United Kingdom
en

BAXI

User manual
Controller

Baxi ASHP pre-plumbed cylinder

Please keep these instructions in a safe place.
If you move house, please hand them over to the next occupier.

Contents

1 Safety

1.1 General safety instructions

Caution
- Only competent persons having received adequate training are permitted to work on the appliance and the installation.
- Read all documentation supplied with the device before undertaking any work.

Danger
Before any work, switch off the mains supply to the appliance.

1.2 Recommendations

Warning
Installation and maintenance of the appliance must be carried out by a competent person. This must be done in accordance with local and national regulations.

Warning
If the mains lead is damaged, it must be replaced by a competent person in accordance with the current regulations.

Warning
Always isolate the mains supply when working on the control unit.

Caution
- Make sure the control unit can be accessed at all times.
- The Main cable must be connected to the mains supply by a Double Pole Switch, according to EN 60335-1.

Important
Keep this document near to the control unit.

Important
Instruction and warning labels must never be removed or covered. They must be clearly legible throughout the entire service life of the control unit.

Important
The control unit must not be modified in any way as this will invalidate the manufacturers warranty.

1.3 Liabilities

1.3.1 Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various Directives applicable. They are therefore delivered with the CE marking and any documents necessary. In the interests of the quality of our products, we strive constantly to improve them. We therefore reserve the right to modify the specifications given in this document.

Our liability as manufacturer may not be invoked in the following cases:

- Failure to abide by the instructions on installing and maintaining the appliance.
- Failure to abide by the instructions on using the appliance.
- Faulty or insufficient maintenance of the appliance.

1.3.2 Installer's liability

The installer is responsible for the installation and initial commissioning of the appliance. The installer must observe the following instructions:

- Read and follow the instructions given in the manuals provided with the system.
- Install the system in compliance with prevailing legislation and standards.
- Carry out initial commissioning and any checks necessary.
- Explain the installation to the user.

- If maintenance is necessary, warn the user of the obligation to check the appliance and keep it in good working order.
- Give all the instruction manuals to the user.

1.3.3 User's liability

To guarantee optimum operation of the system, you must abide by the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Call on a qualified professional to carry out installation and initial commissioning.
- Get your installer to explain your installation to you.
- Have the required inspections and maintenance carried out by a qualified installer.
- Keep the instruction manuals in good condition close to the appliance.

2 About this manual

2.1 General

This manual is intended for the installation of the control unit. The heat pump and cylinder are supplied with their own manuals

Warning
Installation, repair and maintenance must only be carried out only by a competent person.

The installation must be carried out in accordance with:

- Requirements for electrical installations

2.2 Additional documentation

Separate manuals are supplied with the heat pump and the cylinder.

We recommend you carefully read the instructions supplied with other equipment.

2.3 Symbols used

2.3.1 Symbols used in the manual

This manual uses various danger levels to draw attention to special instructions. We do this to improve user safety, to prevent problems and to guarantee correct operation of the appliance.

Danger
Risk of dangerous situations that may result in serious personal injury.

Danger of electric shock
Risk of electric shock.

Warning
Risk of dangerous situations that may result in minor personal injury.

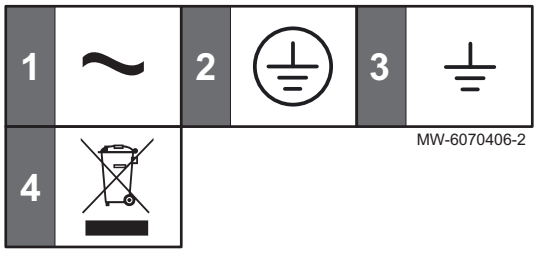
Caution
Risk of material damage.

Important
Please note: important information.

See
Reference to other manuals or pages in this manual.

2.3.2 Symbols used on the indoor unit

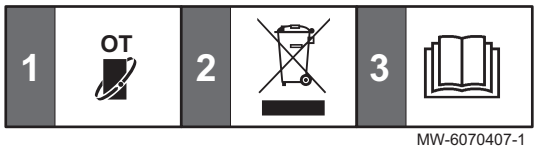
Fig.1



1 Alternating current
2 Protective earthing
3 Earth
4 Dispose of used products in an appropriate recovery and recycling structure

2.3.3 Symbols used on the data plate

Fig.2



1 Compatibility with the OpenTherm smart room thermostat
2 Dispose of used products in an appropriate recovery and recycling structure
3 Before installing and commissioning the appliance, carefully read the instruction manuals provided

3 Technical specifications

3.1 Homologations

3.1.1 Safety, Performance & Quality

This appliance has been assessed by an appropriate Notified Body. It has been shown to meet the requirements of all Directives and Regulations as applicable. These Directives and Regulations lay down requirements for the safety and efficiency of the appliance. Also the design, construction and use of materials. It is a requirement that the production process is covered by an approved and monitored system of quality assurance.

3.1.2 Bluetooth® wireless technology

Fig.3 Logo

AD-3001854-01

This product is equipped with Bluetooth wireless technology.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by BDR Thermea Group is under license. Other trademarks and trade names are those of their respective owners.

3.2 Technical data

Tab.1 Indoor unit technical specifications

	Unit	Baxi ASHP PP
Ambient operating temperature	°C	7 – 30
Storage temperature	°C	-25 – 60
Relative humidity (non condensing)	%	0 – 95

3.2.1 Sensor specifications

■ Outdoor temperature sensor specifications

Tab.2 Tout sensor

Temperature	°C	-20	-15	-10	-5	0	5	10	15	20	25	30	40	50
Resistance	Ω	3895	2987	2312	1799	1411	1117	891	715	577	470	384	257	172

■ Heating flow & DHW temperature sensor specifications

Tab.3 Tsystem and DHW temperature sensor

Temperature	°C	0	10	20	25	30	40	50	60	70	80	90
Resistance	Ω	32014	19691	12474	10000	8080	5372	3661	2535	1794	1290	941

3.3 Electrical diagram

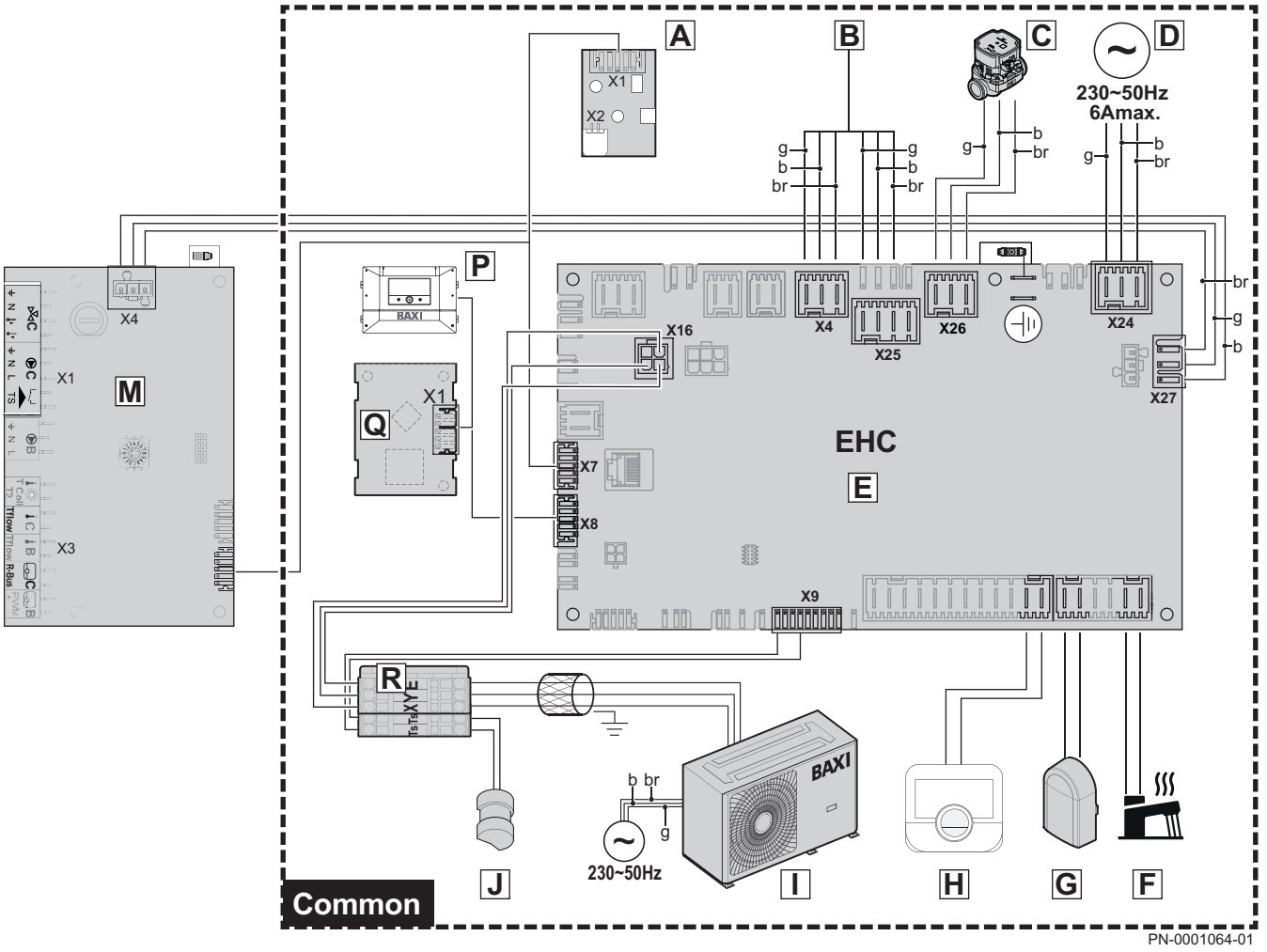
This chapter describes all the possible zones configurations.

Tab.4 Zones configurations

Chapter	Zone1	Zone2	Zone3
Zone1 (direct), page 8	direct	*not wired*	*not wired*
Zone1 (direct) & Zone3 (mixing), page 9	direct	*not wired*	mixing
Zone1, Zone2 (direct), page 9	direct	direct	*not wired*
Zone1, Zone2, Zone3 (direct), page 10	direct	direct	direct
Zone1, Zone2 (direct), Zone3 (mixing), page 11	direct	direct	mixing

3.3.1 Zone1 (direct)

Fig.4 Main control box - Zone1 (direct)

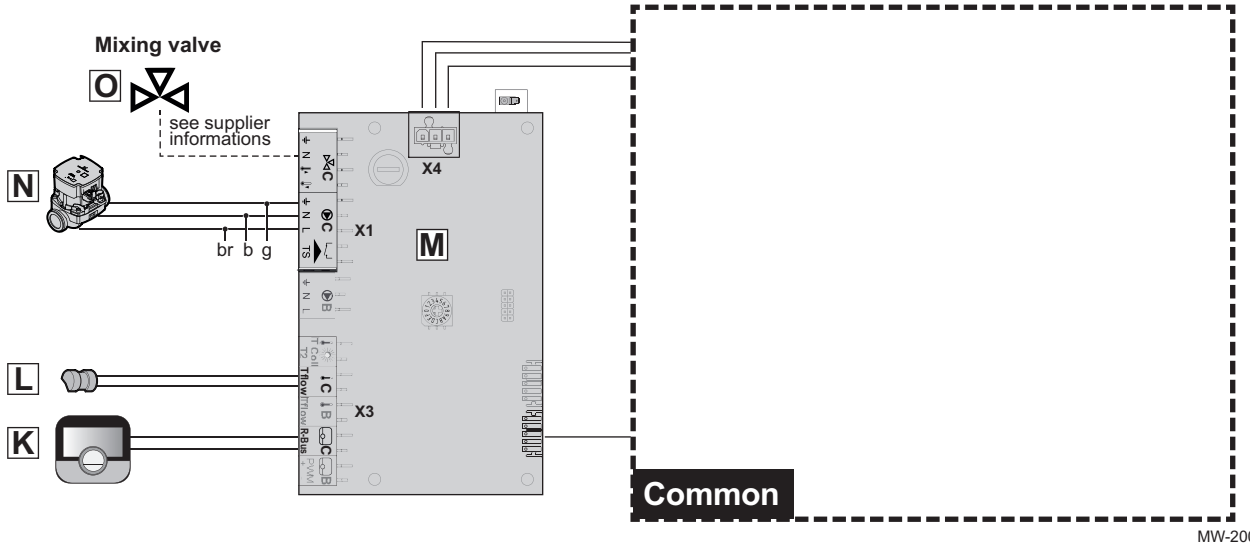


Tab.5

Identifier	Main Component	Description	Pre-wired
A	CB-21	Interface PCB between the EHC–16 PCB and an external L-BUS connection	X
B	Contactor box	Electrical contactor box	X
C	Zone1 Pump	Zone1 Pump	X
D	Product power supply	Main power supply	
E	EHC–16	Main PCB for the heat pump	X
F	Domestic Hot Water temperature sensor	DHW temperature sensor	X
G	Outdoor temperature sensor	Outdoor temperature sensor	
H	Zone1 smart room thermostat	Zone1 smart room thermostat or 3rd party OT thermostat	
I	Heat pump	Outdoor unit	
J	External Tsystem sensor	Heating flow temperature sensor	X
M	SCB-17	PCB for controlling one or two additional heating circuits	X
P	HMI	User interface	X
Q	GTW-22	PCB for Bluetooth® communication	X
R	Interface connection block	Interface connection block	X

3.3.2 Zone1 (direct) & Zone3 (mixing)

Fig.5 SCB-17 connection : Zone1 (direct) & Zone3 (mixing)



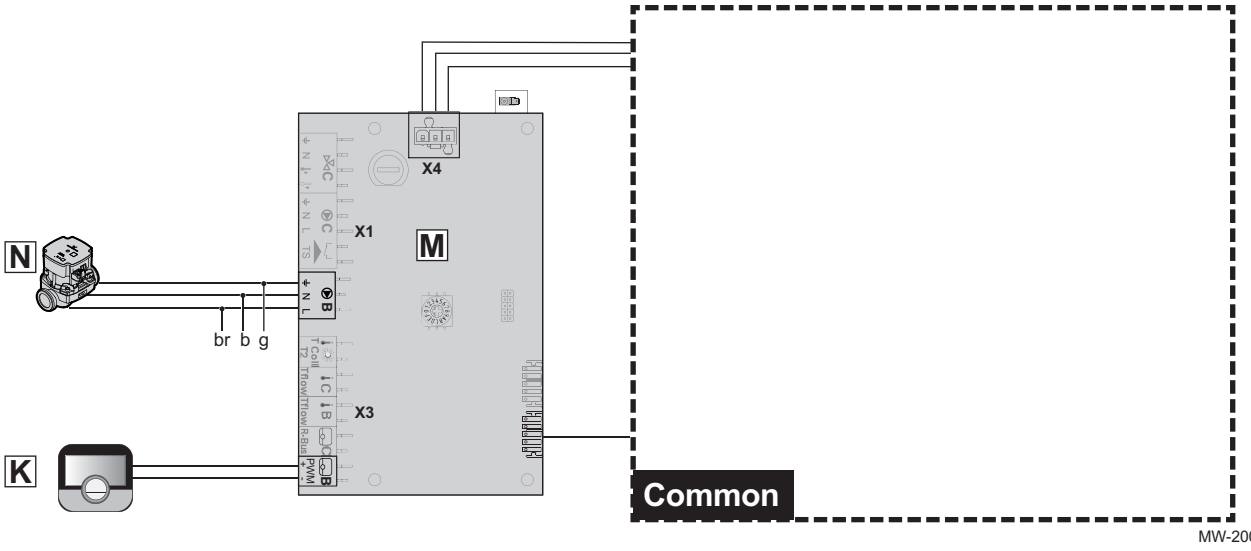
br — brown	b — blue	g — green

Tab.6

Identifier	Main Component	Description	Pre-wired
K	Zone3 smart room thermo-stat	Zone3 smart room thermostat or 3rd party OT thermostat	
L	Flow temp.sensor for Zone3 (mixing)	Zone3 (mixing) heating flow temperature sensor	
M	SCB-17	PCB for controlling one or two additional heating circuits	X
N	Zone3 pump	Zone3 pump	
O	Zone3 mixing valve	Zone3 mixing valve	

3.3.3 Zone1, Zone2 (direct)

Fig.6 SCB-17 connection : Zone1, Zone2 (direct)



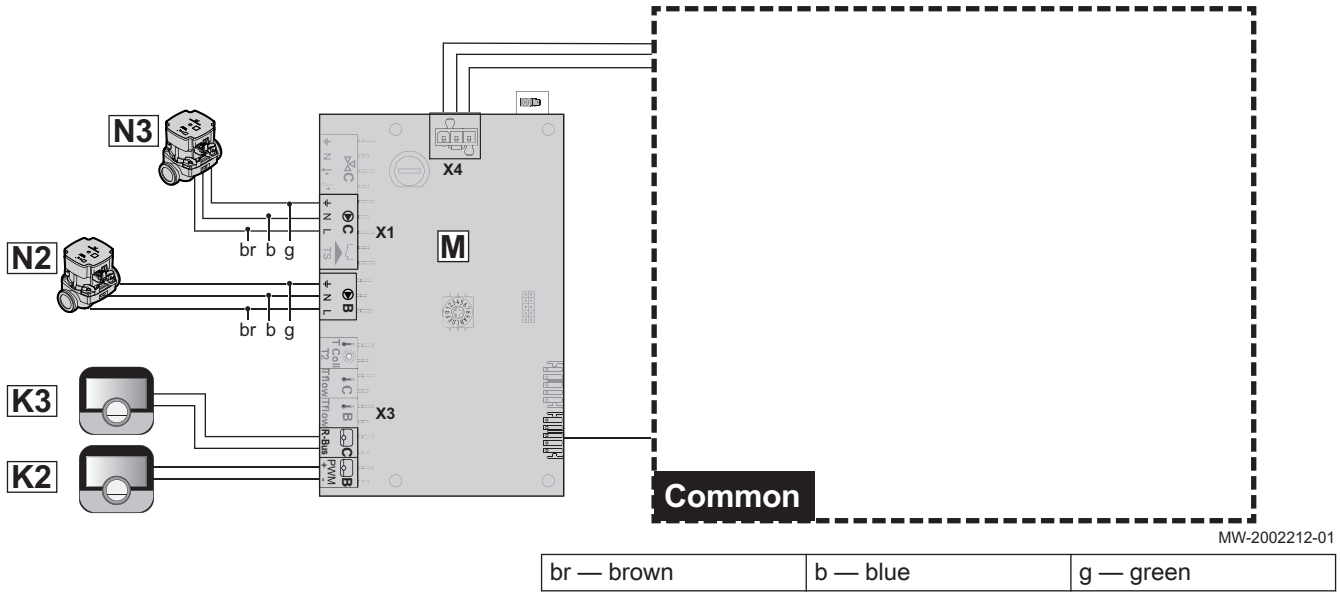
br — brown	b — blue	g — green

Tab.7

Identifier	Main Component	Description	Pre-wired
K	Zone2 smart room thermostat	Zone2 smart room thermostat or 3rd party OT thermostat	
M	SCB-17	PCB for controlling one or two additional heating circuits	X
N	Zone2 pump	Zone2 pump	

3.3.4 Zone1, Zone2, Zone3 (direct)

Fig.7 SCB-17 connection : Zone1, Zone2, Zone3 (direct)



