United Kingdom - Ireland

en

BAXI

Service manual

High-efficiency wall-hung gas boiler

Quinta Ace S

50 - 60 - 70

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.

Contents

1 Safety

1.1 General safety instructions

1.1.1 For the installer

Danger
If you smell gas:

1. Do not use naked flames, do not smoke and do not operate electrical contacts or switches (doorbell, lighting, motor, lift etc.).
2. Shut off the gas supply.
3. Open the windows.
4. Trace possible leaks and seal them off immediately.
5. If the leak is upstream of the gas meter, notify the gas company.

Danger
If you smell flue gases:

1. Switch the boiler off.
2. Open the windows.
3. Trace possible leaks and seal them off immediately.

1.1.2 For the end user

Danger
If you smell gas:

1. Do not use naked flames, do not smoke and do not operate electrical contacts or switches (For example: doorbell, lighting, motor, lift).
2. Shut off the gas supply.
3. Open the windows.
4. Report any leaks immediately.
5. Evacuate the property.
6. Contact a qualified installer.

Danger
If you smell flue gases:

1. Switch off the appliance.
2. Open the windows.
3. Report any leaks immediately.
4. Evacuate the property.
5. Contact a qualified installer.

Warning
The condensate drain must not be modified 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 appliance 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 appliance settings, the temperature of the radiators can rise to over 60 °C.

Caution
Be careful when using the domestic hot water. Depending on the appliance settings, the temperature of domestic hot water can rise to over 65 °C.

Caution
Ensure that the appliance is regularly serviced. Contact a qualified installer or arrange a maintenance contract for the servicing of the appliance.

Notice
Only genuine spare parts may be used.

Important
Regularly check the water level and pressure in the heating system.

1.2 Recommendations

Danger
For safety reasons, we recommend fitting smoke alarms at suitable places and a CO detector near the appliance.

Warning
If the mains lead is damaged, it must be replaced by the original manufacturer, the manufacturer's dealer or another suitably skilled person to prevent hazardous situations from arising.

Notice
- Make sure the appliance can be reached at all times.
- The appliance must be installed in a frost-free area.
- Drain the appliance and central heating system if you are not going to use your home for a long time and there is a chance of frost.
- The frost protection does not work if the appliance is out of operation.
- The appliance protection only protects the appliance, not the system.
- Check the system water pressure regularly. If the water pressure is below the recommended pressure, the system must be topped up.

Important
Keep all delivered documentation near to the appliance.

Important
Instruction and warning labels must never be removed or covered and must be clearly legible throughout the entire service life of the appliance. Damaged or illegible instructions and warning stickers must be replaced immediately.

Important
Modifications to the appliance require the written approval of **BAXI**.

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 UKCA and 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 product.
- Failure to abide by the instructions on using the product.
- Faulty or insufficient maintenance of the product.

1.3.2 Installer's liability

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

- Read and follow the instructions given in the manuals for the product.
- Install the product 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 product and keep it in good working order.
- Give the user all safety and user instruction manuals provided with the product.

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 for the product.
- Call on a qualified professional to carry out the installation and initial commissioning.
- Have your installer explain the installation to you.
- Have the required inspections and maintenance carried out by a qualified installer.
- Keep the provided manuals in good condition and close to the product.

2 About this manual

2.1 Additional documentation

The following documentation is available in addition to this manual:

- Installation and user manual
- Cascade description
- Product information

2.2 Symbols used in the manual

This manual contains special instructions, marked with specific symbols. Please pay extra attention when these symbols are used.

Danger of electric shock
Risk of electric shock that will result in death or serious injury.

Danger
Risk of dangerous situations that will result in death or serious injury.

Warning
Risk of dangerous situations that could result in death or serious injury.

Caution
Risk of dangerous situations that could result in minor or moderate injury.

Notice
Risk of dangerous situations that could result in damage to the product or other property.

Important
Please note: important information.

The symbols mentioned below are of lower importance, but they can help you navigate or give useful information.

See
Reference to other manuals or pages in this manual.

▶▶ Direct menu navigation, confirmations will not be shown. Use if you are familiar with the system.

