



MW-2000881-02



MID control box equipped with a HMI T-control
for Gas 120 ACE boiler

Dear Customer,

Thank you very much for buying this appliance.

Please read through the manual carefully before using the product, and keep it in a safe place for later reference. In order to ensure continued safe and efficient operation we recommend that the product is serviced regularly. Our service and customer service organisation can assist with this.

We hope you enjoy years of problem-free operation with the product.

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1 Safety

1.1 General safety instructions



Danger

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Children must not carry out any unsupervised cleaning or maintenance operations.

1.1.1 Safety instructions for the installer



Danger

If you smell gas:

1. Do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, light, motor, lift, etc.).
2. Shut off the gas supply.
3. Open the windows.
4. Locate the probable leak and seal it immediately.
5. If the leak is before the gas meter, contact the gas supplier.



Danger of electric shock

Before any work, switch off the mains supply to the boiler.



Danger

If you smell flue gases:

1. Switch off the appliance.
2. Open the windows.
3. Locate the probable source of the flue gas leak and fix it immediately.



Warning

After any maintenance or repair work, check the entire heating installation to ensure that there are no leaks.



Warning

The condensation drain must not be changed or sealed. If a condensate neutralisation system is used, the system must be cleaned regularly in accordance with the instructions provided by the manufacturer.



Caution

Do not touch the flue gas pipes. Depending on the boiler settings, the temperature of the flue gas pipes can rise to over 60°C.



Caution

Do not touch radiators for long periods. Depending on the boiler settings, the temperature of the radiators may exceed 60 °C.



Caution

Take precautions with the domestic hot water. Depending on the boiler settings, the domestic hot water temperature may exceed 65°C.

1.1.2 Safety instructions for the user



Danger

If you smell gas:

1. Do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, light, motor, lift, etc.).
2. Shut off the gas supply.
3. Open the windows.
4. Evacuate the property.
5. Contact a qualified professional.



Danger

If you smell flue gases:

1. Switch off the appliance.
2. Open the windows.
3. Evacuate the property.
4. Contact a qualified professional.



Danger of electric shock

Before any work, switch off the mains supply to the boiler.



Caution

Do not touch the flue gas pipes. Depending on the boiler settings, the temperature of the flue gas pipes can rise to over 60°C.



Caution

Do not touch radiators for long periods. Depending on the boiler settings, the temperature of the radiators may exceed 60 °C.



Caution

Take precautions with the domestic hot water. Depending on the boiler settings, the domestic hot water temperature may exceed 65°C.

1.2 Recommendations



Danger

For safety reasons, we recommend fitting smoke and CO₂ detectors and alarms at suitable places in your home.



Caution

- The boiler must always be connected to the protective earthing.
- Earthing must comply with the prevailing installation standards.
- Earth the appliance before making any electrical connections.

For the type and calibre of the protective equipment, refer to the chapter Electrical Connections in the Installation and Service Manual.



Caution

If a power cord comes with the appliance and it turns out to be damaged, it must be replaced by the manufacturer, its after sales service or persons with similar qualifications in order to obviate any danger.



Caution

A disconnection device must be fitted to the fixed wiring in accordance with the installation rules.



Caution

Power the appliance via a circuit that includes an omnipolar switch with contact opening distance of 3 mm or more.

**Caution**

Drain or have the boiler and heating system drained by a qualified professional if the home is left empty for a long period of time and there is a chance of frost.

**Caution**

Remove the boiler casing only to perform maintenance and repair work. Always put the casing back in place after such work.

**Caution**

To enjoy warranty cover, no modifications must be made to the boiler.

**Caution**

The frost protection function only protects the boiler, not the heating system.

**Caution**

The frost protection function does not work if the boiler is powered off.

**Caution**

The appliance should be switched to Summer or Frost Protection mode rather than be switched off in order to guarantee the following functions:

- Avoidance of pumps blocking
- Frost Protection

**Important**

Respect the minimum and maximum water inlet pressure to ensure correct operation of the boiler: refer to the chapter Technical Specifications.

**Important**

Only qualified professionals are permitted to install the boiler, in accordance with prevailing local and national regulations.

**Important**

- Never remove or cover labels and data plates affixed to the boiler.
- Labels and data plates must be legible throughout the entire lifetime of the boiler. Immediately replace damaged or illegible instructions and warning labels.

**Important**

Keep this document close to the place where the appliance is installed.

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 appliance.
- Install the appliance 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 Symbols used

2.1.1 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.

2.1.2 Symbols used on the appliance

Fig.1

1		1	Alternating current.
2		2	Protective earthing.
3		3	Before installing and commissioning the appliance, carefully read the instruction manuals provided.
4		4	Dispose of used products through an appropriate recovery and recycling structure.
5		5	Caution: danger of electric shock, live parts. Disconnect the mains power prior to carrying out any work.

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3 Technical specifications

3.1 Homologations

3.1.1 Standards & Directives

This product complies with the requirements of the following European directives and standards:

- Standards: EN15502
- Efficiency Directive 92/42/EC
- Low Voltage Directive 2014/35/EU
Generic standard: EN 60335-1
Relevant standard: EN 60335-2-102
- Electromagnetic Compatibility Directive 2014/30/EU
Generic standards: EN 61000-6-3, EN 61000-6-1
Relevant Standard: EN 55014
- Ecodesign Directive
This product conforms to the requirements of European Directive 2009/125/EC on the ecodesign of energy-related products.

In addition to the legal requirements and guidelines, the supplementary guidelines in this manual must also be followed.

Supplements or subsequent regulations and guidelines that are valid at the time of installation shall apply to all regulations and guidelines specified in this manual.



Warning

The appliance must be installed by a qualified professional in accordance with applicable local and national regulations.

3.1.2 Factory test

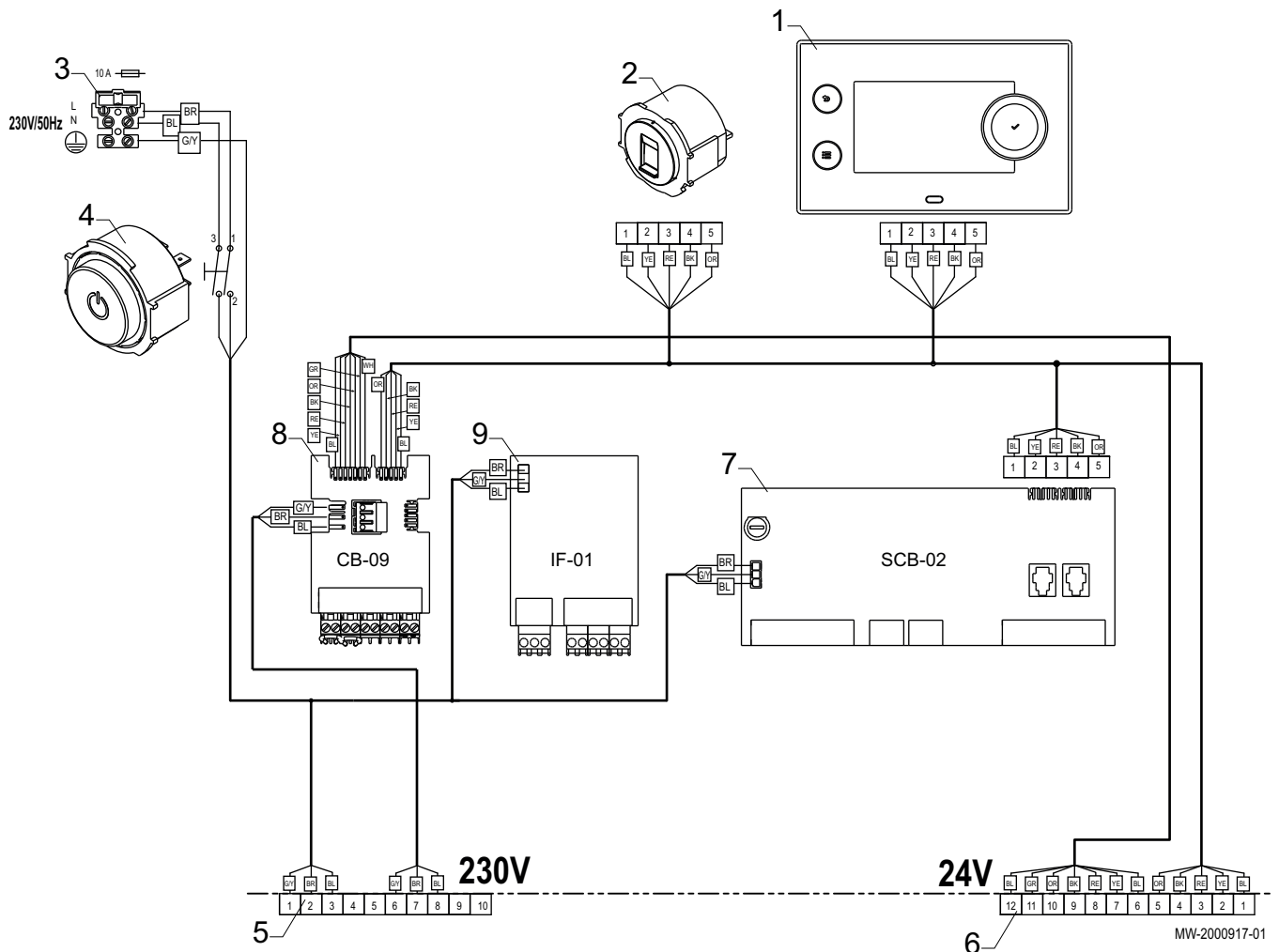
Before leaving the factory, each appliance is tested for the following:

- Electrical tests (components, safety).

3.2 Electrical diagram

3.2.1 Electrical diagram for the MID control unit HMI T-control

Fig.2



- 1 MID control panel HMI T-control
 - 2 **Service** connector, allows the technician to work on the equipment
 - 3 230 V mains power supply connection with 10 A fuse
 - 4 On/Off switch
 - 5 230 V connector, connection with the boiler
 - 6 24 V connector, connection with the boiler
 - 7 SCB-02 PCB
 - 8 CB-09 PCB
 - 9 IF-01 PCB
- BK** Black

- BL** Blue
BR Brown
G/Y Green/Yellow
YE Yellow
OR Orange
GR Green
PI Pink
GY Grey
RD Red
WH White

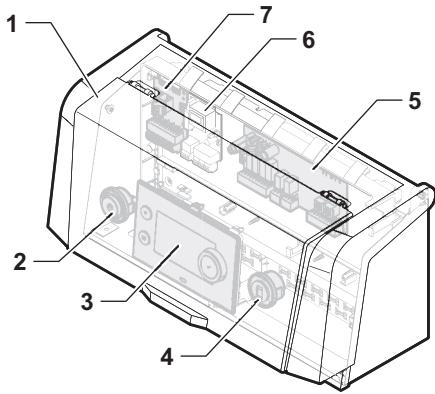
4 Description of the product

4.1 General description

The control box is used to control the operation of a Gas 120 ACE boiler. The box is equipped with a HMI T-control control panel.

4.2 Main components

Fig.3



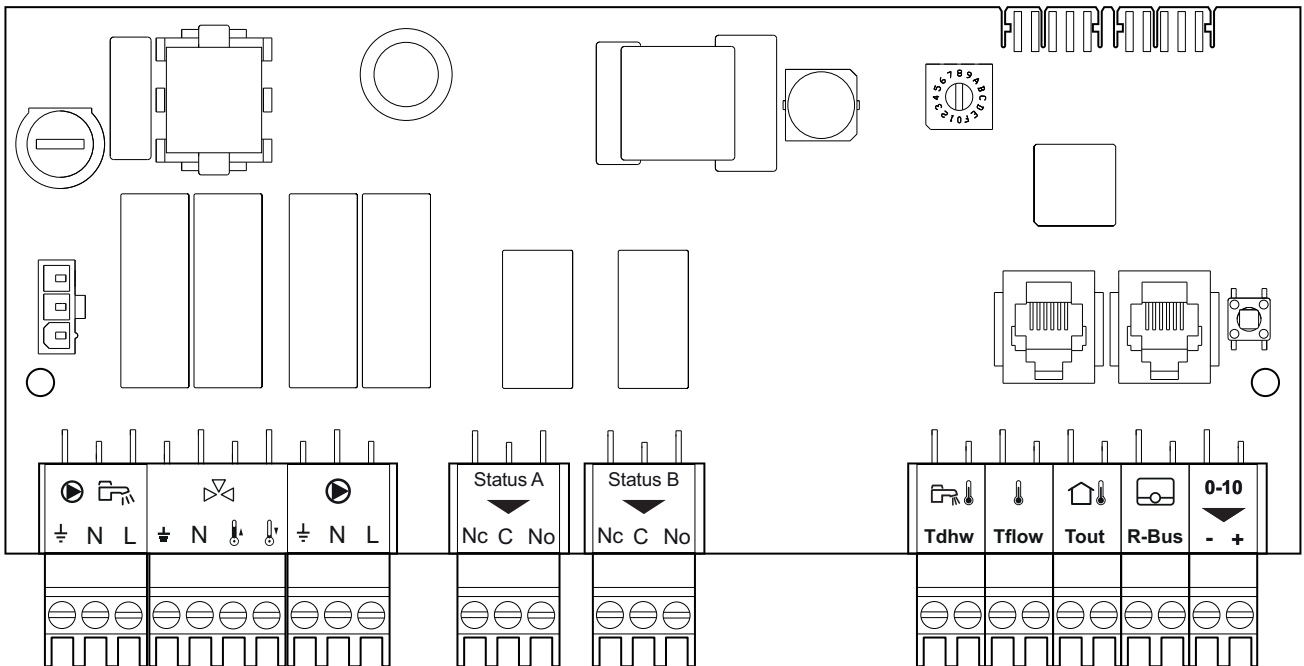
MW-2000918-01

- 1 Protective cover
- 2 On/Off switch
- 3 HMI T-control control panel
- 4 **Service** connector, allows the technician to work on the equipment
- 5 SCB-02 PCB
- 6 IF-01 PCB
- 7 CB-09 PCB

4.3 PCBs

4.3.1 The SCB-02 expansion PCB

Fig.4 SCB-02 PCB



AD-3001313-01

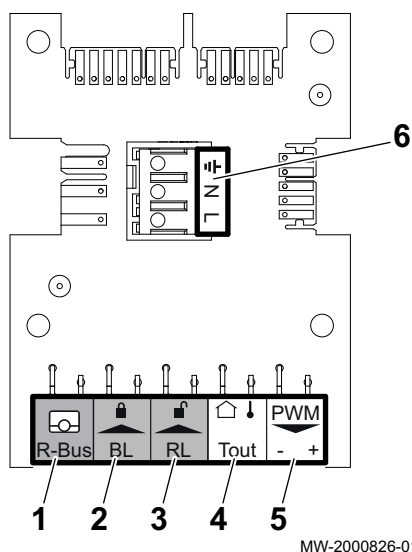
The SCB-02 has the following features:

- Control of a (mixing) zone for heating (or cooling)
- Control of one domestic hot water (DHW) zone
- 0–10 V output connection for a PWM system pump
- Two potential-free contacts for status notifications

Expansion PCBs are automatically recognised by the control unit of the boiler. If expansion PCBs are removed, the boiler will show an error code. To resolve this error, an auto-detect must be carried out after removal.

4.3.2 Description of the CB-09 PCB

Fig.5

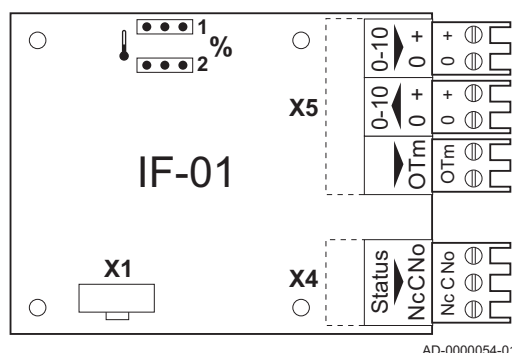


The CB-09 PCB allows additional inputs to be connected as per the following table:

Marker	Connector	Description
1	R-Bus	Not used
2	BL	Boiler frost protection (active if contact open)
3	RL	Release open contact
4	Tout	Not used
5	PWM	Modulating pump control connection
6	X4	Modulating pump power connection

4.3.3 Description of the IF-01 PCB

Fig.6



The IF-01 PCB is factory fitted and allows additional inputs such as a sensor or switch to be connected to the system.

This PCB controls the boiler with the 0-10V signal from an external control system.

Connector	Description
0-10 (input)	The 0-10V signal corresponds to a temperature or power set point, depending on the position of the jumpers
0-10 (output)	Output signal indicating the boiler's operating mode
Status	Boiler fault reporting contact output
OTm	Communication link with the CU-GH-08 PCB



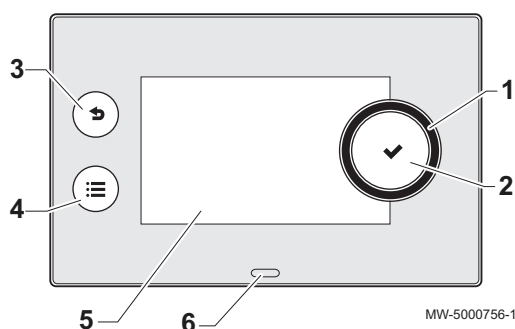
Caution

Do not connect a frost thermostat or room thermostat to the boiler if using the 0-10 V PCB.

4.4 Control panel description

4.4.1 Description of the user interface

Fig.7



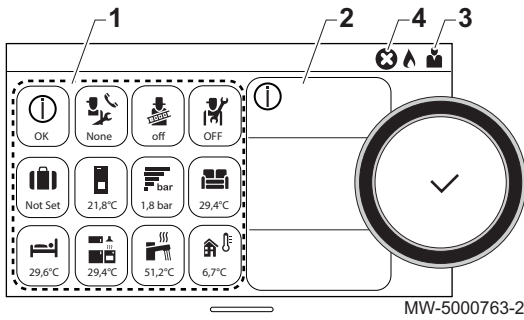
- 1 Rotary knob to select a menu or setting
- 2 Validation button ✓
- 3 Back button ← to return to the previous level or menu
- 4 Main menu button ☰
- 5 Display screen
- 6 LED for status indication:
 - continuous green = normal operation
 - flashing green = warning
 - red fixed = blockage
 - flashing red = lockout

4.4.2 Description of the main screen

This screen is displayed automatically after the appliance is started up.

The screen goes into standby if no key is pressed for five minutes. Press one of the buttons on the control panel to exit standby.

Fig.8



1 Symbols

The selected icon is highlighted.

2 Information on the selected icon

3 Navigation level:

- : Chimney Sweep level
- : User level
- : Installer level

This level is reserved for installers and is protected by an access

code. When this level is active, the icon becomes .

4 error notification: only visible if an error occurs.

Tab.1 Symbols

	User Level		Maintenance message
	Installer Level		Water pressure
	Chimney Sweep level		Outdoor temperature sensor
	Timer programme		Buffer tank
	Timer programme override		Cascade
	Holiday mode		Boiler
	Manual mode		Burner output level
	Eco mode		Burner on
	Frost protection mode		Domestic hot water override
	Zone icons		All zones

4.5 Standard delivery

The package contains:

- A complete control box for a Gas 120 ACE boiler
- Two mounting bolts with two serrated washers
- An outdoor temperature sensor
- A control box installation, user and service manual

4.6 Accessories & options

A detailed list of accessories and options can be found in our catalogue.

5 Installation

5.1 Installation regulations



Caution

The appliance must be installed and maintained by a certified professional in accordance with prevailing statutory texts and codes of practice.

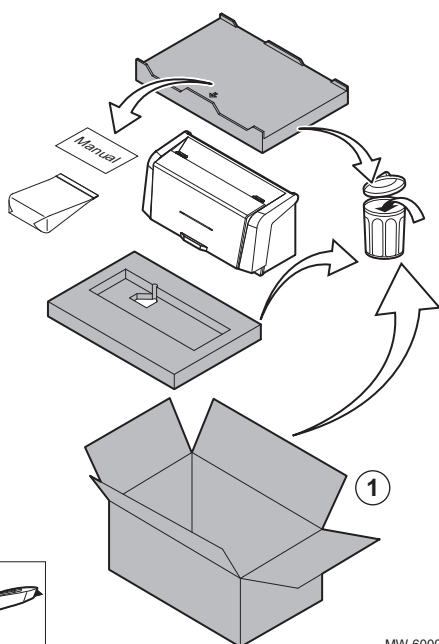
5.2 Unpack and fit the control box



Caution

Wear gloves when handling the control box.

Fig.9



1. Cut and remove the packaging.

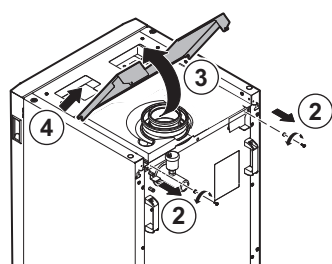


Important

The technical documentation is housed in the protective block.



