targeted by the heat pump manager if a voltage of 1 V is present at input X1.15.

□□□□■ PRESET TEMPERATURE 10 V

▶ Set here the temperature that should be targeted by the heat pump manager if a voltage of 10 V is present at input X 1.15.

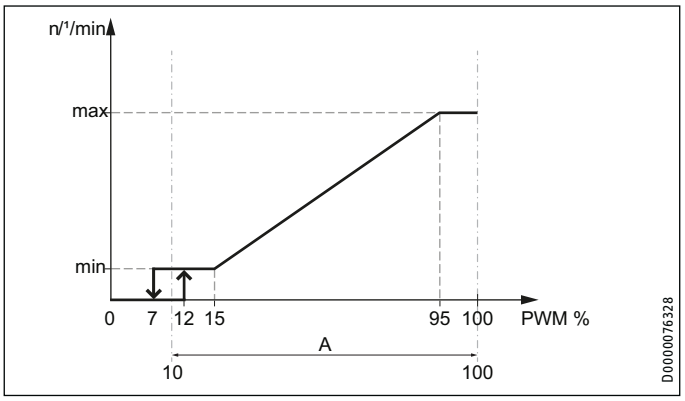
□□■ OUTPUT X1.16/X1.17

Note
If a second heat generator is connected to output X 1.16 and the heat generator uses the PWM or volt signal, the output cannot be used for a pump.

In this menu item you can adjust the settings for the pump connected to the output.

□□□■ FUNCTION

□□□□■ PWM 0%...100%



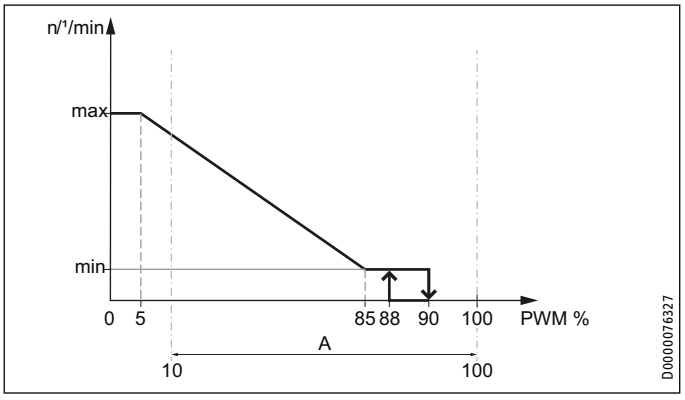
A Setting range

The pump speed is controlled in proportion to the PWM input signal. The pump stops if there is a cable break.

▶ Set this parameter to ON if you connect a pump for solar thermal energy.

▶ Observe the operating instructions of the pump manufacturer.

□□□□■ PWM 100%...0%



A Setting range

The pump speed is controlled in inverse proportion to the PWM input signal. If there is a cable break, the pump runs at maximum speed.

▶ Set this parameter to ON if you connect a heating circuit pump.

▶ Observe the operating instructions of the pump manufacturer.

□□□□■ 0-10 V

▶ Set this parameter to ON if you use a pump that is controlled by a 0-10 V voltage signal.

□□□■ PUMP

▶ Select here the pump that is connected to the output.

You have the following options:
- Buffer charging pump (BUFFER CHARGING PUMP 1 / 2)
- Heating circuit pump (HK PUMP 1 / 2 / 3)
- DHW charging pump (DHW CHARGING PUMP)
- Source pump (SOURCE PUMP)
- CHARGING PUMP CONTROL HEATING
- CHARGING PUMP CONTROL DHW

□□□■ OUTPUT, PWM

In this menu item, you can assign a signal strength for pulse width modulation to the connected pump. The signal is used to specify the flow rate, output or set speed.

▶ Please also note the information on flow rate (see the operating instructions for the pump and the chapter “Specification / Data table” in the operating and installation instructions for the heat pump).

▶ Observe the operating instructions of the pump manufacturer.

▶ Set the PWM signal here.

□□□■ OUTPUT, VOLT

In this menu item, you can assign a signal strength for pulse width modulation to the connected pump. The signal is used to specify the flow rate, output or set speed.

▶ Please also note the information on flow rate (see the operating instructions for the pump and the chapter “Specification / Data table” in the operating and installation instructions for the heat pump).

▶ Observe the operating instructions of the pump manufacturer.

▶ Set the voltage signal here.

□□■ OUTPUT X2.10

The heat pump manager can send a 230 V fault signal to an external controller connected here.

□□□■ FATAL ERROR

▶ Set this parameter to ON if the fault output should switch only for serious faults leading to a shutdown of the heat pump.

□□□■ GENERAL ERROR

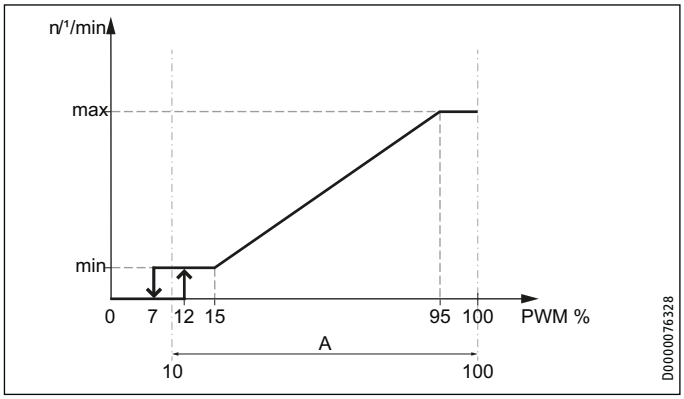
▶ Set this parameter to ON if the fault output should switch for all faults.

□□□□■ OUTPUT X3.16/X3.17

In this menu item you can adjust the settings for the pump connected to the output.