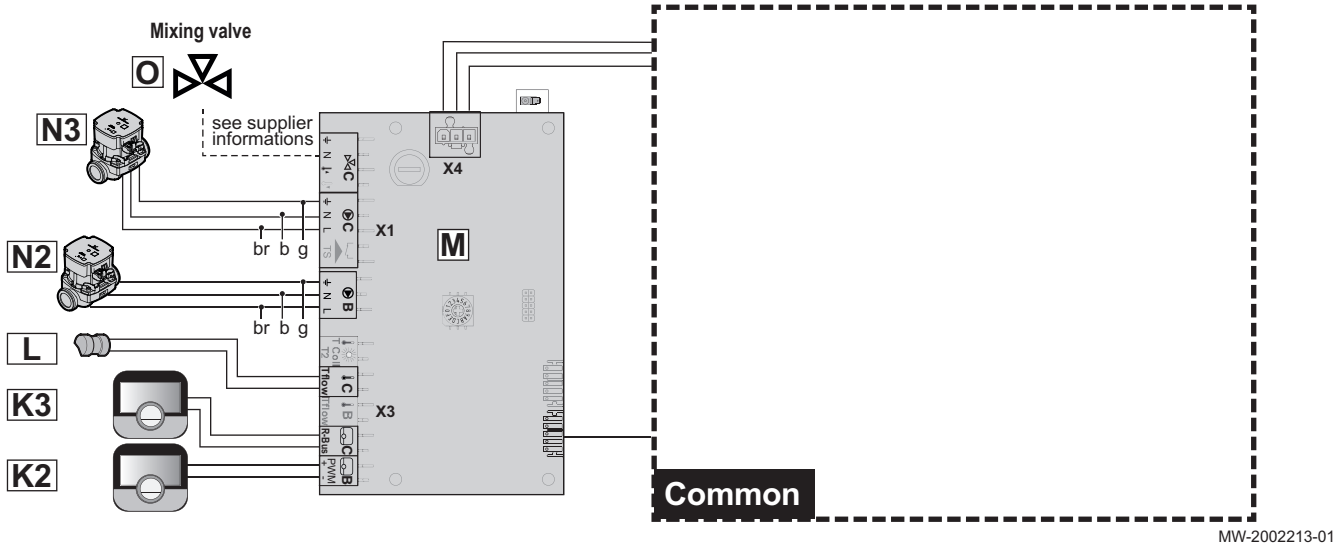
br — brown	b — blue	g — green

Tab.8

Identifier	Main Component	Description	Pre-wired
K2	Zone2 smart room thermostat	Zone2 smart room thermostat or 3rd party OT thermostat	
K3	Zone3 smart room thermostat	Zone3 smart room thermostat or 3rd party OT thermostat	
M	SCB-17	PCB for controlling one or two additional heating circuits	X
N2	Zone2 pump	Zone2 pump	
N3	Zone3 pump	Zone3 pump	

3.3.5 Zone1, Zone2 (direct), Zone3 (mixing)

Fig.8 SCB-17 connection : Zone1, Zone2 (direct), Zone3 (mixing)



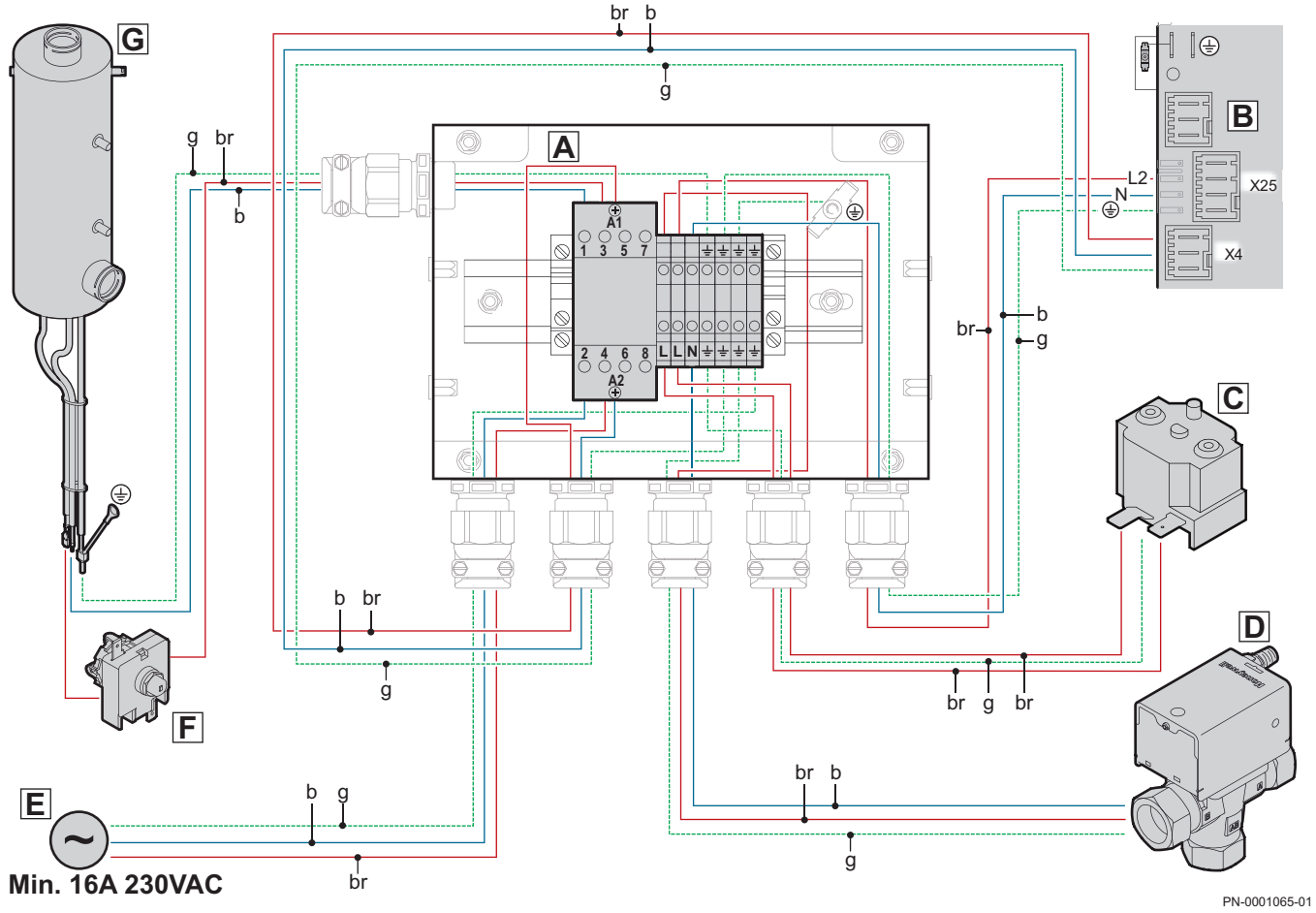
br — brown	b — blue	g — green

Tab.9

Identifier	Main Component	Description	Pre-wired
K2	Zone2 smart room thermo-stat	Zone2 smart room thermostat or 3rd party OT thermostat	
K3	Zone3 smart room thermo-stat	Zone3 smart room thermostat or 3rd party OT thermostat	
L	Flow temp.sensor for Zone3 (mixing)	Zone3 (mixing) heating flow temperature sensor	
M	SCB-17	PCB for controlling one or two additional heating circuits	X
N2	Zone2 pump	Zone2 pump	
N3	Zone3 pump	Zone3 pump	
O	Mixing valve	Zone3 mixing valve	

3.3.6 Contactor box

Fig.9 Contactor box



br — brown	b — blue	g — green

Identifier	Main component	Description	Pre-wired
A	Contactor box	Contactor box	X
B	EHC–16	Main PCB for the heat pump	X
C	Domestic hot water overheat stat	Domestic hot water overheat stat	X
D	Diverter valve	Valve switching from central heating to DHW	X
E	Product power supply	Main power supply	
F	Backup heater overheat stat	Backup heater overheat stat	X
G	Backup heater	Backup heater	X

4 Description of the product

4.1 General description

The controller is designed to work with the following heat pump models:

Tab.10 Models with a HP40 and HP50 outdoor units

HP40-4-1PHMB HP50-4-1PHMB
HP40-5-1PHMB HP50-5-1PHMB
HP40-7-1PHMB HP50-7-1PHMB

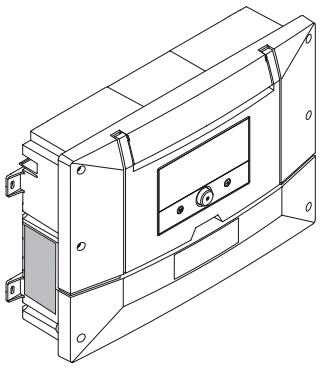
HP40-8-1PHMB HP50-8-1PHMB
HP40-11-1PHMB HP50-11-1PHMB
HP40-11-3PHMB HP50-11-3PHMB
HP40-13-1PHMB HP50-13-1PHMB
HP40-13-3PHMB HP50-13-3PHMB

Tab.11 Models with a HP55 and HP60 outdoor units

Assure HP55-4-1-PHMB HP60-4-1-PHMB
Assure HP55-6-1-PHMB HP60-6-1-PHMB
Assure HP55-8-1-PHMB HP60-8-1-PHMB
Assure HP55-11-1-PHMB HP60-11-1-PHMB
Assure HP55-11-3-PHMB HP60-11-3-PHMB
Assure HP55-13-1-PHMB HP60-13-1-PHMB
Assure HP55-13-3-PHMB HP60-13-3-PHMB

Data plate location

Fig.10 Data label



PN-0001044-01

The data plate must be accessible at all times.

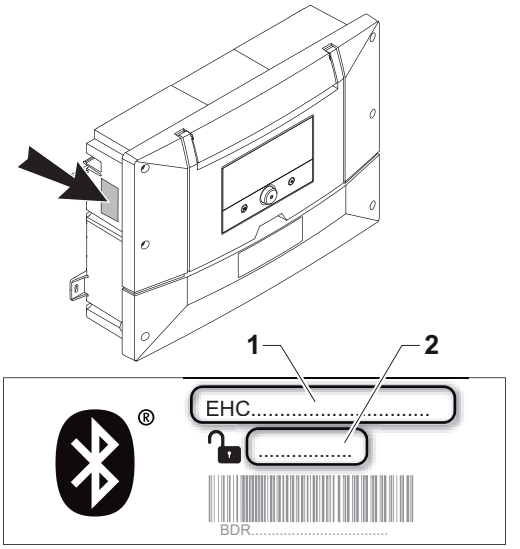
The data plate identifies the product and provides the following information:

- Appliance type
- Serial number
- Electrical power supply

Important
Never remove or cover the data plate and labels affixed to the appliance.

Bluetooth label location

Fig.11 Bluetooth label



PN-0001046-01

To establish the Bluetooth® connection between the smartphone and the indoor unit, use the information shown on the label on the casing.

1 Name of appliance
2 Pairing code

To connect to the controller do the following:

1. Open Bluetooth on your smartphone
2. Scan for devices if required
3. Select the name of the controller from the list of devices
4. Use the code to pair the devices

4.2 Operating principle

The controller is used to set the parameters and functions for controlling the system. This includes the heat pump, cylinder and backup heater.

4.2.1 Operation when the outdoor temperature falls below the operating threshold of the outdoor unit

If the outdoor temperature is below the minimum operating temperature of the outdoor unit as defined by the **Min outdoor T HP** (HP051) parameter, the outdoor unit is not authorised to operate.

If the system has a demand pending, the electric heating element starts up immediately to guarantee heating comfort.

4.2.2 Backup operation if an error occurs on the outdoor unit

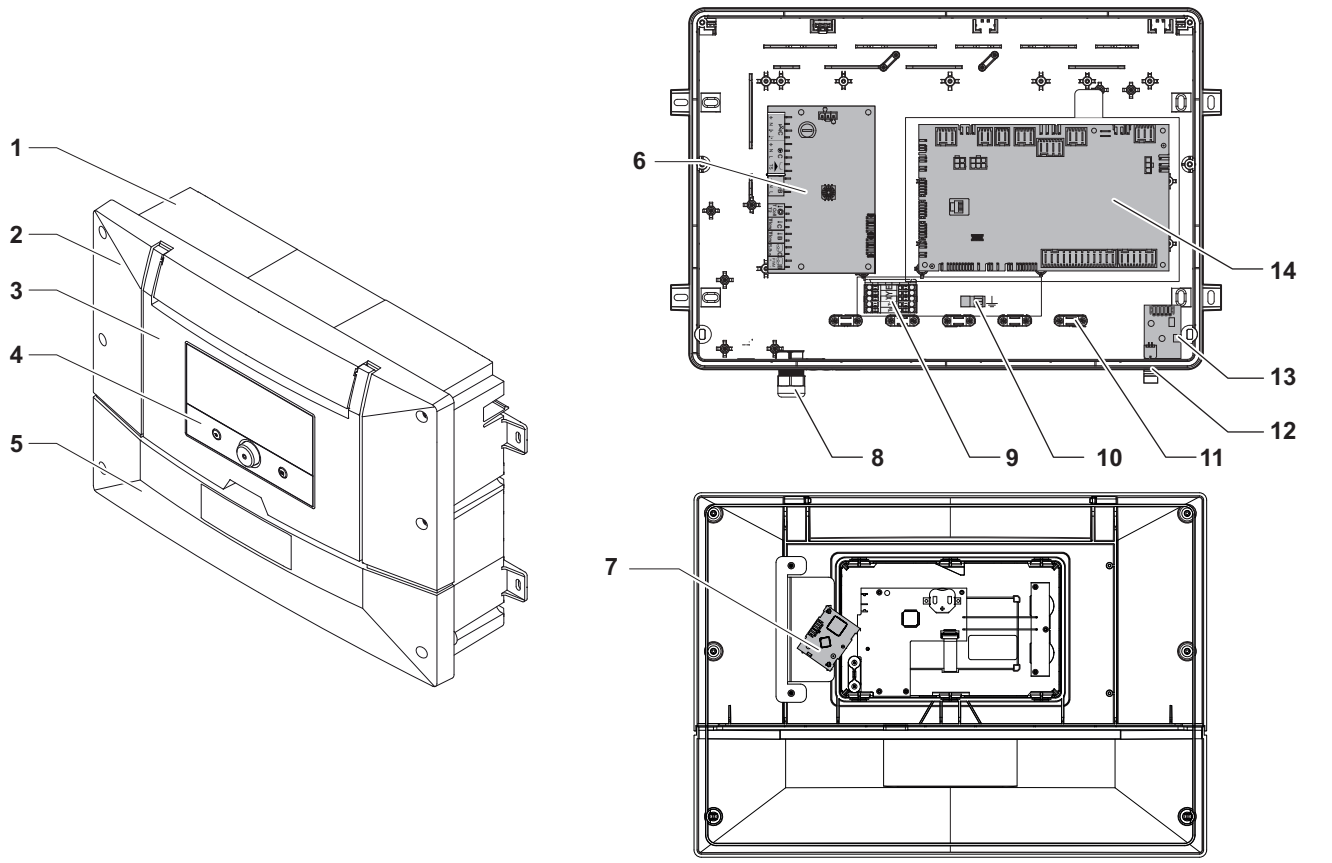
If an error on the outdoor unit, the backup heater operates after 3 minutes to guarantee heating comfort.

Important
If a communication error occurs between the heat pump and the control unit, the backup heater will not start.

See
Error codes, page 59 for more information,

4.3 Main components

Fig.12 Components

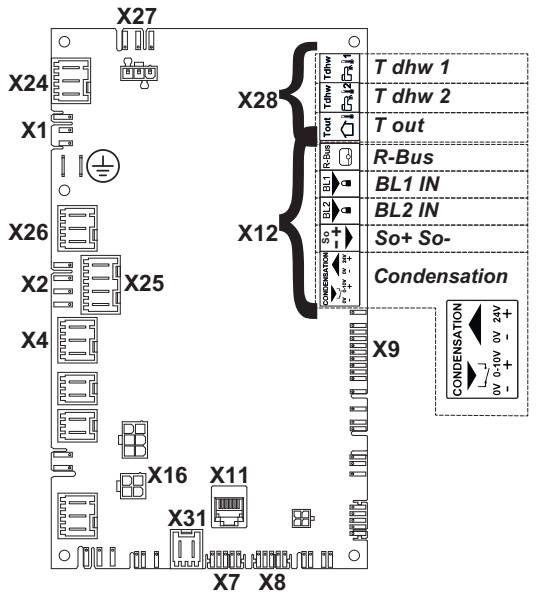


1 Casing
2 Upper front cover
3 User interface cover
4 User interface
5 Bottom front cover
6 SCB-17 PCB: managing additional heating circuits
7 GTW-22Bluetooth® communication
8 Feedthrough cable gland
9 TsTsXYE connection block
10 BUS cable earth connection
11 Cable clamp
12 L-BUS bus terminator
13 CB-21 PCB
14 EHC–16 main PCB: control system for the heat pump and the first heating circuit (direct circuit)

4.4 Terminal blocks

4.4.1 Main PCB EHC–16

Fig.13



X1 230 V - 50 Hz power supply
X2 Heating/domestic hot water 3-way directional valve connection
X4 Backup heater (electrical)
X7-X8 L-Bus
X9 Heating flow temperature sensor (T-system)
X11 S-Bus / CAN / service port
X12 Options

- Condensation: condensation sensor
- So+ / So-: electric meter
- BL1 IN / BL2 IN: multifunction inputs
- R-Bus: OpenTherm thermostat

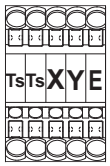
X16 Outdoor unit bus connection
X24 230 V - 50 Hz power supply
X25 Heating/domestic hot water 3-way directional valve connection
X26 Pump Zone1 - maximum 450 W - only if a pump is connected after a buffer tank
X27 Main pump power supply for the SCB-17 PCB
X28

- T out: outdoor temperature sensor
- T dhw 1
- T dhw 2: Not used

X31 OpenTherm

4.4.2 Terminal block for outdoor unit connection

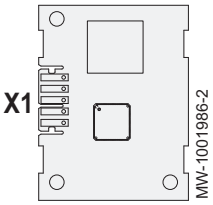
Fig.14



Ts Heating flow temperature sensor
Ts Heating flow temperature sensor
X Outdoor unit bus connection
Y Outdoor unit bus connection
E Outdoor unit bus connection

4.4.3 GTW-22 PCB for Bluetooth® communication

Fig.15



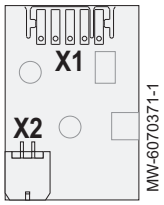
X1 L-BUS between the EHC–16 PCB and the user interface

Specifications	Unit	Values
Antenna	N/A	1
Bluetooth®frequency band	MHz	2400 - 2483.5
Bluetooth®output	dBm	<10

4.4.4 CB-21 PCB

The CB-21 PCB is used to connect external options.

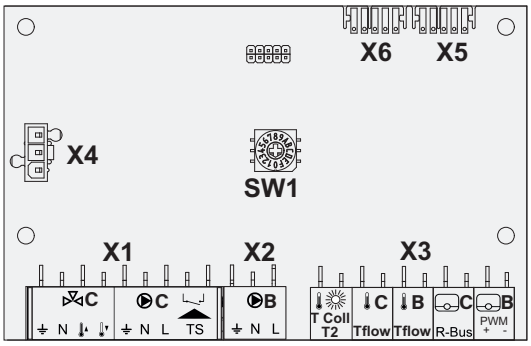
Fig.16



X1 L-BUS to the EHC–16 and SCB-17B PCBs
X2 L-BUS to external options and/or to the backup heater

4.4.5 SCB-17B second circuit PCB

Fig.17



SW1 Not used
X1 Mixing valve / central heating pump power supply (maximum 300 W)
X2 Zone2 pump
X3
- TColl: Not used
- (C) Tflow: Zone3 sensor
- (B) Tflow: Optionnal
- (C) R-Bus : Zone3 thermostat
- (B) PWM + - : Zone2 thermostat

X4 230 V power supply
X5 L-Bus
X6 L-Bus

5 Operation

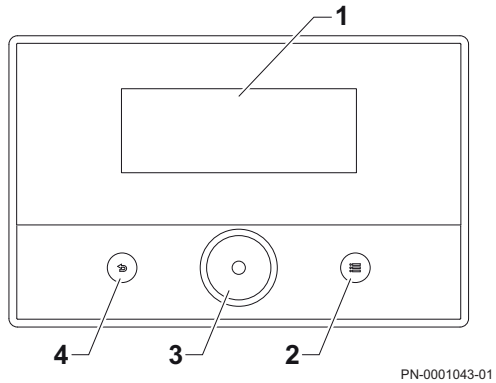
5.1 Use of the control panel

5.1.1 Control panel

The panel is controlled by a single knob and two buttons. The knob can be pressed to select functions.