Fig.10

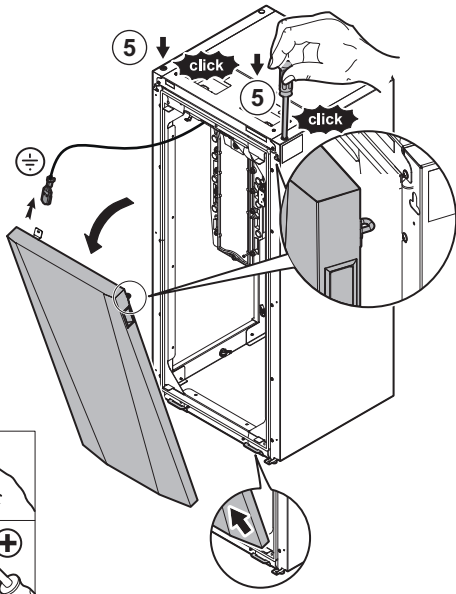


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MW-6000760-01

2. Remove the two screws from the boiler's rear top panel.
3. Lift the top panel.
4. Remove the top panel.

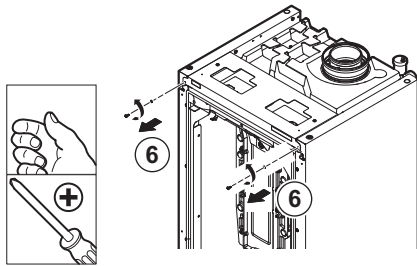
Fig.11



MW-2000680-03

5. Remove the front door.

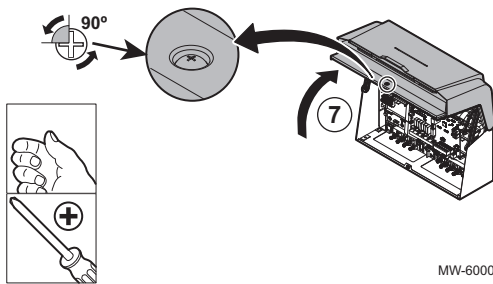
Fig.12



MW-6000762-01

6. Remove the two retaining screws from the front top panel.

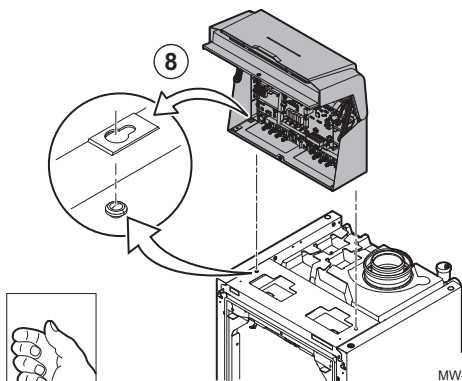
Fig.13



MW-6000763-02

7. Open the control box cover.

Fig.14



MW-6000764-01

8. Align the boiler's tapered interlocks with the notches on the control box.

Fig.15

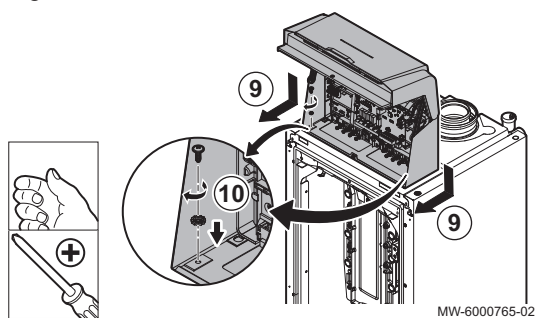


Fig.16

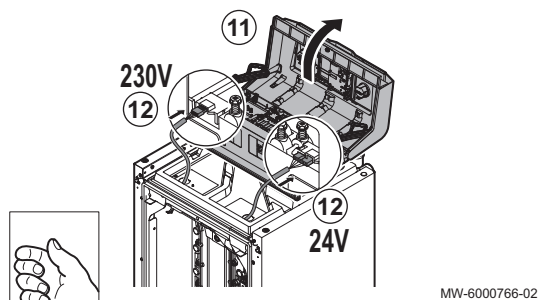


Fig.17

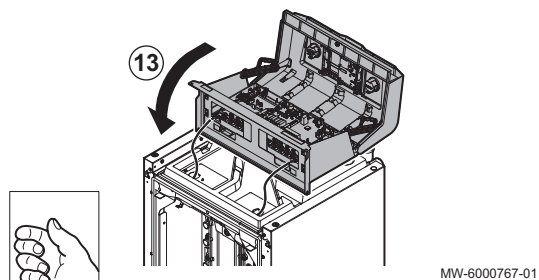


Fig.18

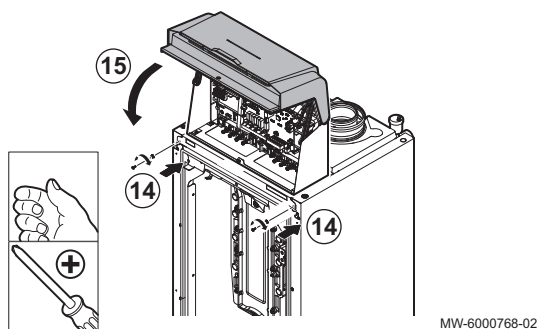
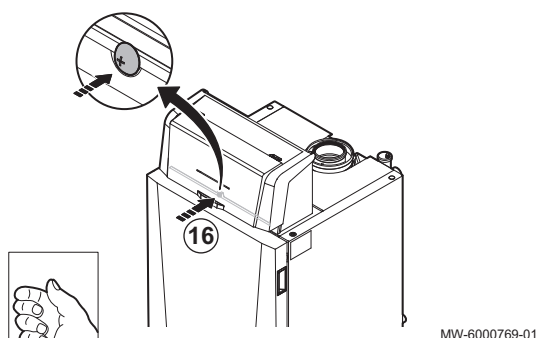


Fig.19



9. Fit the box and slide it forwards.
10. Lock the box using the two screws and toothed washers supplied in the bag with the manual.

11. Tilt the assembly backwards.
12. Connect the two connectors from the boiler to the connectors on the control box.

13. Move the control box back to its original position by tilting it forwards.


14. Lock the control box in position using the two screws and the toothed washers.
15. Close the box cover.

16. Lock the cover by pressing on the screw head.
17. Refit the front door and the rear top panel and refit the two screws and the toothed washers.

5.3 Electrical connections


5.3.1 Recommendations

- Only qualified professionals may carry out electrical connections, always with the power off.
- Earth the appliance before making any electrical connections.
- Power the appliance via a circuit that includes an omni-polar switch with contact opening distance of 3 mm or more.
- When making electrical connections to the mains, respect the polarities.

 **Danger**
 Position the various electrical cables in such a way that they never touch the heating pipes.
 Keep the various electrical cables far enough from the heating pipes so that they cannot be damaged by the effect of the heat.

5.3.2 Power supply

Supply voltage	230 V AC / 50 Hz
----------------	------------------

 **Caution**
 Please ensure the polarities shown on the terminals are followed, i.e live (L), neutral (N) and earth (÷)

5.3.3 Recommended cable cross section

Decide on the cable according to the following information:

- Distance of the appliance from the power source.
- Upstream protection.
- Neutral operating conditions.

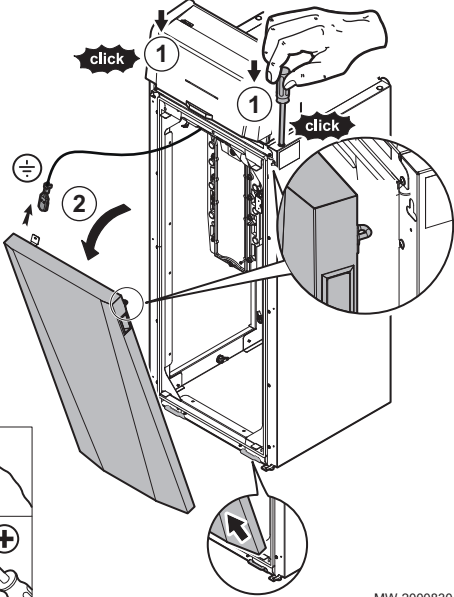
Tab.2 Specifications of the power cable and the power source

Cable cross section	3 x 1.5 mm ²
Curve C (circuit breaker)	10 A
Differential	30 mA

Caution
 Provide a separate power supply for the pump and a power switch, if necessary.
 The output available per outlet is 450 W (2 A, with $\cos \phi = 0.7$) and the inrush current must be less than 16 A. If the load exceeds either of these values, the control must be relayed using a contactor that must in no circumstances be installed in the control panel. The sum of the currents from all outlets must not exceed 5 A.

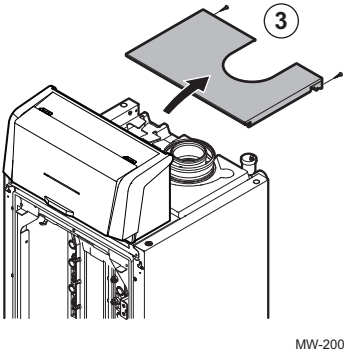
5.3.4 Cable routing and access to the connection terminal blocks

Fig.20



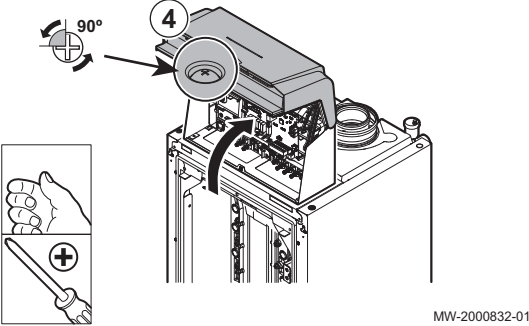
- 1. Unlock the front door.
- 2. Tilt and lift the door to remove it.

Fig.21



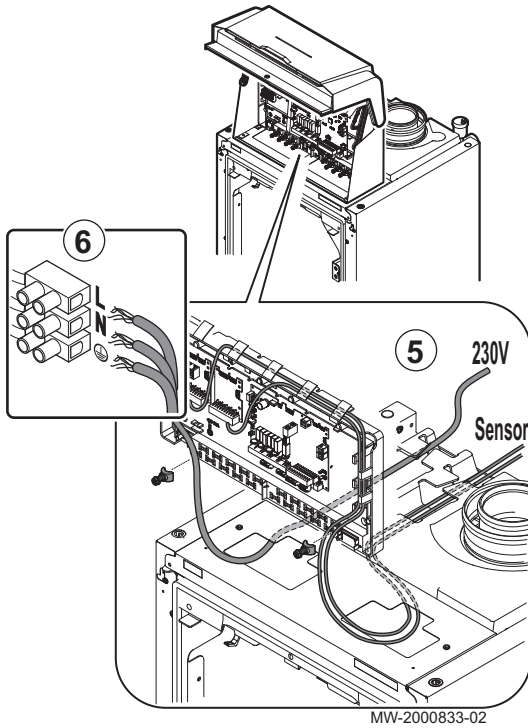
- 3. Remove the two screws and dismantle the rear top panel.

Fig.22



- 4. Unlock and open the cover on the control box.

Fig.23



5. Ensure that the cables are correctly routed and affix the cable(s) using the traction arrester devices.

230 V 230 V circuits (left)
Sensor Sensor circuits (right)



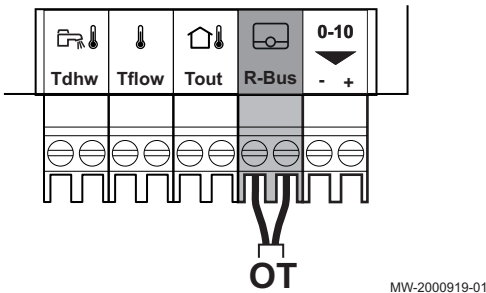
Danger

Separate the sensor cables from the 230 V circuit cables.

6. Connect the boiler's main power supply cable.

5.3.5 Connecting a modulating thermostat

Fig.24 to SCB-02



The boiler is fitted with an R-Bus connection as standard. This connection is also compatible with OpenTherm. This enables the user to connect OpenTherm modulating thermostats (such as iSense Pro) or R-Bus thermostats (such as eTwist) without any further adjustments being made to the appliance. The boiler is also suitable for OpenTherm Smart Power.

1. In the case of a room thermostat: install the thermostat in a reference room.
2. Connect the two-wire cable for the thermostat to the R-Bus terminals for the connector. It does not matter which wire is connected to which terminal block.

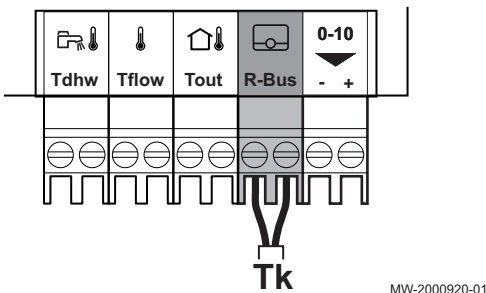


Important

If the domestic hot water temperature can be set on the OpenTherm thermostat, the boiler will supply this temperature, with the value set in the boiler as a maximum.

5.3.6 Connecting an on/off thermostat

Fig.25 to SCB-02

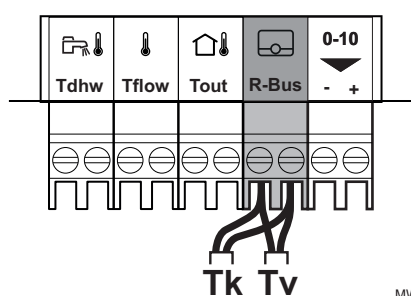


The boiler is suitable for connection to a two-wire on/off room thermostat (Tk).

1. Fit the thermostat in a reference room.
2. Connect the two-wire cable for the thermostat to the **R-Bus** terminals of the connector. It does not matter which wire is connected to which terminal block.

5.3.7 Frost protection combined with on/off thermostat

Fig.26 to SCB-02



MW-2000921-01

When an on/off thermostat is used, the pipes and radiators in a frost-sensitive room can be protected by a frost thermostat. The radiator valve in the frost-sensitive room must be open.

1. Place a frost thermostat (**Tv**) in a frost-sensitive room (e.g. a garage).
2. Connect the frost thermostat (**Tv**) and the on/off thermostat (**Tk**) in parallel to the R-Bus terminals of the connector.

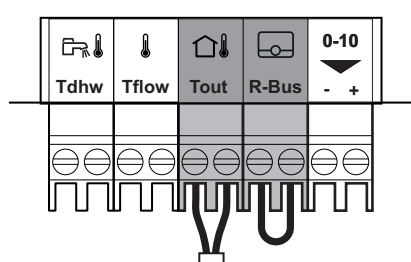


Warning

If a Remeha eTwist or OpenTherm thermostat is used, a frost thermostat cannot be connected in parallel to the R-Bus terminals. In this case, ensure frost protection of the central heating system in combination with an outside sensor.

5.3.8 Frost protection combined with outdoor temperature sensor

Fig.27 to SCB-02



MW-2000922-01

The central heating system can also be protected against frost in combination with an outdoor temperature sensor. The radiator valve in the frost-sensitive room must be open.

1. Connect the outdoor temperature sensor to the **Tout** terminals of the connector.

The frost protection works as follows with an outdoor temperature sensor:

- If the outdoor temperature is lower than +3 °C: heat demand from the boiler.
- If the outdoor temperature is higher than +3 °C: no heat demand from the boiler.

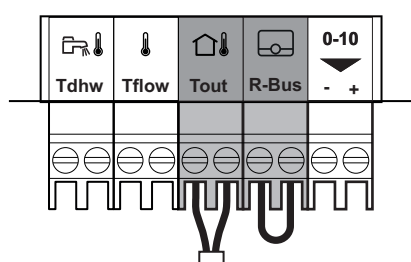


Important

The outdoor temperature before the start of frost protection can be changed with the **AP080** parameter.

5.3.9 Connecting an outdoor temperature sensor

Fig.28 to SCB-02



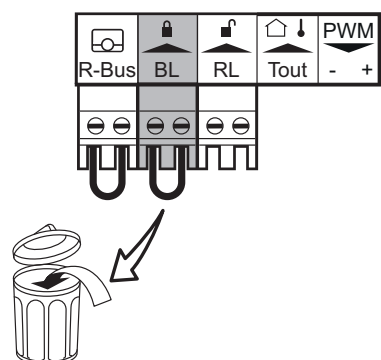
MW-2000922-01

An outdoor temperature sensor (accessory) can be connected to the **Tout** terminals of the connector. If the boiler is equipped with an on/off thermostat, the temperature is controlled using the setpoint of the internal heating curve (**F**). Various parameter settings can be used to change the internal heating curve.

1. Connect the plug from the outdoor temperature sensor to the **Tout** terminal.

5.3.10 Blocking input

Fig.29 to CB-09



MW-2000873-01

The boiler has a blocking input (normally closed contact). This input relates to the **BL** terminals of the connector.

If this contact is opened, the boiler will be blocked or locked out.

Change the function of the input by configuring the **AP001** parameter.

In the case of a cascade assembly, if the blocking input **BL** must block or lock all the boilers in the cascade, it is necessary to wire the **BL** input of all the boilers.

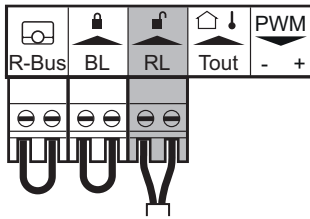


Important

- Remove the bridge if this input is used.
- Only suitable for potential-free contacts.
- It is necessary to respect the polarity (Left - Right) between the **BL** connectors of the different boilers in case of a cascade.

5.3.11 Release input

Fig.30 to CB-09



MW-2000874-01

The boiler has a release input (normally open contact). This input relates to the **RL** terminals of the connection terminal block.

If this contact is closed when there is a heat demand, the boiler will be blocked after a waiting time.

Change the waiting time of the input by configuring the **AP008** parameter.

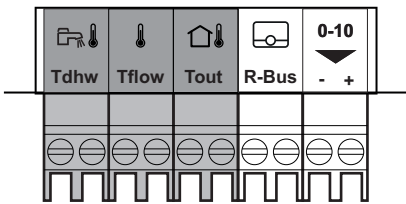


Important

Only suitable for potential-free contacts.

5.3.12 Connecting external sensors

Fig.31



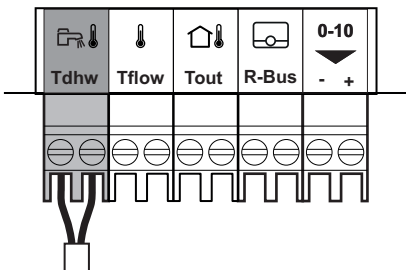
MW-2000932-01

- Tdhw Tank sensor (NTC 10 k Ohm)
- Tflow Boiler flow temperature sensor (NTC 10 k Ohm)
- Tout Outdoor temperature sensor (NTC 10 k Ohm)

The sensor connection contacts are dry contacts.

5.3.13 Connecting a tank sensor or thermostat

Fig.32 to SCB-02



MW-2000923-01

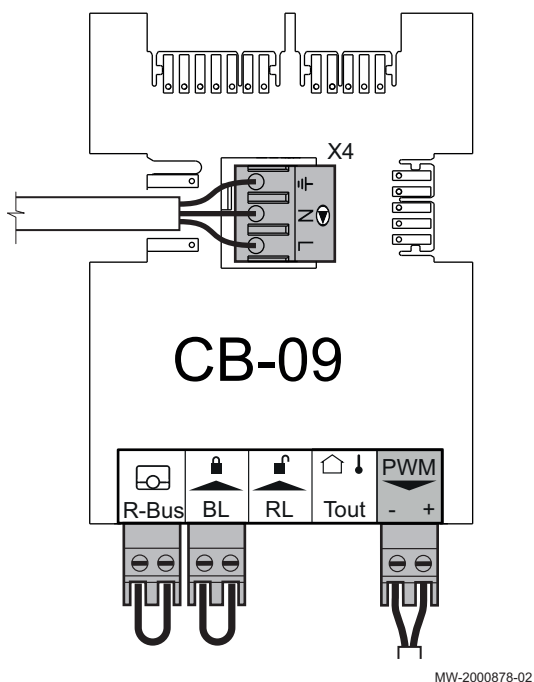
A sensor or thermostat can be connected to the **Tdhw** terminals of the connector.

1. Connect the domestic hot water sensor or the tank thermostat to the **Tdhw** connector.

5.3.14 Connecting a PWM pump

Fig.33 to CB-09

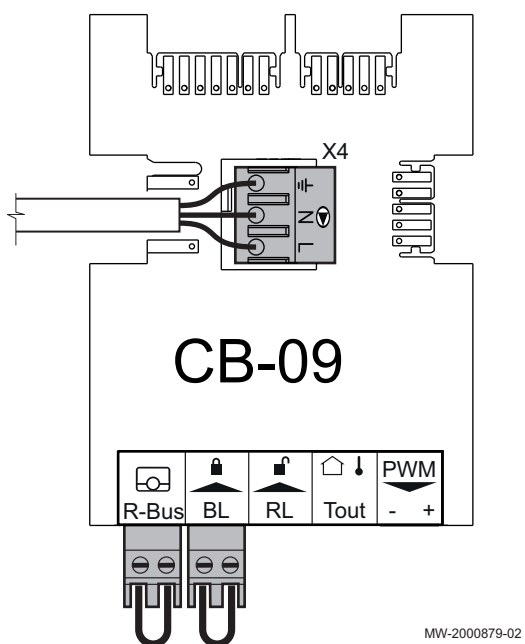
1. Connect the modulating pump to the **X4** terminal for the power section and to the **PWM** terminal for the control section, respecting the pump polarity.



5.3.15 Connecting a standard pump

Fig.34 to CB-09

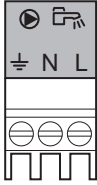
1. Connect the pump to the **X4** terminal on the PCB.



5.3.16 Connecting a domestic hot water (DHW) pump

Connecting a domestic hot water (DHW) pump. The maximum power consumption is 300 VA.

Fig.35 DHW pump connector



AD-4000123-01

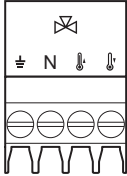
Connect the pump as follows:

- ⏏ Earth
- N Neutral
- L Phase

5.3.17 Connecting a mixing valve

The mixing valve connector can be used to connect a mixing valve (230 VAC) for use in a boiler group (zone).

Fig.36 Mixing valve connector



AD-4000015-03

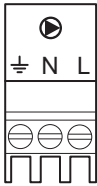
Connect the mixing valve as follows:

- ⏏ Earth
- N Neutral
- ⏏ Open
- ⏏ Close

5.3.18 Connecting a system pump for mix group

Connecting a system pump for mix group (zone) The maximum power consumption is 300 VA.

Fig.37 Pump connector



AD-3001306-01

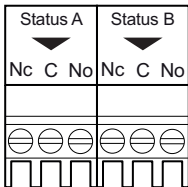
Connect the pump as follows:

- ⏏ Earth
- N Neutral
- L Phase

5.3.19 Connecting status notifications

The two potential-free contacts, **Status**, can be configured as required. Depending on the setting, a particular status can be transmitted by the boiler.

Fig.38 Status notifications



AD-3001312-01

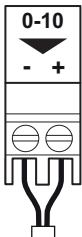
Connect a relais as follows:

- Nc** Normally closed contact. Contact will open when status occurs.
- C** Main contact.
- No** Normally opened contact. Contact will close when status occurs.

Select the desired status notification (setting) using parameter **EP018** and **EP019**.

5.3.20 Connecting 0–10 V output

Fig.39 0–10 V output connector



AD-3001305-01

The **0-10** contact can be used to connect a PWM system pump. The speed of the pump is modulated based on the signal received from the boiler. Depending on the make and type of pump, the pump can be controlled by a 0–10 V or a PWM signal.

Connect the system pump controller to connector **0-10**.