□□□■ FUNCTION

□□□□■ PWM 0%...100%



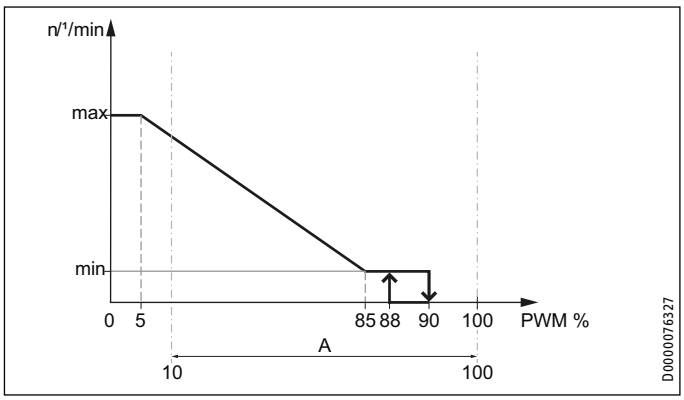
A Setting range

The pump speed is controlled in proportion to the PWM input signal. The pump stops if there is a cable break.

▶ Set this parameter to ON if you connect a pump for solar thermal energy.

▶ Observe the operating instructions of the pump manufacturer.

□□□□■ PWM 100%...0%



A Setting range

The pump speed is controlled in inverse proportion to the PWM input signal. If there is a cable break, the pump runs at maximum speed.

▶ Set this parameter to ON if you connect a heating circuit pump.

▶ Observe the operating instructions of the pump manufacturer.

□□□□■ 0-10 V

▶ Set this parameter to ON if you use a pump that is controlled by a 0-10 V voltage signal.

□□□■ PUMP

▶ Select here the pump that is connected to the output.

You have the following options:
- Swimming pool pump, primary (POOL PUMP, PRIMARY)

- Swimming pool pump, secondary (POOL PUMP, SECONDARY)
- Buffer charging pump (BUFFER CHARGING PUMP 3 / 4 / 5 / 6)
- DHW charging pump (DHW CHARGING PUMP 2)
- Heating circuit pump (HEATING CIRCUIT PUMP 4 / 5)

□□□■ OUTPUT, PWM / OUTPUT, VOLT

In this menu item you can set the pump rate for the connected pump. The pump rate is used to specify the flow rate.

Please also note the information on flow rate (see the operating instructions for the pump and the chapter “Specification / Data table” in the operating and installation instructions for the heat pump).

▶ Set the pump rate here.

□■ EMERGENCY OPERATION

Response to a shutdown of the heat pump in the event of a fault.

ON

As soon as a FATAL ERROR occurs in heat pump types with internal electric reheating and the heat pump fails, the operating mode automatically switches over into emergency mode.

Every heat pump in a parallel array must suffer a fatal error before the program switch automatically switches over to emergency operation.

There's one exception: Automatic emergency operation will also be triggered if only the preselected heat pump for DHW fails.

In heat pump types with an external heat source, the second heat source must be set to ON for central heating or DHW heating; only then can it change over to emergency operation when a fatal error occurs.

For heat pumps with a second heat source, the second heat source takes over heating operation and DHW heating.

OFF

As soon as faults occur in heat pump types with internal electric reheating and the heat pump fails, the second heat source for central heating takes over frost protection. Heating operation and DHW heating are not carried out.

□■ RESET

□□■ HEAT PUMP

If a fault occurs the heat pump can be reset. Setting it to ON clears the fault that has occurred. The compressor starts again. The fault remains stored in the message list.

□□■ NOTIFICATION LIST

The entire message list is deleted.

□□■ SYSTEM

A system reset will reset the heat pump manager to delivered condition (factory settings).

□□■ FET

With this reset, you reset all installed FET remote controls. The heating circuits must be reassigned.

□□■ WPE

A system reset will reset the heat pump extension to delivered condition (factory settings).

□■ SENSOR CALIBRATION

If the sensors do not measure the temperature correctly, you can correct the measured temperature by +/-9 °F (+/-5 K) in this menu.

□□■ ACTUAL FLOW TEMPERATURE WP

▶ Correct the measured temperature by +/-9 °F (+/-5 K).

□□■ ACTUAL FLOW TEMPERATURE NHZ

▶ Correct the measured temperature by +/-9 °F (+/-5 K).

□□■ ACTUAL RETURN TEMPERATURE WP

▶ Correct the measured temperature by +/-9 °F (+/-5 K).

□■ UPDATE

9. Settings

9.1 Parameter overview

The following lists the parameters that can be adjusted via the programming unit.

Note
The values in the columns "Min.", "Max." and "Standard" vary depending on the connected heat pump and may differ from the values given.