Information is presented on an LCD display.

Fig.18 Control panel



1 Display
2 Main menu button
3 Selection/validation button
4 Back button

The colour of the display when lit indicates the following status.

Tab.12 Screen colour status

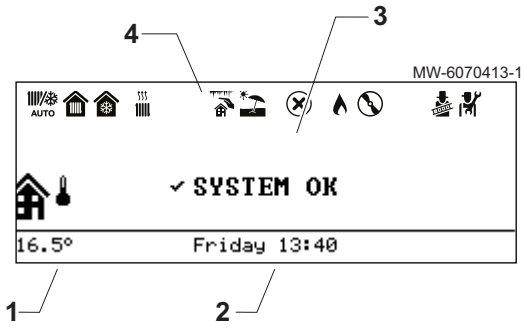
Colour of the display back-lighting	Information
Blue	Normal operation or warning
Continuous red	Blockage
Flashing red	Lock-out

The control panel automatically goes into standby mode if no buttons are pressed for a period of 5 minutes. The backlighting switches off and information relating to the general status of the appliance is displayed.

Press one of the buttons or rotate the knob to 'wake' the display.

The display is layout is as follows:

Fig.19 Home screen display



1 Temperature, as measured by the outdoor temperature sensor
2 Day and time
3 Status of the appliance
4 Icons indicating the appliance status

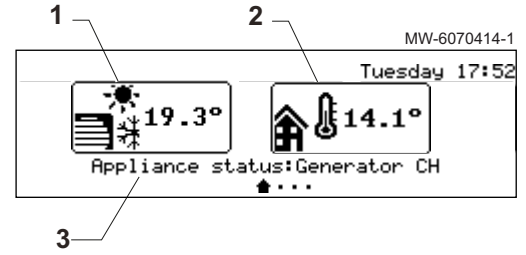
The icons indicate the following:

Tab.13 Home screen icons

Icons	Description
AUTO	Automatic switching from heating mode to cooling mode (1)
	• Steady symbol: heating active • Flashing symbol: heating in progress
	• Steady symbol: cooling active • Flashing symbol: cooling in progress
	• Steady symbol: domestic hot water available • Flashing symbol: domestic hot water production in progress
	Frost protection activated
	Summer mode activated. No heating possible: cooling and domestic hot water production only.
	Error detected
	Hydraulic backup is running (1)
	The heat pump compressor is running
	Electrical backup is running
MODE	Operating test mode activated
	Installer level activated
(1) mode function not available with the product	

5.1.2 Home screen display

Fig.20 Initial display



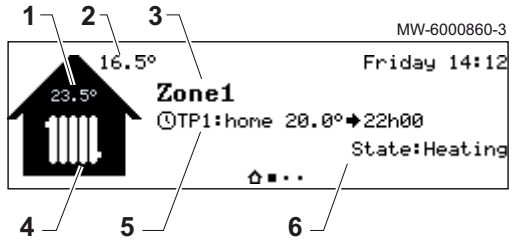
When activated the first screen displays the following:

1 Symbol for the appliance and circuit flow temperature
2 Temperature measured by the outdoor temperature sensor
3 Status of the appliance

Pressing the knob displays a sub menu.

5.1.3 Description of the Zone display

Fig.21



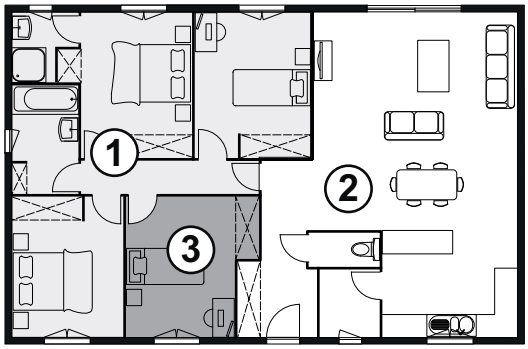
From the home screen, rotate the ⊙ knob to access the screens for the various zones within your system.

1. Room temperature (if a smart room thermostat is installed)
2. Outdoor temperature
3. Name of the zone
4. Zone type symbol
5. Current active operating mode
6. Zone status information

Pressing the knob displays a sub menu.

■ Definition of the term "zone"

Fig.22



Zone: term given to the different hydraulic circuits. It indicates several rooms served by the same circuit.

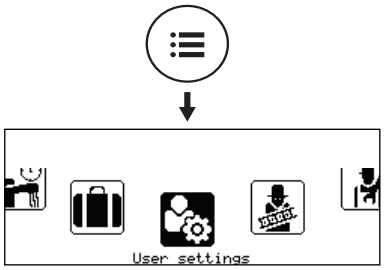
Tab.14 Example:

Key	Zone	Factory-set name
①	Zone 1	Zone1
②	Zone 2	Zone2
③	Zone 3	Zone3

■ Changing the name and symbol for a zone

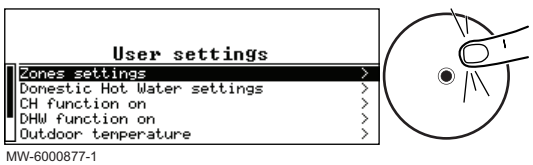
The name and symbol for a zone are factory-set. If required, you can personalise the name and symbol used for the zones in your installation.

Fig.23



1. Press the ☰ button.
2. Select **User settings**.

Fig.24



3. Select **Zones settings**.
4. Select the zone to be changed.
5. Select **General** to access the parameters.
6. Change the name and/or the symbol for the zone. Refer to the table provided at the back of the manual.

■ Selecting the operating mode

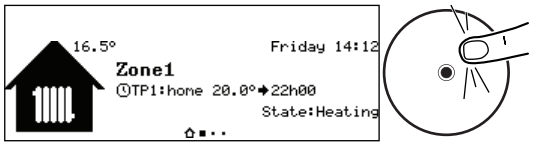
To set the room temperature for the different living zones, you can choose between five operating modes.

If you are using a programmable on/off thermostat, we recommend selecting **Manual** operating mode for the zone.

If you are using OpenTherm or R-bus, we recommend the **Programming** operating mode which enables the room temperature to be modulated according to your activities, thereby optimising your energy consumption.

1. From the home screen, access the screen for the relevant zone by turning the ⊙ button.

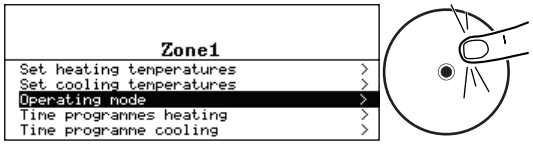
Fig.25



MW-6000861-02

2. Press the ⊙ button.

Fig.26



MW-6000874-1

3. Select **Operating mode**.
4. Select the desired operating mode:

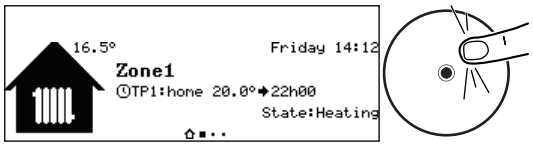
Tab.15

Operating mode	Description
Programming	The room temperature is regulated according to the selected timer programme. Recommended mode.
Manual	The room temperature is constant.
Temporary	The room temperature is forced for a defined period.
Holiday	The room temperature is reduced during an absence period to save energy.
Off	The selected zone within the installation is protected from frost in winter.

■ Activating and configuring a timer programme for heating

A timer programme can be used to vary the room temperature in a living zone depending on activities during the day. This can be programmed for each day of the week.

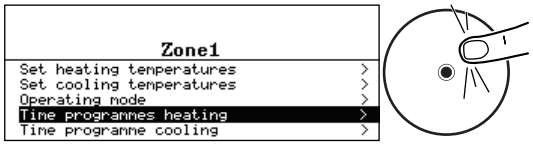
Fig.27



MW-6000861-02

1. From the home screen, access the screen for the relevant zone.
2. Press the ⊙ button.

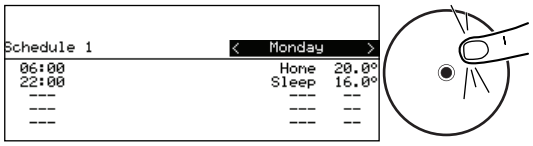
Fig.28



MW-6000880-1

3. Select **Time programs heating**.
   ⇨ Three timer programmes are available. The programme that is currently active is marked with a tick.
4. To activate another timer programme, select **ZoneTimeProg Select**.

Fig.29



MW-6000862-2

5. To change the timer programming, select the programme you wish to change.
   ⇨ The programmed activities for Monday are displayed.
   The last activity of the day remains active until the first activity of the following day.
6. Select the day to be modified.

7. Carry out the following actions according to your needs:

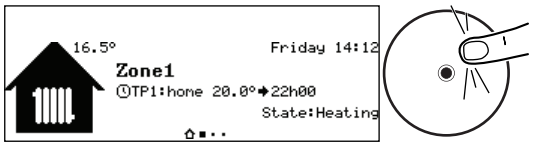
Tab.16

Action	Procedure
Modify the timer settings for programmed activities.	• Select a programmed activity. • Press the ⊙ button. • Change the start time and/or the associated activity. • Select **Confirm** to save the modification.
Add a new time range.	• Move the cursor to an empty line. • Press the ⊙ button. • Select the start time for the activity. • Select the activity required at this time. • Select **Confirm** to save the new time range.
Deleting a programmed activity	• Select the activity you want to delete. • Press the ⊙ button. • Select **Delete** to delete the activity.
Copying programmed daily activities to other days	• Position the cursor on the **Copy to other days** line which appears at the end of the empty lines. • Press the ⊙ button. • Check the days of the week which are to follow the same timer programming as the current day. • Select **Confirm** to apply the current timer programme to all of the selected days.

■ Changing the room temperature temporarily

Regardless of the operating mode selected for a zone, it is possible to modify the room temperature for a defined period. Once this time has elapsed, the selected operating mode will restart.

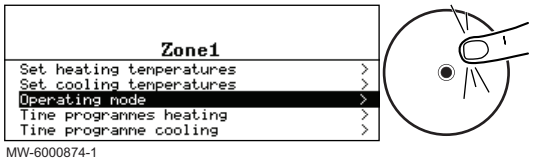
Fig.30



MW-6000861-02

1. From the home screen, access the screen for the relevant zone by turning the ⊙ button.
2. Press the ⊙ button.

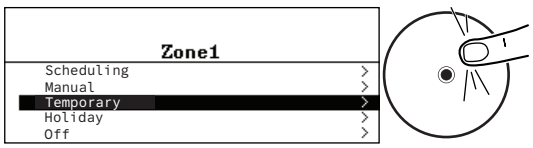
Fig.31



MW-6000874-1

3. Select **Operating mode**.

Fig.32



MW-6070679-1

4. Select **Temporary**.
5. Indicate the temperature required throughout the override period.
6. Indicate the time when the override will end.
7. Select **Confirm** to confirm the override.

5.1.4 Domestic hot water temperature

■ Selecting the operating mode

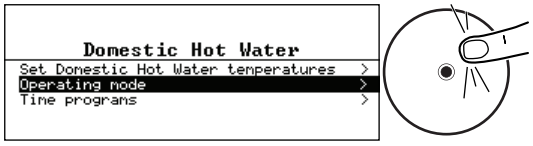
For the production of domestic hot water, you can choose between five operating modes. We recommend the **Programming** mode which enables domestic hot water production periods to be programmed according to your needs and optimises your energy consumption.

Fig.33

MW-6000863-2

1. From the home screen, access the screen for the relevant zone.
2. Press the ⊙ button.

Fig.34



MW-6000884-02

3. Select **Operating mode**.
4. Select the desired operating mode:

Tab.17

Operating mode	Description
Programming	The domestic hot water is produced according to the defined timer programme.
Manual	The domestic hot water temperature remains at the comfort temperature permanently
Temporary	The production of domestic hot water is forced to the comfort temperature until the defined time
Holiday	The domestic hot water temperature is reduced during an absence period to save energy.
Off	The installation and equipment are protected during the winter period.

■ Activating and configuring a timer programme for domestic hot water

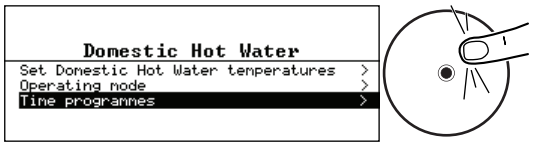
A timer programme can be used to vary the domestic hot water temperature depending on activities during the day. This can be programmed for each day of the week.

Fig.35

MW-6000863-2

1. From the home screen, access the screen for the relevant zone.
2. Press the ⊙ button.

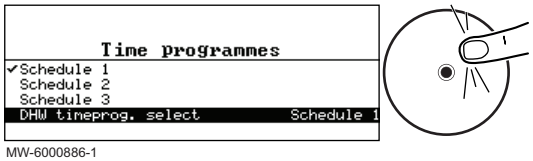
Fig.36



MW-6000885-02

3. Select **Time programs**.
   ⇨ Three timer programmes are available. The programme that is currently active is marked with a tick.

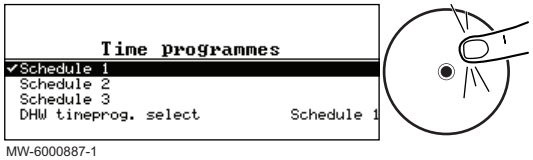
Fig.37



MW-6000886-1

4. To activate another timer programme, select **DHW timeprog select**.

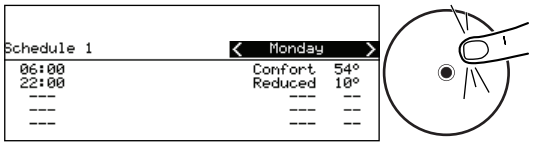
Fig.38



MW-6000887-1

5. To change the timer programming, select the programme you wish to change.
   ⇨ The programmed activities for Monday are displayed.
   The last activity of the day remains active until the first activity of the following day.

Fig.39



MW-6000864-2

6. Select the day to be modified.
7. Carry out the following actions according to your needs:

Tab.18

Action	Procedure
Modify the timer settings for programmed activities	• Select a programmed activity. • Press the ⊙ button. • Change the start time and/or the associated activity. • Select Confirm to save the modification.
Add a new time range	• Move the cursor to an empty line. • Press the ⊙ button. • Select the start time for the activity. • Select the activity required at this time. • Select Confirm to save the new time range.
Deleting a programmed activity	• Select the activity you want to delete. • Press the ⊙ button. • Select Delete to delete the activity.
Copying programmed daily activities to other days	• Position the cursor on the Copy to other days line which appears at the end of the empty lines. • Press the ⊙ button. • Check the days of the week which are to follow the same timer programming as the current day. • Select Confirm to apply the current timer programme to all of the selected days.

■ Forcing domestic hot water production (override)

Regardless of the selected operating mode, you can force domestic hot water production to the comfort temperature (**DHW comfort setpoint** parameter) until the required time.

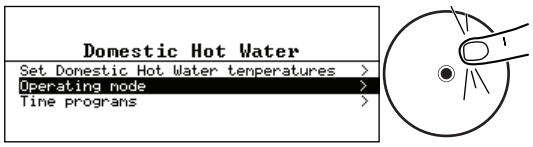
Forcing the production of domestic hot water will cause the backup heater to operate reducing the efficiency of the system.

Fig.40

MW-6000863-2

1. From the home screen, access the screen for the relevant zone.
2. Press the ⊙ button.

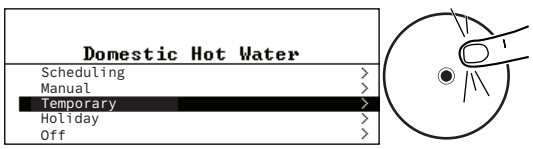
Fig.41



MW-6000884-02

3. Select **Operating mode**.

Fig.42



MW-6070676-01

4. Select **Temporary**.
5. Indicate the time when the override will end.
6. Select **Confirm** to confirm the override.

To cancel the override, select another operating mode.

■ Modifying the domestic hot water setpoint temperatures

The production of domestic hot water operates with two setpoint temperature parameters:

- **DHW comfort setpoint**: used in **Scheduling**, **Manual** and **Temporary** modes
- **DHW eco setpoint**: used in the **Scheduling**, **Holiday** and **Off** modes.

You can change these set point temperature settings to adapt them to your needs.

Fig.43

MW-6000863-2

1. From the home screen, access the screen for the Domestic Hot Water zone.
2. Press the ⊙ button.

Fig.44

MW-6000889-02

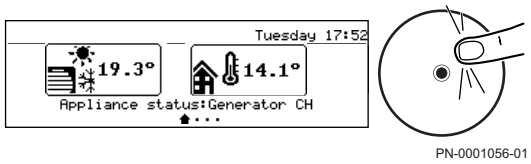
3. Select **DHW temperature setting**.
4. Change the required set point temperature:
   - **DHW comfort setpoint**
   - **DHW eco setpoint**

5.1.5 Managing the heating and domestic hot water (DHW) production

■ Turning off the heating

Your appliance will automatically regulate the heating based on the outdoor temperature. You can turn off the heating regardless of the outdoor temperature whilst maintaining production of domestic hot water.

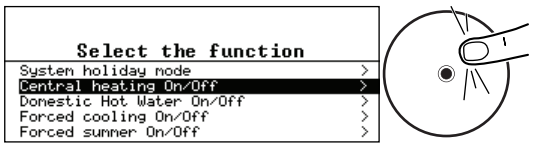
Fig.45



PN-0001056-01

1. From the home screen, access the screen for the relevant zone by turning the ⊙ knob.
2. Press the ⊙ button.

Fig.46



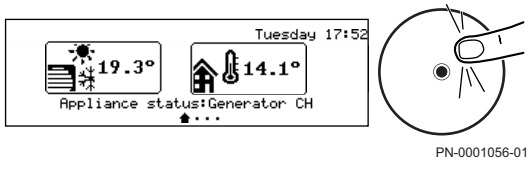
MW-6000869-1

3. Select **Central heating ON/OFF**.
4. Select the desired value:
   - **Off** : heating is turned off.
   - **On** : heating is automatically regulated based on the outdoor temperature.
5. Select **Confirm** to accept the change.

■ Turning off the heating in summer

Your appliance will automatically regulate the heating based on the outdoor temperature. You can turn off the heating regardless of the outdoor temperature whilst continuing to use the domestic hot water.

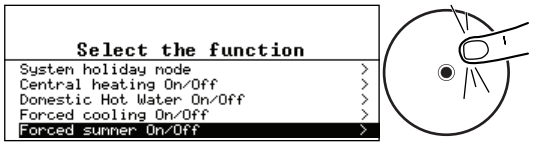
Fig.47



PN-0001056-01

1. From the home screen, press the ⊙ knob.

Fig.48



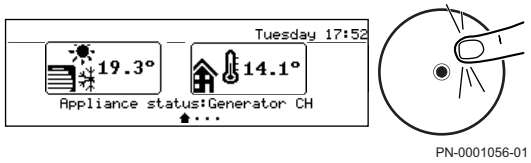
MW-6000871-1

2. Select **Forced summer ON/OFF**.
3. Select the desired value:
   - **Off** : the system automatically regulates the heating based on the outdoor temperature.
   - **On** : the heating is off. Domestic hot water production continues.
4. Select **Confirm** to accept the changes.

Turning off domestic hot water production

You can turn off the domestic hot water production whilst continuing to use the heating functions.

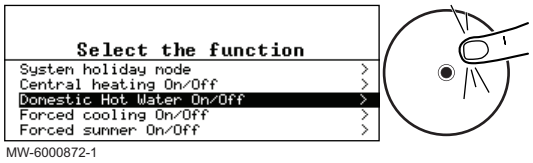
Fig.49



PN-0001056-01

1. From the home screen, press the ⊙ knob.

Fig.50



MW-6000872-1

2. Select **Domestic hot water ON/OFF**.
3. Select the desired value:
   - **Off** : domestic hot water production is turned off. Heating continues.
   - **On** : domestic hot water production is active.
4. Select **Confirm** to accept the change.

Periods of absence or going on holiday

Your appliance will automatically regulate the heating based on the outdoor temperature. You can shut off the heating regardless of the outdoor temperature whilst continuing to use the domestic hot water.