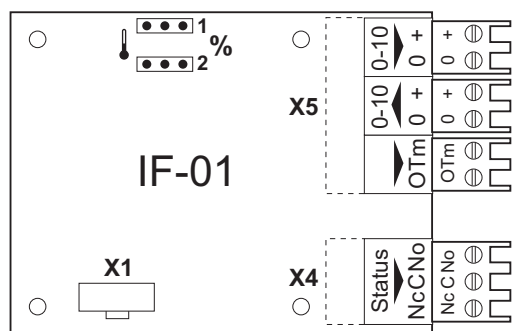
- Select the type of signal that will be sent from the boiler using the parameter **EP029**.
- Select the type of signal that controls the pump using the parameter **EP028**.

**Caution**

- If possible, use the pump modulation signal. This provides the most accurate pump control.
- If the automatic burner unit does not support pump modulation, the pump will behave as an on/off pump.

5.3.21 Connection options for the expansion PCB - IF-01

Fig.40 IF-01 PCB



AD-0000054-01

The expansion board IF-01 is pre-installed in the instrument box as standard.

**Caution**

Do not connect a frost thermostat or room thermostat to the boiler if using the 0–10 V control PCB.

■ Connecting the status relay (Nc)

If the boiler locks out, a relay is de-energised and the alarm can be transmitted via a potential-free contact (maximum 230 V, 1 A) on terminals **Nc** and **C** of the connector.

■ Connection (OTm)

The interface uses **OpenTherm** to communicate with the boiler control unit. To make this possible, the **OTm** connection must be connected to the **OpenTherm** input of the boiler control unit. **OTm**

■ Analogue input (0-10 V)

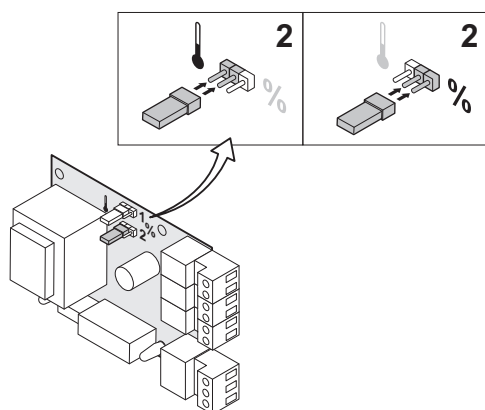
A choice can be made with this control between control based on temperature or heat output. The two controls are described briefly below.

1. Connect the input signal to terminals **0–10** of the connector.

Tab.3 Temperature-based control (°C)

Jumper 2	Input signal (V)	Temperature °C	Description
	0–1.5	0–15	Boiler off
	1.5–1.8	15–18	Hysteresis
	1.8–10	18–100	Desired temperature

Fig.41 Switch jumper (2)



AD-0000055-01

The 0–10 V signal controls the boiler supply temperature. This control modulates on the basis of flow temperature. The output varies between the minimum and maximum value on the basis of the flow temperature set point calculated by the controller.

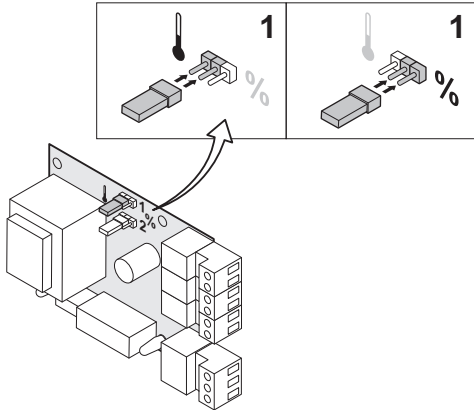
A jumper (2) on the interface is used to select either temperature-based control (🌡️) or output-based control (%).

Tab.4 Control based on heat output

Jumper 2	Input signal (V)	Heat output (%)	Description
%	0–2.0 ⁽¹⁾	0–20	Boiler off
	2.0–2.2 ⁽¹⁾	20–22	Hysteresis
	2.0–10 ⁽¹⁾	20–100	Desired heat output

(1) Dependent on the minimum modulation depth (set speeds, standard 20%)

Fig.42 Switch jumper (1)



AD-0000056-01

The 0–10 V signal controls the boiler output. This control modulates on the basis of the heat output. The minimum output is linked to the boiler's modulation depth. The output varies between the minimum and maximum value on the basis of the value defined by the controller.

■ Analogue output (0–10 V)

This feedback can be based on temperature or heat output. The two controls are described briefly below.

A jumper (1) on the interface is used to select either temperature (°C) or output (%).

Tab.5 Temperature message

Jumper 1	Output signal (V)	Temperature °C	Description
°C	0.5	–	Alarm
	1–10	10–100	Supplied temperature

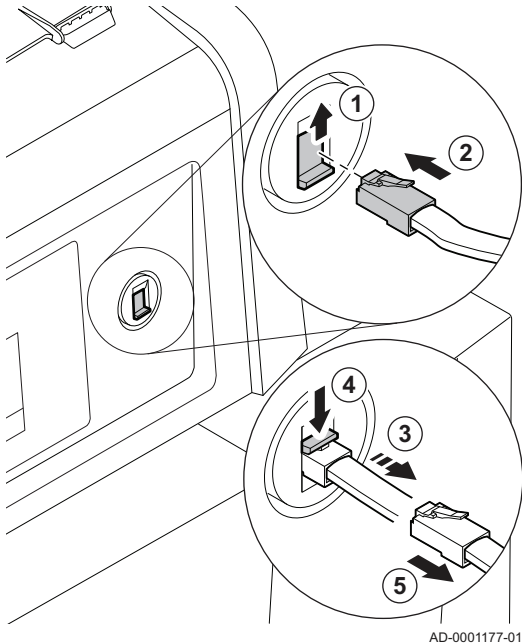
Tab.6 Output message

Jumper 2	Output signal (V)	Heat output (%)	Description
%	0	0–15	Boiler off
	0.5	15–20	Alarm
	2.0–10 ⁽¹⁾	20–100	Supplied heat output

(1) Dependent on the minimum modulation depth (set speeds, standard 20%)

5.3.22 Connecting a PC/laptop

Fig.43 Connecting an interface connector



AD-0001177-01

There is a **Service** connector next to the control panel. A **Recom** interface can be used to connect a PC, laptop or a Smart Service Tool here. Using the **Recom** PC/laptop service software, you can enter, change and read out various boiler settings.

Connecting an interface connector:

1. Move the Service connector slide upwards.
2. Push the interface connector into place. It should snap shut with a click.
⇒ Disconnect the interface connector again:
3. Maintain slight tension on the interface connector
4. Push the slide downwards. The interface connector will now be released.
5. Pull the interface connector from the connector.

6 Connecting diagrams and configuration

6.1 Factory settings for circuits

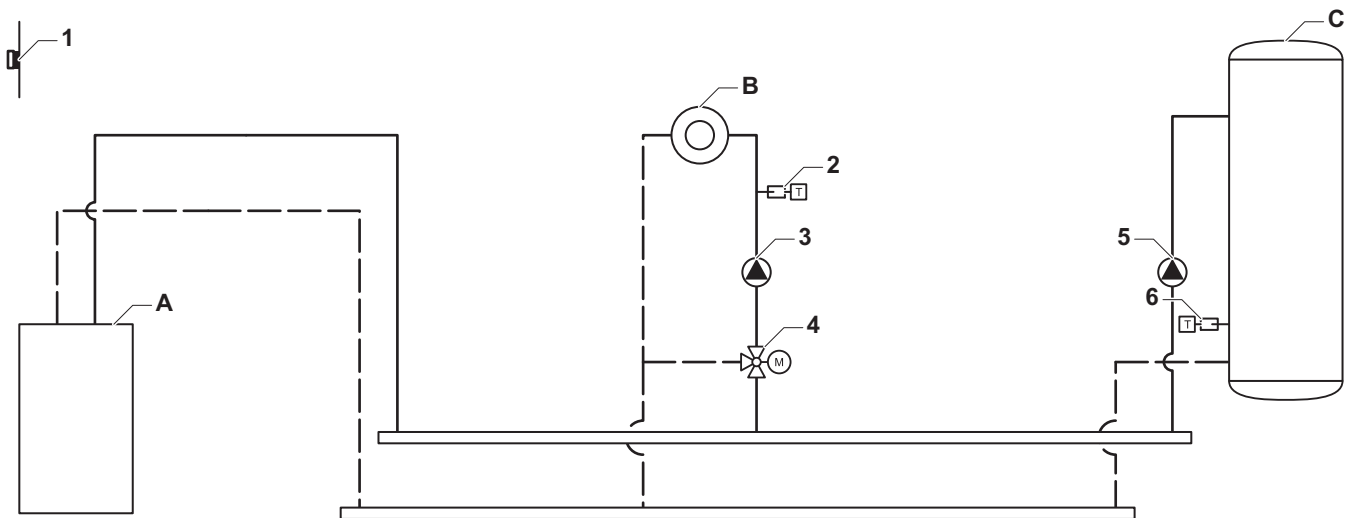
In the factory, the different circuits are configured as indicated in the table. You can modify this configuration and adapt it to the needs of your installation using the installation type described here as a guide.

Tab.7

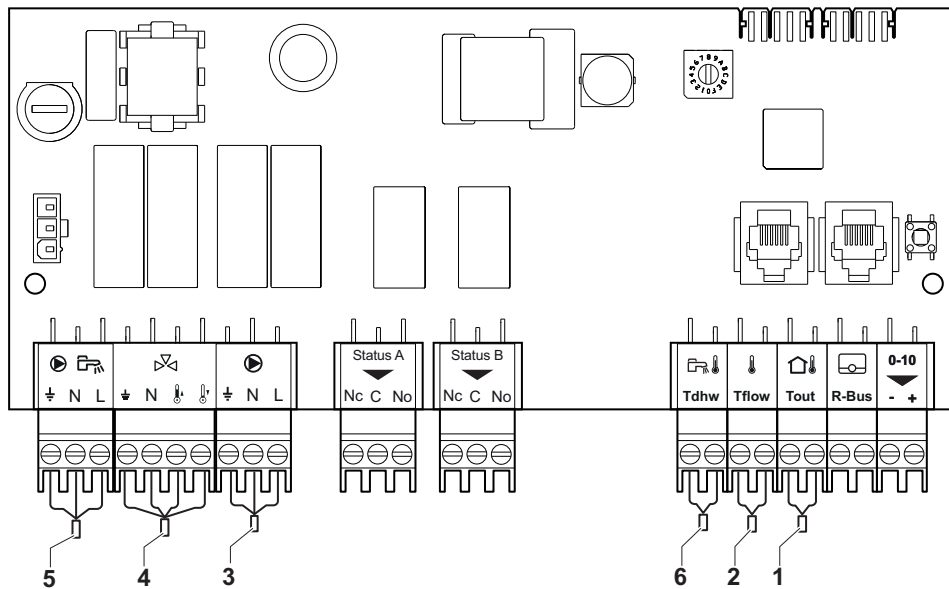
Circuit	Circuit type	Specifications
CIRCA	Direct heating circuit	Gradient: 1.5 Maximum temperature: 90 °C
DHW	Domestic hot water circuit	Set point temperature: 55 °C

6.2 Connection example - SCB-02

Fig.44 1 boiler + 1 mixing zone + domestic hot water (DHW) zone



AD-4100036-01



AD-4100058-02

A Boiler
B Mixing zone

C Domestic hot water (DHW) zone (1 sensor)



Important

All the factory settings of the SCB-02 are adequate for this connection.

7 Commissioning

7.1 General

Commissioning the boiler is done for first time use, after a prolonged shut-down (more than 28 days) or after any event that would require complete re-installation of the boiler. Commissioning of the boiler allows the user to review the various settings and checks to be made to start up the boiler in complete safety.

7.2 Check-list before commissioning

1. Check that the gas type supplied matches the data shown on the boiler's data plate.
⇒ Do not commission the boiler if the gas supplied does not match the gas types approved for the boiler.
2. Check connection of the earth wires.
3. Check the tightness of the gas circuit from the non-return valve to the burner.
4. Check the hydraulic circuit from the boiler's isolation valves to the connection to the heating body.
5. Check the hydraulic pressure in the heating system.
6. Check the electricity supply connections to the various boiler components.
7. Check the electrical connections on the thermostat and the other external components.
8. Check the ventilation in the room in which the system is installed.
9. Check the flue gas connections.

7.3 Checking the gas inlet

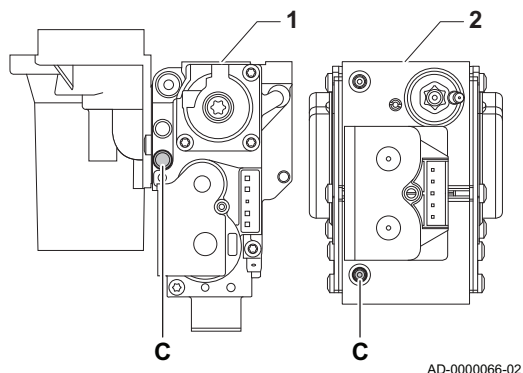
**Danger**

Ensure that the boiler is switched off.

1. Open the main gas valve.
2. Open the front panel.
3. Check the gas supply pressure at the pressure outlet on the gas valve unit.
4. Check the tightness of the gas connections made after the gas valve unit in the boiler.
5. Check the tightness of the gas pipe, including any valves, from the non-return valve to the burner. The test pressure must not exceed 60 bar (0.006 MPa).
6. Vent the gas supply pipe by unscrewing the pressure outlet on the gas valve unit. Close the outlet again when the pipe has been sufficiently vented.
7. Check the tightness of the gas connections in the boiler.

7.3.1 Setting the pressure in the gas circuit

Fig.45



- 1 Gas valve -**
 Gas 120 ACE - 65
 Gas 120 ACE - 90
- 2 Gas valve -**
 Gas 120 ACE - 115



Warning

- Ensure that the boiler is switched off.
- Do not commission the boiler if the type of gas supplied does not match the gas types approved for the boiler.

1. Open the main gas valve.
2. Remove the boiler's front panel.
3. Check the gas inlet pressure at the measuring point **C** on the gas valve unit.
 - The gas pressure that was measured at the measuring point **C** must fall within the stated gas inlet pressure limits.

Gas 120 ACE			Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
Gas inlet pressure G20 (H-gas)	min.–max.	mbar	17 - 25	17 - 25	17 - 25
Gas inlet pressure G25 (L-gas)	min–max	mbar	20 - 30	20 - 30	20 - 30
Gas inlet pressure G27 (Lw gas)	min–max	mbar	16 - 23	16 - 23	16 - 23
Gas inlet pressure G2.350 (Ls gas)	min–max	mbar	10 - 16	10 - 16	10 - 16
G30/G31 gas inlet pressure (Butane/Propane)	min–max	mbar	37 - 50	37 - 50	37 - 50
G31 gas inlet pressure (Propane)	min–max	mbar	37 - 50	37 - 50	37 - 50

4. Vent the gas supply pipe by unscrewing the measuring point on the gas valve unit.
5. Tighten the pressure socket again when the pipe has been fully vented.
6. Check all connections for gas tightness. The maximum allowable test pressure is 60 mbar (0.006 MPa).

7.4 Checking the electrical connections

1. Check for the presence of the recommended circuit breaker.
2. Check the electrical connection to the mains.
3. Check the connection of the sensors.
4. Check the position of the sensors. Respect the distance of the sensors according to the power.
5. Check the connection of the circulating pump(s).
6. Check the connection of the optional equipment.
7. Check the length of the cables and that they are firmly secured in the cable clamps.

7.5 Checking the hydraulic circuit

1. Check the siphon, which must be completely filled with water.
2. Check that there are no leaks on the boiler's hydraulic connections.
3. Check the pressure in the expansion vessel before filling the system.

7.6 Starting and stopping the boiler

7.6.1 Commissioning



Caution

- Initial commissioning must be done by a qualified professional.
- If adapting to another type of gas, e.g. propane, the boiler must be adjusted before it is switched on.

1. Open the main gas valve.
2. Switch the power on with the boiler's on/off switch.
⇒ The boiler starts before the control panel display is active.
3. Set the following parameters when the appliance is first switched on:
 - **Select Country and Language**
 - **Configure the date and time used by the appliance**
 - **Enable Daylight Saving Time**
 - **CN1 and CN2** (codes present on the boiler data plate).
4. Set the components (thermostats, control system) so that they request heat.
5. Check the hydraulic pressure in the installation shown on the control panel display.
Recommended hydraulic pressure between 0.15 and 0.2 MPa (1.5 and 2.0 bar).



Important

In the event of an error during start-up, a message with the corresponding code is displayed. The meaning of the error codes can be found in the error table.

7.6.2 Shutting down the boiler

The boiler must be shut down in order for certain operations to be carried out on the equipment or its environment.

In other situations, such as an extended absence period we recommend that **Holiday Mode** mode is used in order to benefit from the heating pump anti-blocking function and to protect the installation from frost.

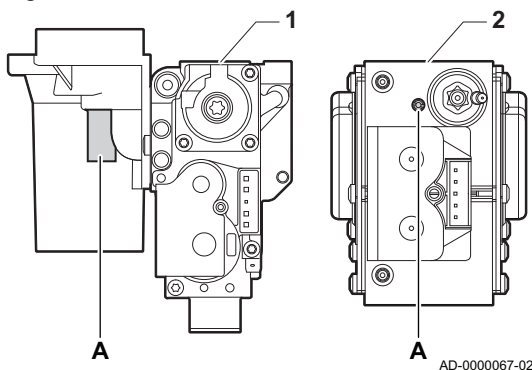
To shut down the boiler:

1. Press the on/off switch.

7.7 Gas settings

7.7.1 Adapting/adjusting the boiler to different types of gas

Fig.46



- 1 Gas valve unit on the
Gas 120 ACE - 65
Gas 120 ACE - 90
- 2 Gas valve unit on the
Gas 120 ACE - 115



Warning

Only a qualified engineer may carry out the following operations.

The boiler is pre-set in the factory to run on G20 type natural gas (H gas). Before operating with a different type of gas, carry out the following steps:

Tab.8 If operating on propane

Type of boiler	Action
Gas 120 ACE - 65	Rotate the setting screw A on the venturi 6½ turns in a clockwise direction
Gas 120 ACE - 90	Rotate the setting screw A on the venturi 6½ turns in a clockwise direction Replace the current gas valve unit with the propane gas valve unit according to the instructions supplied with the propane conversion kit
Gas 120 ACE - 115	Rotate the setting screw A in a clockwise direction until it is closed, then: Rotate the setting screw A on the gas valve unit 3½–4 turns in an anticlockwise direction

1. Set the fan speed as indicated in the table (if necessary). The setting can be changed with a parameter setting.

Tab.9 Factory settings G20 (H gas)

Code	Parameter	Description	Adjustment range	Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm 7000 Rpm	5600	6300	6800
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm 7000 Rpm	5600	6300	6800
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm 4000 Rpm	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm 4000 Rpm	2500	2500	2500

Tab.10 Setting for gas type G30/G31 (butane/propane)

Code	Parameter	Description	Adjustment range	Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm 7000 Rpm	5300	5800	6500
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm 7000 Rpm	5300	5800	6500
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm 4000 Rpm	1600	1600	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm 4000 Rpm	2500	2500	2500

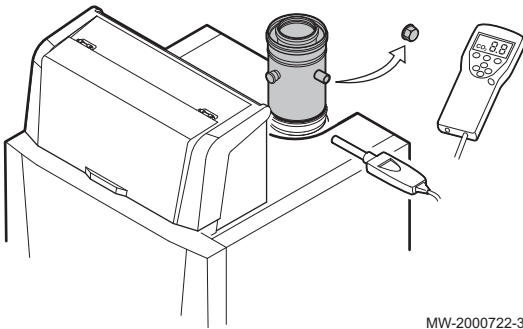
Tab.11 Setting for gas type G31 (propane)

Code	Parameter	Description	Adjustment range	Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm 7000 Rpm	5400	6000	6700
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm 7000 Rpm	5400	6000	6700
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm 4000 Rpm	1600	2000	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm 4000 Rpm	2500	2500	3500

2. Check the setting of the gas/air ratio.

7.7.2 Checking/adjusting the combustion

Fig.47



MW-2000722-3

1. Unscrew the cap from the flue gas measuring point.
2. Insert the probe for the flue gas analyser into the measurement opening.

i Important
 - During measurement, seal the opening around the sensor fully.
 - The flue gas analyser must have a minimum accuracy of $\pm 0.25\%$ O₂/CO₂.

3. Measure the percentage of O₂/CO₂ in the flue gases. Take measurements at full load and at part load.

■ Performing the full load test

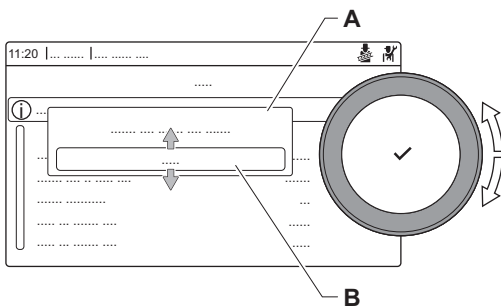
1. Select the tile [👤].
 ⇒ The **Change load test mode** menu appears.
2. Select the test **MaximumPowerCH**.

- A** Change load test mode
- B** MaximumPowerCH

⇒ The full load test starts. The selected load test mode is shown in the menu and the icon 👤 appears in the top right of the screen.

3. Check the load test settings and adjust if necessary.
 ⇒ Only the parameters shown in bold can be changed.

Fig.48 Full load test



AD-3000941-03

■ Control and setting values for O₂ at full load

i Important
 This appliance is suitable to category I_{2H}, I_{2E} and I_{2K} containing up to 20% hydrogen gas (H₂).

Setting procedure:

The boiler is powered by G20 type natural gas and set for minimum and maximum heat supply.

Once the boiler is set, it can be supplied with a mix of methane (CH₄) and hydrogen (H₂). The volume concentration of hydrogen (H₂) may be 0 to 20%.

Due to variations in the percentage of H₂, the percentage of O₂ may vary over time (e.g.: 20% H₂ in the gas may lead to a 1.5% increase of O₂ in flue gases).

1. Set the boiler to full load.
2. Measure the percentage of O₂ in the flue gases.
3. Compare the measured value with the set point values in the tables.