Menu item/parameter	Options	Unit	Min.	Max.	Standard	System value
■ PROGRAMS						
□■ PARTY PROGRAM						
□□■ HOURS		h	0	24		
□■ HEAT-UP PROGRAM						
□□■ SETTINGS						
□□□■ LOW END TEMPERATURE		°F (°C)	68 (20)	104 (40)	77 (25)	
□□□■ DURATION BASE TEMP		d	0	5	2	
□□□■ MAXIMUM TEMPERATURE		°F (°C)	68 (20)	122 (50)	104 (40)	
□□□■ MAX TEMPERATURE DURATION		d	0	5	0	
□□□■ RISE PER DAY		°F (K)	1.8 (1)	18 (10)	1.8 (1)	
■ SETTINGS						
□■ GENERAL						
□□■ CONTRAST			1	5		
□□■ BRIGHTNESS		%	0	100	50	
□□■ TOUCH SENSITIVITY			1	10	4	
□□■ TOUCH ACCELERATION			1	10	6	
□■ HEATING						
□□■ HEATING CIRCUIT 1						
□□□■ COMFORT TEMPERATURE		°F (°C)	41 (5)	86 (30)	68 (20)	
□□□■ ECO TEMPERATURE		°F (°C)	41 (5)	86 (30)	68 (20)	
□□□■ MINIMUM TEMPERATURE	OFF	°F (°C)	50 (10)	86 (30)	OFF	
□□□■ ROOM INFLUENCE		%	0	100		
□□□■ HEATING CURVE RISE			0.2	3	0.6	
□□■ HEATING CIRCUIT 2 / 3 / 4 / 5						
□□□■ COMFORT TEMPERATURE		°F (°C)	41 (5)	86 (30)	68 (20)	
□□□■ ECO TEMPERATURE		°F (°C)	41 (5)	86 (30)	68 (20)	
□□□■ MINIMUM TEMPERATURE	OFF	°F (°C)	50 (10)	86 (30)	OFF	
□□□■ MAXIMUM TEMPERATURE		°F (°C)	68 (20)	194 (90)	122 (50)	
□□□■ MIXER DYNAMICS			30	240	(100)	
□□□■ ROOM INFLUENCE		%	0	100		
□□□■ HEATING CURVE RISE			0.2	3	0.2	
□□■ STANDARD SETTING						
□□□■ BUFFER OPERATION	OFF | ON					
□□□■ SUMMER MODE	OFF | ON				ON	
□□□□■ OUTSIDE TEMPERATURE		°F (°C)	50 (10)	86 (30)	68 (20)	
□□□□■ BUILDING HEAT BUFFER			0	3	1	
□□□■ FLOW PROP HEATING CIRC		%	0	100		
□□□■ MAXIMUM RETURN TEMP		°F (°C)	68 (20)	149 (65)	149 (65)	
□□□■ MAXIMUM FLOW TEMPERATURE		°F (°C)	68 (20)	167 (75)	167 (75)	
□□□■ FIXED VALUE OPERATION	OFF	°F (°C)	68 (20)	158 (70)	OFF	
□□□■ FROST PROTECTION		°F (°C)	14 (-10)	50 (10)	39 (4)	
□□■ PUMP CYCLES	OFF | ON					
□□■ EXTERNAL HEAT SOURCE						
□□□■ OFF	OFF | ON					
□□□■ THREADED IMMERSION HEATER	OFF | ON					

Settings

Menu item/parameter	Options	Unit	Min.	Max.	Standard	System value
□□□■ BOILER	OFF | ON					
□□□■ HZG PWM	OFF | ON					
□□□■ HZG 0-10 V	OFF | ON					
□□□□■ HEATING CURVE GAP		°F (K)	1.8 (1)	27 (15)	5.4 (3)	
□□□□■ SET BOILER TEMPERATURE		°F (°C)	95 (35)	194 (90)		
□□□□■ BLOCKING TIME EVU	OFF	h	1	10		
□□□□■ LOWER APP LIMIT HZG	OFF	°F (°C)	-3 (-19.5)	104 (40)	-3 (-19.5)	
□□□□■ DUAL MODE TEMP HZG		°F (°C)	-4 (-20)	104 (40)	-4 (-20)	
□□□□■ HZG PWM		°F min (K min)	18 (10)	180 (100)	(3)	
□□□□■ HZG 0-10 V		°F min (K min)	18 (10)	180 (100)		
□□■ ELECTRIC REHEATING						
□□□■ LOWER APP LIMIT HZG	OFF	°F (°C)	-4 (-20)	104 (40)	-4 (-20)	
□□□■ DUAL MODE TEMP HZG		°F (°C)	-4 (-20)	104 (40)	-4 (-20)	
□□□■ NUMBER OF STAGES			0	3	3	
□□□■ DELAY		min	1	60	60 min	
□■ DHW						
□□■ DHW TEMPERATURES						
□□□■ COMFORT TEMPERATURE		°F (°C)	50 (10)	140 (60)	122 (50)	
□□□■ ECO TEMPERATURE		°F (°C)	50 (10)	140 (60)	122 (50)	
□□■ STANDARD SETTING						
□□□■ DHW HYSTERESIS		°F (K)	1.8 (1)	18 (10)	9 (5)	
□□□■ DHW STAGES			1	6	1	
□□□■ AUTOMATIC DHW CONTROL	OFF | ON				OFF	
□□□□■ OUTSIDE TEMPERATURE		°F (°C)	23 (-5)	86 (30)		
□□□■ WW LEARNING FUNCTION	OFF | ON				OFF	
□□□■ COMBI CYLINDER	OFF | ON				OFF	
□□□■ WW OUTPUT WP						
□□□□■ WW OUTPUT SUMMER		kW	5	15	10 kW	
□□□□■ WW OUTPUT WINTER		kW	5	15	10 kW	
□□□■ MAXIMUM FLOW TEMPERATURE		°F (°C)	68 (20)	167 (75)	167 (75)	
□□□■ PASTEURISATION	OFF | ON				OFF	
□□□□■ SET TEMPERATURE with 2nd heat generator (2.WE)		°F (°C) °F (°C)	140 (60) 140 (60)	149 (65) 167 (75)		
□□■ ELECTRIC REHEATING						
□□□■ DUAL MODE TEMP WW		°F (°C)	-4 (-20)	104 (40)	-4 (-20)	
□□□■ LOWER APP LIMIT WW	OFF	°F (°C)	-4 (-20)	104 (40)	-4 (-20)	
□□■ EXTERNAL HEAT SOURCE						
□□□■ OFF						
□□□■ SUPPORTED	OFF | ON					
□□□■ ALONE	OFF | ON					
□□□■ INDEPENDENT	OFF | ON					
□□□□■ DUAL MODE TEMP WW		°F (°C)	-4 (-20)	104 (40)	-4 (-20)	
□□□□■ LOWER APP LIMIT WW	OFF	°F (°C)	-3 (-19.5)	104 (40)	-3 (-19.5)	
□□□□■ WW PWM		%	0	100		
□□□□■ WW 0-10 V			0	10		
□□■ DHW CIRCULATION						
□□□■ DEMAND	OFF | ON					
□□□□■ PROGRAM	OFF | ON					
□□□□■ PROGRAM + INPUT	OFF | ON					
□□□□■ PROGRAM + SENSOR	OFF | ON					
□□□□□■ SET TEMPERATURE		°F (°C)	95 (35)	140 (60)		
□□□□□■ HYSTERESIS		°F (K)	0.9 (0.5)	9 (5)		
□■ HYBRID MODULE						
□□■ 2ND HEAT GENERATOR TYPE						
□□□■ GAS CONDENSING	OFF | ON				ON	
□□□■ GAS NON-CONDENSING	OFF | ON				OFF	
□□□■ OIL CONDENSING	OFF | ON				OFF	