If you are away for several weeks, the room and domestic hot water temperature can be reduced to save energy. Activate the **System holiday mode** operating mode for all zones, including the domestic hot water, or the **Holiday** operating mode for each zone individually.

Frost protection

If the temperature of the heating water in the heat pump falls too much, the integrated protection device switches itself on. This device functions as follows:

- If the water temperature is lower than 8 °C, the circulating pump starts up.
- If the water temperature is lower than 6 °C, the back-up starts up.
- If the water temperature is higher than 10°C, the back-up shuts down and the circulating pump continues to run for a short time.

The radiator valves in rooms where there is a risk of frost must be fully open.

5.1.6 Browsing the carousel menu

Fig.51

MW-6001088-01

The carousel is used to quickly access the user interface menus. The displayed menus depend on the system configuration.

Display the carousel by pressing the Main menu button ☰.

Scroll through the menu by turning the ⊙ knob in either direction.

Press the ⊙ knob to select a menu.

The following menus are available:

Tab.19

Symbol menu	Description of the symbols	Description
AUTO	**Operating mode**	Switching the central heating on/off, and/or the cooling if applicable
	Domestic Hot Water On/Off	Switching domestic hot water production on/off
	Heating temperature	Setting the activities temperature
	Water temperature	Modifying the domestic hot water setpoint temperatures

Symbol menu	Description of the symbols	Description
	Temporary heating temperature change	Temporarily modifying the requested room temperature until the next set-point temperature in the timer programme
	Hot water boost	Forcing domestic hot water production (override)
	System holiday mode	Periods of absence or going on holiday
	User settings	Accessing the list of parameters available to users
	Test mode	Performing an operating test on the heating or cooling
	Installer	Menu not accessible to the user Installer level: List of Installer menu parameters
	Finder	Menu not accessible to the user Installer level: Using the parameter search
	Signal overview	Menu not accessible to the user Installer level: Displaying the measured values
	Energy overview	Monitoring the energy consumption
	Bluetooth	Establishing the Bluetooth® connection
	System settings	Customising the user interface
	Version information	Version information

5.1.7 Navigating the menus

All of the menus are navigated in the same way.

Rotate the ⊙ knob to scroll through the menu options

Press the ⊙ knob to select a menu, sub-menu or parameter.

Rotate the ⊙ knob to change the value of a parameter

Press the ⮌ back button to return to a previous menu.

5.1.8 Operating mode display

Fig.52 Operating mode display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has two options:

- Off
- Heating (auto)

5.1.9 Domestic hot water on/off menu display

Fig.53 Domestic hot water on/off menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has two options:

- Off
- On

5.1.10 Heating temperature menu display

Fig.54 Heating temperature menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has three options:

- Zone1
- Zone2
- Zone3

Zone1, Zone2 and Zone 3 have parameters that can be modified.

5.1.11 Water temperature menu display

Fig.55 Operating mode display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has two options:

- DHW comfort setpoint
- DHW eco setpoint

5.1.12 Temporary heating temperature change menu display

Fig.56 Operating mode display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has three options:

- Zone1
- Zone2
- Zone3

Zone1, Zone2 & Zone 3 contain modifiable parameters for temperature and time.

5.1.13 System holiday mode menu display

Fig.57 System holiday mode menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

The start and end date and time for a holiday period can be set on this menu.

5.1.14 Hot water boost menu display

Fig.58 Operating mode display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

The time at which boost mode ends can be set on this screen.

Select confirm or disable to leave the menu and return to the carousel.

5.1.15 User settings menu display

Fig.59 Heating temperature menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has eight options:

- Zones settings
- Domestic Hot Water settings
- CH function on
- DHW function on
- Outdoor temperature
- HP silent mode
- Energy overview
- System holiday mode

Some of the options contain sub-menus as listed below

Zone settings
This menu has three options:

- Zone1
- Zone2
- Zone3

All three options have further sub-menus.

Zone1 and Zone2
Both of these menus have more sub-menus. The options are the same for both zones.

- Set Heating temperatures
- Operating mode
- Time programs heating
- General

Zone3
This menu has more sub-menus

- Operating mode
- Time programs
- General

Domestic hot water settings
This menu has three options:

- Set Domestic Hot Water temperatures
- Operating mode
- Time programs

Operating mode has more sub-menus

- Scheduling
- Comfort
- Hot water boost
- Holiday
- Off

CH function on
This menu has two options.

- Off
- On

DHW function on
This menu has two options.

- Off
- On

Outdoor temperature
This menu contains three option.

- Force summer mode

- Summer Winter
- Season cross-over

Force summer mode has two options.

- Off
- On

Summer Winter and Season cross-over have modifiable parameters.

HP silent mode
This menu contains three option.

- HP silent mode
- Low noise start time
- Low noise end time

HP silent mode contains three option.

- No silent mode
- Silent mode level 1
- Silent mode level 2

Low noise start time and Low noise end time have modifiable parameters.

Energy overview
This menu contains three option.

- Heat Pump
- Backup heater
- Total installation

All three menus have sub-menus which provide information on energy consumption

System holiday mode
The start and end date and time for a holiday period is set using this menu option.

This offers the same functionality as the 'System holiday mode' menu option

See
System holiday mode menu display, page 27 for more information.

5.1.16 Test mode menu display

Fig.60 Heating temperature menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has four options:

- Func test status
- System Flow Temp
- Water pressure
- Flow rate

'Func test status' has further options.

- Off
- Medium power
- Cooling

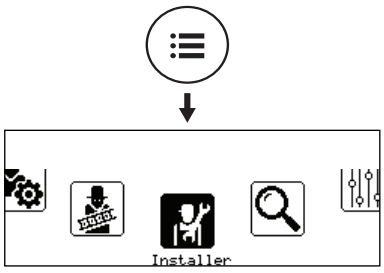
The options are displayed differently to other menus but provide the same functionality.

'System test status', 'Water pressure' and 'Flow rate' display information only.

5.1.17 Installer menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

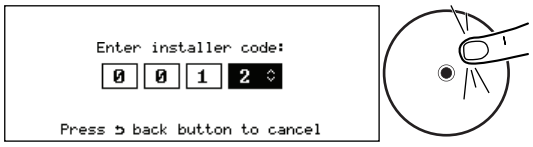
Fig.61



MW-6000891-01

The Installer access code (**0012**) needs to be entered before the installer menu display is shown

Fig.62



MW-6000892-1

Rotate the ⊙ button to change the value.

Press the ⊙ button to move to the next number.

This menu has eight options:

- Installation setup
- Signals
- Counters
- Commissioning
- View service reminder
- Error history
- Installer details
- Advanced menu
- Exit installer mode

Installation setup
This sub-menu has nine options:

- Zone1
- Zone2
- Zone3
- Domestic Hot Water
- Heat pump
- Outdoor temperature
- Status information
- DHW Mix/Circulation
- Solar systems

Each of these sub-menus have further sub-menus and parameters or information.

Signals
This sub-menu has ten options:

- Zone1
- Zone2
- Zone3
- Domestic Hot Water
- Heat pump
- Outdoor temperature
- Outdoor unit
- Status information
- DHW Mix/Circulation
- Solar systems

Each of these sub-menus have further sub-menus and parameters or information.

Counters
This sub-menu has seven options:

- Zone1
- Zone2

- Zone3
- Domestic Hot Water
- Heat pump
- DHW Mix/Circulation
- Solar systems

Each of these sub-menus have further sub-menus and parameters or information.

Commissioning
This sub-menu has three options:

- Test mode
- Output test
- Input test

Each of these sub-menus have further sub-menus and parameters or information.

View service reminder
Displays information and allows the installer to set a service notification.

Error history
Provides a list of errors that have occurred and allows the installer to delete the error history.

Installer details
Enter the installers name and phone number on this screen.

This information is the same as contained in System settings menu display.

See
System settings menu display, page 32

Advanced menu
This sub-menu has seven options:

- Auto detect
- Set configuration code
- Reset to factory settings
- Finder
- Signals overview
- Restart HMI Wizard

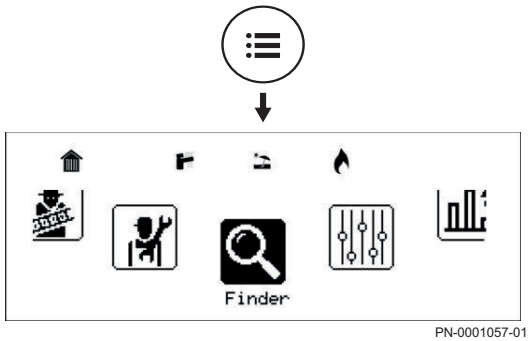
Each of these sub-menus have further sub-menus and parameters or information.

Exit installer mode
Returns the installer to the carousel display.

5.1.18 Finder menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

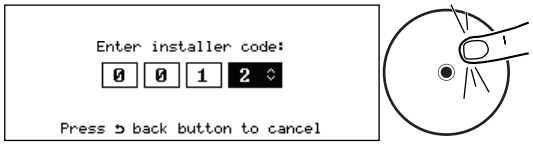
Fig.63 Heating temperature menu display



If you know the code for a parameter or a measured value, using the **Finder** function is the easiest way to access it directly.

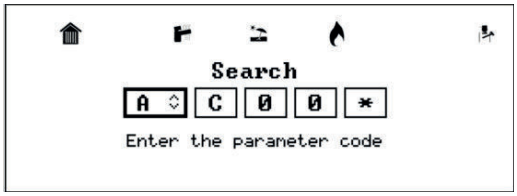
The Installer access code (**0012**) needs to be entered before the finder menu display is shown

Fig.64 Installer access code



MW-6000892-1

Fig.65 Parameter code



PN-0001058-01

Enter a measured value or parameter to display relevant information.

5.1.19 Signal overview menu display

Fig.66 Signal overview menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

These menus display each connected devices signals and parameters:

- EHC–16
- MK2.2
- SCB-17
- GTW-Bluetooth

The devices contain additional information.

5.1.20 Energy overview menu display

Fig.67 Heating temperature menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has three options:

- Heat pump
- Backup heater
- Total installation

All of the options have further sub-menus which provide information on energy consumption

5.1.21 Bluetooth menu display

Fig.68 Heating temperature menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has two options:

- Bluetooth
- Current pairing code

Selecting Bluetooth allows the Bluetooth to be switched on or off.

Selecting current pairing code to display the pairing code

5.1.22 System settings menu display

Fig.69 Heating temperature menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has five options:

- Country and language
- Date and time
- Installer details
- Activity names
- Display settings

Country and language
The required country and language can be selected from a scrolling list. The country is selected first and then the required language.

Date and time
Enter the year, month, day, hour and minute parameters on this screen.

Installer details
Enter the installers name and phone number on this screen.

Activity names
There are six activity names in this menu. Select one to rename it.

Display settings
The child lock can be tuned off and on from this menu.

5.1.23 Version information menu display

Fig.70 Heating temperature menu display

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

This menu has four options:

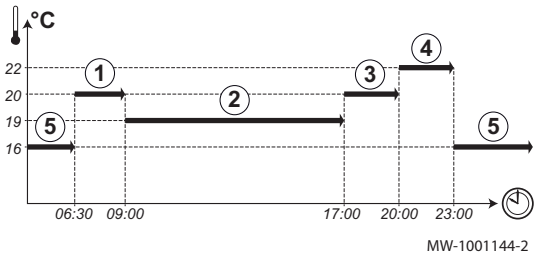
- EHC–16
- MK2.2
- SCB-17
- GTW-Bluetooth

Selecting an option displays information on the device.

The options displayed are the same for each device.

5.1.24 Activities

Fig.71



■ Definition of the term "Activity"

Activity: this term is used when programming time ranges. It refers to the client's desired comfort level for different activities during the course of the day. One set point temperature is associated to each activity. The last activity of the day remains valid until the first activity of the following day.

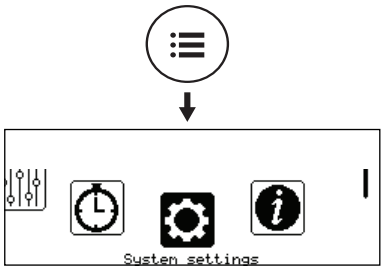
Tab.20 Example

Start of the activity	Activity	Room temperature set-point
6:30	Morning ①	20 °C
9:00	Away ②	19 °C
17:00	Home ③	20 °C
20:00	Evening ④	22 °C
23:00	Sleep ⑤	16 °C

■ Changing the name of an activity

The name of the different activities is factory-set: Morning, Sleep, Home, Evening, Away and Custom. If you wish, you can personalise the name of the activities for all of the zones in your installation.

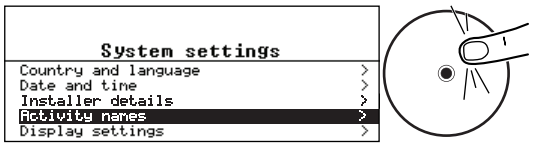
Fig.72



MW-6000876-01

1. Press the ☰ button.
2. Select **System settings**.

Fig.73



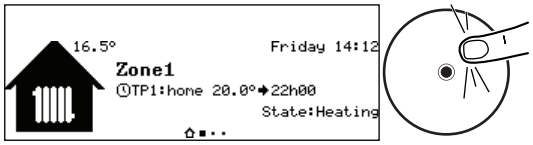
MW-6000878-2

3. Select **Activity names**.
4. Select **Set heating activity names**
5. Select the activity you want to change.
6. Change the name of the activity (10 characters max.) and confirm with **OK**.

■ Changing the temperature of an activity

The activities are used in the timer programming to define the temperature required at different times of the day. You can customise the temperature associated with each activity for each zone within your installation.

Fig.74



MW-6000861-02

1. From the home screen, access the screen for the relevant zone by turning the ⊙ button.
2. Press the ⊙ button.

Fig.75

MW-6000879-1

3. Select **Set heating temperatures** to change the temperature for the activities used for programming the heating mode.
4. Select the activity you want to change.
5. Modify the temperature for the activity.

5.2 Setting the circuit function

Set the circuit function based on the components contained in the heating circuit.

1. Press the ☰ button.
2. Select the **Installer** menu.
   The Installer access code needs to be entered before the finder menu display is shown.

See
Installer menu display, page 30 for further information.

3. Select **Installation setup** and press the ⊙ knob.
4. Select the required **Zone** and press the ⊙ knob.
5. Select **Zone Function1** and press the ⊙ knob.
6. Scroll down to the required function.

Value	Description	EHC–16	SCB-17
Direct	direct heating circuit (Zone1, Zone2 or Zone3)	x	x
Mixing circuit on SCB-17	Heating circuit for direct underfloor heating (Zone1) Second heating circuit with mixing valve (Zone2)		x
Swimming pool	Swimming pool heating	not available	x
High temperature	Heating a circuit in summer (for example a towel rail)	x	x
Fan convector	Heating circuit with convection fans	x	x

7. Press the ⊙ knob to select.
8. Press the ↩ button three times to return to the carousel.

5.3 Drying the screed

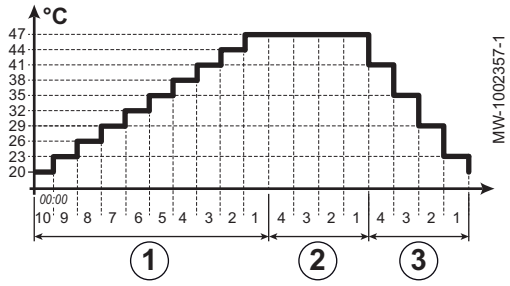
The **Screed drying** function reduces the drying time of the screed for underfloor heating.

The **Screed drying** function is set in 3 stages. Each stage is defined by:

- A start setpoint temperature in °C
- An end setpoint temperature in °C
- A duration in days

The screed drying times and temperatures are to be defined according to the screed manufacturer's specifications.

Fig.76 Example of screed drying programming in 3 stages.



① Stage 1
② Stage 2
③ Stage 3

1. Follow the path described below to access the screed drying parameters for the zone in question:
2. Press the ☰ button.
3. Select the **Installer** menu.
   The Installer access code needs to be entered before the finder menu display is shown.

See
Installer menu display, page 30 for further information.

4. Select **Installation setup** and press the ⊙ knob.
5. Select the required **Zone** and press the ⊙ knob.
6. Select **Screed drying** and press the ⊙ knob.
7. Configure the screed drying parameters for stage 1:

Parameter	Description	Adjustment required
Screed drying time 1 ZP000	Set the number of days in the first screed drying phase	Number of days of drying for phase 1
Screed start temp 1 ZP010	Set the start temperature for the first phase of screed drying	Drying start temperature for phase 1
Screed end temp 1 ZP020	Set the end temperature for the first phase of screed drying	Drying end temperature for phase 1
Confirm	Accept the figures entered for the first screed drying phase	Rotate the ⊙ knob until **Confirm** is highlighted and press the ⊙ knob.
Disable phase	Skip the first screed drying phase	Rotate the ⊙ knob until **Disable phase** is highlighted and press the ⊙ knob.

8. Configure the screed drying parameters for stage 2:

Parameter	Description	Adjustment required
Screed drying time 2 ZP030	Set the number of days in the second screed drying phase	Number of days of drying for phase 2
Screed start temp 2 ZP040	Set the start temperature for the second phase of screed drying	Drying start temperature for phase 2
Screed end temp 2 ZP050	Set the end temperature for the second phase of screed drying	Drying end temperature for phase 2
Confirm	Accept the figures entered for the second screed drying phase	Rotate the ⊙ knob until **Confirm** is highlighted and press the ⊙ knob.
Disable phase	Skip the second screed drying phase	Rotate the ⊙ knob until **Disable phase** is highlighted and press the ⊙ knob.

9. Configure the screed drying parameters for stage 3:

Parameter	Description	Adjustment required
Screed drying time 3 ZP060	Set the number of days in the third screed drying phase	Number of days of drying for phase 3
Screed start temp 3 ZP070	Set the start temperature for the third phase of screed drying	Drying start temperature for phase 3
Screed end temp 3 ZP080	Set the end temperature for the third phase of screed drying	Drying end temperature for phase 3
Confirm	Accept the figures entered for the third screed drying phase	Rotate the ⊙ knob until **Confirm** is highlighted and press the ⊙ knob.
Disable phase	Skip the third screed drying phase	Rotate the ⊙ knob until **Disable phase** is highlighted and press the ⊙ knob.

10. Activate screed drying:

Parameter	Description	Adjustment required
Screed drying enable ZP090	Enable the screed drying of the zone	On

⇨ The screed drying program will start immediately and continue for the number of days selected for each stage.
The system evaluates the setpoint temperature every 24 hours and redefines it based on the remaining time for the stage.

To find out the setpoint temperature, start and end date and time for the **Screed drying** function and the remaining drying time, at any moment, refer to the following signals and counters:

Signals/Counters	Description
Screed temp setpoint ZM000	The current flow temperature setpoint for the screed drying program
Screed start time ZM010	The start time and date of the screed drying program
Screed end time ZM020	The intended end time and date of the screed drying program
Screed dry remaining ZC000	The remaining time (in days) of the screed drying program

5.4 Start-up

1. Switch on the outdoor unit and the indoor unit simultaneously.

Important
The outdoor unit and the indoor unit are supplied via the circuit breaker.

⇨ The heat pump will begin an automatic vent cycle (which lasts approx. three minutes), run each time the power is switched on.
2. Switch on the backup heater.
3. Check the hydraulic pressure using the pressure gauge on the low loss header.

Important
Recommended hydraulic pressure between 0.15 and 0.2 MPa (1.5 and 2 bar).

5.5 Shutdown

On occasion the system requires shutting down. If the system is to be left for an extended period of time, put the system in **System holiday mode** to make use of the anti-blocking function and protect the system from frost.

To shut down the system:

1. Switch off the power to the outdoor unit.

2. Switch off the power to the indoor unit.
3. Switch off the backup heater.

5.6 Frost protection

If the temperature of the heating water in the heat pump falls too much, the integrated protection device switches itself on. This device functions as follows:

- If the water temperature is lower than 8 °C, the circulating pump starts up.
- If the water temperature is lower than 6 °C, the back-up starts up.
- If the water temperature is higher than 10°C, the back-up shuts down and the circulating pump continues to run for a short time.