Tab.12

Values at full load for G20 (H gas)	O ₂ % ⁽¹⁾	CO ₂ % ⁽²⁾
Gas 120 ACE - 65	4.3 - 4.8	9.0 - 9.3
Gas 120 ACE - 90	4.3 - 4.7	9.1 - 9.3
Gas 120 ACE - 115	4.2 - 4.7	9.1 - 9.4
(1) nominal value		
(2) Values given as a guide		

Tab.13

Values at full load for G31 (propane)	O ₂ % ⁽¹⁾	CO ₂ % ⁽²⁾
Gas 120 ACE - 65	4.6 - 4.9	10,5 - 10,7
Gas 120 ACE - 90	4.9 - 5.2 ⁽¹⁾	10.3 ⁽¹⁾ - 10.5
Gas 120 ACE - 115	4.9 - 5.4	10.2 - 10.5

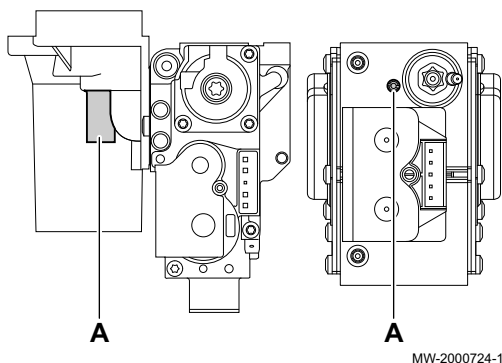
(1) nominal value
(2) Values given as a guide

Tab.14

Values at full load for G30/G31 (butane/propane)	O ₂ % ⁽¹⁾	CO ₂ % ⁽²⁾
Gas 120 ACE - 65	4.9 - 5.4	10.2 - 10.5
Gas 120 ACE - 90	4.9 - 5.4	10.2 - 10.5
Gas 120 ACE - 115	4.9 - 5.4	10.2 - 10.5

(1) nominal value
(2) Values given as a guide

Fig.49



- If the measured value differs from that given in the table, correct the gas/air ratio.
- Using the setting screw **A**, set the percentage of O₂ for the gas type being used to the nominal value. This should always be within the highest and lowest setting limits.
Allow the pressure to stabilise for approximately 60 seconds between each setting modification.

**Important**

The boilers are supplied with a variety of gas valve units. Compare the gas valve unit in the boiler with those in the drawings and see the drawing for the position of adjusting screw **A** for full load.

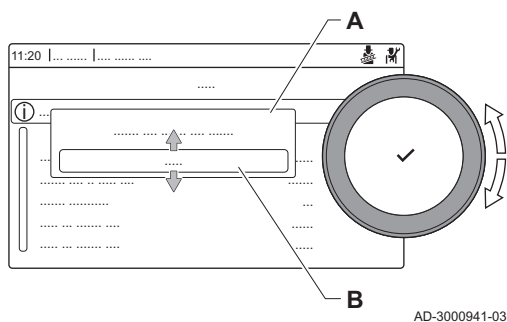
■ Performing the part load test

- If the full load test is still running, press the ✓ button to change the load test mode.
- If the full load test was finished, select the tile [👤] to restart the chimney sweep menu.

A Change load test mode**B MinimumPower**

- Select the **MinimumPower** test in the menu **Change load test mode**.
⇒ The part load test starts. The selected load test mode is shown in the menu and the icon 👤 appears in the top right of the screen.
- Check the load test settings and adjust if necessary.
⇒ Only the parameters shown in bold can be changed.
- End the part load test by pressing the ⏪ button.
⇒ The message **Running load test(s) stopped!** is displayed.

Fig.50 Part load test



■ Control and setting values for O₂ at part load

- Set the boiler to part load.
- Measure the percentage of O₂ in the flue gases.
- Compare the measured value with the set point values in the tables.

Tab.15

Values at part load for G20 (H gas)	O ₂ % ⁽¹⁾	CO ₂ % ⁽²⁾
Gas 120 ACE - 65	4.8 - 5.3	8.7 - 9.0
Gas 120 ACE - 90	4.8 - 5.2	8.8 - 9.0
Gas 120 ACE - 115	5.6 - 6.1	8.3 - 8.6

(1) nominal value
(2) Values given as a guide

Tab.16

Values at part load for G31 (propane)	O ₂ % ⁽¹⁾	CO ₂ % ⁽²⁾
Gas 120 ACE - 65	5,4 - 5,7	10,0 - 10,2
Gas 120 ACE - 90	5,5 - 5,8	9.9 - 10.1
Gas 120 ACE - 115	5,8 - 6,3	9.6 - 9.9

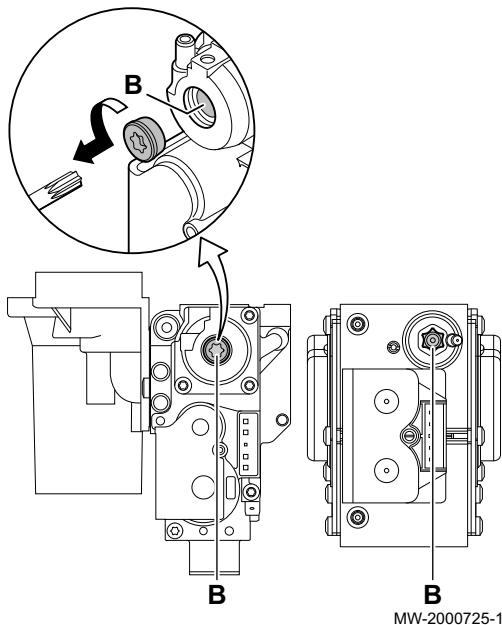
(1) nominal value
(2) Values given as a guide

Tab.17

Values at part load for G30/G31 (butane/propane)	O ₂ % ⁽¹⁾	CO ₂ % ⁽²⁾
Gas 120 ACE - 65	5.7 - 6.2	9.7 - 10.0
Gas 120 ACE - 90	5.7 - 6.2	9.7 - 10.0
Gas 120 ACE - 115	5.7 - 6.2	9.7 - 10.0

(1) nominal value
(2) Values given as a guide

Fig.51



⇒ The O₂ values at low load must be higher than the values at full load.

- If the measured value is outside of the values given in the table, correct the gas/air ratio.
- Using the adjusting screw **B**, set the percentage of O₂ for the gas type being used to the nominal value. This should always be within the highest and lowest setting limits.
Allow the pressure to stabilise for approximately 60 seconds between each setting modification.

i Important

The boilers are supplied with a variety of gas valve units. Compare the gas valve unit in the boiler with those in the drawings and see the drawing for the position of adjusting screw **A** for full load.

- Repeat the high speed test and the low speed test as often as necessary until the correct values are obtained without having to make additional adjustments.
- Set the boiler back to the normal operating status.

7.8 Displaying the water pressure on the control panel



- Highlight the **Water Pressure** icon.



⇒ The pressure is displayed on the main screen of the control panel.

7.9 Modifying the ΔT value

In systems with several operating temperatures, the boiler's ΔT value must be increased.

Tab.18 Standard ΔT values

Boiler model	Standard ΔT	Max. ΔT
Gas 120 ACE - 65	25 K	40 K
Gas 120 ACE - 90	25 K	40 K
Gas 120 ACE - 115	20 K	35 K

Increase the ΔT value using the **GP021** parameter. When increasing the ΔT , the control unit limits the linear flow temperature to 80 °C maximum. This does not modify the value set for the maximum flow temperature. This value can be adjusted using the **CP000** parameter.

i Important

- If the heat demand is greater than 80 °C with the increased ΔT value, Recom (or the service tool) will use a sub-status to indicate that the limited flow temperature is active.
- Always ensure that circulation is minimal (using a bypass or low-loss header if necessary) to prevent the boiler from locking out.
- If a PWM-controlled central heating pump is controlled by the boiler control panel, set the **PP014** parameter to 2.

7.10 Points to check after commissioning

1. Remove the measuring equipment.
2. Put the flue gas sampling plug back in place.
3. Put the front casing back.
4. Bring the heating system temperature up to approximately 50°C.
5. Shut down the boiler.
6. After about 10 minutes, vent the air in the heating system.
7. Check that there are no leaks (hydraulic circuit, gas circuit, etc.).
8. Check that the boiler equipment is operating correctly.
9. Check that the thermostats are operating correctly and have the correct settings.
10. Check the water pressure. Recommended pressure: between 0.15 and 0.2 MPa (1.5 and 2.0 bar).
11. Tidy away or scrap the various packaging items.
12. If necessary, affix the second type plate provided with the documentation to a visible part of the boiler.
13. Affix the data plate supplied with the control box beside the boiler type plate.
14. Instruct the user in the operation of the system, boiler and controller.
15. Inform the user of the periodicity of maintenance work to be carried out.
16. Hand over all manuals to the user.

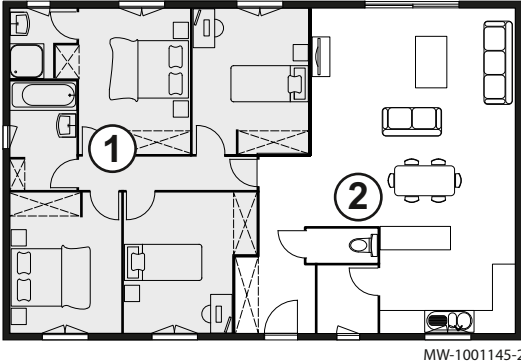
Commissioning of the boiler is now complete.

8 Operation

8.1 Definition of zone and activity

8.1.1 Zone

Fig.52



Term given to the different hydraulic circuits CIRCA, CIRCB, It indicates several rooms served by the same circuit.

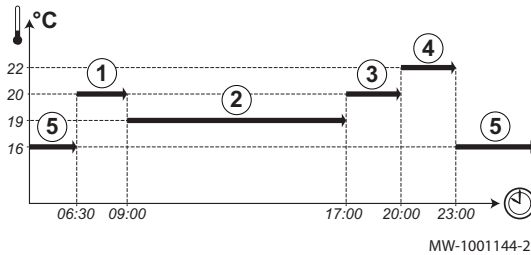
Tab.19 Example

Marker	Zone	Factory-set name
①	Zone 1	CIRCA
②	Zone 2	CIRCB

8.1.2 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.

Fig.53



Tab.20 Example:

Start of the activity	Activity	Set point temperature
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

8.2 Switching the summer mode on or off


You can switch off the central heating function of the boiler to save energy, for example during the summer period.

1. Select the tile
2. Press the ✓ button to confirm the selection.
3. Use the rotary knob to select **Force summer mode**.
4. Press the ✓ button to confirm the selection.
5. Use the rotary knob to select the following setting:
 - 5.1. **On** to switch off the central heating function.
 - 5.2. **Off** to switch the central heating function on again.
6. Press the ✓ button to confirm the selection.

8.3 Activating the holiday program

If you will be absent for several weeks, you can reduce the room temperature and domestic hot water temperature in order to save energy. To activate holiday mode for all zones including the domestic hot water:




1. Select the **Holiday Mode**  icon.
2. Set the following parameters:

Tab.21

Parameter	Description
Start date holiday	Set the date and time for the start of the absence period.
End date holiday	Set the date and time for the end of the absence period.
Wished room temperature during holiday	Set the desired room temperature for the absence period
Reset	Restart or cancel the holiday programme

8.4 Changing the basic settings



1. Press the  key.
2. Select **System Settings**.
3. Carry out one of the following operations:


Tab.22

Menu	Description
Set Date and Time	Setting the date and time
Select Country and Language	Select the country and language.
Daylight Saving Time	Setting the automatic change to daylight saving time. These changes will be carried out on the last Sunday in March and October
Installer Details	Display the installer details
Set Heating Activity Names	Personalise the name of the activities
Set Screen Brightness	Setting the screen brightness
Set click sound	Switch the sound of the rotary knob on or off
License Information	Display the creation licenses for the internal software

8.5 Changing the name of an activity

You can change the names of the activities. The modification applies to all of the zones.



1. Press the  key.
2. Select **System Settings**.
3. Select **Set Heating Activity Names**.
4. Select the activity you want to change.
5. Change the name of the activity (10 characters max.).


Tab.23

Factory setting		Customer setting
Activity 1:	Sleep	
Activity 2:	Home	
Activity 3:	Away	
Activity 4:	Morning	
Activity 5:	Evening	
Activity 6:	Custom	

8.6 Personalising the name and symbol for a zone




It is possible to personalise the name and symbol for a zone.



1. Select the icon for the **zone** to be modified; , for example.
2. Select **Zone configuration**.
3. Select **Friendly Name of the user zone**.

4. Modify the name of the zone (20 characters max.).
5. Select **Icon display zone**.
6. Modify the linked symbol.

Tab.24


Factory-set name and symbol		Customer-set name and symbol	
CIRCB			
CH			
DHW			

8.7 Room temperature for a zone






8.7.1 Selecting the operating mode

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



1. Select the icon for the affected **zone**, , for example.
2. Select the desired operating mode:

Tab.25

Mode	Description
 Scheduling	Selection of a timer programme
 Manual	The room temperature is constant
 Short temperature change	The room temperature is forced for a defined period
 Holiday	The room temperature is reduced during an absence period to save energy
 Antifrost	The installation and equipment are protected during the winter period

8.7.2 Changing the temperature settings of a zone

You can change the temperature settings of activities for the zone selected.




1. Select the icon for the **zone** to be modified; , for example.
2. Select **Set Heating Activity Temperatures**.
3. Select the activity to change its temperature setting.

8.7.3 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.




1. Select the icon for the **zone** to be modified; , for example.
2. Select **Short temperature change**.
3. Define the duration in **Hour** and in **Minute**.
4. Set the **Temporary room setpoint per zone** parameter.

8.7.4 Timer programming for heating

■ Activating timer programming mode

In order to use the timer programme, the **timer programming** (Scheduling) mode must be activated. This is activated for each zone individually.



1. Select the icon for the **zone** to be configured; , for example.
2. Select **Zone configuration > ZoneCurrentMode > Scheduling**.

■ Creating 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.

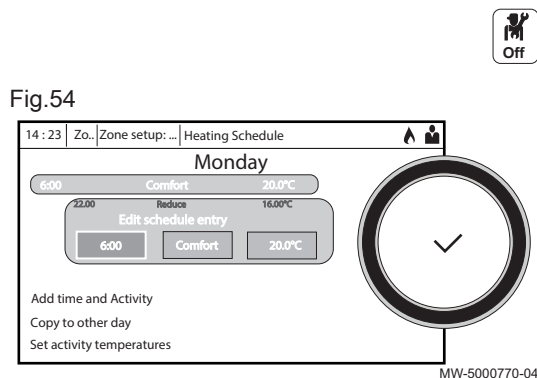




Fig.54

1. Select the icon for the **zone** to be programmed, , for example.
2. Select **Zone configuration > Heating Schedule**.
3. Select the programme to be modified.
 - ⇒ The programmed activities for Sunday are displayed.
 - The last activity of the day remains active until the first activity of the following day.
4. Select the day to be modified.
5. Carry out the following actions according to your needs:
 - **Modify** the timings for programmed activities.
 - **Add** a new activity.
 - **Delete** a programmed activity (choose the activity "Delete").
 - **Copy** programmed daily activities to other days.
 - **Modify temperatures** linked to an activity.

■ Selecting a timer programme

In the **Timer programming** operating mode, three programs are available per zone. Each program is independent. To select a timer programme for a zone:

1. Select the icon for the affected **zone**, , for example.
2. Select **Scheduling**.
3. Select the desired timer programme.






8.8 Domestic hot water temperature

8.8.1 Selecting the operating mode

For the production of domestic hot water, you can choose between five operating modes.

1. Select the  icon for the **DHW** zone.
2. Select the desired operating mode:

Tab.26

Mode		Description
	Scheduling	Selection of a timer programme
	Manual	The domestic hot water temperature remains at the comfort temperature permanently
	Hot water boost	The production of domestic hot water is forced at the comfort temperature for a defined duration
	Holiday	The domestic hot water temperature is reduced during an absence period to save energy
	Antifrost	The installation and equipment are protected during the winter period

8.8.2 Forcing domestic hot water production (override)

Regardless of the selected operating mode, you can force domestic hot water production to the comfort temperature for a defined duration.

1. Select the  icon for the **DHW** zone.
2. Select **Hot water boost**.
3. Define the duration in **Hour** and in **Minute**.

8.8.3 Modifying the domestic hot water set point temperatures

You can modify the "Comfort domestic hot water" and "Reduced domestic hot water" set point temperatures.



1. Select the icon for the **DHW** zone.
2. Select one of the following menus:

Menu	Description
ComfortZoneDHWtemp	Only modify the "Comfort domestic hot water" set point temperature
Zone configuration > Domestic Hot Water Setpoints	Modify the "Comfort domestic hot water" and "Reduced domestic hot water" set point temperatures.

8.8.4 Timer programming for domestic hot water

■ Activating timer programming mode

In order to use the timer programme, the **timer programming (Scheduling)** mode must be activated. This is activated for each zone individually.



1. Select the icon for the **DHW** zone.
2. Select **Zone configuration > OperatingZoneMode > Scheduling**.

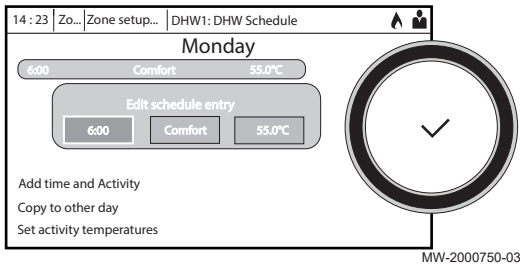
■ Creating a timer programme for domestic hot water

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.



1. Select the icon for the **DHW** zone.
2. Select **Zone configuration > DHW Schedule**.
3. Select the programme to be modified.
⇒ The programmed activities for Sunday are displayed.
The last activity of the day remains active until the first activity of the following day.
4. Select the day to be modified.
5. Carry out the following actions according to your needs:
 - **Modify** the timings for programmed activities.
 - **Add** a new activity.
 - **Delete** a programmed activity (choose the activity "Delete").
 - **Copy** programmed daily activities to other days.
 - **Modify temperatures** linked to an activity.

Fig.55



■ Selecting a timer programme

In the **Timer programming** operating mode, three programs are available. To select a timer programme:






1. Select the icon for the **DHW** zone.
2. Select **Scheduling**.
3. Select the desired timer programme.

9 Settings

9.1 Accessing the Installer level

Certain parameters, which may affect the operation of the appliance, are protected by an access code. Only the installer is authorised to modify these parameters.

To access the installer level:

1. Select the  icon.
2. Enter the code **0012**.
 - ⇒ The **Installer** level is activated . After modifying the desired settings, exit the **Installer** level.
3. To exit the Installer level, select the  icon, then **Confirm**.

If no actions are taken for 30 minutes, the system will automatically exit the Installer level.

9.2 Setting the heating curve

The heating curve is set when the installation is commissioned, thermostatic valves open if necessary. In event of major losses from the building, it is necessary to adjust the gradient of the curve mid-season then mid-winter in increments of 0.1 every 24 hours (building inertia).

To set the heating curve for a zone:




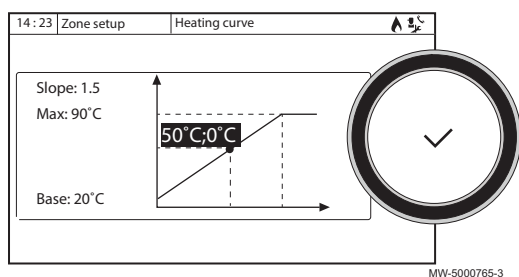
1. Select the icon for the **zone** to be modified; , for example.
2. Select **Heating Curve**.
3. Set the following parameters:

Fig.56



Tab.27

Parameter	Description
Slope:	Value of the heating curve gradient. <ul style="list-style-type: none"> • underfloor heating circuit: gradient between 0.4 and 0.7 • radiator circuit: gradient of approx. 1.5
Max:	Maximum temperature of the circuit
Base:	Curve base point temperature (default value: Off = automatic mode). If Base: Off, the curve base point temperature becomes equal to the room set point temperature
50 °C; 0 °C	Water temperature in the circuit for an outdoor temperature. This data is visible all along the curve.

9.3 Drying screed

The screed drying function reduces the drying time of the screed for underfloor heating. This function can be activated for individual zones.

Every day at midnight, the set point temperature is recalculated and the number of days is decreased.

To activate this function:




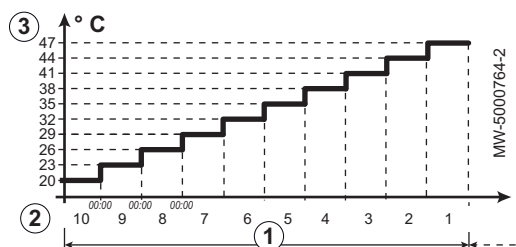
1. Select the icon for the **zone** to be activated, , for example.
2. Select **Set Screed Drying**.
3. Set the following parameters:

Fig.57



Parameters	Description
Zone screed drying	Number of days of drying (1)
ScreedStartTemp	Drying start temperature (2)
ScreedStopTemp	Drying end temperature (3)

The screed drying programme will start immediately and continue for the selected number of days.

At the end of the programme, the selected operating mode will restart.

Tab.28 Example: Adjustment of the temperature setting every 7 days

Days	Start temperature	End temperature	Temperature variation
1 to 7	+25 °C	+55 °C	Temperature increased every day by 5 °C
8 to 14	+55 °C	+55 °C	Temperature maintained at +55 °C without dropping at night
15 to 21	+55 °C	+25 °C	Temperature decreased every day by 5 °C

9.4 Configuring the maintenance message

The boiler control panel is used to display a message whenever a service is necessary.

To configure the maintenance message:



1. Select the **Maintenance** icon.
2. Select **Service notification**.
3. Select the desired type of notification:

Type of notification:	Description
None	No maintenance message
Custom notification	The maintenance message will be displayed once the burner operating hours defined by the Service run hours parameter have elapsed
ABC notification	<p>Recommended setting</p> <p>The maintenance message will be displayed according to the power input (energy value):</p> <ul style="list-style-type: none"> • Gas 120 ACE - 65 : 90,000 kWh • Gas 120 ACE - 90 : 135,000 kWh • Gas 120 ACE - 115 : 180,000 kWh

9.5 Saving the installer details

The name and phone number of the installer can be saved so that the user can find it easily.



1. Press the button.
2. Select **System Settings > Installer Details**.
3. Enter the name and phone number.

9.6 Saving the commissioning settings

You can save all installation-specific settings. These settings can be restored if necessary, for example after replacement of the main PCB.