Settings

Menu item/parameter	Options	Unit	Min.	Max.	Standard	System value
□□□■ OIL NON-CONDENSING	OFF | ON				OFF	
□□■ 2ND HEAT GENERATOR SETTING						
□□□■ SET TEMPERATURE			35	90	70	
□□□■ HYSTERESIS			1	10	5	
□□□■ MIXER DYNAMICS			30	240	200	
□□□■ HEATING CURVE GAP			1	10	5	
□□□■ SOFT START TEMPERATURE			40	60	50	
□□□■ DELAY		Minutes	1	240	60	
□□□■ IDLE TIME		Minutes	1	120	10	
□□■ TYPE OF OPTIMISATION						
□□□■ ECO DRIVE			0	10	0	
□□□■ ECONOMICAL						
□□□□■ PEAK TARIFF PRICE			1	99	23.1	
□□□□■ OFF-PEAK TARIFF PRICE			1	99	19.1	
□□□□■ GAS PRICE			1	99	5.8	
□□□□■ OIL PRICE			1	99	5.8	
□□□■ ECOLOGICAL						
□□□□■ ELECTRICITY CO2 EMISSIONS			1	600	530	
□□□□■ GAS CO2 EMISSIONS			1	600	200	
□□□□■ OIL CO2 EMISSIONS			1	600	290	
□□■ HEAT PUMP SETTING						
□□□■ LOWER APP LIMIT	OFF			40	-20	
□□□■ BLOCKING TIME EVU	OFF			10	1	
□■ COOLING (with FET)						
□□■ COOLING	OFF | ON					
□□■ COOLING MODE						
□□□■ PASSIVE COOLING	OFF | ON					
□□□■ ACTIVE COOLING	OFF | ON					
□□■ STANDARD SETTING						
□□□■ COOLING STAGES			1	6		
□□□■ COOLING LIMIT		°F (°C)	59 (15)	104 (40)		
□□□■ COOLING CAPACITY		kW	3	10		
□□□■ FLOW TEMP HYSTERESIS		°F (K)	5.4 (3)	18 (10)		
□□□■ DYNAMICS ACTIVE			1	10		
□□□■ DYNAMICS PASSIVE			0	10		
□□■ COOLING CIRCUIT 1	OFF | ON					
□□□■ COOLING TYPE						
□□□■ SET ROOM TEMPERATURE		°F (K)	36 (20)	54 (30)		
□□□■ INCREASE COOLING CURVE			0.1	3.0		
□□□■ START TEMPERATURE		°F (°C)	48 (9)	86 (30)		
□□■ COOLING CIRCUIT 2	OFF | ON					
□□□■ COOLING TYPE						
□□□■ SET ROOM TEMPERATURE		°F (K)	36 (20)	54 (30)		
□□□■ INCREASE COOLING CURVE			0.1	3.0		
□□□■ START TEMPERATURE		°F (°C)	48 (9)	86 (30)		
□□■ COOLING CIRCUIT 3	OFF | ON					
□□□■ COOLING TYPE						
□□□■ SET ROOM TEMPERATURE		°F (K)	36 (20)	54 (30)		
□□□■ INCREASE COOLING CURVE			0.1	3.0		
□□□■ START TEMPERATURE		°F (°C)	48 (9)	86 (30)		
□□■ COOLING CIRCUIT 4	OFF | ON					
□□□■ COOLING TYPE						
□□□■ SET ROOM TEMPERATURE		°F (K)	36 (20)	54 (30)		
□□□■ INCREASE COOLING CURVE			0.1	3.0		
□□□■ START TEMPERATURE		°F (°C)	48 (9)	86 (30)		
□□■ COOLING CIRCUIT 5	OFF | ON					
□□□■ COOLING TYPE						
□□□■ SET ROOM TEMPERATURE		°F (K)	36 (20)	54 (30)		