The radiator valves in rooms where there is a risk of frost must be fully open.

6 Settings

6.1 List of parameters

6.1.1 Heat pump parameters

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

Tab.21 **General**

Parameters	Description of the parameters	Factory setting EHC–16
AP016	Enable or disable central heating • Off • On	On
AP017	Enable or disable DHW • Off • On	On
AP063	Maximum central heating flow temperature setpoint Can be set from 20 °C to 90 °C	Heating element: 75 °C
HP086	Enable buffer tank hydraulic management • No • Yes	No
HP087	Temperature hysteresis to start or stop heating the buffer tank Can be set from 0 to 30 °C	3 °C
PP015	Central heating pump post run time • Can be set from 0 Min to 99 Min • Set to 99 minutes (continuous operation)	3 Min

Tab.22 **Water flow and temperature**

Parameter	Description of the parameter	Factory setting EHC–16
AP101	Deaeration program settings • No deair at power up • Always deair at power up	Always deair at power up

Tab.23 **Appoint**

Parameters	Description of the parameters	Factory setting EHC–16
HP000	Above the bivalence temperature, the booster is not allowed to operate Can be set from -10 °C to 20 °C	5 °C
HP030	Delay time for starting the backup energy source for the heating circuits Can be set from 0 Min to 600 Min Set to 0 Min: The backup is started automatically based on the outdoor temperature	0 Min
HP034	Heating level of the 1st stage of the backup electric heater used for energy metering Can be set from 0 kW to 10 kW	0 kW
HP035	Heating level of the 2nd stage of the backup electric heater used for energy metering Can be set from 0 kW to 10 kW	0 kW
HP047	Delay for starting the backup when the outdoor temp is equal to the parameter T Ext Min Can be set from 0 Min to 60 Min	8 Min
HP048	Delay for starting the backup when the outdoor temp is equal to the parameter T Ext Max Can be set from 0 Min to 60 Min	30 Min
HP049	Minimum outside temperature related to the parameter delay min outdoor T Can be set from -30 °C to 0 °C	-10 °C
HP050	Maximum outside temperature related to the parameter delay max outdoor T Can be set from -30 °C to 20 °C	15 °C

Tab.24 **Cooling**

Parameters	Description of the parameters	Factory setting EHC–16
Cooling function not available for this product.		

Tab.25 **Energy management**

Parameters	Description of the parameters	Factory setting EHC–16
HP033	Value of the pulse coming from the electrical counter Can be set from 0 Wh to 1000 Wh	1 Wh
HP054	COP threshold above which the heat pump is authorised to operate Can be set from 1 to 5	2.5
HP061	Hybrid mode selection to choose on what basis the hybrid system will optimise • No hybrid • Hybrid cost • Primary energy • Hybrid CO^2	No hybrid
HP062	Peak rate electricity cost Can be set from 1 to 250 cents per kWh	13 cents per kWh
HP063	Off-peak rate electricity cost Can be set from 0.01 to 655.35 cents per kWh	9 cents per kWh
HP064	Cost of gas per m^3 or oil per litre Can be set from 0.01 to 655.35 cents	90 cents
HP051	Minimum outdoor temperature below which the compressor of the heat pump is stopped Can be set from -20 °C to 5 °C	-20 °C

Tab.26 **Blocking input** (BL input)

Parameters	Description of the parameters	Factory setting EHC–16
AP001	Blocking input setting(1: Lock-out, 2: Partial lock-out, 3: User reset lock-out) (BL1) • Full lock-out • Partial lock-out • User reset lock-out • Backup relieved • Heat producer relieved • Heat producer and back-up relieved • High / low tariff • Photovoltaic HP only • PV HP and back-up • Smart grid ready • Heating / cooling	2: Partial lock-out
AP098	BL1 input contact configuration • Open • Closed	Open
AP099	BL2 input contact configuration • Open • Closed	Open
AP100	BL2 input function selection • Full lock-out • Partial lock-out • User reset lock-out • Backup relieved • Heat producer relieved • Heat producer and back-up relieved • High / low tariff • Photovoltaic HP only • PV HP and back-up • Smart grid ready • Heating / cooling	Partial lock-out
HP091	Heating setpoint temperature offset when photovoltaic energy is available Can be set from 0 °C to 30 °C	0 °C

Tab.27 **Manual heat output**

Parameters	Description of the parameters	Factory setting EHC–16
AP002	Enable manual heat demand function • Off • With setpoint: in this mode, the temperature setpoint used will be that for the manual heat demand (AP026) parameter • Outdoor temperature based	Off
AP026	Flow temperature setpoint for manual heat demand Can be set from 7 °C to 90 °C	40 °C

Tab.28 **Silent mode**

Parameters	Description of the parameters	Factory setting EHC–16
HP058	Heat pump silent mode level • No silent mode • Silent mode level 1 • Silent mode level 2	No silent mode
HP094	Start time of the heat pump low noise function	22:00
HP095	End time of the heat pump low noise function	06:00

Tab.29 **Service settings**

Parameters	Description of the parameters	Factory setting EHC–16
AP009	Number of heat producer operating hours before raising a service notification Can be set from 0 hours to 65534 hours	4000 hours
AP010	Select the type of service notification • None • Custom notification	None
AP011	Hours powered to raise a service notification Can be set from 0 hours to 65534 hours	8700 hours

6.1.2 Zone 1, Zone 2 and Zone 3 parameters

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

The parameters for the Zone 1 circuit are linked to the EHC–16 PCB.

The parameters for the Zone 2 & 3 circuits are linked to the SCB-17B PCB.

Tab.30 **Zone**

Parameters	Description of the parameters	Factory setting Zone 1 (see on EHC)	Factory setting Zone 2 (see on SCB17)	Factory setting Zone 3 (see on SCB17)
CP020for Zone 1 & 2 CP021 for Zone 3	Functionality of the zone • Disable • Direct = radiators. • Mixing circuit = underfloor heating with mixing valve for Zone3. • Swimming pool: Only available for Zone 3. • High temperature = not used. • Fan convector.	Direct	Direct	Mixing circuit

Tab.31 **Set heating temperatures**

Parameters	Description of the parameters	Factory setting Zone 1 (see on EHC)	Factory setting Zone 2 (see on SCB17)	Factory setting Zone 3 (see on SCB17)
CP080for Zone 1 & 2 CP086 for Zone 3	Desired room temperature setpoint for **Sleep** mode Can be set from 5 °C to 30 °C	16 °C	16 °C	16 °C
CP081for Zone 1 & 2 CP087 for Zone 3	Desired room temperature setpoint for **Home** mode Can be set from 5 °C to 30 °C	20 °C	20 °C	20 °C
CP082for Zone 1 & 2 CP088 for Zone 3	Desired room temperature setpoint for **Away** mode Can be set from 5 °C to 30 °C	6 °C	6 °C	6 °C
CP083for Zone 1 & 2 CP089 for Zone 3	Desired room temperature setpoint for **Morning** mode Can be set from 5 °C to 30 °C	21 °C	21 °C	21 °C
CP084for Zone 1 & 2 CP090 for Zone 3	Desired room temperature setpoint for **Evening** mode Can be set from 5 °C to 30 °C	22 °C	22 °C	22 °C

Tab.32 **Heating curve (advanced)**

Parameters	Description of the parameters	Factory setting Zone 1 (see on EHC)	Factory setting Zone 2 (see on SCB17)	Factory setting Zone 3 (see on SCB17)
CP000for Zone 1 & 2 CP001 for Zone 3	Maximum flow temperature setpoint zone • For Zone 1: Can be set from 7 °C to 75 °C • For Zone 3: Can be set from 7 °C to 100 °C	75 °C	90°C	50 °C
CP210for Zone 1 & 2 CP211 for Zone 3	Comfort footprint of the temperature of heating curve of the circuit Can be set from 15 °C to 90 °C	15 °C	15 °C	15 °C
CP220for Zone 1 & 2 CP221 for Zone 3	Reduced footprint of the temperature of heating curve of the circuit Can be set from 15 °C to 90 °C	15 °C	15 °C	15 °C
CP230for Zone 1 & 2 CP231 for Zone 3	Heating curve temperature gradient of the zone Can be set from 0 to 4	1.5	1.5	0.7

Tab.33 **General**

Parameters	Description of the parameters	Factory setting Zone 1 (see on EHC)	Factory setting Zone 2 (see on SCB17)	Factory setting Zone 3 (see on SCB17)
CP030for Zone 1 & 2 CP031 for Zone 3	Bandwidth of mixing valve zone where modulation takes place Can be set from 4 ℃ to 16 ℃	-	-	12 ℃
CP040for Zone 1 & 2 CP041 for Zone 3	Pump post runtime of the zone Can be set from 0 Min to 20 Min	3 Min	-	4 Min
CP050for Zone 1 & 2 CP051 for Zone 3	Shift between calculated setpoint and mixing valve circuit setpoint Can be set from 0 ℃ to 16 ℃	-	-	4 ℃
CP070for Zone 1 & 2 CP071 for Zone 3	Max room temperature limit of the circuit in reduced mode allowing switching to comfort mode Can be set from 5 °C to 30 °C	16 °C	-	16 °C
CP270for Zone 1 & 2 CP271 for Zone 3	Cooling flow temperature setpoint for the underfloor cooling Can be set from 11 °C to 23 °C	18 °C	-	18 °C
CP280for Zone 1 & 2 CP281 for Zone 3	Cooling flow temperature setpoint for the convector fan Can be set from 7 °C to 23 °C	7 °C	20 °C	10 °C
CP340for Zone 1 & 2 CP341 for Zone 3	Type of reduced night mode. Stop or maintain heating of circuit • Stop heat demand • Continue heat demand	Continue heat demand	Continue heat demand	Continue heat demand
CP450for Zone 1 & 2 CP451 for Zone 3	The connected pump type • On / Off • Modulating PWM • Modulating LIN	ON / OFF	ON / OFF	ON / OFF

Parameters	Description of the parameters	Factory setting Zone 1 (see on EHC)	Factory setting Zone 2 (see on SCB17)	Factory setting Zone 3 (see on SCB17)
CP640for Zone 1 & 2 CP641 for Zone 3	OpenTherm logic level contact of the zone • Open • Closed	Closed	Closed	Closed
CP660for Zone 1 & 2 CP661 for Zone 3	Choice of icon to identify zone • None • All • Bedroom • Living room • Study • Outdoor • Kitchen • Basement • Swimming pool • Time program	None	None	Living room
CP690for Zone 1 & 2 CP691 for Zone 3	Reversed OpenTherm contact in cooling mode for heat demand per zone • No • Yes	No	No	No
CP780for Zone 1 & 2 CP781 for Zone 3	Selection of the zone control strategy • Automatic: adapts the regulation strategy based on the sensors present • Room temperature based: use if there is no outdoor temperature sensor. Does not allow the heating curve to be used • Outdoor temperature based: use if there is no room thermostat. Allows the heating curve to be used. If the gradient is not configured correctly, it will cause discomfort • Outdoor and room based: allows the heating curve to be used. If the gradient is not configured correctly, the setpoint temperature must be corrected using the room temperature sensor measurement	Automatic	Automatic	Automatic

Tab.34 **Screed drying**

Parameters	Description of the parameters	Factory setting Zone 1 (see on EHC)	Factory setting Zone 2 (see on SCB17)	Factory setting Zone 3 (see on SCB17)
ZP000for Zone 1 & 2 ZP001 for Zone 3	Set the number of days spent in the first screed drying step Can be set from 0 days to 30 days	3 days	3 days	3 days
ZP010for Zone 1 & 2 ZP011 for Zone 3	Set the start temperature for the first screed drying step Can be set from 7 °C to 60 °C	20 °C	20 °C	20 °C
ZP020for Zone 1 & 2 ZP021 for Zone 3	Set the end temperature for the first screed drying step Can be set from 0 days to 30 days	32 °C	32 °C	32 °C
ZP030for Zone 1 & 2 ZP031 for Zone 3	Set the number of days spent in the second screed drying step Can be set from 0 days to 30 days	11 days	11 days	11 days
ZP040for Zone 1 & 2 ZP041 for Zone 3	Set the start temperature for the second screed drying step Can be set from 7 °C to 60 °C	32 °C	32 °C	32 °C

Parameters	Description of the parameters	Factory setting Zone 1 (see on EHC)	Factory setting Zone 2 (see on SCB17)	Factory setting Zone 3 (see on SCB17)
ZP050for Zone 1 & 2 ZP051 for Zone 3	Set the end temperature for the second screed drying step Can be set from 0 days to 30 days	32 °C	32 °C	32 °C
ZP060for Zone 1 & 2 ZP061 for Zone 3	Set the number of days spent in the second screed drying step Can be set from 0 days to 30 days	2 days	2 days	2 days
ZP070for Zone 1 & 2 ZP071 for Zone 3	Set the start temperature for the third screed drying step Can be set from 7 °C to 60 °C	32 °C	32 °C	32 °C
ZP080for Zone 1 & 2 ZP081 for Zone 3	Set the end temperature for the third screed drying step Can be set from 0 days to 30 days	24 °C	24 °C	24 °C
ZP090for Zone 1 & 2 ZP091 for Zone 3	Enable the screed drying of the zone • Off • On	Off	Off	Off

Tab.35 **Advanced**

Parameters	Description of the parameters	Factory setting Zone 1 (see on EHC)	Factory setting Zone 2 (see on SCB17)	Factory setting Zone 3 (see on SCB17)
CP330for Zone 1 & 2 CP331 for Zone 3	The time needed y the valve to be fully open Can be set from 0 seconds to 240 seconds	-	60 seconds	60 seconds
CP520for Zone 1 & 2 CP521 for Zone 3	Power setpoint per zone Can be set from 0 % to 100 %	-	100 %	100 %
CP680for Zone 1 & 2 CP681 for Zone 3	Select the bus channel of the smart room thermostat for this zone Can be set from 0 to 255	0	0	0
CP750for Zone 1 & 2 CP751 for Zone 3	Maximum zone preheat time Can be set from 0 minutes to 240 minutes	0 min	0 min	0 min
CP770for Zone 1 & 2 CP771 for Zone 3	The zone is after a buffer tank • No • Yes	-	Yes	Yes

6.1.3 DHW (Domestic Hot Water) parameters

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

The DHW circuit is on the EHC–16 PCB. A DHW temperature sensor must be connected to the EHC–16 PCB to display these parameters in the DHW sub-menu.

Tab.36 **Setting DHW temperatures**

Parameters	Description of the parameters	Factory setting EHC–16
DP070	Comfort temperature setpoint for the DHW cylinder Can be set from 40 °C to 65 °C	53 °C
DP080	Eco friendly temperature setpoint for the DHW cylinder Can be set from 10 °C to 60 °C	10 °C

Tab.37 **General**

Parameters	Description of the parameters	Factory setting EHC–16
DP120	Hysteresis temperature relative to the DHW temperature setpoint Can be set from 0 °C to 40 °C	15 °C
DP140	DHW load type (0=combi, 1=solo) • Combi • Solo • Layered cylinder • Process heat • External	Solo
DP046	Maximum DHW temperature Can be set from 10 °C to 75 °C	70 °C
DP047	Maximum duration of DHW production Can be set from 1 hour to 10 hours	3 hours
DP048	Minimum heating duration between two periods of DHW production Can be set from o hours to 10 hours	2 hours
DP213	Post run time of the DHW pump/3 way valve after DHW production Can be set from 0 min to 99 min	3 min
DP337	Holiday temperature setpoint of the DHW cylinder Can be set from 10 °C to 60 °C	10 °C

Tab.38 **Backup**

Parameters	Description of the parameters	Factory setting EHC–16
DP090	Delay time for starting the backup heater for DHW Can be set from 0 min to 120 min	10 min
DP051	ECO mode: Use of the heat pump only. Comfort mode: Use of the heat pump and backup heater • HP only • Auto (HP and backup boiler)	HP only

Tab.39 **Anti-legionella**

Parameters	Description of the parameters	Factory setting EHC–16
DP004	Function to protect the DHW cylinder against Legionella bacteria. • Disabled • Weekly • Daily	Disabled
DP160	Setpoint for DHW anti-legionella Can be set from 60 °C to 75 °C	65 °C
DP410	Duration of the DHW anti-legionella program Can be set from 0 min to 360 min	20 min

Parameters	Description of the parameters	Factory setting EHC–16
DP430	Day to start the DHW anti-legionella program Only visible if the **weekly** mode for the anti-legionella function is activated. • Saturday • Sunday • Monday • Tuesday • Wednesday • Thursday • Friday	Saturday
DP440	Start time for the DHW anti-legionella program Only visible if the **weekly** mode or the **daily** mode for the anti-legionella function is activated. Can be set from 00:00 to 23:50 in increments of 10 min.	03:00

6.1.4 DHW Mix/Circulation

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

Tab.40 **DHW mix/ciculation**

Parameters	Description of the parameters	Factory setting
DHW circulation DP450	DHW circulation enabled/disabled • Off • On	On

6.1.5 Outdoor temperature parameters

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

In the **Outdoor temperature** sub-menu, you will find all parameters related to the behaviour of the system depending on the outdoor temperature.

Tab.41

Parameters	Description of the parameters	Factory setting Zone1
AP056	Enable outdoor temperature sensor • No outdoor temperature sensor • AF60 • QAC34	AF60
AP073	Outdoor temperature: upper limit for heating • Can be set from -30 °C to 30.5 °C in increments of 0.5 °C • When set to 30.5 °C, automatic switching is deactivated, the system remains in **Winter** mode and heating is active.	22 °C
AP075	Temperature variance from set outdoor upper temp limit in which the producer will not heat or cool Can be set from 0 °C to 20 °C	4 °C

Parameters	Description of the parameters	Factory setting Zone1
AP079	Thermal inertia of the building used for heat up speed Can be set from 0 to 10 • 0 = 10 hours for a building with low thermal inertia, • 3 = 22 hours for a building with normal thermal inertia, • 10 = 50 hours for a building with high thermal inertia. **Only modify the factory setting if the inertia of the building is known.**	3
AP091	Type of outdoor temperature sensor connection to be used • Auto • Wired sensor • Wireless sensor • Internet measured • None	Auto

6.1.6 Bluetooth® parameters

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

In the Bluetooth sub-menu, you can find all parameters linked to the Bluetooth® connection.

Tab.42

Parameters	Description of the parameters	Factory setting
AP129	Activate the Bluetooth function to enable communication with the appliance: • On: **Bluetooth®** activated • Off: **Bluetooth®** deactivated	On
Current pairing code	**Bluetooth®** pairing code (specific to each appliance)	-

6.1.7 Reading out the measured values

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

You can display several measured values. These reflect the current state of the heating system such as temperatures, status of the appliance and others.

Certain signals are displayed:

- according to certain system configurations,
- according to the options, circuits or sensors actually connected.