1. Press the button.
2. Select **Advanced Service Menu > Save as commissioning settings**.
3. Select **Confirm** to save the settings.

When you have saved the commissioning settings, the option **Revert commissioning settings** is available in the **Advanced Service Menu**.

9.7 Resetting or re-establishing the parameters

9.7.1 Resetting after replacing the PCB

Configuration numbers must be reset if the boiler or burner safety unit PCB is replaced.

The configuration numbers can be found on the data plate of the boiler.

To reset the configuration numbers:



1. Press the key.
2. Select **Advanced Service Menu > Set Configuration Numbers**.


3. Select **CU-GH-08**.
4. Select and change the **CN1** setting.
5. Select and change the **CN2** setting.
6. Select **Confirm** to confirm the modifications.

9.7.2 Auto-detecting options and accessories

Use this function after replacing a boiler PCB in order to detect all the devices connected to the CAN bus.

To detect devices connected to the CAN bus:




1. Press the  key.
2. Select **Advanced Service Menu > Auto Detect**.
3. Select **Confirm** to carry out the auto-detect.

9.7.3 Reverting to the commissioning settings

If the commissioning settings were saved, you can revert to the values specific to your installation.

To revert to the commissioning settings




1. Press the  key.
2. Select **Advanced Service Menu > Revert commissioning settings**.
3. Select **Confirm** to revert to the commissioning settings.

9.7.4 Reverting to the factory settings

To revert to the factory settings for the boiler:




1. Press the  key.
2. Select **Advanced Service Menu > Reset to Factory Settings**.
3. Select **Confirm** to revert to the factory settings.

9.8 Accessing information on the hardware and software versions

Information on the hardware and software versions for the appliance's various components is stored in the control panel.

To access:



1. Press the  key.
2. Select **Version Information**.
3. Select the component for which you would like to see the version information.

Component	Description
Appliance Info	Information about the boiler
CU-GH-08	Information about the boiler central unit PCB
MK3 - HMI T-control	Information about the control panel
SCB-02	Information about the PCB controlling the zones for heating and domestic hot water
CB-09	Information on the input/output control PCB

9.9 Menu tree



Level 1 menus accessible with the  button:

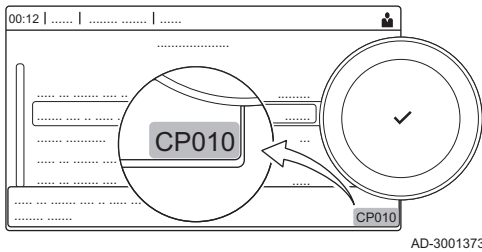
Level 1 menu
Installation Setup
Commissioning Menu
Advanced Service Menu
Error History

Level 1 menu
System Settings
Version Information

9.10 List of parameters

9.10.1 Introduction to parameter codes

Fig.58 Code on a OEtroCom-3



AD-3001373-02

The controls platform makes use of an advanced system to categorise parameters, measurements and counters. Knowing the logic behind these codes, makes it easier to identify them. The code consists of two letters and three numbers.

Fig.59 First letter

CP010
AD-3001375-01

The first letter is the category the code relates to.

- A** Appliance: Appliance
- C** Circuit: Zone
- D** Domestic hot water: Domestic hot water
- G** Gas fired: Gas-fired heat engine
- P** Producer: Central heating

Category D codes are appliance controlled only. When the domestic hot water is controlled by an SCB, it is handled like a circuit, with C-category codes.

Fig.60 Second letter

CP010
AD-3001376-01

The second letter is the type.

- P** Parameter: Parameters
- C** Counter: Counters
- M** Measurement: Signals

Fig.61 Number

CP010
AD-3001377-01

The number is always three digits. In certain cases, the last of the three digits relates to a zone.

9.10.2 Changing the parameters

The boiler's control unit is set for the most common central heating systems. These settings will ensure that virtually every central heating system operates effectively. The user or the installer can optimise the parameters as required.

**Caution**

Changing the factory settings may adversely affect the operation of the boiler.

9.10.3 Control unit settings

**Important**

- All tables show the factory settings for the parameters.
- The tables also list parameters that are only applicable if the boiler is combined with other equipment such as an outdoor temperature sensor.
- All possible options are indicated in the adjustment range. The display on the boiler only shows the relevant settings for the appliance.

Tab.29 Navigation for **BASIC INSTALLER** level

Level	Menu cascade
Basic installer	☰ > Installation Setup > CU-GH08 > Sub-menu ⁽¹⁾ > Parameters, counters, signals > Parameters
(1) See the "Sub-menu" column in the table below for the correct path. The parameters are grouped in specific functionalities.	

Tab.30 Factory settings at **BASIC INSTALLER** level

Code	Display text	Description	Range	Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
AP016	CH function on	Enable central heating heat demand processing	0 = Off 1 = On	1	1	1
AP017	DHW function on	Enable domestic hot water heat demand processing	0 = Off 1 = On	1	1	1
AP073	Summer Winter	Outdoor temperature: upper limit for heating	10 °C - 30 °C	22	22	22
AP074	Force summer mode	The heating is stopped. Hot water is maintained. Force Summer Mode	0 = Off 1 = On	0	0	0
AP083	Enable master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	0	0	0
AP089	Installer name	Name of the installer	-	None	None	None
AP090	Installer phone	Telephone number of the installer	-	0	0	0
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 °C - 30 °C	20	20	20

Tab.31 Navigation for **INSTALLER** level

Level	Menu cascade
Installer	☰ > Installation Setup > CU-GH08 > Sub-menu ⁽¹⁾ > Parameters, counters, signals > Parameters
(1) See the "Sub-menu" column in the table below for the correct path. The parameters are grouped in specific functionalities.	

Tab.32 Factory settings at **INSTALLER** level

Code	Display text	Description	Range	Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
AP001	BL function	BL input function selection BL input function selection	1 = Full blocking 2 = Partial blocking 3 = User reset locking 4 = Backup relieved 5 = Generator relieved 6 = Gen.&Backup relieved 7 = High, Low Tariff 8 = Photovoltaic HP Only 9 = PV HP And backup 10 = Smart Grid ready 11 = Heating Cooling	1	1	1
AP008	Release wait time	Waiting time after closing the release contact to start the heat generator.	0 Sec - 255 Sec	0	0	0
AP009	Service hours	Number of heat generator operating hours for raising a service notification	0 Hours - 51000 Hours	6000	6000	6000
AP010	Service notification	Select the type of service notification	0 = None 1 = Custom notification 2 = ABC notification	2	2	2
AP011	Service hours mains	Hours powered to raise a service notification	0 Hours - 51000 Hours	35000	35000	35000
AP014	Auto Filling	Setting to enable or disable the automatic refill device. It can be set to auto, manual or off	0 = Disabled 1 = Manual 2 = Auto	-	-	-
AP023	Filling Inst Timeout	Maximum time the automatic filling procedure may last at installation	0 Min - 90 Min	-	-	-
AP051	Filling Interval	The minimum time that is allowed between two top-up fillings	0 Days - 65535 Days	-	-	-
AP063	Max CH flow setpoint	Maximum central heating flow temperature setpoint	20 °C - 90 °C	90	90	90
AP069	Top up timeout	Maximum time the automatic topping up procedure may last	0 Min - 60 Min	-	-	-
AP070	Operational Pressure	The operational water pressure the device should be working on	0 bar - 2.5 bar	1.8	1.8	1.8
AP071	InstallMaxTimeOu t	Maximum time that is needed to fill the complete installation	0 Sec - 3600 Sec	-	-	-
AP079	Building Inertia	Inertia of the building used for heat up speed	0 - 15	3	3	3
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated	-60 °C - 25 °C	-10	-10	-10
AP082	Enable daylight save	Enable daylight saving for the system to save energy during winter	0 = Off 1 = On	1	1	1
AP108	OutsideSensorEn abled	Enable the function Outside Sensor	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	0	0	0
CP000	MaxZoneTFlowS etpoint	Maximum Flow Temperature setpoint zone	0 °C - 90 °C	80	80	80

Code	Display text	Description	Range	Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
GP017	Max power	Maximum power percentage in kilo Watt	0 kW - 80 kW	-	-	-
GP050	Power Min	Minimum power in kilo Watt for RT2012 calculation	0 kW - 80 kW	-	-	-
PP015	CH Pump postrun time	Central heating pump post run time	0 Min - 99 Min	1	1	1

Tab.33 Navigation for **ADVANCED INSTALLER** level

Level	Menu cascade
Advanced installer	☰ > Installation Setup > CU-GH08 > Sub-menu ⁽¹⁾ > Parameters, counters, signals > Parameters > Adv. Parameters
(1) See the "Sub-menu" column in the table below for the correct path. The parameters are grouped in specific functionalities.	

Tab.34 Factory settings at **ADVANCED INSTALLER** level

Code	Display text	Description	Range	Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint 2 = TOutdoor Control	0	0	0
AP026	Setpoint manual HD	Flow temperature setpoint for manual heat demand	10 °C - 90 °C	40	40	40
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outside sensor 1 = AF60 2 = QAC34	1	1	1
AP077	Max. display level	Maximum Level of parameters and signals to display on MK	1 = End user 2 = Installer 3 = Installer advanced 4 = Lab 5 = Controls Development	3	3	3
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed lowloss header)	0 = No 1 = Yes	0	0	0
AP111	Can line length	Can line length	0 = < 3m 1 = < 80m 2 = < 500m	0	0	0
CP130	T.OutdoorToZone	Assigning the outdoor sensor to zone ...	0 - 4	0	0	0
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5600	6300	6800
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	2500	2500	2500
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	0	0	0
GP021	Temp diff Modulating	Modulate back when delta temperature is larger than this threshold	10 °C - 40 °C	25	25	20
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	1 - 255	-	-	-
PP014	ChPumpDTReduction	Reduction of temperature delta modulating for pump modulation	0 °C - 40 °C	18	18	18
PP016	Max. CH pump speed	Maximum central heating pump speed (%)	20 % - 100 %	100	100	100

Code	Display text	Description	Range	Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
PP017	ChPumpSpeedMaxFactor	Maximum central heating at minimum load as percentage of max pump speed	0 % - 100 %	100	100	100
PP018	Min CH pump speed	Minimum central heating pump speed (%)	20 % - 100 %	30	30	30
PP023	CH Hysteresis	Temperature hysteresis for the generator to start on central heating	1 °C - 10 °C	10	10	10

9.10.4 List of parameters SCB-02

Tab.35

Parameter	Text display	Description	Factory setting
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone Adjustment range: • from 7 °C to 90 °C	90
CP001	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone Adjustment range: • from 7 °C to 90 °C	55
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint. Adjustment range: • from 7 °C to 95 °C	90
CP011	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint. Adjustment range: • from 7 °C to 95 °C	50
CP020	Zone Function	Functionality of the zone Adjustment range: • 0 =Disable • 1 =Direct • 2 =Mixing Circuit • 3 =Swimming pool • 4 =High Temperature • 5 =Fan Convactor • 6 =DHW tank • 7 =Electrical DHW • 8 =Time Program • 9 =ProcessHeat • 10 =DHW Layered • 11 =DHW Internal tank • 12 =DHW Commercial Tank • 31 =DHW FWS EXT	6

Parameter	Text display	Description	Factory setting
CP021	Zone Function	Functionality of the zone Adjustment range: <ul style="list-style-type: none"> • 0 =Disable • 1 =Direct • 2 =Mixing Circuit • 3 =Swimming pool • 4 =High Temperature • 5 =Fan Convector • 6 =DHW tank • 7 =Electrical DHW • 8 =Time Program • 9 =ProcessHeat • 10 =DHW Layered • 11 =DHW Internal tank • 12 =DHW Commercial Tank • 31 =DHW FWS EXT 	2
CP040	Postrun zone pump	Pump post runtime of the zone Adjustment range: <ul style="list-style-type: none"> • from 0 Min to 99 Min 	2
CP041	Postrun zone pump	Pump post runtime of the zone Adjustment range: <ul style="list-style-type: none"> • from 0 Min to 99 Min 	4
CP060	RoomT. Holiday	Wished room zone temperature on holiday period Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 20 °C 	6
CP061	RoomT. Holiday	Wished room zone temperature on holiday period Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 20 °C 	6
CP070	MaxReducedRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 30 °C 	16
CP071	MaxReducedRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 30 °C 	16
CP080	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 30 °C 	16
CP081	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 30 °C 	16
CP082	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 30 °C 	16
CP083	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 30 °C 	16
CP084	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 30 °C 	16
CP085	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: <ul style="list-style-type: none"> • from 5 °C to 30 °C 	16

Parameter	Text display	Description	Factory setting
CP086	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: • from 5 °C to 30 °C	16
CP087	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: • from 5 °C to 30 °C	16
CP088	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: • from 5 °C to 30 °C	16
CP089	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: • from 5 °C to 30 °C	16
CP090	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: • from 5 °C to 30 °C	16
CP091	User T.Room Activity	Room setpoint temperature of the user zone activity Adjustment range: • from 5 °C to 30 °C	16
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone Adjustment range: • from 5 °C to 30 °C	20
CP201	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone Adjustment range: • from 5 °C to 30 °C	20
CP210	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit Adjustment range: • from 15 °C to 90 °C	15
CP211	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit Adjustment range: • from 15 °C to 90 °C	15
CP220	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit Adjustment range: • from 15 °C to 90 °C	15
CP221	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit Adjustment range: • from 15 °C to 90 °C	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone Adjustment range: • from 0 to 4	0.7
CP231	Zone Heating Curve	Heating curve temperature gradient of the zone Adjustment range: • from 0 to 4	0.7
CP240	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit Adjustment range: • from 0 to 10	3
CP241	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit Adjustment range: • from 0 to 10	3
CP250	CalSondeAmbZone	Calibration of Zone Room Unit Adjustment range: • from -5 °C to 5 °C	0

Parameter	Text display	Description	Factory setting
CP251	CalSondeAmbZone	Calibration of Zone Room Unit Adjustment range: • from -5 °C to 5 °C	0
CP290	ConfigZonePumpOut	Configuration of Zone Pump Output Adjustment range: • 0 =Zone output • 1 =CH mode • 2 =DHW mode • 3 =Cooling mode • 4 =Error report • 5 =Burning • 6 =Service flag • 7 =System error • 8 =DHW looping • 9 =Primary pump • 10 =Buffer pump	0
CP291	ConfigZonePumpOut	Configuration of Zone Pump Output Adjustment range: • 0 =Zone output • 1 =CH mode • 2 =DHW mode • 3 =Cooling mode • 4 =Error report • 5 =Burning • 6 =Service flag • 7 =System error • 8 =DHW looping • 9 =Primary pump • 10 =Buffer pump	0
CP320	OperatingZoneMode	Operating mode of the zone Adjustment range: • 0 =Scheduling • 1 =Manual • 2 =Antifrost • 3 =Temporary	1
CP321	OperatingZoneMode	Operating mode of the zone Adjustment range: • 0 =Scheduling • 1 =Manual • 2 =Antifrost • 3 =Temporary	1
CP340	TypeReducedNightMode	Type of reduced night mode, stop or maintain heating of circuit Adjustment range: • 0 =Stop heat demand • 1 =Continue heat demand	1
CP341	TypeReducedNightMode	Type of reduced night mode, stop or maintain heating of circuit Adjustment range: • 0 =Stop heat demand • 1 =Continue heat demand	1
CP470	Zone screed drying	Setting of the screed drying program of the zone Adjustment range: • 0 Days =30 Days	0

Parameter	Text display	Description	Factory setting
CP471	Zone screed drying	Setting of the screed drying program of the zone Adjustment range: • 0 Days =30 Days	0
CP480	ScreedStartTemp	Setting of the start temperature of the screed drying program of the zone Adjustment range: • from 20 °C to 50 °C	20
CP481	ScreedStartTemp	Setting of the start temperature of the screed drying program of the zone Adjustment range: • from 20 °C to 50 °C	20
CP490	ScreedStopTemp	Setting of the stop temperature of the screed drying program of the zone Adjustment range: • from 20 °C to 50 °C	20
CP491	ScreedStopTemp	Setting of the stop temperature of the screed drying program of the zone Adjustment range: • from 20 °C to 50 °C	20
CP510	Temporary Room Setp	Temporary room setpoint per zone Adjustment range: • from 5 °C to 30 °C	20
CP511	Temporary Room Setp	Temporary room setpoint per zone Adjustment range: • from 5 °C to 30 °C	20
CP520	Zone Power setpoint	Power setpoint per zone Adjustment range: • from 0 % to 100 %	100
CP521	Zone Power setpoint	Power setpoint per zone Adjustment range: • from 0 % to 100 %	100
CP530	Zone PWM Pump speed	Pulse Width Modulation pump speed per zone Adjustment range: • from 20 % to 100 %	100
CP531	Zone PWM Pump speed	Pulse Width Modulation pump speed per zone Adjustment range: • from 20 % to 100 %	100
CP550	Zone, fire place	Fire Place mode is active Adjustment range: • 0 =Off • 1 =On	0
CP551	Zone, fire place	Fire Place mode is active Adjustment range: • 0 =Off • 1 =On	0
CP570	ZoneTimeProg Select	Time Program of the zone selected by the user Adjustment range: • 0 =Schedule 1 • 1 =Schedule 2 • 2 =Schedule 3 • 3 =Cooling	0
CP571	ZoneTimeProg Select	Time Program of the zone selected by the user Adjustment range: • 0 =Schedule 1 • 1 =Schedule 2 • 2 =Schedule 3 • 3 =Cooling	0

Parameter	Text display	Description	Factory setting
CP660	Icon display zone	Choice icon to display this zone Adjustment range: <ul style="list-style-type: none"> • 0 =None • 1 =All • 2 =Bedroom • 3 =Livingroom • 4 =Study • 5 =Outdoor • 6 =Kitchen • 7 =Basement • 8 =Swimming Pool • 9 =DHW Tank • 10 =DHW Electrical Tank • 11 =DHW Layered Tank • 12 =Internal Boiler Tank • 13 =Time Program 	0
CP661	Icon display zone	Choice icon to display this zone Adjustment range: <ul style="list-style-type: none"> • 0 =None • 1 =All • 2 =Bedroom • 3 =Livingroom • 4 =Study • 5 =Outdoor • 6 =Kitchen • 7 =Basement • 8 =Swimming Pool • 9 =DHW Tank • 10 =DHW Electrical Tank • 11 =DHW Layered Tank • 12 =Internal Boiler Tank • 13 =Time Program 	0
CP670	ConfPairing RU Zone	Configuration of pairing room unit per zone	
CP671	ConfPairing RU Zone	Configuration of pairing room unit per zone	
CP730	Zone Heat up speed	Selection of heat up speed of the zone Adjustment range: <ul style="list-style-type: none"> • 0 =Extra Slow • 1 =Slowest • 2 = Slower • 3 = Normal • 4 = Faster • 5 =Fastest 	3
CP731	Zone Heat up speed	Selection of heat up speed of the zone Adjustment range: <ul style="list-style-type: none"> • 0 =Extra Slow • 1 =Slowest • 2 = Slower • 3 = Normal • 4 = Faster • 5 =Fastest 	3
CP740	Zone cool down speed	Selection of cool down speed of the zone Adjustment range: <ul style="list-style-type: none"> • 0 =Slowest • 1 =Slower • 2 =Normal • 3 =Faster • 4 =Fastest 	2

Parameter	Text display	Description	Factory setting
CP741	Zone cool down speed	Selection of cool down speed of the zone Adjustment range: <ul style="list-style-type: none"> • 0 =Slowest • 1 =Slower • 2 =Normal • 3 =Faster • 4 =Fastest 	2
CP750	MaxZone Preheat time	Maximum zone preheat time Adjustment range: <ul style="list-style-type: none"> • from 0 Min to 240 Min 	0
CP751	MaxZone Preheat time	Maximum zone preheat time Adjustment range: <ul style="list-style-type: none"> • from 0 Min to 240 Min 	60
CP780	Control strategy	Selection of the control strategy for the zone Adjustment range: <ul style="list-style-type: none"> • 0 =Automatic • 1 =Room Temp. based • 2 =Outdoor Temp. based • 3 =Outdoor & room based 	0
CP781	Control strategy	Selection of the control strategy for the zone Adjustment range: <ul style="list-style-type: none"> • 0 =Automatic • 1 =Room Temp. based • 2 =Outdoor Temp. based • 3 =Outdoor & room based 	0

Tab.36

Parameter	Text display	Description	Factory setting
EP018	Status relay func.	Status relay function Adjustment range: <ul style="list-style-type: none"> • 0 =No Action • 1 =Alarm • 2 =Alarm Inverted • 3 =Burning • 4 =Not burning • 5 =Reserved • 6 =Reserved • 7 =Service request • 8 =Boiler on CH • 9 =Boiler on DHW • 10 =CH pump on • 11 =Locking or Blocking • 12 =Cooling mode 	0
EP019	Status relay func.	Status relay function Adjustment range: <ul style="list-style-type: none"> • 0 =No Action • 1 =Alarm • 2 =Alarm Inverted • 3 =Burning • 4 =Not burning • 5 =Reserved • 6 =Reserved • 7 =Service request • 8 =Boiler on CH • 9 =Boiler on DHW • 10 =CH pump on • 11 =Locking or Blocking • 12 =Cooling mode 	0
EP028	Function 10V-PWM	Selects the function of the 0-10 Volt output Adjustment range: <ul style="list-style-type: none"> • 0 =0-10V 1 (Wilo) • 1 =0-10V 2 (Gr. GENI) • 2 =PWM signal (Solar) • 3 =0-10V 1 limited • 4 =0-10V 2 limited • 5 =PWM signal limited • 6 =PWM signal (UPMXL) 	0
EP029	Source 10V-PWM	Selects the source signal for the 0-10 Volt output Adjustment range: <ul style="list-style-type: none"> • 0 =PWM • 1 =Requested power • 2 =Actual power 	0

Tab.37

Parameter	Text display	Description	Factory setting
AP056	Outdoor sensor	Enable outdoor sensor Adjustment range: <ul style="list-style-type: none"> • 0 =No outside sensor • 1 =AF60 • 2 =QAC34 	0
AP073	Summer Winter	Outdoor temperature: upper limit for heating Adjustment range: <ul style="list-style-type: none"> • from 15 °C to 30.5 °C 	22

Parameter	Text display	Description	Factory setting
AP074	Force summer mode	The heating is stopped. Hot water is maintained. Force Summer Mode Adjustment range: <ul style="list-style-type: none"> • 0 =Off • 1 =On 	0
AP079	Building Inertia	Inertia of the building used for heat up speed Adjustment range: <ul style="list-style-type: none"> • from 0 to 10 	3
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated Adjustment range: <ul style="list-style-type: none"> • from -30 °C to 20 °C 	-10
AP091	Outside Sens. Source	Type of outside sensor connection to be used Adjustment range: <ul style="list-style-type: none"> • 0 =Auto • 1 =Wired sensor • 2 =Wireless sensor • 3 =Internet measured • 4 =None 	0
AP077	Max. display level	Maximum Level of parameters and signals to display on MK Adjustment range: <ul style="list-style-type: none"> • 1 =End user • 2 =Installer • 3 =Installer advanced • 4 =Lab • 5 =Controls Development 	2

9.11 Reading out measured values

9.11.1 Control unit counters

Tab.38 Navigation for **basic installer level**

Level	Menu path
Basic installer	☰ > Installation Setup > CU-GH08 > Submenu ⁽¹⁾ > Parameters, counters, signals > Counters
(1) See the column "Submenu" in the following table for the correct navigation. The counters are grouped in specific functionalities.	