Settings

Menu item/parameter	Options	Unit	Min.	Max.	Standard	System value
□□□■ INCREASE COOLING CURVE			0.1	3.0		
□□□■ START TEMPERATURE		°F (°C)	48 (9)	86 (30)		
□■ SWIMMING POOL						
□□■ SWIMMING POOL	OFF | ON					
□□□■ DEMAND						
□□□□■ 230 V INPUT						
□□□□■ SENSOR INPUT						
□□□□□■ SET TEMPERATURE		°F (°C)	50 (10)	95 (35)		
□□□□□■ HYSTERESIS		°F (K)	0.9 (0.5)	5.4 (3)		
□□□□□■ BUFFER OPERATION	OFF | ON					
□□□□□■ FIXED VALUE		°F (°C)	68 (20)	131 (55)		
□■ DIFFERENTIAL CONTROLLER 1 / 2						
□□■ DIFFERENTIAL CONTROLLER 1 / 2	OFF | ON					
□□■ START DIFFERENTIAL		°F (K)	1.8 (1)	36 (20)		
□□■ HYSTERESIS		°F (K)	0.9 (0.5)	18 (10)		
□□■ MINIMUM TEMPERATURE	OFF	°F (°C)	86 (30)	158 (70)		
□□■ MAXIMUM TEMPERATURE		°F (°C)	68 (20)	194 (90)		
□□■ STOP DELAY		min	0	10		
□■ THERMOSTAT FUNCTION 1 / 2						
□□■ THERMOSTAT FUNCTION 1 / 2	OFF | ON					
□□■ SET TEMPERATURE		°F (°C)	50 (10)	167 (75)		
□□■ HYSTERESIS		°F (K)	1.8 (1)	18 (10)		
■ COMMISSIONING						
□■ SOURCE						
□□■ MIN SOURCE TEMPERATURE	OFF	°F (°C)	14 (-10)	50 (10)	16 (-9)	
□□■ MAX. SOURCE EXTRACTION RATE	OFF	kW	0.0	100		
□■ CHARGING PUMP CONTROL						
□□■ STANDBY						
□□□■ TYPE OF CONTROL						
□□□□■ MINIMUM PUMP RATE	OFF | ON					
□□□□■ AVERAGE PUMP RATE						
□□□□■ MAXIMUM PUMP RATE						
□□□□■ ADJUSTABLE PUMP RATE						
□□□■ SET VALUES						
□□□□■ PUMP RATE		%				
□□■ HEATING						
□□□■ TYPE OF CONTROL						
□□□□■ MINIMUM PUMP RATE	OFF | ON					
□□□□■ AVERAGE PUMP RATE						
□□□□■ MAXIMUM PUMP RATE						
□□□□■ ADJUSTABLE PUMP RATE						
□□□□■ SPREAD CONTROL						
□□□■ SET VALUES						
□□□□■ PUMP RATE		%				
□□□□■ SPREAD		°F (K)	1.8 (1)	27 (15)		
□□■ DHW						
□□□■ TYPE OF CONTROL						
□□□□■ MINIMUM PUMP RATE	OFF | ON					
□□□□■ AVERAGE PUMP RATE						
□□□□■ MAXIMUM PUMP RATE						
□□□□■ ADJUSTABLE PUMP RATE						
□□□□■ SPREAD CONTROL						
□□□■ SET VALUES						
□□□□■ PUMP RATE		%				

Settings

Menu item/parameter	Options	Unit	Min.	Max.	Standard	System value
□□□□■ SPREAD		°F (K)	1.8 (1)	27 (15)		
□□■ COOLING						
□□□■ TYPE OF CONTROL						
□□□□■ MINIMUM PUMP RATE	OFF | ON					
□□□□■ AVERAGE PUMP RATE						
□□□□■ MAXIMUM PUMP RATE						
□□□□■ ADJUSTABLE PUMP RATE						
□□□□■ SPREAD CONTROL						
□□□■ SET VALUES						
□□□□■ PUMP RATE		%				
□□□□■ SPREAD		°F (K)	1.8 (1)	27 (15)		
□□■ DEFROST						
□□□■ TYPE OF CONTROL						
□□□□■ MINIMUM PUMP RATE	OFF | ON					
□□□□■ AVERAGE PUMP RATE						
□□□□■ MAXIMUM PUMP RATE						
□□□□■ ADJUSTABLE PUMP RATE						
□□□□■ SPREAD CONTROL						
□□□■ SET VALUES						
□□□□■ PUMP RATE		%				
□□□□■ SPREAD		°F (K)	1.8 (1)	27 (15)		
□□■ STANDARD SETTING						
□□□■ MINIMUM PUMP RATE		%				
□□□■ MAXIMUM PUMP RATE		%				
□■ HEATING						
□□■ CONTROLLER DYNAMICS			1	500	100	
□□■ HYSTERESIS		°F (K)	1.8 (1)	18 (10)	1	
□□■ SPREAD CONTROL						
□□□■ SET SPREAD		K	5.4 (3)	21.6 (12)		
□□□■ MAXIMUM PUMP RATE		%	50	100		
□□□■ STANDBY PUMP RATE			20	100		
□□■ HEATING CIRC PUMP RATE		%	20	100		
□■ DHW						
□□■ DHW PUMP RATE		%	20	100		
□■ COMPRESSOR						
□□■ MINIMUM DEFROST TIME		min	1	20	1	
□□■ START DEFROST	OFF | ON				OFF	
□□■ IDLE TIME		min	1	120	20 min	
□□■ MAXIMUM CURRENT		A	10	30	30 A	
□□■ MINIMUM RUNTIME		min	0	30	10 min	
□□■ POWERDEFROST	OFF | ON		0	20	OFF	
□□■ HEATING SYSTEM SIZING						
□□□■ DESIGN TEMPERATURE		°F (°C)	-4 (-20)	32 (0)	5 (-15)	
□□□■ HEAT DEMAND		kW	5	20	15 kW	
□□■ CONSTANT OUTPUT		kW	5	20	10 kW	
□□■ CONDENSATE RIBBON HEATER						
□□□■ OUTSIDE TEMPERATURE		°F (°C)	14 (-10)	41 (5)	41 (5)	
□□■ QUICK START	OFF | ON				OFF	
□■ SILENT MODE						
□□■ FAN REDUCTION	OFF | ON				OFF	
□□■ OUTPUT REDUCTION	OFF | ON				OFF	
□□□■ OUTPUT		%	70	100	100 %	
□□□■ FAN		%	70	100	100 %	
□□■ HEAT PUMP OFF	OFF | ON				OFF	