Tab.43 **Zone 1**

Signals	Description of the signals
CM050	Status of the zone pump • No • Yes
CM070	Current flow temperature setpoint of zone in °C
CM120	Current zone mode • Scheduled • Manual • Off • Anti legionella

Signals	Description of the signals
CM130	Current activity of the zone • Off • Eco • Comfort • Anti legionella
CM190	Desired zone room temperature setpoint in °C
CM200	Current zone operating mode • Standby • Heating • Cooling
CM210	Current outdoor temperature of zone in °C
ZM000	Current flow temperature setpoint for screed drying in °C
ZM010	The screed drying process start date and time
ZM020	The projected screed drying procedure end date and time

Tab.44 **Zone2**

Signals	Description of the signals
Zone Tflow /DHW temp CM040	Measure Zone Flow Temperature or DHW temperature in °C

Tab.45 **Zone 3**

Signals	Description of the signals
CM041	Zone flow temperature measurement or DHW temperature in °C
CM071	Current flow temperature setpoint of zone in °C
CM121	Current zone mode • Scheduled • Manual • Off • Anti legionella
CM131	Current zone activity • Off • Eco • Comfort
CM191	Requested room temperature setpoint of the zone in °C
CM211	Current outdoor temperature of the zone in °C

Tab.46 **Domestic Hot Water**

Signals	Description of the signals
DHW tank temperature DM001	DHW tank temperature in °C
Auto/Derog DHWstatus **DM009**	Automatic/derogation status of Domestic Hot Water mode: • Scheduling • Manual • Off • Temporary
DHW activity DM019	Domestic Hot Water current activity • Off • Eco • Comfort • Anti legionella

Signals	Description of the signals
DHW setpoint DM029	Domestic Hot Water temperature setpoint in °C
DHW active AM001	Is the appliance currently in domestic hot water production mode? • Off • On

Tab.47 **Heat pump**

Signals	Description of the signals
AM012	Current main status of the appliance
AM014	Current sub status of the appliance
AM016	Flow temperature of the appliance in °C
AM019	Water pressure of the primary circuit in bar
AM037	Status of the 3 way valve • CH • DHW
AM056	Water flow rate in the system in l/min
AM101	Internal system flow temperature setpoint in °C
HM001	Heat pump flow temperature in °C
HM002	Heat pump return temperature in °C
HM004	BL1 contact position • Open • Closed • Off
HM005	BL2 contact position • Open • Closed • Off
HM008	Compressor operation • Off • On
HM012	First stage of backup operation • Off • On
HM033	Heat pump flow temperature setpoint in cooling mode in °C

Tab.48 **Outdoor unit**

Signals	Description of the signals
Comm quality HM024	Quality of the communication between the control unit (CU) and the interface board in %

Tab.49 **Outdoor temperature**

Signals	Description of the signals
AM027	Instantaneous outside temperature in °C
AM091	Seasonal mode active (summer/winter) • Winter • Frost protection • Summer neutral band • Summer
AP078	Outdoor temperature sensor detected in the application • No • Yes

Tab.50 **Heat pump**

Signals	Description of the signals
HM003	Heat pump flow temperature setpoint in °C
HM009	Heat pump defrost function in progress • No • Yes
HM024	Quality of the communication between the control unit and the interface board in %
HM030	Request to start compressor • No • Yes

6.1.8 Counters

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

Tab.51

Meters	Description of the meters
Service run hours AC002	Number of hours that the heat producer has been producing energy since the last service
Hours since service AC003	Number of hours since the previous service of the heat producer
Starts since service AC004	Number of heat producer starts since the previous service.
CH Energy Consumed AC005	Energy consumed for central heating
DHW energy consumed AC006	Energy consumed for domestic hot water
CH Energy delivered AC008	Thermal energy delivered for central heating
DHW Energy delivered AC009	Thermal energy delivered for domestic hot water
Average SPF AC013	Current average seasonal performance factor
Pump running hours AC026	Number of pump running hours since installation
Pump starts AC027	Number of pump starts since installation
Backup 1 hours AC028	Number of operating hours of the first backup electric heater stage
Backup 1 starts AC030	Number of starts of the first backup electric heater stage
Standby used energy AC032	Energy consumed by the appliance in standby mode (kWh)
Total energy consume AC065	Total energy consumed (kWh)
Total energy deliver AC103	Total thermal energy delivered (kWh)
Zone Pump Run Hours CC001	Number of pump operating hours of the zone
Zone Nbr Pump Starts CC010	Number of times the pump of the zone has started
DHW valve cycles DC002	Numbers of Domestic Hot Water diverting valve cycles

Meters	Description of the meters
DHW 3wv DC003	Number of hours during which the diverting valve is in the domestic hot water (DHW) position
DHW starts DC004	Numbers of starts for the domestic hot water (DHW) diverting valve cycles
DHW run hours DC005	Total number of hours that the heat producer has been producing energy for domestic hot water (DHW)
Heat producing hours PC000	Number of heat producer operating hours in central heating mode
Total starts PC002	Total number of heat producer starts for heating and domestic hot water (DHW)
Heat gen run hrs PC003	Total duration of heat production in heating mode
Screed dry remaining ZC000	The remaining time required for screed drying in days

6.2 Configuring the anti-legionella function

The anti-legionella function is used to bring the water in the DHW cylinder to a temperature above the normal setpoint. This eliminates legionella bacteria. This function is disabled by default.

The backup heater is used to ensure the anti-legionella programme works correctly. The controller is responsible for ensuring the anti-legionella program functions correctly

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

1. Follow the access path described below to access the parameters for setting the anti-legionella function. Adapt the anti-legionella function parameters based on the recommendations applicable in your country.

Access path
> Installer > Installation setup > Domestic Hot Water > Anti-legionella

2. Activate the anti-legionella function.

Parameter	Description	Adjustment required
Anti-legionella DP004	Function to protect the DHW cylinder against Legionella bacteria.	• Weekly • Daily

3. Adjust the setpoint temperature.

Parameter	Description	Adjustment required
DhwMaxTemp DP046	Maximum temperature of the water circulating in the exchanger of the DHW cylinder	75 °C
DHW AntiLeg Setpoint DP160	Setpoint temperature for the anti-legionella function.	Can be set from 60 °C to 75 °C

4. Adjust the duration of the anti-legionella programme cycle.

Parameter	Description	Adjustment required
DHW anti-leg runtime DP410	Duration for maintaining the setpoint temperature. Duration for which the setpoint temperature can be maintained to ensure Legionella bacteria are eliminated.	Can be set from 0 Min to 360 Min

5. Choose the day and time to start the anti-legionella programme.

Parameter	Description	Adjustment required
Start day anti-leg DP430	Day to start the DHW anti-legionella program. Only for weekly activation.	Can be set from Monday to Sunday
Start time anti-leg DP440	Starting time for the DHW anti-legionella program.	Can be set from 00:00 to 23:50 in increments of 10 minutes.

6.3 Improving comfort

6.3.1 Improving domestic hot water or heating comfort

See
Navigating the menus, page 26 to move through menus, select parameters and return to the carousel menu.

The system does not allow the simultaneous production of heating and domestic hot water. It is possible to alter the parameters to adapt the operation of the product to your needs.

1. The timer programming for domestic hot water production can be altered based on your night-time habits, for example.
2. Change the parameters to facilitate heating or domestic hot water production if changing the timer programming is not sufficient.

Access path
> **Installation** > **Installation setup** > **Domestic hot water** > **General**

3. Adjust the following parameters based on the required comfort:

Tab.52 Improving hot water comfort

Parameter	Description	Adjustment required
Max DHW duration DP047	Maximum duration of the domestic hot water production.	Increase the maximum authorised duration for domestic hot water production. Longer period of hot water production.
Min CH before DHW DP048	Minimum heating duration between two periods of domestic hot water production.	Reduce the minimum heating duration between two domestic hot water production runs. The time between two periods of hot water production is decreased.
Hysteresis DHW DP120	Hysteresis temperature relative to the DHW temperature setpoint	Reduce the setpoint temperature differential triggering the domestic hot water tank load. More frequent period of hot water production.

Tab.53 Improving heating comfort

Parameter	Description	Adjustment required
Max DHW duration DP047	Maximum duration of the domestic hot water production.	Reduce the maximum authorised duration for domestic hot water production. Shorter period of hot water production.
Min CH before DHW DP048	Minimum heating duration between two periods of domestic hot water production.	Increase the minimum heating duration between two domestic hot water production runs. The time between two periods of hot water production is increased.
Hysteresis DHW DP120	Hysteresis temperature relative to the DHW temperature setpoint	Increase the setpoint temperature differential triggering the domestic hot water tank to be charged. Less frequent period of hot water production.

4. Check the improvement in comfort over one week.
5. Readjust the parameters as needed.

6.3.2 Configuring silent mode

Silent mode is used to reduce the sound level of the outdoor unit. The time period can be programmed using the controller. Silent mode reduces the performance of the heat pump.

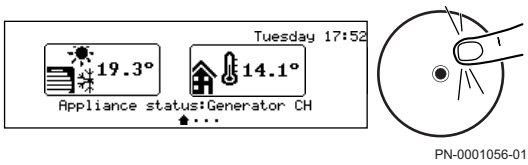
1. Follow the access path described below to access the parameters for setting silent mode.

Access path
> Installer > Installation setup > Heat Pump > Silent

2. Set the parameters for silent mode.

Parameter	Description	Adjustment required
HP silent mode HP058	Heat pump silent mode level 3 possible options. • No silent mode: normal operation • Silent mode level 1: level 1 sound reduction • Silent mode level 2: level 2 sound reduction, significant sound reduction	Set to the user requirements.
Low noise start time HP094	Start time of the heat pump low noise function	Set to the user requirements.
Low noise end time HP095	End time of the heat pump low noise function	Set to the user requirements.

Fig.77



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3. The home screen displays the status of the appliance in silent mode.

6.4 Description of the parameters

6.4.1 Running the back-up in heating mode

■ Start-up conditions for the backup

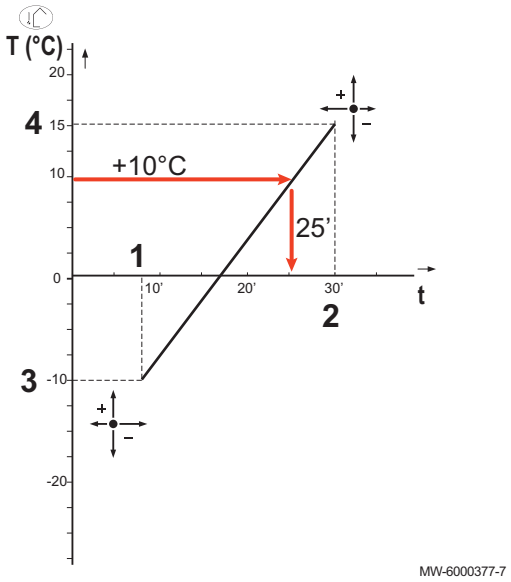
The backups are authorised to start up normally except in cases of power cut-off or limitation linked to bivalency (**Bivalent temperature** - HP000).

If the heat pump must also be limited, the backups are nevertheless authorised to operate to guarantee heating comfort.

In heating mode, the backup is managed by the parameters: **Bivalent temperature** (HP000) and **Delay start backup CH** (HP030).

If **Delay start backup CH** (HP030) is set to 0, the time delay for start-up of the backup is set depending on the outdoor temperature: the lower the outdoor temperature, the quicker the backup will be activated.

Fig.78 Time delay curve for starting the backup



t Time (minutes)
T Outdoor temperature (°C)
1 **Delay min outdoor T** (HP047) = 10 minutes
2 **Delay max outdoor T** (HP048) = 10 minutes
3 **Min outdoor T bacup** (HP049) = -10 °C
4 **Max outdoor T bacup** (HP050) = 15 °C

In this example of a time delay in starting the backup when **Delay start backup CH** HP030 is set to 0, with the factory-set parameters, if the outdoor temperature is 10 °C, the backup will start 25 minutes after the heat pump's outdoor unit.

■ Backup operation if an error occurs on the outdoor unit

If an error on the outdoor unit, the backup heater operates after 3 minutes to guarantee heating comfort.

Important
If a communication error occurs between the heat pump and the control unit, the backup heater will not start.

■ Backup operation when defrosting the outdoor unit

When the outdoor unit is defrosting, the control system ensures the protection of the system by starting up the backup if necessary.

If the backup is not sufficient to ensure the protection of the outdoor unit during defrosting, then the outdoor unit is switched off.

■ Operation when the outdoor temperature falls below the operating threshold of the outdoor unit

If the outdoor temperature is below the minimum operating temperature of the outdoor unit as defined by the **Min outdoor T HP** (HP051) parameter, the outdoor unit is not authorised to operate.

If the system has a demand pending, the electric heating element starts up immediately to guarantee heating comfort.

6.4.2 Running the back-up in domestic hot water mode

■ Start-up conditions for the backup

The start-up conditions for the backup for domestic hot water production depend on the **BL input setting** (AP001) and **BL2 function** (AP100) parameters for the blocking inputs **BL1** and **BL2** respectively.

■ Operating description

The behaviour of the backup boiler in domestic hot water mode depends on the configuration of the **DHW management**(DP051) parameter.

If **DHW management** (DP051) is set to **HP only** the system gives priority to the heat pump during domestic hot water production. The backup heater is used only if the start-up time delay for the backup during domestic hot water production **Delay StartBackupDHW** (DP090) has elapsed in domestic hot water mode.

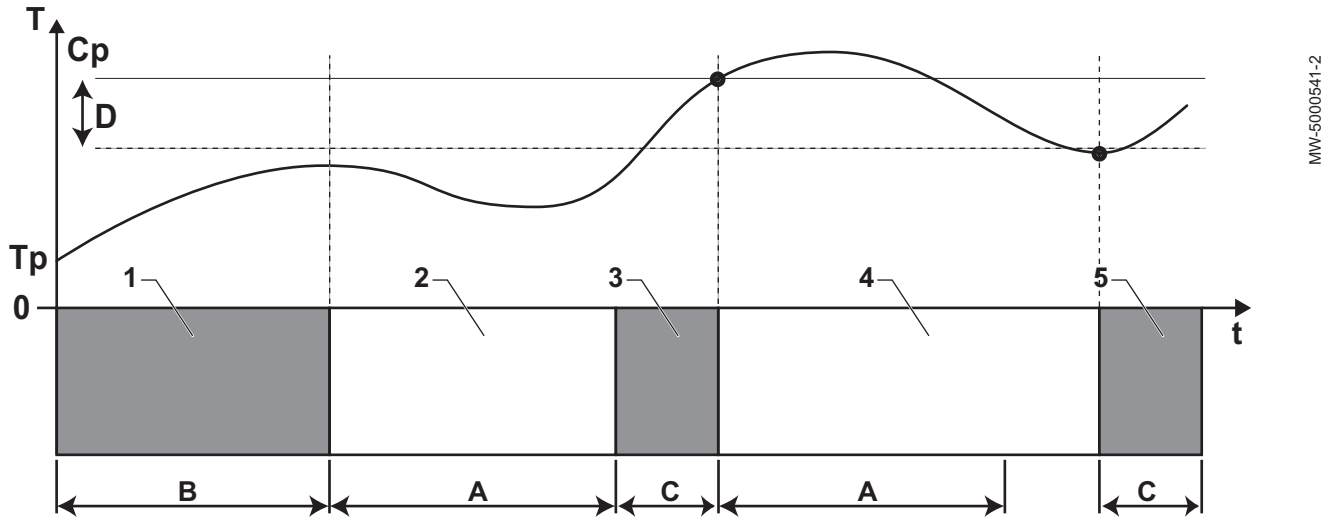
If **DHW management** (DP051) is set to **Auto (HP + Backup heater)**: the domestic hot water production mode gives priority to comfort by accelerating domestic hot water production. This is achieved by using the heat pump and the backup heater together. In this mode, there is no maximum time for domestic hot water production. Using the backup heater helps to ensure domestic hot water is produced quickly.

6.4.3 Operation of the switch between heating and production of domestic hot water

The system does not allow the simultaneous production of heating and domestic hot water.

The switch logic between domestic hot water mode and heating mode operates as follows:

Fig.79



A **Min CH before DHW** DP048: Minimum heating duration between two domestic hot water production runs

B **Max DHW duration** DP047: Maximum authorised duration for domestic hot water production

C Duration for producing domestic hot water (less than **DP047**) to reach the DHW set point

Cp **DHW comfort setpoint** DP070: Domestic hot water "Comfort" setpoint temperature

DHW eco setpoint DP080: Domestic hot water "Reduced" setpoint temperature

T Temperature

Tp **DHW T** DM001: Domestic hot water temperature

t Time

D **Hysteresis DHW** DP120: Setpoint temperature differential triggering the domestic hot water tank to be charged

Tab.54

Phase	Description of the phase	Operating description
1	Domestic hot water production only	When the system is switched on, if domestic hot water production is authorised and the parameter **DHW management** (DP051) is configured to HP only, a domestic hot water production cycle is started up for a maximum duration that can be set and fixed by the **Max DHW duration** (DP047) parameter. In the event of insufficient heating comfort, the heat pump is running too long in domestic hot water mode: reduce the maximum duration of domestic hot water production.
2	Heating only	Production of domestic hot water is off. Even if the domestic hot water setpoint is not reached, a minimum heating period is forced. This period can be set and defined with the **Min CH before DHW** (DP048) parameter. After the heating period, tank loading is enabled again.
3	Domestic hot water production only	When the domestic hot water setpoint is reached, a period in heating mode begins.
4	Heating only	When the **Hysteresis DHW** (DP120) differential is reached, domestic hot water production is triggered. If there is not enough domestic hot water (e.g. if the domestic hot water does not heat up quickly enough): reduce the trip differential (hysteresis) by modifying the value of the **Hysteresis DHW** (DP120) parameter. The heat pump will start heating up the domestic hot water more often.
5	Domestic hot water production only	When the domestic hot water setpoint is reached, a period in heating mode begins.

6.4.4 Operation of the heating curve

The relationship between the outdoor temperature and the circuit flow heating water temperature is controlled by a heating curve or water temperature setpoint. This can be adjusted according to the requirements of the installation.

Important
Regulation via the heating curve is only possible when the **regulation strategy** CP780 is set on the modes "Acc. to Ext. T." and "Acc. to Ext. T and Room T.".

Fig.80

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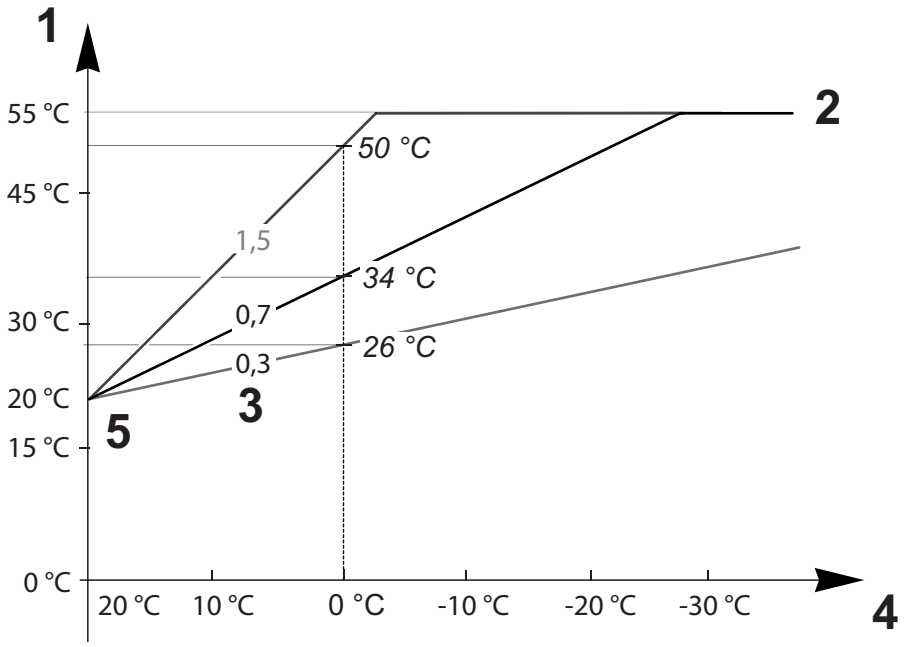


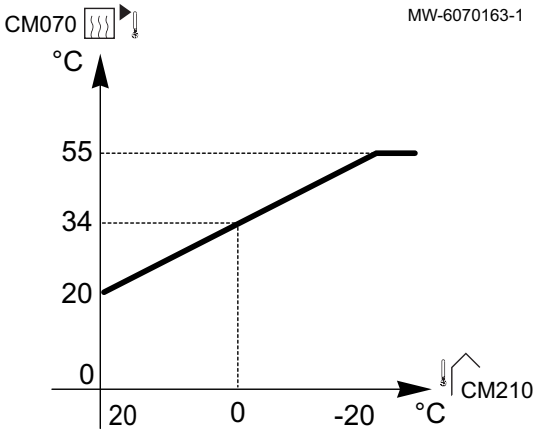
1 **Current Flow temperature setpoint of zone** CM070
2 **Maximum Flow Temperature setpoint zone** CP000 = 55 °C
3 **Heating curve temperature gradient of the zone** CP230
4 **Outdoor temperature** CM210
5 **Curve base temperature** CP210 / CP220 = 20 °C

Tab.55

Parameters	Description of the parameters
Maximum Flow Temperature setpoint zone CP000	The **flow setpoint temperature for the circuit** CM070 is limited by the **maximum flow temperature setpoint for the circuit** CP000. When using a room thermostat, the setpoint retained is the lowest temperature between the **flow setpoint temperature for the circuit** CM070 and the **maximum flow temperature setpoint for the circuit** CP000.
Heating curve temperature gradient of the zone CP230	The steeper the **gradient of the heating temperature curve for the circuit** CP230, the quicker the **flow setpoint temperature for the circuit** CM070 will increase. Decrease the **gradient of the heating temperature curve for the circuit** CP230 in case of over-heating in mid-winter. Example: for an **outdoor temperature** CM210 of 0 °C: if CP230 = 0.7 then CM070 = 34 °C if CP230 = 1.5 then CM070 = 50 °C
Curve base temperature CP210 / CP220	Increase the **curve base temperature** CP210 / CP220 when the heating is insufficient for mild outdoor temperatures. CP210 corresponds to the curve base temperature in comfort mode. CP220 corresponds to the curve base temperature in reduced mode. If the **curve base temperature** CP210 / CP220 is set to 15 °C, then it becomes equal to the **Required room setpoint temperature for the circuit** CM190. Example: if CP210 = 15 °C then CM190 = the room setpoint temperature for the activity/timer programme.