3 Description of the product

3.1 General description

The Quinta Ace S boilers are high-efficiency wall-hung gas boilers with the following properties:

- High-efficiency heating.
- Stainless steel heat exchanger.
- Limited emissions of polluting substances.
- Ideal choice for cascade configurations.

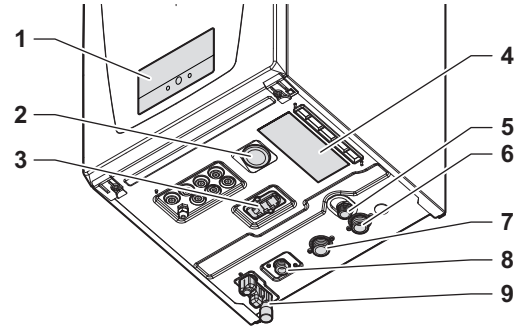
The following boiler types are available:

Tab.1 Boiler types

Name	Rated heat output *(Prated)*
Quinta Ace S 50	45 kW
Quinta Ace S 60	55 kW
Quinta Ace S 70	65 kW

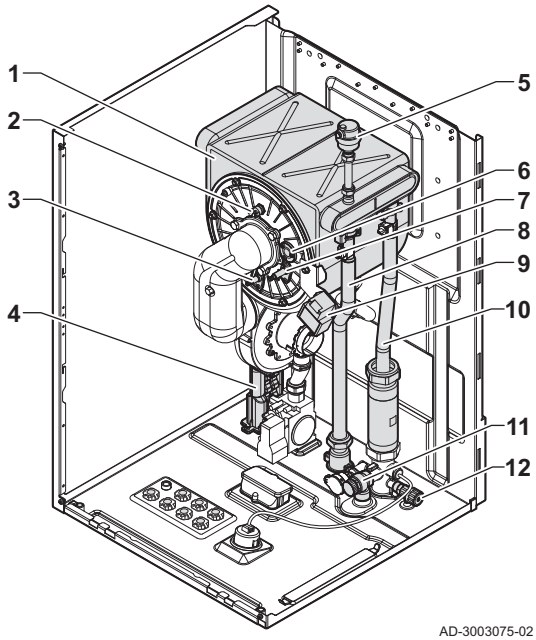
3.2 Main components

Fig.1 General



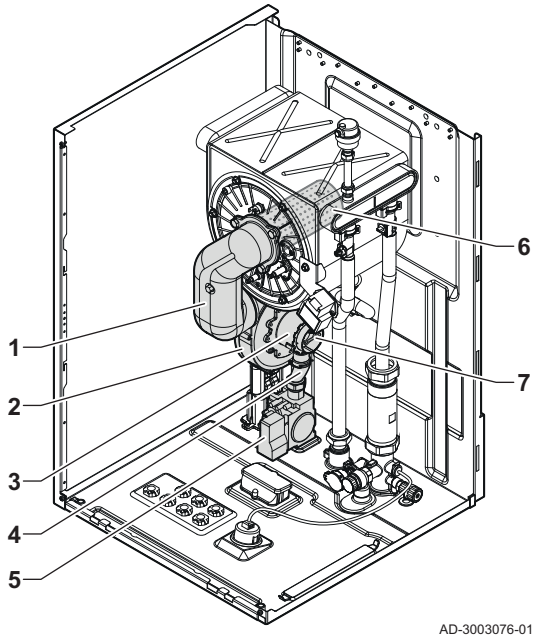
1 Control panel
2 Pressure gauge
3 Quick connect
4 Data plate
5 Safety pressure relief valve outlet
6 Return pipe connection
7 Flow pipe connection
8 Gas pipe connection
9 Trap with condensate drain connection