Settings

Menu item/parameter	Options	Unit	Min.	Max.	Standard	System value
☐■ POWER-OFF						
☐☐■ OFF	OFF | ON					
☐☐■ HEAT PUMP + ELECTRIC BOOSTER HEATER	OFF | ON					
☐☐■ HEAT PUMP	OFF | ON					
☐☐■ ELECTRIC BOOSTER HEATER	OFF | ON					
☐■ SYSTEM TYPE			0	100		
☐■ I/O CONFIGURATION						
☐☐■ INPUT X1.13						
☐☐☐■ TELEPHONE REMOTE SWITCH	OFF | ON					
☐☐☐■ HEATING CURVE OPTIMISATN	OFF | ON					
☐☐☐■ SG READY	OFF | ON					
☐☐■ INPUT X1.14						
☐☐☐■ HEATING	OFF | ON					
☐☐☐■ COOLING	OFF | ON					
☐☐■ INPUT X1.15						
☐☐☐■ HEATING	OFF | ON					
☐☐☐☐■ PRESET TEMPERATURE 1 V		°F (°C)	50 (10)	140 (60)		
☐☐☐☐■ PRESET TEMPERATURE 10 V		°F (°C)	50 (10)	140 (60)		
☐☐☐■ COOLING	OFF | ON					
☐☐☐☐■ PRESET TEMPERATURE 1 V		°F (°C)	48 (9)	68 (20)		
☐☐☐☐■ PRESET TEMPERATURE 10 V		°F (°C)	48 (9)	68 (20)		
☐☐■ OUTPUT X1.16/X1.17						
☐☐☐■ FUNCTION						
☐☐☐☐■ PWM 0%...100%	OFF | ON					
☐☐☐☐■ PWM 100%...0%	OFF | ON					
☐☐☐☐■ 0-10 V	OFF | ON					
☐☐☐■ PUMP						
☐☐☐☐■ BUFFER CHARGING PUMP 1	OFF | ON					
☐☐☐☐■ BUFFER CHARGING PUMP 2						
☐☐☐☐■ HK PUMP 1						
☐☐☐☐■ HK PUMP 2						
☐☐☐☐■ HK PUMP 3						
☐☐☐☐■ DHW CHARGING PUMP						
☐☐☐☐■ SOURCE PUMP						
☐☐☐☐■ CHARGING PUMP CONTROL HEATING						
☐☐☐☐■ CHARGING PUMP CONTROL DHW						
☐☐☐■ OUTPUT, PWM		%	10	100		
☐☐☐■ OUTPUT, VOLT		V	1	10		
☐☐■ OUTPUT X2.10						
☐☐☐■ FATAL ERROR	OFF | ON					
☐☐☐■ GENERAL ERROR						
☐☐■ OUTPUT X3.16/X3.17						
☐☐☐■ FUNCTION						
☐☐☐☐■ PWM 0%...100%	OFF | ON					
☐☐☐☐■ PWM 100%...0%						
☐☐☐☐■ 0-10 V						
☐☐☐■ PUMP						
☐☐☐☐■ POOL PUMP, PRIMARY	OFF					
☐☐☐☐■ POOL PUMP, SECONDARY						
☐☐☐☐■ BUFFER CHARGING PUMP 3						
☐☐☐☐■ BUFFER CHARGING PUMP 4						
☐☐☐☐■ BUFFER CHARGING PUMP 5						
☐☐☐☐■ BUFFER CHARGING PUMP 6						
☐☐☐☐■ HEATING CIRCUIT PUMP 4						
☐☐☐☐■ HEATING CIRCUIT PUMP 5						
☐☐☐■ OUTPUT, PWM		%	10	100		

Menu item/parameter	Options	Unit	Min.	Max.	Standard	System value
□□□■ OUTPUT, VOLT		V	1	10		
□■ EMERGENCY OPERATION	OFF | ON				OFF	
□■ RESET						
□□■ HEAT PUMP	OFF | ON				OFF	
□□■ NOTIFICATIONLIST	OFF | ON				OFF	
□□■ SYSTEM	OFF | ON				OFF	
□□■ FET	OFF | ON					
□□■ WPE	OFF | ON					
□■ SENSOR CALIBRATION						
□□■ ACTUAL FLOW TEMPERATURE WP			-5	5		
□□■ ACTUAL FLOW TEMPERATURE NHZ			-5	5		
□□■ ACTUAL RETURN TEMPERATURE WP			-5	5		

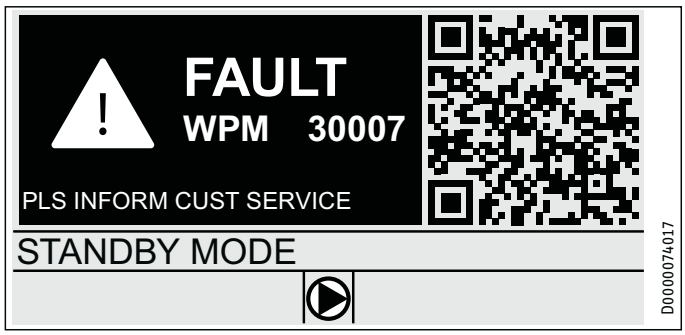
10. Appliance handover

Explain the appliance function to users and familiarize them with how it works.

Note
Hand over the operating and installation instructions to the user for safe-keeping. All the information in these instructions must be carefully followed. The instructions provide information on safety, operation, installation and maintenance of the appliance.

11. Notifications

If the device registers a fault, this is clearly displayed with the message shown below.



The fault is shown on the display with a fault number. Use the fault number to find more information about the fault in the message list.

The message list can be found on the internet. To view this, scan the QR code or paste this link into your browser: http://www.stiebel-eltron.com.

If more than one fault occurs, it is always the most recently occurring fault that is displayed.

11.1 Notification list

Using the menu DIAGNOSIS / NOTIFICATIONLIST, you can display a list of the most recently registered faults on the device. The message list contains up to 50 messages.

▶ Use the Touch-Wheel to access the other entries in the message list.