Tab.39 Counters at **basic installer level**

Code	Display text	Description	Range	Submenu
AC005	CH Energy Consumed	Energy consumed for central heating	0 kWh - 4294967294 kWh	Gas fired appliance
AC006	DHW energy consumed	Energy consumed for domestic hot water	0 kWh - 4294967294 kWh	Gas fired appliance

Tab.40 Navigation for **installer level**

Level	Menu path
Installer	☰ > Installation Setup > CU-GH08 > Submenu ⁽¹⁾ > Parameters, counters, signals > Counters
(1) See the column "Submenu" in the following table for the correct navigation. The counters are grouped in specific functionalities.	

Tab.41 Counters at installer level

Code	Display text	Description	Range	Submenu
AC001	Hours on mains	Number of hours that the appliance has been on mains power	0 Hours - 4294967295 Hours	System Functionality
AC002	Service run hours	Number of hours that the appliance has been producing energy since last service	0 Hours - 131068 Hours	Gas fired appliance
AC003	Hours since service	Number of hours since the previous servicing of the appliance	0 Hours - 131068 Hours	Gas fired appliance
AC004	Starts since service	Number of heat generator starts since the previous servicing.	0 - 4294967294	Gas fired appliance
AC016	Amount Autofillings	Filling counter, count the amount of automatic filling loops	0 - 65534	Auto filling CH
AC026	Pump running hours	Counter that shows the number of pump running hours	0 Hours - 65534 Hours	Gas fired appliance
AC027	Pump starts	Counter that shows the number of pump starts	0 - 65534	Gas fired appliance
DC002	DHW valve cycles	Numbers of Domestic Hot Water diverting valve cycles	0 - 4294967294	Internal DHW Tank DHW Gas fired appliance
DC003	Hrs DHW 3wv	Number of hours during which the diverting valve is in DHW position	0 Hours - 65534 Hours	Tank DHW Gas fired appliance
DC004	DHW starts	Number of starts for domestic hot water	0 - 65534	Internal DHW Tank DHW Gas fired appliance
DC005	DHW run hours	Total number of hours that the appliance has been producing energy for domestical hot water	0 Hours - 65534 Hours	Internal DHW Tank DHW Gas fired appliance
GC007	Failed starts	Number of failed starts	0 - 65534	Gas fired appliance
PC001	ChCtrTotalPower Cons.	Total power consumption used by Central Heating	0 kW - 4294967294 kW	Gas fired appliance
PC002	Total starts	Total number of heat generator starts. For heating and domestic hot water	0 - 4294967294	Gas fired appliance
PC003	Heat gen run hrs	Total Number of hours that the appliance has been producing energy for central heating and DHW	0 Hours - 65534 Hours	Gas fired appliance
PC004	Burner flame loss	Number of burner flame loss	0 - 65534	Gas fired appliance

9.11.2 SCB-02 counters

Tab.42 Zone Mixing valve

CC001	Zone Pump Run Hours	Numbers of pump operating hours of the zone	0 4294967295
CC002	Zone Pump Run Hours	Numbers of pump operating hours of the zone	0 4294967295
CC010	Zone Nbr Pump Starts	Numbers of times the pump of the zone has started	0 4294967295
CC011	Zone Nbr Pump Starts	Numbers of times the pump of the zone has started	0 4294967295

Tab.43 Zone High Temperatur

CC001	Zone Pump Run Hours	Numbers of pump operating hours of the zone	0 4294967295
CC002	Zone Pump Run Hours	Numbers of pump operating hours of the zone	0 4294967295
CC010	Zone Nbr Pump Starts	Numbers of times the pump of the zone has started	0 4294967295
CC011	Zone Nbr Pump Starts	Numbers of times the pump of the zone has started	0 4294967295

Tab.44 DHW tank

CC001	Zone Pump Run Hours	Numbers of pump operating hours of the zone	0 4294967295
CC002	Zone Pump Run Hours	Numbers of pump operating hours of the zone	0 4294967295
CC010	Zone Nbr Pump Starts	Numbers of times the pump of the zone has started	0 4294967295
CC011	Zone Nbr Pump Starts	Numbers of times the pump of the zone has started	0 4294967295

Tab.45 Process heat

CC001	Zone Pump Run Hours	Numbers of pump operating hours of the zone	0 4294967295
CC002	Zone Pump Run Hours	Numbers of pump operating hours of the zone	0 4294967295
CC010	Zone Nbr Pump Starts	Numbers of times the pump of the zone has started	0 4294967295
CC011	Zone Nbr Pump Starts	Numbers of times the pump of the zone has started	0 4294967295

Tab.46 Mandatory platform

AC001	Hours on mains	Number of hours that the appliance has been on mains power	0 Hours 4294967295 Hours
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9.11.3 Control unit signals

Tab.47 Navigation for **basic installer level**

Level	Accessing the menu
Basic installer	☰ > Installation Setup > CU-GH08 > Sub-menu ⁽¹⁾ > Parameters, counters, signals > Signals
(1) See the "Sub-menu" column in the table below for the correct path. The signals are grouped in specific functionalities.	

Tab.48 Signals at **basic installer level**

Code	Display text	Description	Range	Sub-menu
	Used descriptor ver	Version of the menu structure that is being used for export	0 - 255	System Functionality
	No of status items	Status bytes number of different items	0 - 255	Gas fired appliance
	Frost protect active	Frost protect is active	0 = No 1 = Yes	Gas fired appliance
	Comfort mode active	Comfort mode is active	0 = No 1 = Yes	Tank DHW Gas fired appliance

Code	Display text	Description	Range	Sub-menu
	DHW blocking active	Domestic hot water preparation blocking is active	0 = No 1 = Yes	Gas fired appliance
	Anti legionella act.	Anti legionella is active	0 = Off 1 = On	Internal DHW Tank DHW Gas fired appliance
	DHW active	Domestic hot water preparation is active	0 = No 1 = Yes	Gas fired appliance
	DHW Enabled	Domestic hot water preparation is enabled	0 = No 1 = Yes	Gas fired appliance
	CH Enabled	Central heating production is enabled	0 = No 1 = Yes	Gas fired appliance
	Struct loc DLS PDO	Structure used to fill the location and DLS PDO message.		Mandatory bus master
	Ini status	give the device initialisation status	0 = Not Done 1 = CheckObjPointerTable 2 = Default 3 = Read Configuration 1 4 = Read Configuration 2 5 = Read Custom Param. 6 = Finished 7 = Blocking Parameters 8 = PST Error 30 = WaitForConfiguration	System Functionality
	HMI display info	Trending string containing all relevant information for displaying appliance status on the HMI MK2		System Functionality Gas fired appliance
	RTC update on CAN	A Real Time Clock update has been received on the CAN bus	0 = No 1 = Yes	Mandatory bus master
	Total EnergyConsumed	Total energy consumed	0 kWh - 4294967294 kWh	Gas fired appliance
	Auto filling active	Setting to enable or disable the autofilling feature	0 = Standby 1 = Filling Needed 2 = Filling Active 3 = Auto filling pending	Auto filling CH
	Func. test status	Status of the functional test	0 = Off 1 = Low power 2 = Medium power 3 = High power 4 = Cooling	Gas fired appliance
AM001	DHW active	Is the appliance currently in domestic hot water production mode?	0 = Off 1 = On	Internal DHW Tank DHW Gas fired appliance
AM010	Pump speed	The current pump speed	0 % - 100 %	Internal DHW Gas fired appliance
AM011	Service required?	Is service currently required?	0 = No 1 = Yes	Gas fired appliance
AM012	Status Appliance	Current main status of the appliance.	 See Status and sub-status, page 63	Status information System Functionality
AM014	Sub status Appliance	Current sub status of the appliance.	 See Status and sub-status, page 63	Status information System Functionality
AM015	Pump running?	Is the pump running?	0 = Inactive 1 = Active	Gas fired appliance

Code	Display text	Description	Range	Sub-menu
AM016	System Flow Temp	Flow temperature of appliance.	-25 °C - 150 °C	Zone manager Internal DHW Tank DHW Producer Generic Gas fired appliance Prod. manager bridge
AM018	T return	Return temperature of appliance. The temperature of the water entering the appliance.	-25 °C - 150 °C	Zone manager Internal DHW Tank DHW Gas fired appliance
AM019	Water pressure	Water pressure of the primary circuit.	0 bar - 4 bar	Auto filling CH Gas fired appliance
AM022	On / Off heat demand	On / Off heat demand	0 = Off 1 = On	Gas fired appliance
AM027	Outside temperature	Instantaneous outside temperature	-60 °C - 60 °C	Outdoor temperature Gas fired appliance
AM033	Next Service Ind.	Next service indication	0 = None 1 = A 2 = B 3 = C 4 = Custom	Gas fired appliance
AM037	3 way valve	Status of the three way valve	0 = CH 1 = DHW	Gas fired appliance
AM040	Control temperature	Temperature used for hot water control algorithms.	0 °C - 250 °C	Internal DHW Gas fired appliance
AM046	Internet T.Outside	Outside temperature received from an internet source	-70 °C - 70 °C	Outdoor temperature
AP078	Out sensor detected	Outside sensor detected in the application	0 = No 1 = Yes	Outdoor temperature
DM002	DHWFlowSpeed	Actual DHW combi flow rate	0 l/min - 25 l/min	Internal DHW
DM029	DHW setpoint	Domestic Hot Water temperature setpoint	0 °C - 100 °C	Internal DHW
GM001	Actual fan RPM	Actual fan RPM	0 Rpm - 12000 Rpm	Gas fired appliance
GM002	Fan RPM setpoint	Actual fan RPM setpoint	0 Rpm - 12000 Rpm	Gas fired appliance
GM008	Actual flame current	Actual flame current measured	0 µA - 25 µA	Gas fired appliance

Tab.49 Navigation for **installer level**

Level	Accessing the menu
Installer	☰ > Installation Setup > CU-GH08 > Sub-menu ⁽¹⁾ > Parameters, counters, signals > Signals
(1) See the "Sub-menu" column in the table below for the correct path. The signals are grouped in specific functionalities.	

Tab.50 Signals at **installer level**

Code	Display text	Description	Range	Sub-menu
	Error code	Holds the error code in case of a warning, blocking or locking		System Functionality
	CurrOrUpcomServ Notif	Current or upcoming service notification	0 = None 1 = A 2 = B 3 = C 4 = Custom	Gas fired appliance
	PowerActualU8	Actual relative power produced for PDO output	0 % - 100 %	Zone manager Gas fired appliance PM-P Int. Interface
	ZoneSysPowerReceptPM	Current system power received from power manager of the zone	0 % - 100 %	Zone manager

Code	Display text	Description	Range	Sub-menu
	Zone SysTReturn PM	Current system return temperature from power manager of the zone	-327.68 °C - 327.67 °C	Zone manager
	Request P to PM	Request from the producer to the producer manager to take action		Producer Generic Producer<>Consumer Prod. manager bridge
	Actual power PM	Actual power sent from the producer manager	0 % - 100 %	Producer Generic Producer<>Consumer Prod. manager bridge
	Time update stat RU	Time update status for devices communicating via the RUbuss		Time R to L/S-bus
AM024	Actual rel. Power	Actual relative power of the appliance	0 % - 100 %	Gas fired appliance
AM036	Flue gas temperature	Temperature of the exhaust gas leaving the appliance	0 °C - 250 °C	Gas fired appliance
AM043	Pwr dwn reset needed	A power down reset is needed	0 = No 1 = Yes	Gas fired appliance
AM101	Internal setpoint	Internal system flow temperature setpoint	0 °C - 250 °C	Gas fired appliance
DM001	DHW tank temp bottom	Domestic Hot Water tank temperature (bottom sensor)	-25 °C - 150 °C	Tank DHW
DM005	DhwSolarTankTemp	Domestic Hot Water solar tank temperature	-25 °C - 150 °C	Internal DHW Tank DHW
DM008	DHW out temp	Temperature sensor for the tap temperature leaving the appliance	-25 °C - 150 °C	Internal DHW
GM025	STB status	High limit status (0 = open, 1 = closed)	0 = Open 1 = Closed 2 = Off	Gas fired appliance
GM027	Flame Test Active	Flame test 1=active, 0=inactive	0 = Inactive 1 = Active	Gas fired appliance
GM044	ControlledStopReason	Possible reason for Controlled Stop	0 = None 1 = CH Blocking 2 = DHW Blocking 3 = Wait for burner 4 = TFlow > absolute max 5 = TFlow > start temp. 6 = Theat exch. > Tstart 7 = Avg Tflow > Tstart 8 = TFlow > max setpoint 9 = T difference too big 10 = TFlow > stop temp. 11 = Anti cycle on off HD	Gas fired appliance
PM002	CH Setpoint	Central heating setpoint of the appliance	0 °C - 250 °C	Gas fired appliance
PM003	ChTflowAverage	Actual average flow temperature	-25 °C - 150 °C	Gas fired appliance

Tab.51 Navigation for **advanced installer level**

Level	Accessing the menu
Advanced installer	☰ > Installation Setup > CU-GH08 > Sub-menu ⁽¹⁾ > Parameters, counters, signals > Signals > Adv. Signals
(1) See the "Sub-menu" column in the table below for the correct path. The signals are grouped in specific functionalities.	

Tab.52 Signals at advanced installer level

Code	Display text	Description	Range	Sub-menu
	Warning code	Warning code describing the current error status of the device	0 - 255	System Functionality
	numer of bitfields	number of status bitfields	0 - 255	System Functionality
	config bitfield	Configuration bitfields number 1. Relevant for the HMI output	0 - 255	System Functionality
	status bitfield 1	Status bitfields number 1. Relevant for the HMI output	0 - 255	Status information System Functionality
	status bitfield 2	Status bitfields number 2. Relevant for the HMI output	0 - 255	Status information System Functionality
	status bitfield 3	Status bitfields number 3. Relevant for the HMI output	0 - 255	System Functionality
	Wireless T.Outside	Outside temperature measured by a wireless source	-50 °C - 60 °C	Outdoor temperature
	Low average Out Temp	Low average of outside sensor temperature	-60 °C - 60 °C	Outdoor temperature
	High average OutTemp	High average of outside sensor temperature	-60 °C - 60 °C	Outdoor temperature
	Flow temp producer	Flow temperature used for calculations in the power control functions	-40 - 120	PM-P Int. Interface
	Return temp producer	Return temperature used for calculations in the power control functions	-40 - 120	PM-P Int. Interface
	Wired T.Outside	Outside temperature measured by a wired source	-50 °C - 60 °C	Outdoor temperature
	Outside Sens. Source	Outside sensor connection used	1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	Outdoor temperature
AM004	Blocking code	The current blocking code	0 - 255	System Functionality
AM005	Locking code	The currently active locking code.	0 - 255	System Functionality
AM091	SeasonMode	Seasonal mode active (summer / winter)	0 = Winter 1 = Frost protection 2 = Summer neutral band 3 = Summer	Outdoor temperature
DM004	DhwFlowTempSet point	Flow temperature setpoint Domestic Hot Water	0 °C - 95 °C	Tank DHW
GM003	Flame detection	Flame detection	0 = Off 1 = On	Gas fired appliance
GM004	Gas valve 1	Gas valve 1	0 = Open 1 = Closed 2 = Off	Gas fired appliance
GM006	GPS status	Gas Pressure Switch status	0 = Open 1 = Closed 2 = Off	Gas fired appliance
GM007	Ignite	Appliance is igniting	0 = Off 1 = On	Gas fired appliance
GM010	Power available	Available power in % of maximum	0 % - 100 %	Gas fired appliance
GM013	Blocking Input	Blocking input status	0 = Open 1 = Closed 2 = Off	Gas fired appliance

■ Status and sub-status

The status and sub-status are only shown if applicable.

Tab.53 Status numbers

Status	Description
0	Standby
1	Heat Demand
2	Generator start
3	Generator CH
4	Generator DHW
5	Generator stop
6	Pump Post Run
8	Controlled Stop
9	Blocking Mode
10	Locking Mode
11	Load test min
12	Load test CH max
13	Load test DHW max
15	Manual Heat Demand
16	Frost Protection
19	Reset In Progress
21	Halted
200	Device Mode
254	Unknown

Tab.54 Sub-status numbers

Sub-status	Description
0	Standby
1	AntiCycling
4	WaitingForStartCond.
10	CloseExtGasValve
12	CloseFlueGasValve
13	FanToPrePurge
14	WaitForReleaseSignal
15	BurnerOnCommandToSu
17	PreIgnition
18	Ignition
19	FlameCheck
20	Interpurge
30	Normal Int.Setpoint
31	Limited Int.Setpoint
32	NormalPowerControl
33	GradLevel1PowerCtrl
34	GradLevel2PowerCtrl
35	GradLevel3PowerCtrl
36	ProtectFlamePwrCtrl
37	StabilizationTime
38	ColdStart
39	ChResume
40	SuRemoveBurner
41	FanToPostPurge
44	StopFan

Sub-status	Description
45	LimitedPwrOnTflueGas
60	PumpPostRunning
61	OpenPump
63	SetAntiCycleTimer
200	Initialising Done
201	Initialising Csu
202	Init. Identifiers
203	Init.BL.Parameter
204	Init. Safety Unit
205	Init. Blocking
254	StateUnknown
255	SuOutOfResetsWait1Hr

9.11.4 SCB-02 signals

Tab.55 Zone Direct

	Zone over heating	Active over heating of the zone	0 Off 1 On
	Zone over heating	Active over heating of the zone	0 Off 1 On
CM030	Zone RoomTemperature	Measure of the room temperature of the zone	0 °C 50 °C
CM031	Zone RoomTemperature	Measure of the room temperature of the zone	0 °C 50 °C
CM050	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM051	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM060	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM061	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM070	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM071	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM110	ZoneTRoomUnit setp	Room Unit temperature setpoint of zone	0 °C 35 °C
CM111	ZoneTRoomUnit setp	Room Unit temperature setpoint of zone	0 °C 35 °C
CM120	ZoneCurrentMode	Zone Current Mode	0 Scheduling 1 Manual 2 Antifrost 3 Temporary
CM121	ZoneCurrentMode	Zone Current Mode	0 Scheduling 1 Manual 2 Antifrost 3 Temporary
CM130	ZoneCurrent activity	Current activity of the zone	0 Anti frost 1 Reduced 2 Comfort 3 Anti legionella
CM131	ZoneCurrent activity	Current activity of the zone	0 Anti frost 1 Reduced 2 Comfort 3 Anti legionella
CM140	ZoneOTContr present	OpenTherm controller is connected to the zone	0 No 1 Yes

CM141	ZoneOTContr present	OpenTherm controller is connected to the zone	0 No 1 Yes
CM150	ZoneState Heatdemand	State of On Off heat demand per zone	0 No 1 Yes
CM151	ZoneState Heatdemand	State of On Off heat demand per zone	0 No 1 Yes
CM160	Zone Mod HeatDemand	Presense of modulating heat demand per zone	0 No 1 Yes
CM161	Zone Mod HeatDemand	Presense of modulating heat demand per zone	0 No 1 Yes
CM180	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes
CM181	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes
CM190	Zone Troom setpoint	Wished room temperature setpoint of the zone	0 °C 50 °C
CM191	Zone Troom setpoint	Wished room temperature setpoint of the zone	0 °C 50 °C
CM200	ZoneCurrentHeatMode	Displaying current operating mode of the zone	0 Standby 1 Heating 2 Cooling
CM201	ZoneCurrentHeatMode	Displaying current operating mode of the zone	0 Standby 1 Heating 2 Cooling
CM210	ZoneTout temp	Current outdoor temperature of the zone	-70 °C 70 °C
CM211	ZoneTout temp	Current outdoor temperature of the zone	-70 °C 70 °C
CM240	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 No 1 Yes
CM241	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 No 1 Yes
CM280	ZoneRTC TcalcRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	-60 °C 60 °C
CM281	ZoneRTC TcalcRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	-60 °C 60 °C

Tab.56 Zone Mixing valve

	Zone over heating	Active over heating of the zone	0 Off 1 On
	Zone over heating	Active over heating of the zone	0 Off 1 On
CM010	Zone 3WV closing	Mixing valve closing status of zone	0 No 1 Yes
CM011	Zone 3WV closing	Mixing valve closing status of zone	0 No 1 Yes
CM020	Zone 3WV opening	Mixing valve opening status of zone	0 No 1 Yes
CM021	Zone 3WV opening	Mixing valve opening status of zone	0 No 1 Yes
CM030	Zone RoomTemperature	Measure of the room temperature of the zone	0 °C 50 °C
CM031	Zone RoomTemperature	Measure of the room temperature of the zone	0 °C 50 °C