Fig.2 Internal



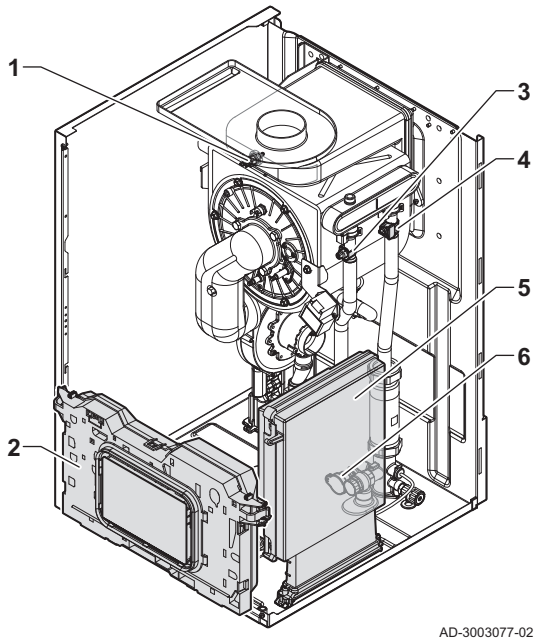
1 Heat exchanger
2 Heat exchanger thermal switch
3 Ionisation electrode
4 Condensate trap
5 Automatic air valve
6 Flame inspection glass
7 Ignition electrode
8 Flow pipe
9 Ignition transformer
10 Return pipe
11 Safety pressure relief valve
12 Heat exchanger drain valve

Fig.3 Gas-air



1 Mixing tube
2 Fan
3 Venturi
4 Gas pipe
5 Gas control valve
6 Burner
7 Air inlet

Fig.4 Sensors and boxes

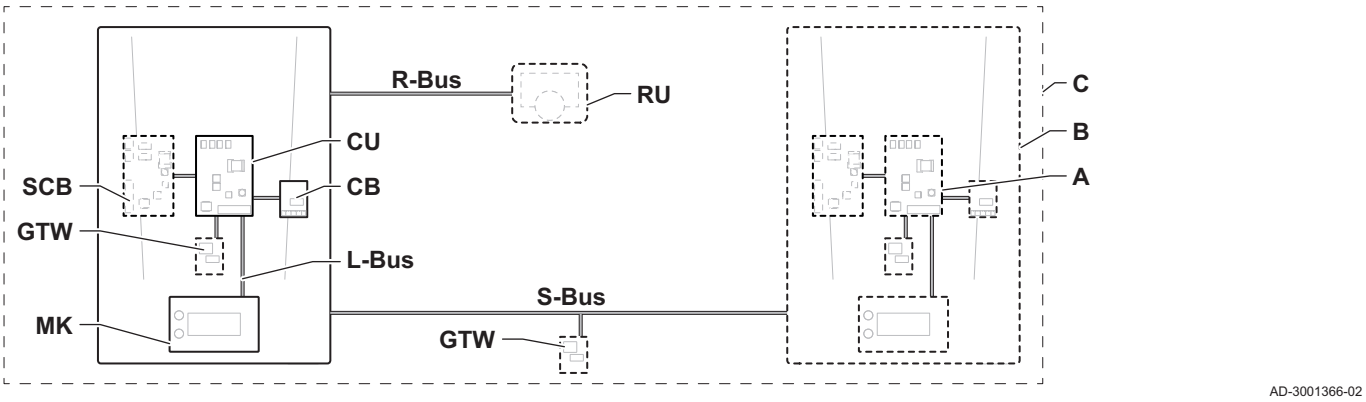


1 Flue gas temperature sensor
2 Control box
3 Flow temperature sensor
4 Return temperature sensor
5 Expansion box (optional)
6 Water pressure sensor

3.3 Introduction to the BDR controls platform

The Quinta Ace S boiler is equipped with the BDR controls platform. This is a modular system, and offers compatibility and connectivity between all products that make use of the same platform.