... / ... ◀NOTIFICATION LIST 1/1

#	CODE	TIME	DATE	WP
01.	30007	08:23	15. APR 17	01
02.				
03.				
04.				
05.				

D0000074016

12. Care

WPM heat pump manager in wall mounted enclosure

A damp cloth is all you need to care for the plastic parts. Never use abrasive or corrosive cleaning agents.

13. Troubleshooting

WARNING Electrocution

▶ Isolate the heat pump from the power supply when carrying out any work.

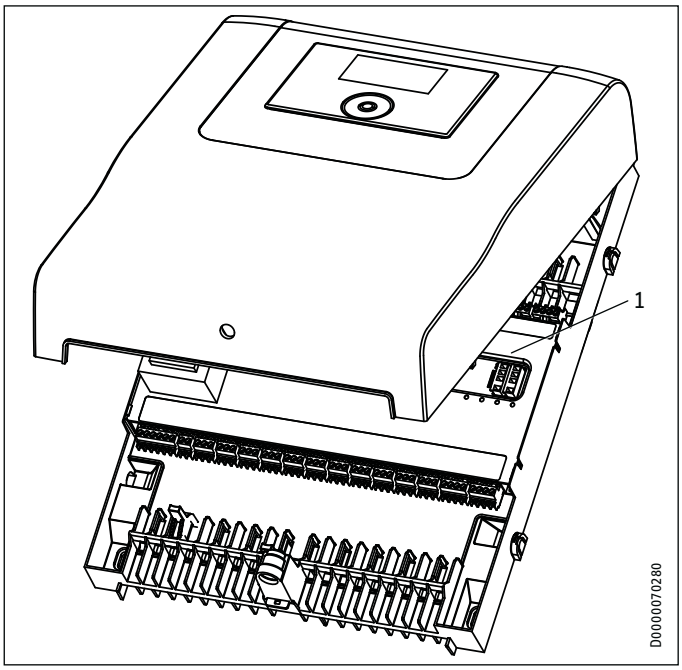
Problem	Cause	Remedy
An info value is not displayed.	The sensor has not been connected correctly.	Isolate the system from the power supply. Connect the sensor. Reconnect the system to the mains voltage.
The controller is not responding.	A malfunction in the controller.	Disconnect the entire heating system from the power supply. Switch the system on again.
The heat pump does not start or does not respond as expected.		

13.1 Updating the heat pump manager

WPM heat pump manager in wall mounted enclosure

▶ Remove the screw at the bottom of the front fascia.

▶ Remove the front fascia from the WPM.



1 Micro-SD card slot

▶ Insert the micro-SD card with the new software into the memory card slot.

Integral WPM heat pump manager

Carry out whatever steps are necessary to gain access to the built-in heat pump manager. Observe the operating and installation instructions of the appliance.

▶ Insert the micro-SD card with the new software into the memory card slot.

13.2 Fault display

Faults in the system or in the heat pump are indicated on the display. For heating system and heat pump troubleshooting and analysis, all important process data and BUS subscribers can be called up under DIAGNOSIS and a relay test can be carried out.

▶ For troubleshooting, analyze all available parameters before opening the heat pump control panel.

All faults cause the heat pump to shut down. The red LED on the IWS flashes for approx. 12 minutes, the idle time is set and the corresponding fault is written to the message list.

Once the fault time on the IWS and the idle time have elapsed, the heat pump restarts. Even if the heat pump has already been reset and the flashing red LED on the IWS has gone out, the heat pump will not restart until the idle time has elapsed.

With all heat pumps, the fault inputs on the IWS have no effect. In standard mode, 230 V is always present at the fault inputs.

When the heat pump has been shut down (controlled shut down) and after a period of 10 s, the 230 V signal must be present. If this is not the case, the red LED on the IWS flashes and CENTRAL FAULT is displayed.

Note
For these faults, an entry is made in the message list. The system will be shut down. The display message goes out 10 min after the fault has been removed. The system will be shut down permanently if 5 heat pump-specific or hardware faults occur within 2 hours run. The heat pump can only be restarted after the fault has been remedied and the IWS reset.

13.3 Heat pump-specific or hardware faults

Also see chapter "Notifications".

13.3.1 The heat pump does not run

The heat pump type was incorrectly selected.

- ▶ Check the heat pump type in the menu "DIAGNOSIS / SYSTEM / HEAT PUMP TYPE".
- ▶ Perform a system reset ("COMMISSIONING / RESET / SYSTEM").
- ▶ Select the correct heat pump type.

The heat pump is in standby mode.

- ▶ Change the system over to programmed operation.

The power supply has been blocked; POWER-OFF is displayed.

- ▶ Wait for the blocking time to elapse. The heat pump will automatically start up again.

There is no heat demand.

- ▶ Check the set and actual values under the INFO menu item.

There may be incorrect fuse protection.

- ▶ See chapter "Specification / Data table".

Note
The heat pump can only be restarted after the fault has been remedied and the heat pump reset (parameter: heat pump reset).

Additional parameters available for system analysis:

- QUICK START: The quick start must only be carried out by our customer support. The heat pump compressor is checked during a quick start.
- RELAY TEST: Test for all relays in the heat pump manager.

13.3.2 The WPM display is not responding to entries

- Isolate the heat pump from the power supply.
- Restart the system.
- If an ISG is installed, the WPM must have completely started up before you reconnect the ISG power supply.