Parameters	Description of the parameters
Wished room temperature setpoint of the zone CM190	Calculated setpoint temperature, taken from the timer programming, manual mode or the override
Outdoor temperature CM210	The **outdoor temperature** CM210 is affected by the position of the outdoor temperature sensor: check the sensor is positioned correctly.
Current Flow temperature setpoint of zone CM070	The **flow setpoint temperature for the circuit** CM070 is calculated according to the heating curve parameters: • Without setting of the **curve base temperature** (CP210 / CP220 set to 15 °C): CM070 = (CM190 - CM210) x CP230 + CM190 • With setting of the **curve base temperature** (CP210 / CP220 > 15 °C): CM070 = (CM190 - CM210) x CP230 + (CP210 or CP220)

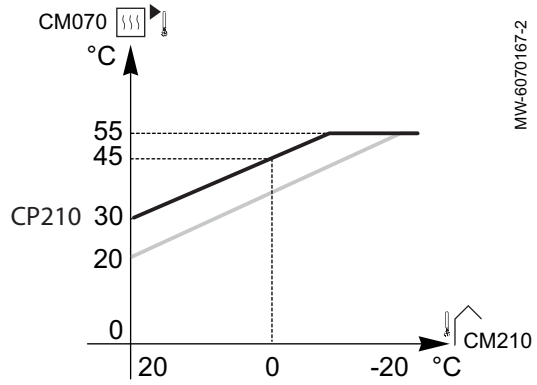
Fig.81 Heating curve without curve base



Without setting of the **curve base temperature** (CP210 / CP220 set to 15 °C): an **outdoor temperature** CM210 of 0 °C will give a **flow setpoint temperature for the circuit** CM070 of 34 °C.

If CP210 = 15 °C, then CP210 becomes the **required room setpoint temperature** CM190 (in our example CM190 = 20 °C).

Fig.82 Heating curve with curve base



With setting of the **curve base temperature** (CP210 / CP220) to 30 °C: an **outdoor temperature** CM210 of 0 °C will give a **flow setpoint temperature for the circuit** CM070 of 45 °C.

7 Maintenance

7.1 General

Caution
Only competent persons are authorised to carry out maintenance work on the control unit.

Danger
When carrying out any maintenance ensure that the electrical supply to the control unit is isolated before commencing work.

Warning
After servicing or performing any maintenance on the control unit ensure that:

- The front cover is correctly fitted
- The front cover securing screws are fully tightened

Important

- Maintenance must be undertaken as recommended by the manufacturer.
- Replace any damaged components.

1. Check the electrical connections.
2. Check the operation of the user interface.
3. Change any and all defective parts.
4. Check all screws and nuts for tightness.

7.2 Standard inspection and maintenance operations

7.2.1 Cleaning the casing

1. Clean the outside of the appliance using a damp cloth and a mild detergent.

7.3 Specific maintenance operations

7.3.1 Replacing the HMI

See
Baxi ASHP PP cylinder installation and service manual for information on removing the front upper and lower covers.

1. Remove the front cover.
2. Carefully lift the cover away from the control panel.
3. Rotate the cover so that the back can be accessed.
4. Remove the two cable clamp screws and clamp.
5. Release the six clips holding the HMI in the housing and push out of the cover.
6. Remove the connector from the HMI.
7. Reverse the steps above to fit the new HMI.

7.3.2 Replacing the main PCB

See
Baxi ASHP PP cylinder installation and service manual for information on removing the front upper and lower covers.

1. Remove the lower front cover.
2. Remove the front cover.
3. Remove the X9 connector.
4. Remove the 28 connector.
5. Remove the X16 connector.
6. Remove the BCKT1 connector.
7. Remove the X26 connector.
8. Remove the X24 connector.
9. Remove the X27 connector.

10. Release the circuit board retaining clips.
11. Ease the PCB away from the retaining clips
12. Remove the X7 connector.
13. Remove the X8 connector.
14. Reverse the steps above to fit the new main PCB.

7.3.3 Replacing the SCB-17

See
Baxi ASHP PP cylinder installation and service manual for information on removing the front upper and lower covers.

1. Remove the lower front cover.
2. Remove the front cover.
3. Remove the X4 connector.
4. Release the circuit board retaining clips.
5. Ease the PCB away from the retaining clips
6. Remove the X6 connector.
7. Reverse the steps above to fit the new PCB.

7.3.4 Replacing the GTW-22

See
Baxi ASHP PP cylinder installation and service manual for information on removing the front upper and lower covers.

1. Remove the front cover.
2. Carefully lift the cover away from the control panel.
3. Rotate the cover so that the back can be accessed.
4. Remove the X1 connector.
5. Release the circuit board retaining clips.
6. Reverse the steps above to fit the new PCB.

7.3.5 Replacing the HMI battery

If the indoor unit is switched off, the user interface battery takes over to keep the correct time.

The battery must be replaced when the time is no longer saved.

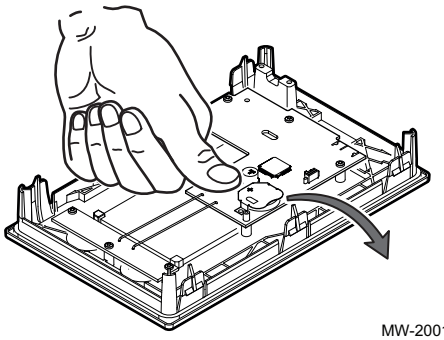
See
Baxi ASHP PP cylinder installation and service manual for information on removing the front upper and lower covers.

1. Remove the front cover.
2. Remove the battery located in back plate of the user interface by pushing it gently forwards.
3. Insert a new battery. Battery format: CR2032, 3 V

Important
- Do not use rechargeable batteries
- Do not discard used batteries in the dustbin. Take them to an appropriate collection place.

4. Re-assemble everything.

Fig.83



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8 Troubleshooting

8.1 Temporary and permanent faults

When an error occurs a code is displayed on the control panel.

The code is split into two parts as follows:

- Group code - **L.NN**
- Specific code - **.NN**

Where **L** = Letter and **N** = number

The code will flash on the control panel, alternating between the group code and the specific code.

There are two types of faults that can occur, temporary or permanent as follows:

- **A / H** are temporary faults
- **E** is a permanent fault

A temporary fault does not cause a permanent stoppage of the appliance.

The following happens when a temporary fault occurs:

- **A** - The appliance continues to operate. The fault disappears as soon as the cause has been resolved.
- **H** - The appliance does not operate. The fault disappears when the error condition is removed.

A permanent fault stops the appliance.

Correct the fault and then press the RESET key for 1 second.

If faults occurs frequently, contact the authorised BAXI service network.

8.2 Error codes

A warning code signals that the optimal operating conditions are not fulfilled. The system continues to operate safely, but there is a risk of shutdown if the situation continues to deteriorate.

If the situation improves, the warning code may disappear spontaneously.

Tab.56 List of warning codes

Code	Message	Description
A02.18	OBD error	Object dictionary error
A02.22	System flow warning	System water flow warning active
A02.55	Invalid serial number	Invalid or missing serial number

A blocking code signals an anomaly affecting the heating system.

Several possibilities:

- The system automatically attempts to correct the error (for example in the event of a fault related to the flow rate).
- The error is still present and the system functions in defect mode (for example, in the event of a fault affecting the outdoor unit, the heating element is started up).
- The system is shut down but automatically switches on again when the error disappears.

Tab.57 List of temporary faults

Code	Message	Description
H00.16	DHW temperature sensor open	DHW cylinder temperature sensor is missing or measures a temperature below range • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.17	DHW temperature sensor closed	Domestic hot water tank probe short-circuited or temperature higher than measured range • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.32	TOutdoor open	Outdoor temperature sensor is missing or a temperature below range is measured • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.

Code	Message	Description
H00.33	TOutside closed	The outdoor temperature sensor is shorted or measures a temperature above the range • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.34	TOutside missing	Exterior temperature sensor expected but not detected Wired sensor: • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary. • Reset the values CN1 and CN2. This solution also resets all the other parameters. Radio-controlled outdoor temperature sensor: • Check the wiring between the radio receiver and the main PCB (R-Bus line). • Check that the radio gateway is supplied with power. • Perform a pairing sequence. • If necessary, perform a new pairing sequence and reduce the distance between the outdoor radio sensor and the radio receiver. • Replace the sensor if necessary. • Replace the radio receiver if necessary.
H00.47	HP flow temperature sensor removed or below range	The heat pump flow temperature sensor is missing or a temperature below the range is measured • Check the wiring between the EHC–16 main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.48	THp flow closed	The heat pump flow temperature sensor is shorted or measures a temperature above range • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.49	THp flow missing	Heat pump flow temperature sensor expected but not detected • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted correctly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.51	THp return open	Heat pump return temperature sensor is missing or measures a temperature below the range • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.52	THp return closed	Heat pump return temperature sensor is shorted or measures a temperature above the range • Check the wiring between the main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H00.57	T DHW top open	The upper DHW cylinder sensor is missing or measures a temperature below the range • Check the wiring between the EHC–16 main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.

Code	Message	Description
H00.58	T DHW top closed	The DHW cylinder top sensor is short-circuited or a temperature above the range has been detected • Check the wiring between the EHC–16 main PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H02.02	Wait config number	Waiting for configuration number Waiting for configuration parameters to be entered: • Configure CN1 / CN2 depending on the output of the outdoor unit installed (CNF menu). Main PCB replaced: heat pump not configured.
H02.03	Conf error	Configurtion error The configuration parameters entered are incorrect: • Configure CN1 / CN2 depending on the output of the outdoor unit installed (CNF menu).
H02.04	Parameter error	Parameter error • Restore the factory settings. • If the error is still present: change the main PCB. PCB settings cannot be read: • Configure CN1 / CN2 depending on the output of the outdoor unit installed (CNF menu). • Check the correct parameter settings.
H02.05	CSU / CU mismatch	CSU does not match CU type • Software change (software number or version parameter inconsistent with the memory).
H02.09	Partial block	Partial device blocking recognized **BL** input on the main PCB connection block open: • Check the contact on the **BL** input. • Check the wiring. • Check parameters AP001 and AP100.
H02.10	Full block	Full device blocking recognised **BL** input on the main PCB connection block open: • Check the contact on the **BL** input. • Check the wiring. • Check parameters AP001 and AP100.
H02.23	System flow error	System water flow error active Flow problem Insufficient flow: open a radiator valve. The circuit is clogged: • Check that the filters are not obstructed and clean them if necessary. • Clean and flush the installation. No circulation: • Check that the valves and thermostatic valves are open, • Check that the pump is working, • Check the wiring, • Check the pump supply: if the pump does not work, replace it. Too much air: completely vent the indoor unit and the installation for optimum running. Incorrect wiring: check the electrical connections. Flow rate sensor: • Check the electrical connections and the direction of the flow rate sensor (arrow to the right). • Replace the flow rate sensor if necessary.
H02.25	ACI error	**Titan Active System** short-circuited or on an open circuit • Check the connection cable. • Check that the anode has not short-circuited and is not broken.

Code	Message	Description
H02.36	Funct device lost	Functional device disconnected No communication between the main PCB and the additional circuit PCB: • Check the connection of the power supply cable between the PCBs. • Check the connection of the **BUS** cable between the PCBs. • Run automatic detection.
H02.37	Uncritic device lost	Non-critical device disconnected No communication between the main PCB and the additional circuit PCB: • Check the connection of the power supply cable between the PCBs. • Check the connection of the **BUS** cable and the PCBs. • Run automatic detection.
H02.60	Unsupported function	Zone does not support the selected function
H06.43	DIP switch	Interface board DIP switch configuration error **Error code shown on the digital display of the outdoor unit: E3, E4, H5, H9**
H06.01	HP unit failure	Heat pump unit failure occurred **Error code shown on the digital display of the outdoor unit: E3, E4, H5, H9**
H06.06	BL CompHighPressure	A high pressure fault has stopped the compressor.
H06.07	BL CompLowPressure	A low pressure fault has stopped the compressor. **Error code shown on the digital display of the outdoor unit: P0, HP** • The system's refrigerant level is too low. Add the appropriate quantity. • In heating or DHW mode, the outdoor heat exchanger is dirty or clogged. Clean the exchanger. • The water flow rate is too low in cooling mode. Increase the water flow rate.
H06.17	DeltaT CH max limit	The delta temperature on the central heating side exceeds the maximum overshoot **Error code shown on the digital display of the outdoor unit: P5** • Check whether the water filter needs cleaning. • Make sure that there is no air in the system (deaeration). • Check the water pressure. The water pressure must be above 1 bar (0.1 MPa) (at low temperature). • Check that the pump's speed setting is the highest speed. • Make sure that the expansion vessel is not broken. • Check that the resistance in the hydraulic circuit is not too high for the pump.
H06.21	Tret heat pump	Heat pump return temperature sensor error • Check the wiring between the EHC–16 PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H06.22	Heating error	Heating operation error
H06.23	Refr pressure	Refrigerant pressure sensor error **Error code shown on the digital display of the outdoor unit: H8** • Check the wiring between the PCB and the sensor. • Check that the sensor has been fitted correctly. • Reconnect the sensor connector, if necessary. • Check the ohmic value of the sensor. • Replace the sensor if necessary.

Code	Message	Description
H06.24	Refr high pressure	The refrigerant high pressure protection is active **Error code shown on the digital display of the outdoor unit: P1** Heating/DHW mode: • The water flow rate is low, the water temperature is high. If there is air in the water system, bleed the air. • The water pressure is below 0.1 MPa: add water to the circuit until the pressure is between 0.15 and 0.2 MPa. • The refrigerant level is too high. Adjust the quantity of refrigerant. • The electric expansion valve is locked or the winding connector is loose. Tap the valve body and connect/disconnect the connector several times to check that the valve is working correctly. Fit the winding in the correct position. DHW mode: the water tank's heat exchanger is smaller. Cooling mode: • The heat exchanger cover has not been taken off: remove the cover • The heat exchanger is dirty or clogged. Clean the heat exchanger.
H06.25	Tflow heat pump	Heat pump flow temperature sensor error • Check the wiring between the EHC–16 PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H06.26	HP liquid temp	Heat pump liquid temperature sensor error **Error code shown on the digital display of the outdoor unit: H2** • Check the wiring between the EHC–16 PCB and the sensor. • Check that the sensor has been fitted properly. • Check the Ohmic value of the sensor. • Replace the sensor if necessary.
H06.27	Frost protection	The heat pump frost protection is activated
H06.28	Comm IDU - ODU	Communication error between the indoor unit and outdoor unit **Error code shown on the digital display of the outdoor unit: E2** • The main PCB B and the main control PCB of the hydraulic module are not connected. Connect the wire. • Check the value of signal HM024. If the value of HM024 is less than 75%, the communication errors are too severe. It is essential to use a shielded communication cable. If there is a strong magnetic field or strong interference, (lifts, powerful transformers), add a barrier to protect the unit or move the unit to another location. 1. Switch off the outdoor unit and the indoor unit. 2. Wait 3 minutes for the outdoor unit capacitors to discharge. 3. Switch on the indoor unit then the outdoor unit.
H06.29	ODU-interface	Mismatch between the outdoor unit and the interface board • Configure CN1 / CN2 depending on the output of the outdoor unit installed.
H06.30	ODU temperature	Outdoor unit temperature error **Error code shown on the digital display of the outdoor unit: P4** • The discharge temperature sensor connector is loose. Reconnect it. • The discharge temperature sensor connector is wet or contains water. Drain the water, dry the connector and add waterproof adhesive. • The discharge temperature sensor is faulty. Replace it.
H06.31	ODU temp sensor	Outdoor unit temperature sensor error • Check the wiring between the main PCB and the sensors. • Check that the sensors have been fitted correctly. • Check the Ohmic value of the sensors. • Replace the sensors if necessary.
H06.32	ODU temp sensor	Outdoor unit temperature sensor error • Check the wiring between the main PCB and the sensors. • Check that the sensors have been fitted correctly. • Check the Ohmic value of the sensors. • Replace the sensors if necessary.

Code	Message	Description
H06.33	ODU heat sink temp	Outdoor unit heat sink temperature error (heat sink = radiator) **Error code shown on the digital display of the outdoor unit: C7**
H06.34	ODU power module	Outdoor unit power module is functioning incorrectly **Error code displayed on the outdoor unit digital display: bH, H4, P6, L0, L1, L2, L4, L5, L7, L8, or L9** • The power supply voltage of the unit is low, increase the power supply voltage to the required range. • The space between the units is too narrow for heat exchange. Increase the space between the units. • The heat exchanger is dirty or clogged. Clean the exchanger. • The fan is not running. The fan motor or the fan is broken. Replace it. • The refrigerant level is too high. Adjust the quantity of refrigerant. • The water flow rate is low, there is air in the system or the pump stroke is insufficient. Release the air and reselect the pump. • The water outlet temperature sensor is loose or broken, reconnect it or replace it. • The wires or screws on the module are loose. Reconnect the wires and tighten the screws. The thermally conductive adhesive has dried out or has fallen off. Add a little thermally conductive adhesive. • The wire connection is loose or has fallen off. Reconnect the wire. • The inverter module board is faulty, replace it. • If the control system is operating correctly, the compressor is faulty. Replace it. • The stop valves are closed, open them.
H06.35	ODU superheat	Outdoor unit superheat function error
H06.36	Fan motor	Outdoor unit fan motor error **Error code shown on the digital display of the outdoor unit: H6, HE or HH** • A strong wind is blowing against the fan, making it turn in the opposite direction. Reorient the unit or shelter it to prevent the wind from blowing against the fan. • The fan motor is broken, replace it.
H06.37	Overheat protection	Outdoor unit overheat protection is activated
H06.38	ODU pressure	Outdoor unit pressure error
H06.39	ODU overcurrent	Outdoor unit compressor overcurrent **Error code shown on the digital display of the outdoor unit: P3** • See possible causes and action list for code H06.24. • The power supply voltage of the unit is low. Increase the power voltage to the required range.
H06.40	ODU current sensor	Outdoor unit current sensor error
H06.41	ODU Tinl water	The outdoor unit inlet water temperature error
H06.42	ODU refrigerant	Outdoor unit refrigerant error
H06.43	DIP switch	Interface board DIP switch configuration error interface panel = EHC–16 PCB
H06.53	Tambient air minimum	Ambient air temperature is below the allowed minimum
H06.58	HP outdoor temp	Heat pump outdoor temperature sensor error **Error code shown on the digital display of the outdoor unit: E6**
H06.59	HP suction temp	Heat pump compressor suction temperature sensor error **Error code shown on the digital display of the outdoor unit: E9** • The connector of sensor Th is loose. Reconnect it. • The connector of the temperature sensor Th is wet or contains water. Drain the water, dry the connector and protect with waterproof sealant • The temperature sensor Th is faulty. Replace it.