Fig.5 Generic example



Tab.2 Components in the example

Item	Description	Function
CU	Control Unit: Control unit	The control unit handles all basic functionality of the appliance.
CB	Connection Board: Connection PCB	The connection PCB provides easy access to all connectors of the control unit.
SCB	Smart Control Board: Expansion PCB	An expansion PCB provides extra functionality, like an internal calorifier or multiple zones.
GTW	Gateway: Conversion PCB	A gateway can be fitted to an appliance or system, to provide one of the following: • Extra (wireless) connectivity • Service connections • Communication with other platforms
MK	Control panel: Control panel and display	The control panel is the user interface to the appliance.
RU	Room Unit: Room unit (for example, a thermostat)	A room unit measures the temperature in a reference room.
L-bus	Local Bus: Connection between devices	The local bus provides communication between devices.
S-bus	System Bus: Connection between appliances	The system bus provides communication between appliances.
R-bus	Room unit Bus: Connection to a room unit	The room unit bus provides communication to a room unit.
A	Device	A device is a PCB, control panel or a room unit.
B	Appliance	An appliance is a set of devices connected via the same L-bus
C	System	A system is a set of appliances connected via the same S-bus

Tab.3 Specific devices delivered with the Quinta Ace S boiler

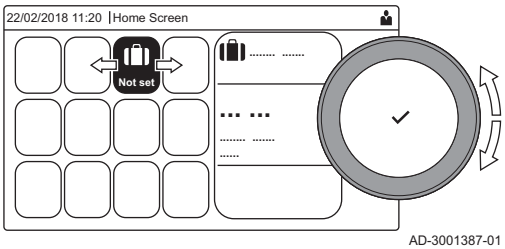
Name visible in display	Software version	Description	Function
CU-GH20	0.2	Control unit **CU-GH20**	The CU-GH20 control unit handles all basic functionality of the Quinta Ace S boiler.
MK3	1.98	Control panel **HMI Advanced**	The HMI Advanced is the user interface to the Quinta Ace S boiler.

4 Installer instructions

4.1 Accessing the user level menus

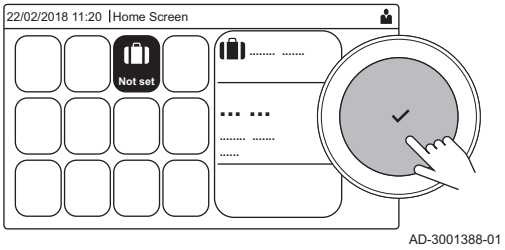
The tiles on the home screen provide quick access for the user to the corresponding menus.

Fig.6 Menu selection



1. Use the rotary knob to select the required menu.

Fig.7 Confirm menu selection



2. Press the ✔ button to confirm the selection.
   ⇨ The available settings of this selected menu appear in the display.
3. Use the rotary knob to select the desired setting.
4. Press the ✔ button to confirm the selection.
   ⇨ All options for change will appear in the display (if a setting cannot be changed, **Cannot edit read-only datapoint** will appear in the display).
5. Use the rotary knob to change the setting.
6. Press the ✔ button to confirm the selection.
7. Use the rotary knob to select the next setting or press the ⮌ button to return to the home screen.

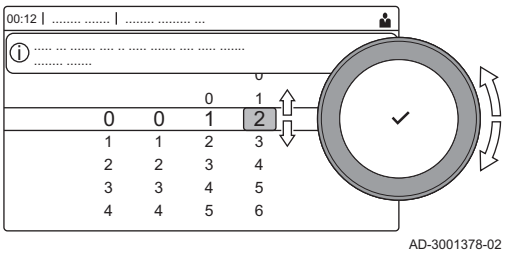
4.2 Accessing the installer level

Some settings are protected by installer access. Enable installer access in order to change these settings.

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

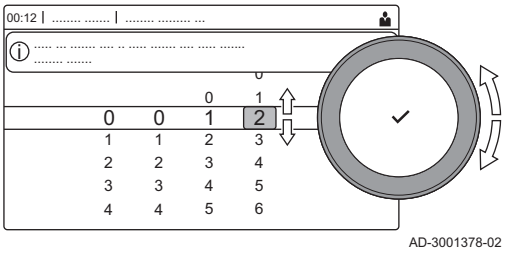
1. Access the installer level via the tile:
   1.1. Select the tile [🔧].
   1.2. Use code: **0012**.
   ⇨ The tile [🔧] shows that the installer access is **On**, and the icon in the top right of the display changes into 🔧.