14. Specification

14.1 Data table

	WPM
Electrical data	
Power consumption	8 VA
Relay breaking capacity	2 A
Sensor resistance	1000 Ω
Max. relay output breaking capacity	2 A (2 A)
Design peak voltage	4000 V
Max. total breaking capacity of all relay outputs	10 A (10 A)
Power supply	240 V, 60 Hz
Versions	
IP rating	IP21
Communication system	CAN
Number of automatic cycles	100000
Level of contamination	2
Function	1.B
Values	
Ambient temperature	32–131 °F (0–55 °C)

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Deutschland
STIEBEL ELTRON GmbH & Co. KG
Dr.-Stiebel-Straße 33 | 37603 Holzminden
Tel. 05531 702-0 | Fax 05531 702-480
info@stiebel-eltron.de
www.stiebel-eltron.de

Verkauf Tel. 05531 702-110 | Fax 05531 702-95108 | info-center@stiebel-eltron.de
Kundendienst Tel. 05531 702-111 | Fax 05531 702-95890 | kundendienst@stiebel-eltron.de
Ersatzteilverkauf www.stiebel-eltron.de/ersatzteile | ersatzteile@stiebel-eltron.de

Australia
STIEBEL ELTRON Australia Pty. Ltd.
294 Salmon Street | Port Melbourne VIC 3207
Tel. 03 9645-1833 | Fax 03 9644-5091
info@stiebel-eltron.com.au
www.stiebel-eltron.com.au

Austria
STIEBEL ELTRON Ges.m.b.H.
Gewerbegebiet Neubau-Nord
Margaritenstraße 4 A | 4063 Hörsching
Tel. 07221 74600-0 | Fax 07221 74600-42
info@stiebel-eltron.at
www.stiebel-eltron.at

Belgium
STIEBEL ELTRON bvba/sprl
't Hofveld 6 - D1 | 1702 Groot-Bijgaarden
Tel. 02 42322-22 | Fax 02 42322-12
info@stiebel-eltron.be
www.stiebel-eltron.be

China
STIEBEL ELTRON (Tianjin) Electric Appliance Co., Ltd.
Plant C3, XEDA International Industry City
Xiqing Economic Development Area
300385 Tianjin
Tel. 022 8396 2077 | Fax 022 8396 2075
info@stiebeleltron.cn
www.stiebeleltron.cn

Czech Republic
STIEBEL ELTRON spol. s r.o.
Dopraváků 749/3 | 184 00 Praha 8
Tel. 251116-111 | Fax 235512-122
info@stiebel-eltron.cz
www.stiebel-eltron.cz

Finland
STIEBEL ELTRON OY
Kapinakuja 1 | 04600 Mäntsälä
Tel. 020 720-9988
info@stiebel-eltron.fi
www.stiebel-eltron.fi

France
STIEBEL ELTRON SAS
7-9, rue des Selliers
B.P 85107 | 57073 Metz-Cédex 3
Tel. 0387 7438-88 | Fax 0387 7468-26
info@stiebel-eltron.fr
www.stiebel-eltron.fr

Hungary
STIEBEL ELTRON Kft.
Gyár u. 2 | 2040 Budaörs
Tel. 01 250-6055 | Fax 01 368-8097
info@stiebel-eltron.hu
www.stiebel-eltron.hu

Japan
NIHON STIEBEL Co. Ltd.
Kowa Kawasaki Nishiguchi Building 8F
66-2 Horikawa-Cho
Saiwai-Ku | 212-0013 Kawasaki
Tel. 044 540-3200 | Fax 044 540-3210
info@nihonstiebel.co.jp
www.nihonstiebel.co.jp

Netherlands
STIEBEL ELTRON Nederland B.V.
Daviottenweg 36 | 5222 BH 's-Hertogenbosch
Tel. 073 623-0000 | Fax 073 623-1141
info@stiebel-eltron.nl
www.stiebel-eltron.nl

New Zealand
Stiebel Eltron NZ Limited
61 Barrys Point Road | Auckland 0622
Tel. +64 9486 2221
info@stiebel-eltron.co.nz
www.stiebel-eltron.co.nz

Poland
STIEBEL ELTRON Polska Sp. z O.O.
ul. Działkowa 2 | 02-234 Warszawa
Tel. 022 60920-30 | Fax 022 60920-29
biuro@stiebel-eltron.pl
www.stiebel-eltron.pl

Russia
STIEBEL ELTRON LLC RUSSIA
Urzhumskaya street 4,
building 2 | 129343 Moscow
Tel. +7 495 125 0 125
info@stiebel-eltron.ru
www.stiebel-eltron.ru

Slovakia
STIEBEL ELTRON Slovakia, s.r.o.
Hlavná 1 | 058 01 Poprad
Tel. 052 7127-125 | Fax 052 7127-148
info@stiebel-eltron.sk
www.stiebel-eltron.sk

South Africa
STIEBEL ELTRON Southern Africa (PTY) Ltd
30 Archimedes Road
Wendywood
Johannesburg, 2090
Tel. +27 10 001 85 47
info@stiebel-eltron.co.za
www.stiebel-eltron.co.za

Switzerland
STIEBEL ELTRON AG
Industrie West
Gass 8 | 5242 Lupfig
Tel. 056 4640-500 | Fax 056 4640-501
info@stiebel-eltron.ch
www.stiebel-eltron.ch

Thailand
STIEBEL ELTRON Asia Ltd.
469 Moo 2 Tambol Klong-Jik
Amphur Bangpa-In | 13160 Ayutthaya
Tel. 035 220088 | Fax 035 221188
info@stiebeleltronasia.com
www.stiebeleltronasia.com

United Kingdom and Ireland
STIEBEL ELTRON UK Ltd.
Unit 12 Stadium Court
Stadium Road | CH62 3RP Bromborough
Tel. 0151 346-2300 | Fax 0151 334-2913
info@stiebel-eltron.co.uk
www.stiebel-eltron.co.uk

United States of America
STIEBEL ELTRON, Inc.
17 West Street | 01088 West Hatfield MA
Tel. 0413 247-3380 | Fax 0413 247-3369
info@stiebel-eltron-usa.com
www.stiebel-eltron-usa.com

STIEBEL ELTRON

Stand 9734

A 354199-45434-9843
B 327907-43222-9639