Code	Message	Description
H06.60	HP inverter voltage	The heat pump inverter voltage is too low **Error code shown on the digital display of the outdoor unit: F1** • Check the power supply. • If the power supply is correct check the LED indicator light is functioning. Check the PN voltage. If it is 380 V the main PCB is usually the issue. If the LED indicator light is off, switch off the power supply and check the IGBT and dioxides. If the voltage is not correct, the inverter board is damaged. Replace it. • If there is no problem with the IGBT this means there are no problems with the inverter board. Check the bridge rectifier to check if the bridge voltage is correct. (Same method as the IGBT. Disconnect the power supply and check if the dioxides are damaged. • If F1 is displayed when the compressor starts up, the main PCB is likely to be the problem. If F1 is displayed when the fan starts up, the inverter board is likely to be the problem.
H06.61	HP supply voltage	The heat pump power supply voltage is out of range **Error code shown on the digital display of the outdoor unit: H7** • Check the power supply input is in the available range. • Switch off and on again quickly several times. The unit must remain off for more than 3 minutes before being switched back on. • The main PCB circuit is faulty. Replace the main PCB.
H06.62	HP discharge temp	Heat pump compressor discharge temperature sensor error **Error code shown on the digital display of the outdoor unit: EA** • See possible causes and action list for code H06.24. • The temperature sensor TWout is loose. Reconnect it. • The temperature sensor T1 is loose. Reconnect it. • The temperature sensor T5 is loose. Reconnect it. • If the error appears three times in less than two hours, restart the heat pump to reset the error.
H06.63	HP EEPROM error	Heat pump inverter module EEPROM error **Error code shown on the digital display of the outdoor unit: HF** • Error in the EEPROM parameter, rewrite EEPROM data. • The part in the EEPROM chip is broken. Replace it. • The main PCB is broken. Replace it.
H06.64	HP inverter com	Communication error between the outdoor main control unit and the inverter module **Error code shown on the digital display of the outdoor unit: H1** • If there is a power supply connected to the PCB and to the drive board. Check whether the PCB LED is on or off. If the LED is off, reconnect the power supply wire. • If the LED is on, check the wire connection between the main PCB and the drive PCB. If the wire is loose or broken, reconnect the wire or replace it. • Fit a new main PCB or drive board.
H06.65	HP high temp cooling	HP refrigerant outlet temperature is too high in cooling mode **Error code shown on the digital display of the outdoor unit: Pd** • The heat exchanger cover has not been taken off. Remove it. • The heat exchanger is dirty or clogged. Clean the exchanger. • There is insufficient space around the unit for heat exchange. • The fan motor is broken. Replace it.
H06.66	HP gas temp	Heat pump gas temperature sensor error **Error code shown on the digital display of the outdoor unit: H3** • Check the sensor resistance • The connector for sensor T2B is loose. Reconnect it. • The connector for sensor T2B is wet or contains water. Drain the water and dry the connector. Add a waterproof adhesive. • Sensor T2B is faulty, replace it with a new sensor.

Code	Message	Description
H06.67	ODU return high flow	The heat pump temperature is higher than the flow temperature in the outdoor unit **Error code shown on the digital display of the outdoor unit: PP** • Check the resistance of the two Tw_out - Tw_in sensors • Check the position of the two sensors. • The water inlet/outlet sensor (TWJn/TW_out) is broken, replace it with a new sensor. • The 4-way valve is jammed. Restart the unit again to allow the valve to change the direction. • The 4-way valve is broken, replace it with a new valve.
H06.68	ODU air temp sensor	Refrigerant outlet temperature sensor error in air side of outdoor unit heat exchanger **Error code shown on the digital display of the outdoor unit: E5** • The connector for sensor T3 is loose. Reconnect it. • The connector for sensor T3 is wet or contains water. Drain the water and dry the connector. Add a waterproof adhesive. • Sensor T3 is faulty, replace it with a new sensor.
H06.69	3 phase sequence	Invalid phase sequence in the 3 phase heat pump power supply **Error code shown on the digital display of the outdoor unit: E1** • Check that the power supply cables are correctly connected and avoid phase loss. • Check whether the connections of the neutral and live wires have been reversed.
H06.75	ODU flow error	Water flow error active in the outdoor unit **Error code shown on the digital display of the outdoor unit: E0 or E8** • Check whether the water filter needs cleaning. • Make sure that there is no air in the system (deaeration). • Check the water pressure. The water pressure must be greater than 1 bar (0.1 MPa). • Check that the pump's speed setting is the highest speed. • Make sure that the expansion vessel is not broken. • Check that the resistance in the hydraulic circuit is not too high for the pump. • If this error occurs during operation in Defrost mode (when heating spaces or domestic water), make sure that the power supply to the backup electric heater is correctly cabled and the fuses are not blown. • Check that the pump fuse and the PCB fuse are not blown. • The electric circuit is short circuited or open. Reconnect the wire correctly. • The water flow rate is too low. • The water flow rate control unit is faulty, it is continuously open or closed. Replace it.
H06.76	ODU return temp err	Outdoor unit return temperature sensor error **Error code shown on the digital display of the outdoor unit: Ed** • Check the sensor resistance • The connector for the Tw_in sensor is loose. Reconnect it. • The connector for the Tw_in sensor is wet or contains water. Drain the water and dry the connector. Add a waterproof adhesive • The Tw_in sensor is faulty. Replace it with a new sensor.
H06.77	ODU EEPROM error	EEPROM error in hydronic system main PCB in the outdoor unit **Error code shown on the digital display of the outdoor unit: EE** • The EEprom parameter is incorrect. Rewrite the EEprom data. • The EEprom chip is broken. Replace it with a new EEprom chip. • The main control PCB for the hydraulic module is broken. Replace it with a new PCB.
H06.78	ODU internal com Err	Communication error between refrigerant system and hydronic system main PCB **Error code shown on the digital display of the outdoor unit: H0** • The cable is not connecting the main PCB B and the main control PCB of the hydraulic module. Connect the cable. • The communication cable order is incorrect. Reconnect the cables in the correct order. • There is significant magnetic or electrical interference caused by lifts or large electrical transformers. Add shielding to protect the unit or move the unit.

Code	Message	Description
H06.79	ODU flow temp err	Outdoor unit flow temperature sensor error **Error code shown on the digital display of the outdoor unit: HA** • The connector for sensor Tw_out is loose. Reconnect it. • The connector for sensor Tw2 is loose. Reconnect it. • The connector for sensor Tw2 is wet or contains water. Drain the water and dry the connector. Add a waterproof adhesive. • Tw2 sensor is faulty. Replace it.
H06.80	HE frost protection	ODU water side heat exchanger anti-freeze protection **Error code shown on the digital display of the outdoor unit: Pb** The unit will resume normal operation.
H06.81	Evaporator error	ODU water side heat exchanger anti-freeze protection

A lock-out code signals a major anomaly affecting the heating system. The heating system is shut down as the safety conditions are not fulfilled.

Two operations are necessary for the system to resume normal operation:

1. Remove the causes of the anomaly.
2. Acknowledge the error message manually on the user interface.

Tab.58 List of permanent faults

Code	Message	Description
E00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary
E00.01	Flow temp sensor shorted or above range	Flow temperature sensor is either shorted or measures a temperature above range • Check the wiring between the main PCB and the sensor • Check that the sensor has been correctly fitted • Check the Ohmic value of the sensor • Replace the sensor if necessary
E02.13	Blocking input	Blocking input of the control unit from device external environment Input **BL** open. • Check the wiring • Check the component connected to the **BL** contact • Check the component connected to the AP001 and AP100 contact
E02.24	System flow lock-out	System water flow lock-out active
E06.03	Locking HydrauBackup	Lock-out hydraulic backup

9 Decommissioning

9.1 Decommissioning procedure

To decommissioning the control unit temporarily or permanently:

1. Isolate the power supply.
2. Disconnect the control unit from the heat pump.

10 Disposal

10.1 Disposal and recycling

Fig.84 Recycling

MW-3000179-03

The control unit is composed of multiple components made from various different materials. These include steel, plastics, aluminium, rubber.

These materials may be highly pollutant. This means that the control unit must be disposed of correctly by contacting staff at the nominated disposal facility or by taking it to a centre that is authorised to dispose of bulky waste (domestic appliances).

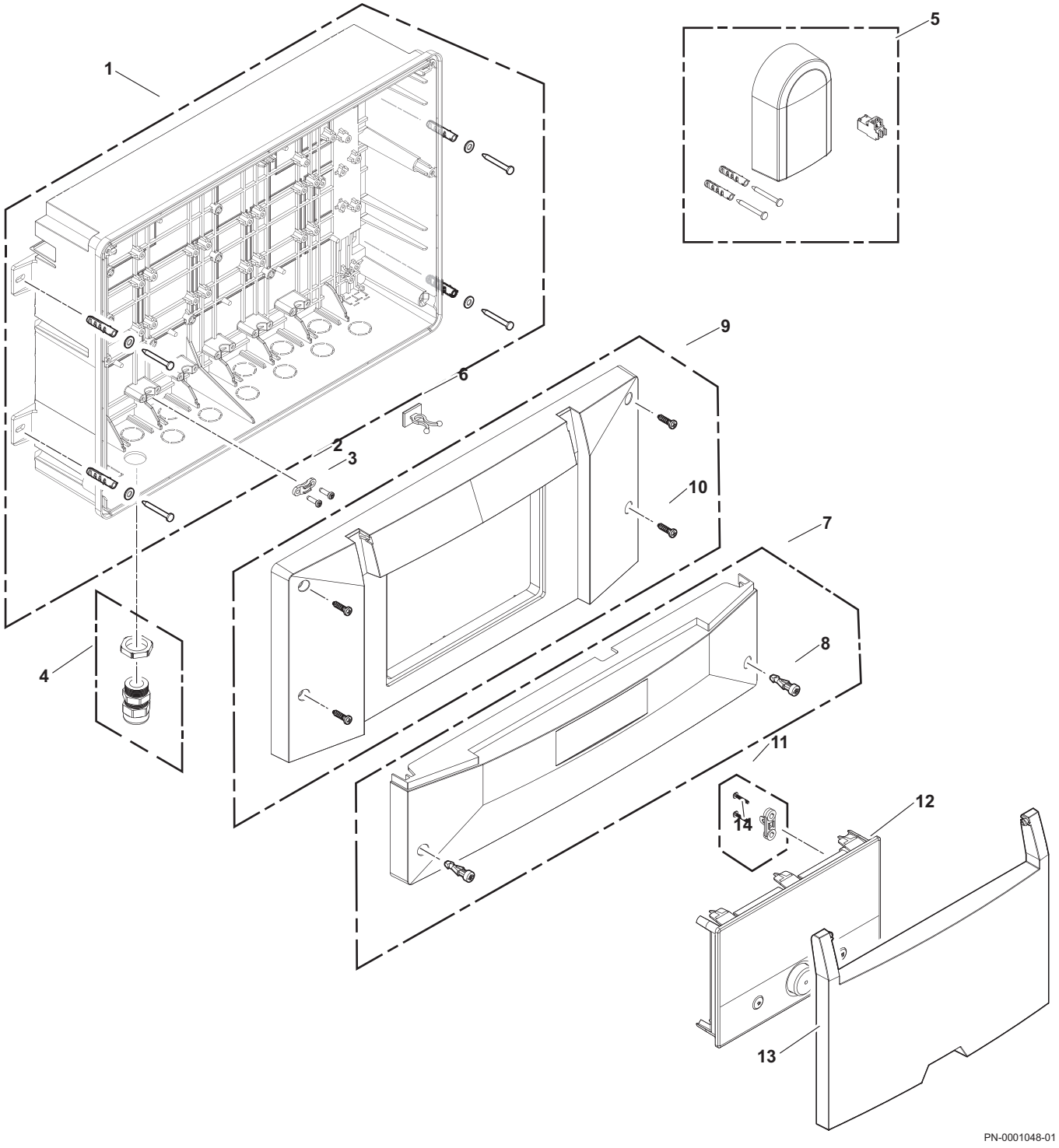
Warning
Removal and disposal of the control unit must be carried out by a competent person. This must be done in accordance with local and national regulations.

11 Spare parts

11.1 Exploded views

11.1.1 Casing

Fig.85 Casing parts

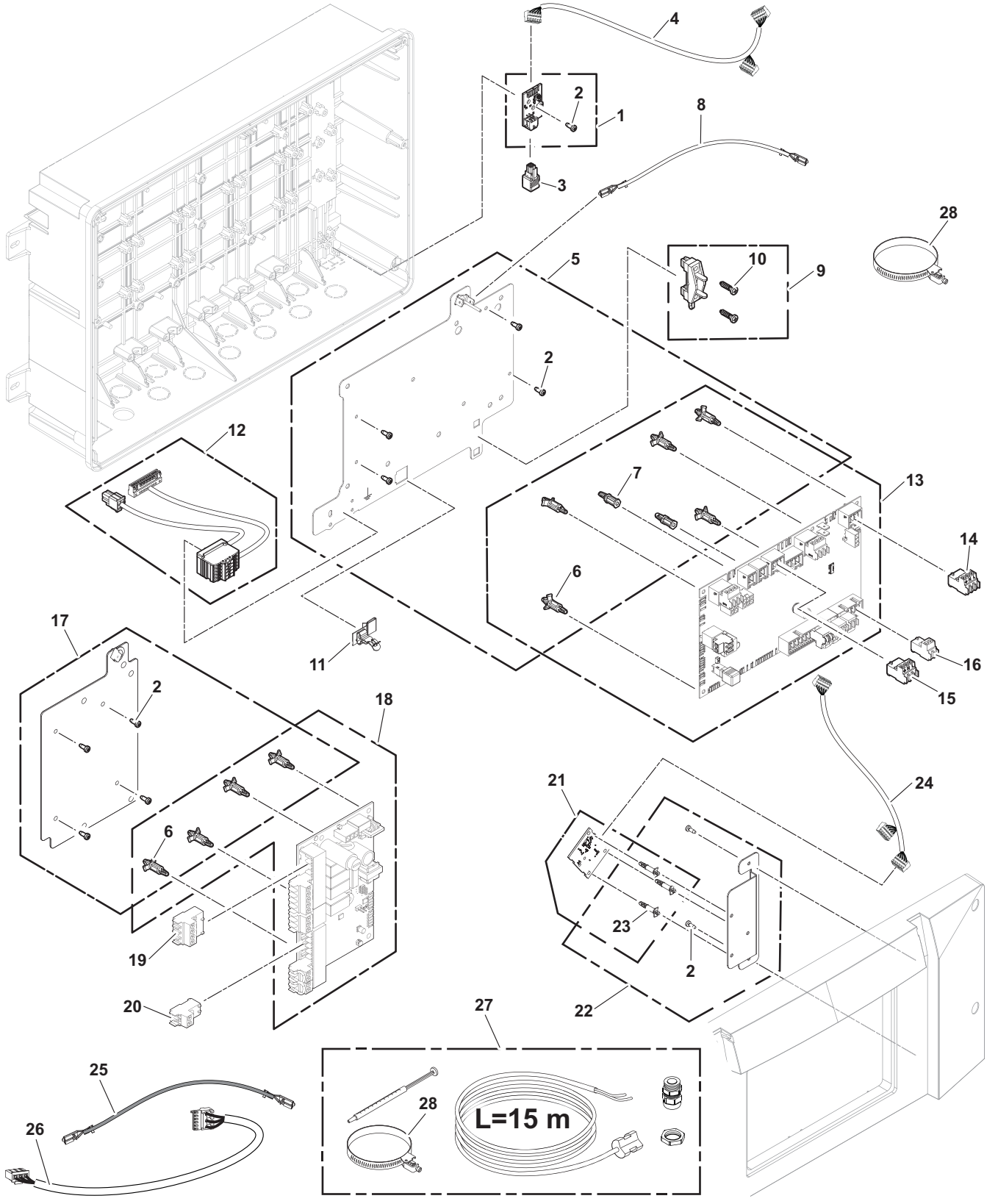


Tab.59 Casing parts

Marker	Reference	Description
1	7845892	Box
2	7845147	Cable clamp (5 pieces)
3	S59367	Screw KB35x12 (10 pieces)
4	7788945	Cable gland (5 pieces)
5	S100316	Outdoor Temperature Sensor
6	7845160	Cable clip twist lock 9 mm (5 pieces)
7	7886571	Bottom front cover Baxi
8	7788940	Quarter turn fastener (10 pieces)
9	7845894	Upper front cover
10	7788941	Screw 40x16 (10 pieces)
11	7845144	Cable clamp
12	7897373	Control panel MK2.2
13	7788939	Cover HMI
14	7860964	Screw EJOT WN 5451 25X15 (10 pieces)

11.1.2 Wire harnesses and PCBs

Fig.86 Harness parts



Tab.60 Harness parts

Marker	Reference	Description
1	7845954	CB-21 PCB
2	S62185	Screw KB30x8 (10 pieces)
3	7845899	L-BUS terminator
4	7845142	L-BUS wire harness main PCB - CB-21
5	7845125	Sheet metal PCB support
6	7843603	PCB holder 100-0 (10 pieces)
7	7843622	PCB holder 100-2 (10 pieces)
8	7845146	Earth wire 65 mm
9	7845145	Cable clamp
10	7788941	Screw 40x16 (10 pieces)
11	7845122	Earthing clip BUS cable
12	7845140	L-BUS wire harness outdoor temperature sensor
13	7902234	EHC–16 PCB
14	7845092	3-pin connector power supply
15	7845093	3-pin RAST5 connector
16	7741305	Connector for DHW temperature sensor
17	7845166	Sheet metal second circuit kit PCB
18	7845167	Second circuit kit PCB
19	7845094	4-pin connector (mixing valve)
20	7845095	2-point connector (TFLOW sensor)
21	7845123	GTW-22 Bluetooth Smart PCB
22	7845143	Sheet metal GTW-22 PCB support
23	7843604	PCB holder 3.18 (10 pieces)
24	7845137	L-BUS wire harness Bluetooth Smart PCB
25	7845187	Earth wire 380 mm
26	7845184	Power supply cable PCB
27	7901557	Temperature sensor NTC 10 K (15 meter)
28	7877113	Clamp nemo 20-47 (5 pieces)

11.2 Notes

Original instructions - © Copyright

FOR UNITED KINGDOM

Baxi Customer Support

0344 736 0092
Please note calls may be monitored or recorder

Opening hours
Monday - Friday, 8.00am-6.00pm
Saturdays and Bank Holidays, 8.30am-2.00pm
Please note calls may be recorded for training and monitoring purposes

baxi.co.uk

Register now to activate your warranty:
https://warranty.baxi.co.uk/

For the warranty to be maintained, please make sure...
1. Warranty is registered within 30 days
2. The appliance has an annual service

For full terms and conditions, visit www.baxi.co.uk/terms. Failure to adhere to terms and conditions will void your manufacturer's warranty.

Baxi
Brooks House,
Coventry Road,
Warwick, CV34 4LL

FOR IRELAND

BDR Thermea trading as Baxi Ireland

00353 (0)1 4590870
Please note calls may be monitored or recorder

Opening hours
Monday - Thursday : 9.00am-12.00am, Friday : 8.00am-4.00pm
In Warranty cover on Saturdays : 9.00am-12.00am October - March.
We are closed on Bank Holidays, Christmas Day and New Year's Day.
Please note calls may be recorded for training and monitoring purposes

baxi.ie

Register now to activate your warranty:
https://www.baxi.ie/support/warranty

For the warranty to be maintained, please make sure...
1. Warranty is registered within 30 days
2. The appliance has an annual service

For full terms and conditions, visit www.baxi.co.uk/terms. Failure to adhere to terms and conditions will void your manufacturer's warranty.

BDR Thermea trading as Baxi Ireland
Unit F 586, Calmount Park,
Calmount Road,
Ballymount, Dublin 12, Ireland

Please ensure the appliance is installed in accordance with these installation instructions and that you adhere to the Building Regulations.

CE