CM040	Zone Tflow /DHW temp	Measure Zone Flow Temperature or DHW temperature	-10 °C 140 °C
CM041	Zone Tflow /DHW temp	Measure Zone Flow Temperature or DHW temperature	-10 °C 140 °C
CM050	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM051	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM060	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM061	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM070	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM071	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM110	ZoneTRoomUnit setp	Room Unit temperature setpoint of zone	0 °C 35 °C
CM111	ZoneTRoomUnit setp	Room Unit temperature setpoint of zone	0 °C 35 °C
CM120	ZoneCurrentMode	Zone Current Mode	0 Scheduling 1 Manual 2 Antifrost 3 Temporary
CM121	ZoneCurrentMode	Zone Current Mode	0 Scheduling 1 Manual 2 Antifrost 3 Temporary
CM130	ZoneCurrent activity	Current activity of the zone	0 Anti frost 1 Reduced 2 Comfort 3 Anti legionella
CM131	ZoneCurrent activity	Current activity of the zone	0 Anti frost 1 Reduced 2 Comfort 3 Anti legionella
CM140	ZoneOTContr present	OpenTherm controller is connected to the zone	0 No 1 Yes
CM141	ZoneOTContr present	OpenTherm controller is connected to the zone	0 No 1 Yes
CM150	ZoneState Heatdemand	State of On Off heat demand per zone	0 No 1 Yes
CM151	ZoneState Heatdemand	State of On Off heat demand per zone	0 No 1 Yes
CM160	Zone Mod HeatDemand	Presense of modulating heat demand per zone	0 No 1 Yes
CM161	Zone Mod HeatDemand	Presense of modulating heat demand per zone	0 No 1 Yes
CM180	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes
CM181	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes
CM190	Zone Troom setpoint	Wished room temperature setpoint of the zone	0 °C 50 °C
CM191	Zone Troom setpoint	Wished room temperature setpoint of the zone	0 °C 50 °C
CM200	ZoneCurrentHeatMode	Displaying current operating mode of the zone	0 Standby 1 Heating 2 Cooling

CM201	ZoneCurrentHeatMode	Displaying current operating mode of the zone	0 Standby 1 Heating 2 Cooling
CM210	ZoneTout temp	Current outdoor temperature of the zone	-70 °C 70 °C
CM211	ZoneTout temp	Current outdoor temperature of the zone	-70 °C 70 °C
CM240	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 No 1 Yes
CM241	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 No 1 Yes
CM280	ZoneRTC TcalcRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	-60 °C 60 °C
CM281	ZoneRTC TcalcRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	-60 °C 60 °C

Tab.57 Zone High Temperatur

	Zone over heating	Active over heating of the zone	0 Off 1 On
	Zone over heating	Active over heating of the zone	0 Off 1 On
CM030	Zone RoomTemperature	Measure of the room temperature of the zone	0 °C 50 °C
CM031	Zone RoomTemperature	Measure of the room temperature of the zone	0 °C 50 °C
CM050	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM051	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM060	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM061	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM070	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM071	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM110	ZoneTRoomUnit setp	Room Unit temperature setpoint of zone	0 °C 35 °C
CM111	ZoneTRoomUnit setp	Room Unit temperature setpoint of zone	0 °C 35 °C
CM120	ZoneCurrentMode	Zone Current Mode	0 Scheduling 1 Manual 2 Antifrost 3 Temporary
CM121	ZoneCurrentMode	Zone Current Mode	0 Scheduling 1 Manual 2 Antifrost 3 Temporary
CM130	ZoneCurrent activity	Current activity of the zone	0 Anti frost 1 Reduced 2 Comfort 3 Anti legionella
CM131	ZoneCurrent activity	Current activity of the zone	0 Anti frost 1 Reduced 2 Comfort 3 Anti legionella

CM140	ZoneOTContr present	OpenTherm controller is connected to the zone	0 No 1 Yes
CM141	ZoneOTContr present	OpenTherm controller is connected to the zone	0 No 1 Yes
CM150	ZoneState Heatdemand	State of On Off heat demand per zone	0 No 1 Yes
CM151	ZoneState Heatdemand	State of On Off heat demand per zone	0 No 1 Yes
CM160	Zone Mod HeatDemand	Presense of modulating heat demand per zone	0 No 1 Yes
CM161	Zone Mod HeatDemand	Presense of modulating heat demand per zone	0 No 1 Yes
CM180	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes
CM181	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes
CM190	Zone Troom setpoint	Wished room temperature setpoint of the zone	0 °C 50 °C
CM191	Zone Troom setpoint	Wished room temperature setpoint of the zone	0 °C 50 °C
CM200	ZoneCurrentHeatMode	Displaying current operating mode of the zone	0 Standby 1 Heating 2 Cooling
CM201	ZoneCurrentHeatMode	Displaying current operating mode of the zone	0 Standby 1 Heating 2 Cooling
CM210	ZoneTout temp	Current outdoor temperature of the zone	-70 °C 70 °C
CM211	ZoneTout temp	Current outdoor temperature of the zone	-70 °C 70 °C
CM240	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 No 1 Yes
CM241	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 No 1 Yes
CM280	ZoneRTC TcalcRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	-60 °C 60 °C
CM281	ZoneRTC TcalcRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	-60 °C 60 °C

Tab.58 DHW tank

CM040	Zone Tflow /DHW temp	Measure Zone Flow Temperature or DHW temperature	-10 °C 140 °C
CM041	Zone Tflow /DHW temp	Measure Zone Flow Temperature or DHW temperature	-10 °C 140 °C
CM050	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM051	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM060	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM061	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM070	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C

CM071	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM120	ZoneCurrentMode	Zone Current Mode	0 Scheduling 1 Manual 2 Antifrost 3 Temporary
CM121	ZoneCurrentMode	Zone Current Mode	0 Scheduling 1 Manual 2 Antifrost 3 Temporary
CM130	ZoneCurrent activity	Current activity of the zone	0 Anti frost 1 Reduced 2 Comfort 3 Anti legionella
CM131	ZoneCurrent activity	Current activity of the zone	0 Anti frost 1 Reduced 2 Comfort 3 Anti legionella
CM180	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes
CM181	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes

Tab.59 Zone time program

CM050	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM051	Status Pump zone	Status of the Pump of zone	0 No 1 Yes

Tab.60 Process heat

CM040	Zone Tflow /DHW temp	Measure Zone Flow Temperature or DHW temperature	-10 °C 140 °C
CM041	Zone Tflow /DHW temp	Measure Zone Flow Temperature or DHW temperature	-10 °C 140 °C
CM050	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM051	Status Pump zone	Status of the Pump of zone	0 No 1 Yes
CM060	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM061	ZonePumpSpeed	Current Pump speed of zone	0 % 100 %
CM070	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM071	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 °C 150 °C
CM180	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes
CM181	Zone RU present	Presense of Room Unit in this zone	0 No 1 Yes

Tab.61 Zone manager

	PowerActualU8	Actual relative power produced for PDO output	0 % 100 %
AM016	System Flow Temp	Flow temperature of appliance.	-10 °C 140 °C
AM018	T return	Return temperature of appliance. The temperature of the water entering the appliance.	-10 °C 140 °C

Tab.62 Status information

AM200	Status contact 1	Status of status contact 1. The meaning is dependant on the current function setting.	0 Off 1 On
AM201	Status contact 1	Status of status contact 1. The meaning is dependant on the current function setting.	0 Off 1 On

Tab.63 Mandatory for SCB

	HMI display info	Trending string containing all relevant information for displaying appliance status on the HMI MK2
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Tab.64 Mandatory platform

	Ini status	give the device initialisation status	0 Not Done 1 CheckObjPointerTable 2 Default 3 Read Configuration 1 4 Read Configuration 2 5 Read Custom Param. 6 Finished 7 Blocking Parameters 8 PST Error 30 WaitForConfiguration
	HMI display info	Trending string containing all relevant information for displaying appliance status on the HMI MK2	
AM012	Status Appliance	Current main status of the appliance.	DeviceState
AM014	Sub status Appliance	Current sub status of the appliance.	DeviceSubStatus

Tab.65 Outdoor sensor

	Wireless T.Outside	Outside temperature measured by a wireless source	-50 °C 60 °C
	Low average Out Temp	Low average of outside sensor temperature	-70 °C 70 °C
	High average OutTemp	High average of outside sensor temperature	-70 °C 70 °C
	Wired T.Outside	Outside temperature measured by a wired source	-50 °C 60 °C
	Outside Sens. Source	Outside sensor connection used	1 Wired sensor 2 Wireless sensor 3 Internet measured 4 None

AM027	Outside temperature	Instantaneous outside temperature	-70 °C 70 °C
AM046	Internet T.Outside	Outside temperature received from an internet source	-70 °C 70 °C
AM091	SeasonMode	Seasonal mode active (summer / winter)	0 Winter 1 Frost protection 2 Summer neutral band 3 Summer
AP078	Out sensor detected	Outside sensor detected in the application	0 No 1 Yes

Tab.66 0-10 volt or PWM out

	PowerActualU8	Actual relative power produced for PDO output	0 % 100 %
	10V-PWM output setp	Holds the requested output value of the 0-10V output	0 V 25 V
	Actl 0-10V PWM value	The actual 0-10V PWM output after mapping, calculation and correction	0 % 25 %
	List 10V outp stat 2	List of 0-10V output status 2 information of all connected devices in the system	0 255
AM010	Pump speed	The current pump speed	0 % 100 %
AM015	Pump running?	Is the pump running?	0 Inactive 1 Active

Tab.67 Producer Manager Gen

AM016	System Flow Temp	Flow temperature of appliance.	-10 °C 140 °C
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10 Maintenance

10.1 General

We recommend having the boiler inspected and serviced at regular intervals.



Caution

Do not neglect to service the boiler. Contact a qualified professional or take out a maintenance contract for the obligatory annual servicing of the boiler.
Failure to service the appliance voids the warranty.



Caution

Adapt the frequency of inspection and maintenance to the conditions of use. This particularly concerns boilers used continuously (for specific processes).



Danger of electric shock

Before starting any maintenance work, switch off the boiler and protect it to ensure it cannot be accidentally switched back on.



Caution

Have an inspection carried out and the flues swept **at least once a year** or more, depending on the regulations in force in your country.

**Caution**

Only qualified professionals are authorised to carry out maintenance work on the boiler and the heating system.

**Caution**

After maintenance or repair work, check the entire heating system to ensure that there are no leaks.

**Caution**

Only genuine spare parts may be used.

10.2 Maintenance message

The boiler display will clearly indicate that a service is required at the appropriate time. Use the automatic maintenance message for preventive maintenance, to keep faults to a minimum. The maintenance messages show which service kit must be used. These service kits contain all parts and gaskets that are required for the relevant service. These service kits (A, B or C) are available from your spare parts supplier.

**Important**

A maintenance message must be followed up within 2 months. Call your installer as soon as possible.

**Caution**

Reset the maintenance message following every service.

10.2.1 Viewing the service notifications

When a service notification appears on the display, you can view the details of the notification.



1. Select the **Maintenance** icon.



⇒ Information about maintenance is displayed (cannot be modified).

10.3 Standard inspection and maintenance operations

10.3.1 Checking the combustion

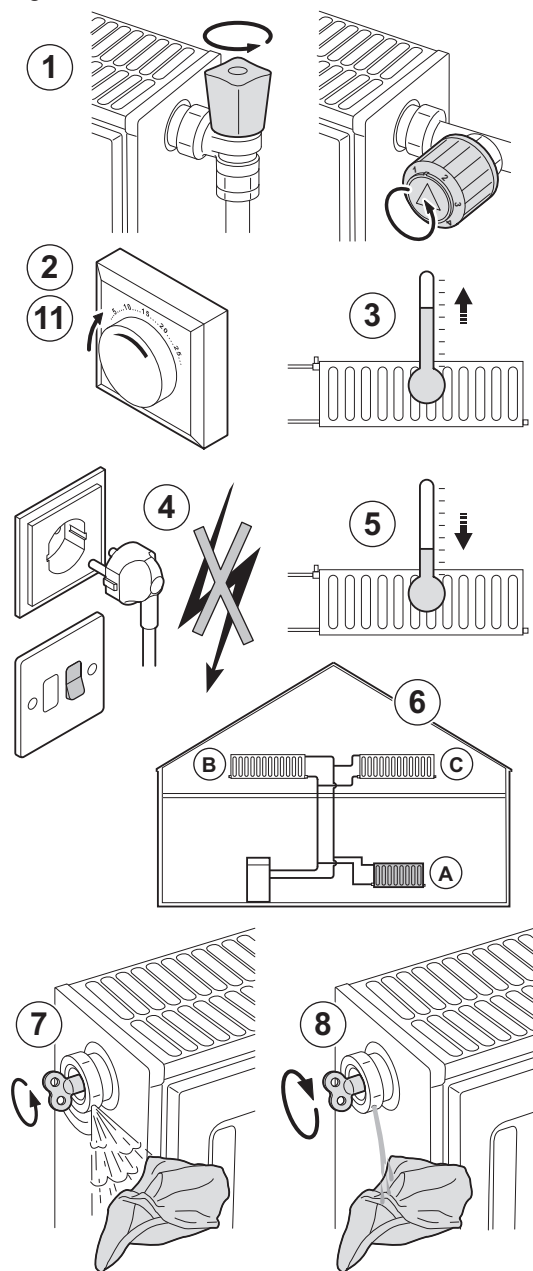
Combustion is checked by measuring the O₂ percentage in the flue gas discharge pipe.

**See also**

Checking/adjusting the combustion, page 32
 Performing the full load test, page 32
 Control and setting values for O₂ at full load, page 32
 Performing the part load test, page 33
 Control and setting values for O₂ at part load, page 33

10.3.2 Venting the heating system

Fig.62



Any air in the boiler, pipes or valves must be vented in order to prevent annoying noises that may be generated during heating or when drawing water.

1. Open the valves of all the radiators and/or underfloor heating circuits connected to the system.
2. Set the room thermostat to the highest possible temperature.
3. Wait until the radiators are warm.
4. Shut down the boiler.
5. Wait approximately 10 minutes, until the radiators feel cold.
6. Bleed the radiators. Work from the lowest to the highest.
7. Open the venting valve with the bleed key, keeping a cloth pressed against the vent.



Warning

The water may still be hot.

8. Wait until water comes out of the venting valve and then close the venting valve.
9. Start the boiler.



Important

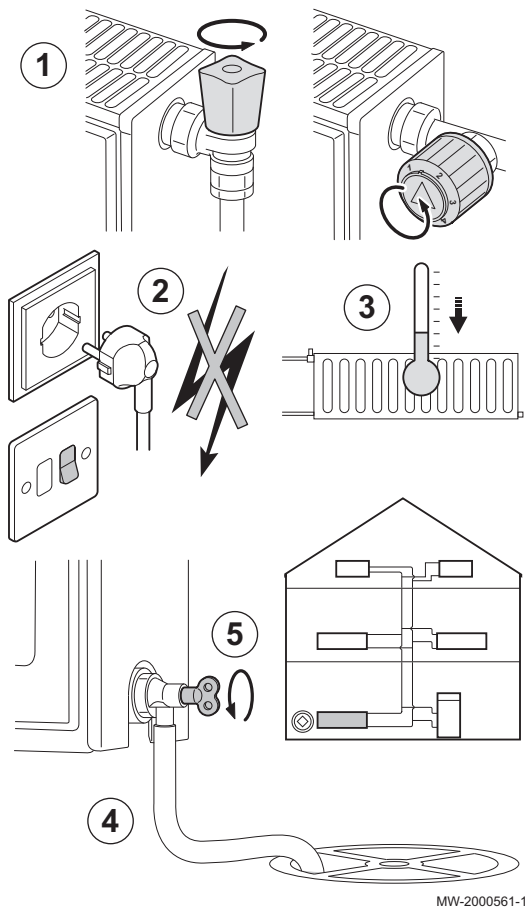
After the power is switched on, the boiler always runs through an automatic venting program lasting approx. 3 minutes.

10. After venting, check that the water pressure in the system is still adequate. If necessary, top up the water level in the heating system.
11. Adjust the room thermostat or temperature control.

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10.3.3 Draining the heating system

Fig.63



It may be necessary to drain the central heating system if radiators need to be replaced, if there is a major water leak or if there is a risk of freezing.

1. Open the valves on all the radiators connected to the system.
2. Shut down the boiler.
3. Wait approximately 10 minutes, until the radiators feel cold.
4. Connect a drain hose to the lowest draining point. Place the end of the hose in a drain or at a place where drained pipe water will not cause any damage.
5. Open the central heating system filling/draining valve. Drain the installation.



Warning

The water may still be hot.

6. Close the drain valve when no more water comes from the draining point.

10.3.4 Check the hydraulic pressure

1. Check the hydraulic pressure in the installation.



Caution

The hydraulic pressure must reach a minimum of 0.08 MPa (0.8 bar).



Important

If the hydraulic pressure is lower than 0.08 MPa (0.8 bar), the **bar** symbol flashes.

2. Top up the heating system with water to increase the hydraulic pressure.



Important

The recommended hydraulic pressure when cold is between 0.15 MPa (1.5 bar) and 0.2 MPa (2 bar).



See also

Displaying the water pressure on the control panel, page 34

10.3.5 Topping up the installation with water

1. Open the valves on all radiators connected to the heating system.
2. Set the room thermostat to as low a temperature as possible.
3. Put the boiler in shut-down/frost protection mode.
4. Open the fill valve.
5. Close the filling valve when the pressure gauge shows a pressure of 0.15 MPa (1.5 bar).
6. Put the boiler in heating mode.

- When the pump has stopped, vent again and top up the water pressure.



Important

Filling and venting the installation twice a year should be sufficient to obtain an adequate hydraulic pressure. If it is often necessary to top up the installation with water, contact your installer.

10.3.6 Cleaning the casing

- Clean the outside of the boiler using a damp cloth and a gentle detergent.

10.4 Specific maintenance operations

10.4.1 Carrying out an auto-detect

Carry out an auto-detect after removing or replacing a control PCB.

Proceed as follows:



- Press the key.
- Select **Advanced Service Menu / This will send a command to autodetect all devices connected to the Local Bus**
⇒ The selection options appear on the screen:
 - **Cancel**
 - **Confirm**
- Select **Confirm**
- The auto-detect is carried out and after a while the main display appears.

10.4.2 Other specific maintenance operations

In addition to the maintenance operations described in this manual, please also ensure that the maintenance operations listed in the boiler manual are carried out.



See

Boiler installation and service manual.

11 Troubleshooting

11.1 Displaying and clearing the error memory

The error memory stores the 32 most recent errors. You can check the details of each error and then clear it from the error memory.

To display and clear the error memory:



- Press the button.
- Select **Error History**.
⇒ The list of the 32 most recent errors is displayed with the error code, a short description and the date.
- Carry out the following actions according to your needs:
 - Show the details of an error: select the desired error.
 - To clear the error memory, press and hold the rotary knob.

11.2 Error codes

If an error occurs, the control panel displays a message and a corresponding code.

The control panel status LED flashes and/or is displayed in red.


The control panel can display three types of error codes:

Type of code	Description	Colour of the error icon (⊗)
Axx.xx codes	Warning	Grey
Hxx.xx codes	Blockage	Red
Exx.xx codes	Lock out	Red + red flashing screen

1. Make a note of the code displayed. The code is important for the correct and rapid diagnosis of the type of malfunction and for any technical assistance that may be needed.
2. Switch the boiler off and switch it back on.
3. The boiler starts up again automatically when the cause of the error has been removed.
 ⇒ If the code is displayed again, correct the problem by following the instructions in the tables below.

11.2.1 Warning

If it is anticipated that a situation may develop into a fault, a warning will first be given for some malfunctions. The error code is displayed in the main display and the LED for status indication flashes green.

Press the  key to remove the warning from the main display.

■ **CU-GH-08 alarm codes**

Tab.68

Code	Display text	Description/Solution
A00.34	TOutside Missing	Outside temperature sensor was expected but not detected
A00.42	WaterPressureMissing	Water pressure sensor was expected but not detected: <ul style="list-style-type: none"> • Water pressure sensor is not connected: connect the sensor • Water pressure sensor is not connected correctly: connect the sensor correctly
A02.06	Water Press Warning	Water Pressure Warning active: <ul style="list-style-type: none"> • Water pressure too low; check the water pressure.
A02.18	OBD Error	Object Dictionary Error : <ul style="list-style-type: none"> • Reset CN1 and CN2
A02.36	Funct device lost	Functional device has been disconnected: <ul style="list-style-type: none"> • Run a PCB auto-detect. • Bad connection: check the wiring and connectors. • Faulty SCB PCB: replace SCB PCB
A02.37	Uncritic device lost	Uncritical device has been disconnected: <ul style="list-style-type: none"> • Run a PCB auto-detect. • Bad connection: check the wiring and connectors. • Faulty SCB PCB: replace SCB PCB
A02.45	Full Can Conn Matrix	Full Can Connection Matrix : <ul style="list-style-type: none"> • Carry out an auto-detect
A02.46	Full Can Device Adm	Full Can Device Administration: <ul style="list-style-type: none"> • Carry out an auto-detect
A02.48	Funct Gr Conf Fault	Function Group Configuration Fault: <ul style="list-style-type: none"> • Carry out an auto-detect
A02.49	Failed Init Node	Failed Initialising Node: <ul style="list-style-type: none"> • Carry out an auto-detect
A02.69	Fair mode active	Fair mode active
A08.02	Shower Time Elapsed	The time reserved for the shower has elapsed

11.2.2 Blockage

A (temporary) blockage is a status resulting from an abnormal state. The error code is displayed in the main display and the LED for status indication flashes red. The control unit makes a number of attempts to restart. If the cause of blocking persists, the blockage will turn into a fault.



Press the  key to remove the warning from the main display.



Important

If the cause of blocking is resolved, the system will restart automatically.

■ Blocking codes CU-GH-08

Code	Display text	Description/Solution
H01.00	Comm Error	Communication Error occurred: <ul style="list-style-type: none"> Restart the boiler
H01.05	Max Delta TF-TR	Maximum difference between flow temperature and return temperature: <ul style="list-style-type: none"> No flow or insufficient flow: <ul style="list-style-type: none"> Check the circulation (direction, pump, valves) Check the hydraulic pressure Check the cleanliness of the heat exchanger Sensor error: <ul style="list-style-type: none"> Check that the sensors are operating correctly Check that the sensor has been correctly fitted
H01.08	CH Temp Grad. Level3	Maximum CH temperature gradient level3 exceeded: <ul style="list-style-type: none"> No flow or insufficient flow: <ul style="list-style-type: none"> Check the circulation (direction, pump, valves). Check the hydraulic pressure. Check the cleanliness of the heating body. Check that the installation has been correctly vented to remove air. Sensor error: <ul style="list-style-type: none"> Check that the sensors are operating correctly. Check that the sensor has been fitted properly.
H01.09	Gas Pressure Switch	Gas Pressure Switch: <ul style="list-style-type: none"> No flow or insufficient flow: <ul style="list-style-type: none"> Check that the gas valve is fully opened Check the gas supply pressure Wrong setting on the Gps gas pressure switch: <ul style="list-style-type: none"> Check whether the Gps pressure switch is installed correctly Replace the gas pressure switch (Gps) if necessary
H01.14	Max Tflow	Flow temperature has exceeded the maximum operating value: <ul style="list-style-type: none"> Bad connection: check the wiring and connectors. No flow or insufficient flow: <ul style="list-style-type: none"> Check the circulation (direction, pump, valves). Check the hydraulic pressure. Check the cleanliness of the heating body.
H01.21	Dhw Temp GradLevel3	Maximum Dhw Temperature Gradient Level3 Exceeded: <ul style="list-style-type: none"> Check the circulation (direction, pump, valves) Check that the heating pump is operating correctly
H02.00	Reset In Progress	Reset In Progress: <ul style="list-style-type: none"> No action
H02.02	Wait Config Number	Waiting For Configuration Number: <ul style="list-style-type: none"> Reset  and  (see boiler data plate).
H02.03	Conf Error	Configuration Error

Code	Display text	Description/Solution
H02.04	Parameter Error	Parameter Error: <ul style="list-style-type: none"> Parameters are not correct: <ul style="list-style-type: none"> Restart the boiler Reset CN1 and CN2 Replace the control system
H02.05	CSU CU mismatch	CSU does not match CU type: <ul style="list-style-type: none"> Reset CN1 and CN2.
H02.09	Partial block	Partial blocking of the device recognized: <ul style="list-style-type: none"> External cause: remove external cause. Wrong parameter set: check the parameters. Bad connection: check the connection.
H02.10	Full Block	Full blocking of the device recognized: <ul style="list-style-type: none"> External cause: remove external cause. Wrong parameter set: check the parameters. Bad connection: check the connection.
H02.12	Release Signal	Release Signal input of the Control Unit from device external environment: <ul style="list-style-type: none"> External cause: remove external cause. Wrong parameter set: check the parameters. Bad connection: check the connection.
H02.38	No water hardness	No hardness of water
H02.70	HRU test error	External heat recovery unit test failed
H03.00	Parameter Error	Safety parameters level 2, 3, 4 are not correct or missing : <ul style="list-style-type: none"> Restart the boiler Replace the CU-GH-08 control panel
H03.01	CU to GVC data error	No valid data from CU to GVC received: <ul style="list-style-type: none"> Restart the boiler
H03.02	Flame loss detected	Measured ionisation current is below limit: <ul style="list-style-type: none"> No ionization current: <ul style="list-style-type: none"> Vent the gas supply to remove air. Check whether the gas valve is properly open. Checking the gas supply pressure. Check the operation and setting of the gas valve unit. Check that the air supply and flue gas discharge flues are not blocked. Check that there is no recirculation of flue gases.
H03.05	Internal blocking	Gas Valve Control internal blocking occurred: <ul style="list-style-type: none"> Restart the boiler Replace the CU-GH-08 control panel
H03.17	Safety check	Periodically safety check ongoing

11.2.3 Lock out codes CU-GH-08

If the blocking conditions continue, the boiler goes into lockout (also called an error). The boiler will also lock out if an error is signalled anywhere in the boiler. The error code appears in the main display and alternates with a flashing red screen.

The meaning of the error codes can be found in the error table. Note the error code.



Important

The error code is important for correct and fast tracing of the nature of the error and for obtaining support from your supplier.

Tab.69

Code	Display text	Description/Solution
E00.04	TReturn Open	Return temperature sensor is either removed or measures a temperature below range: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E00.05	TReturn Closed	Return temperature sensor is either shorted or measures a temperature above range: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Faulty sensor: replace the sensor.
E00.06	TReturn Missing	Return temperature sensor was expected but not detected: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Faulty sensor: replace the sensor
E00.07	dTReturn Too High	Return temperature difference is too large: <ul style="list-style-type: none"> • No circulation: <ul style="list-style-type: none"> - Vent the air from the heating system - Check the hydraulic pressure - If present: check the boiler type parameter setting - Check the circulation (direction, pump, valves) - Check that the heating pump is operating correctly - Check the cleanliness of the heat exchanger • Sensor not connected or incorrectly connected: <ul style="list-style-type: none"> - Check that the sensors are operating correctly - Check that the sensor has been correctly fitted • Faulty sensor: replace the sensor if necessary
E01.04	5x Flame Loss Error	5x Error of unintended Flame Loss occurrence: <ul style="list-style-type: none"> • Vent the gas supply to remove air. • Check whether the gas valve is properly open. • Check the gas supply pressure. • Check the operation and setting of the gas valve unit. • Check that the air supply and flue gas discharge flues are not blocked. • Check that there is no recirculation of flue gases.
E01.11	Fan Out Of Range	Fan speed has exceeded normal operating range: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Faulty fan: replace the fan • Fan operates when it should not be operating: check for excessive chimney draught
E01.12	Return Higher Flow	Return temperature has a higher temperature value than the flow temperature: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Water circulation in wrong direction: check the circulation (direction, pump, valves). • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Malfunctioning sensor: check the Ohmic value of the sensor. • Faulty sensor: replace the sensor.
E02.13	Blocking Input	Blocking Input of the Control Unit from device external environment: <ul style="list-style-type: none"> • External cause: remove external cause. • Wrong parameter set: check the parameters.
E02.15	Ext CSU Timeout	External CSU Timeout: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • CSU faulty: replace the CSU.
E02.17	GVC CommTimeout	Gas Valve Control unit communication has exceeded feedback time: <ul style="list-style-type: none"> • Restart the boiler • Replace the CU-GH-08 control panel
E02.35	Safety device lost	Safety critical device has been disconnected
E02.47	Failed Conn Funct Gr	Failed Connecting Function Groups
E04.00	Parameter error	Safety parameters Level 5 are not correct or missing

Code	Display text	Description/Solution
E04.01	TFlow Closed	Flow temperature sensor is either shorted or measuring a temperature above range : <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E04.02	TFlow Open	Flow temperature sensor is either removed or measuring a temperature below range: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Faulty sensor: replace the sensor.
E04.03	Max Flow temp	Measured flow temperature above safety limit
E04.04	TFlue Closed	Flue temperature sensor is either shorted or measuring a temperature above range
E04.05	TFlue Open	Flue temperature sensor is either removed or measuring a temperature below range
E04.06	Max Flue temp	Measured flue temperature above limit
E04.07	TFlow Sensor	Deviation in flow sensor 1 and flow sensor 2 detected: <ul style="list-style-type: none"> • Bad connection: check the connection. • Faulty sensor: replace the sensor.
E04.08	Safety input	Safety input is open: <ul style="list-style-type: none"> • Non-return valve does not open. • Siphon blocked or empty. • Check that the air supply and flue gas discharge flues are not blocked. • Check the cleanliness of the heating body.
E04.09	TFlue Sensor	Deviation in flue sensor 1 and flue sensor 2 detected
E04.10	Unsuccessful start	5 Unsuccessful burners starts detected : <ul style="list-style-type: none"> • No ignition spark: <ul style="list-style-type: none"> - Check the wiring between the CU-GH-08 unit and the igniter. - Check the ionization/ignition electrode. - Check the earthing. - Check the surface condition of the burner. - Check the earthing. - SU PCB faulty: replace the PCB. • Ignition spark but no flame: <ul style="list-style-type: none"> - Vent the gas pipes to remove air. - Check that the air supply and flue gas discharge flues are not blocked. - Check whether the gas valve is properly open. - Check the gas supply pressure. - Check the operation and setting of the gas valve unit. - Check the wiring on the gas valve unit. - Replace the CU-GH-08 control panel • Presence of the flame but insufficient ionization (<3 μA): <ul style="list-style-type: none"> - Check whether the gas valve is properly open. - Check the gas supply pressure. - Check the ionization/ignition electrode. - Check the earthing. - Check the wiring on the ionization/ignition electrode.
E04.11	VPS	VPS Gas Valve proving failed
E04.12	False flame	False flame detected before burner start : <ul style="list-style-type: none"> • The burner remains very hot: adjust the O₂ • Ionization current measured but no flame should be present: check the ionization/ignition electrode. • Faulty gas valve: replace the gas valve. • Faulty igniter: replace the igniter.
E04.13	Fan	Fan speed has exceeded normal operating range: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Fan operates when it should not be operating: check for excessive chimney draught. • Faulty fan: replace the fan.
E04.14	Combustion Error	The burner temperature and setpoint differ more than 60s regarding GVC configuration
E04.17	GasValve Driver Err.	The driver for the gas valve is broken
E04.18	Min Temp Flow Error	The flow temperature is less than the minimum defined by the GVC parameter

Code	Display text	Description/Solution
E04.21	Burner temperature	Deviation in burner sensor 1 and burner sensor 2 detected
E04.23	Internal Error	Gas Valve Control internal locking

12 Decommissioning

12.1 Decommissioning procedure



Caution

Only qualified professionals are authorised to carry out maintenance work on the boiler and the heating system.

To switch off the boiler temporarily or permanently, proceed as follows:

1. Switch the boiler off.
2. Cut the electrical power to the boiler.
3. Close the gas valve on the boiler.
4. Drain the central heating system or ensure frost protection.
5. Close the door of the boiler to prevent air circulating inside it.
6. Remove the pipe connecting the boiler to the chimney and close the nozzle with a plug.

12.2 Recommissioning procedure



Caution

Only qualified professionals are authorised to carry out maintenance work on the boiler and the heating system.

Should it prove necessary to carry out the recommissioning of the boiler, proceed as follows:

1. Re-establish electrical power to the boiler.
2. Remove the siphon.
3. Fill the siphon with water.
⇒ The siphon must be completely full.
4. Put the siphon back in place.
5. Fill the central heating system.
6. Open the boiler gas valve.
7. Start up the boiler.

13 Disposal and recycling



Caution

Only qualified professionals are permitted to remove and dispose of the boiler, in accordance with local and national regulations.

Fig.64



If you need to remove the boiler, proceed as follows:

1. Switch off the boiler.
2. Cut the power supply to the boiler.
3. Close the main gas valve.
4. Close the water mains.
5. Close the gas valve on the boiler.
6. Drain the installation.
7. Remove the air/flue gas pipes.
8. Disconnect all pipes.
9. Dismantle the boiler.

14 Environmental

14.1 Energy savings

Energy-saving advice:

- Do not block ventilation outlets.
- Do not cover the radiators. Do not fit curtains in front of the radiators.
- Install reflective panels behind the radiators to prevent heat losses.
- Insulate the pipes in rooms that are not heated (cellars and lofts).
- Close the radiators in rooms not in use.
- Do not run hot (or cold) water pointlessly.
- Install an energy-saving shower head, which can save up to 40 % energy.
- Take showers rather than baths. A bath consumes twice as much water and energy.

14.2 Room thermostat and settings

Various models of room thermostat are available. The type of thermostat used and the parameter selected impact total energy consumption.

- A modulating regulator, which may be combined with thermostatic valves, is eco-friendly in terms of energy and offers an excellent level of comfort. This combination allows you to set the temperature separately for each room. However, do not install thermostatic radiator valves in the room in which the room thermostat is located.
- Complete opening and closing of the thermostatic radiator valves causes undesirable variations in temperature. Therefore, these must be opened/closed progressively.
- Set the room thermostat to a temperature of approximately 20°C to reduce heating costs and energy consumption.
- Lower the thermostat setting to approximately 16°C at night or when you are not at home. This reduces heating costs and energy consumption.
- Lower the thermostat setting well before airing the rooms.
- Set the water temperature to a lower level in summer than in winter (e.g. 60°C and 80°C respectively) when an ON/OFF thermostat is used.
- When clock thermostats and programmable thermostats are to be set, do not forget to take any holidays and days when no one is at home into account.

15 Warranty

15.1 General

We would like to thank you for buying one of our appliances and for your trust in our product.

In order to ensure continued safe and efficient operation, we recommend that the product is regularly inspected and maintained.

Your installer and our service department can assist with this.

15.2 Terms of warranty

The following provisions do not affect the application, in favour of the buyer, of the legal provisions with regard to hidden defects that are applicable in the buyer's country.

This appliance comes with a warranty that covers all manufacturing faults; the warranty period will commence on the date of purchase stated on the installer's invoice.

The warranty period is stated in our price list.

As a manufacturer, we can by no means be held liable if the appliance is used incorrectly, is poorly maintained or not maintained at all, or is not installed correctly (it is your responsibility to ensure that installation is carried out by a qualified installer).

In particular, we cannot be held liable for material damage, intangible losses or physical injury resulting from an installation that does not comply with:

- Legal or regulatory requirements or provisions laid down by the local authorities.
- National or local regulations and special provisions relating to the installation.
- Our manuals and installation instructions, in particular in terms of regular maintenance of the appliances.

Our warranty is limited to the replacement or repair of the parts found to be defective by our technical services team, excluding labour, transfer and transport costs.

Our warranty does not cover replacement or repair costs for parts that may become defective due to normal wear, incorrect usage, the intervention of unqualified third parties, inadequate or insufficient supervision or maintenance, a mains supply that is not appropriate or the use of unsuitable or poor quality fuel.

Smaller parts, such as motors, pumps, electrical valves etc., are guaranteed only if these parts have never been dismantled.

The rights established in European Directive 99/44/EEC, implemented by legal decree No. 24 of 2 February 2002 and published in Official Journal No. 57 of 8 March 2002, remain in force.

16 Spare parts

16.1 General

If inspection or maintenance work bring to light the need to replace a component in the boiler:

Provide the reference number given in the spare parts list when ordering a spare part.

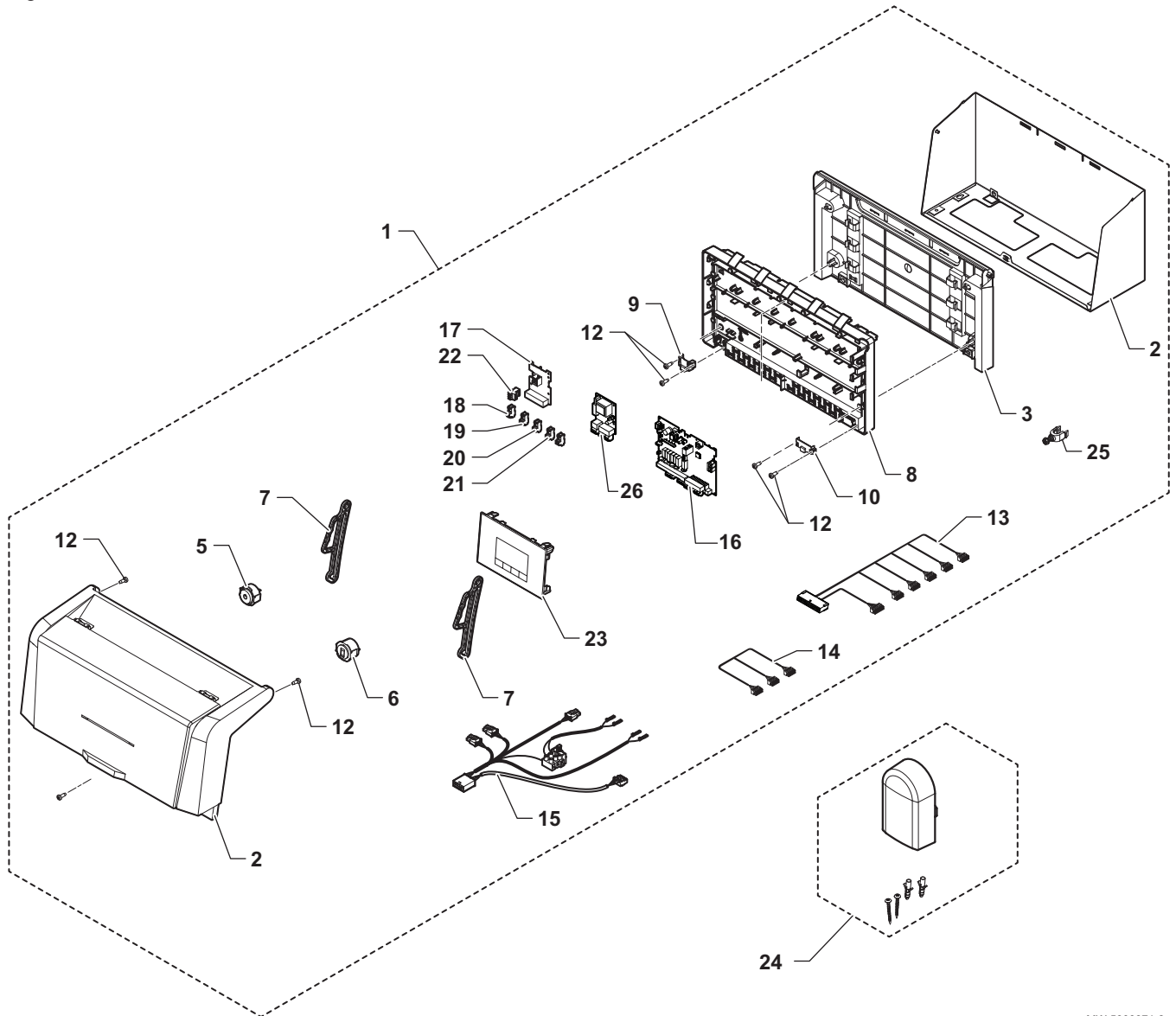


Caution
Only genuine spare parts may be used.

16.2 Spare parts lists

16.2.1 Control panel

Fig.65



MW-5000871-2

Tab.70

Markers	Reference	Description
1	7695239	panel package
2	7769548	Cover set + rear base
3	7650575	Base frame rear base
5	7764986	Complete power switch
6	7608103	Complete RJ11 connector
7	7643513	Control box arm (x2)

Markers	Reference	Description
8	7764765	Panel base
9	7621065	10p connector cover
10	7621080	24p connector cover
12	S62185	KB30x8 screw (x10)
13	7685753	24 V control box cable harness
14	7685294	Control panel cable harness RJ11
15	7685149	230 V control box cable harness
16	7764825	SCB-02 PCB
17	7695062	CB-09 PCB
18	7632095	Green 2-pin connector
19	200009965	2-pin connector BL (orange)
20	200006921	2-pin tel. relay connector (orange)
21	7632096	White 2-pin connector
22	7674749	White 3-pin connector
23	7695389	HMI T-control display
24	95362450	AF60 outdoor temperature sensor
26	S100325	IF-01 PCB

17 Appendix

17.1 Package fiche - Boilers

Fig.66 Package fiche for boilers indicating the space heating energy efficiency of the package

Seasonal space heating energy efficiency of boiler ①
 %

Temperature control ②
 from fiche of temperature control Class I = 1%, Class II = 2%, Class III = 1.5%,
 Class IV = 2%, Class V = 3%, Class VI = 4%,
 Class VII = 3.5%, Class VIII = 5% + %

Supplementary boiler ③
 from fiche of boiler Seasonal space heating energy efficiency (in %)
 $(\text{input} - \text{'I'}) \times 0.1 = \pm \text{input} \%$

Solar contribution ④
 from fiche of solar device Tank rating ⁽¹⁾
 A* = 0.95, A = 0.91,
 B = 0.86, C = 0.83,
 D - G = 0.81

Collector size (in m²) Tank volume (in m³) Collector efficiency (in %)

$(\text{'III'} \times \text{input} + \text{'IV'} \times \text{input}) \times 0.9 \times (\text{input} / 100) \times \text{input} = + \text{input} \%$

(1) If tank rating is above A, use 0.95

Supplementary heat pump ⑤
 from fiche of heat pump Seasonal space heating energy efficiency (in %)
 $(\text{input} - \text{'I'}) \times \text{'II'} = + \text{input} \%$

Solar contribution AND Supplementary heat pump ⑥
 select smaller value ④ OR ⑤ = - %

Seasonal space heating energy efficiency of package ⑦
 %

Seasonal space heating energy efficiency class of package

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G	F	E	D	C	B	A	A*	A**	A***
<30%	≥30%	≥34%	≥36%	≥75%	≥82%	≥90%	≥98%	≥125%	≥150%

Boiler and supplementary heat pump installed with low temperature heat emitters at 35°C ? ⑦
 from fiche of heat pump ⑦ + (50 x 'II') = %

The energy efficiency of the package of products provided for in this fiche may not correspond to its actual energy efficiency once installed in a building, as this efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

- I The value of the seasonal space heating energy efficiency of the preferential space heater, expressed in %.
- II The factor for weighting the heat output of preferential and supplementary heaters of a package as set out in the following table.
- III The value of the mathematical expression: $294/(11 \cdot \text{Prated})$, whereby "Prated" is related to the preferential space heater.
- IV The value of the mathematical expression $115/(11 \cdot \text{Prated})$, whereby "Prated" is related to the preferential space heater.

Tab.71 Weighting of boilers

$P_{sup} / (Prated + P_{sup})^{(1)(2)}$	II, package without hot water storage tank	II, package with hot water storage tank
0	0	0
0.1	0.3	0.37
0.2	0.55	0.70
0.3	0.75	0.85
0.4	0.85	0.94
0.5	0.95	0.98
0.6	0.98	1.00
≥ 0.7	1.00	1.00

(1) The intermediate values are calculated by linear interpolation between the two adjacent values.
(2) Prated is related to the preferential space heater or combination heater.

Tab.72 Package efficiency

Remeha - Gas 120 ACE		Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
HMI T-control	%	92	95	97

17.2 Product fiche - Temperature Controls

Tab.73 Product fiche for temperature controls

Remeha - Gas 120 ACE		HMI T-control
Class		II
Contribution to space heating energy efficiency	%	2

17.3 Product fiche

Tab.74 Product fiche for boiler space heaters

		Gas 120 ACE - 65	Gas 120 ACE - 90	Gas 120 ACE - 115
Seasonal space heating energy efficiency class		A	(1)	(1)
Rated heat output (<i>Prated</i> or <i>Psup</i>)	kW	62	84	104
Seasonal space heating energy efficiency	%	94	-	-
Annual energy consumption	GJ	190	-	-
Sound power level L_{WA} , indoors	dB	55	61	60

(1) No ErP information needs to be provided for heating boilers above 70 kW.



See

For specific precautions about assembling, installing and maintaining: See Safety

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