Fig.8 Installer level



2. Access the installer level via the menu:
   2.1. Select **Enable installer access** from the **Main Menu**.
   2.2. Use code: **0012**.
   ⇨ When the installer level is enabled or disabled, the status of the tile [🔧] changes into **On** or **Off**.

Fig.9 Installer level



When the control panel is not used for 30 minutes, the installer access is disabled automatically. You can manually disable installer access via the tile [🔧] or the **Main Menu** by selecting **Disable installer access**.

4.3 Commissioning the appliance

At first start-up of the appliance, the display will show the commissioning wizard. Depending on the appliance, some steps take a few minutes to complete, for example appliances that need to deaerate after installation or need to configure a boiler.

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Start up the appliance.

2. Follow the instructions on the display.

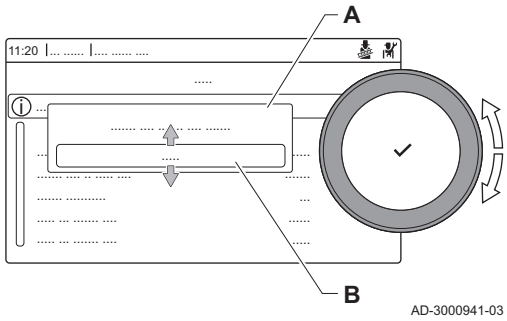
Important
The appliance might take a few minutes during certain steps while commissioning. Do not shut off the appliance or try to bypass steps, unless stated otherwise on the display.

3. Access the individual commissioning steps:
   3.1. Press the ☰ button.
   3.2. Select **Commissioning Menu**.
   3.3. Select the desired commissioning step to perform.

4.3.1 Chimney sweep menu

Select the tile [🧹] to open the chimney sweep menu. The **Change load test mode** menu will appear:

Fig.10 Load test



A Change load test mode
B Load test mode

Tab.4 Load tests in the chimney sweep menu 🧹

Change load test mode	Settings
Off	No test
Low power	Low load test
Medium power	Full load test for Central Heating mode
High power	Full load test for Central Heating + Domestic Hot Water mode
Custom	Custom load test, load can be configured

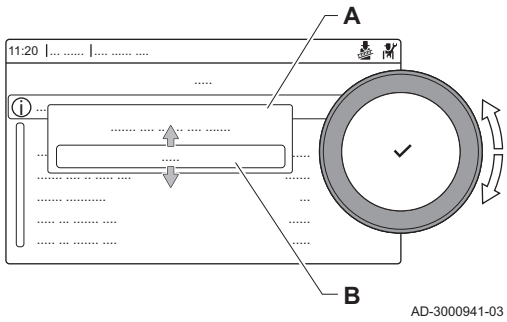
Tab.5 Load test settings

Load Test menu	Settings
Func test status	Select the load test to start the test.
System Flow Temp	Read the central heating flow temperature
T return	Read the central heating return temperature
Actual fan RPM	Read the actual fan speed
Actual flame current	Read the actual flame current
Fan RPM Max CH	Adjust the maximum fan speed during Central Heating mode
Fan RPM Min	Adjust the minimum fan speed during Central Heating + Domestic Hot Water mode
Fan RPM Start	Adjust the start fan speed

■ Performing the full load test

1. Select the tile [🧹].
   ⇨ The **Change load test mode** menu appears.

Fig.11 Full load test



2. Select the test **Medium power**.

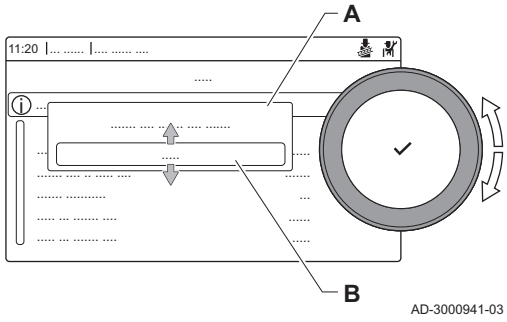
   A Change load test mode
   B Medium power

   ⇨ 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.

■ Performing the low load test

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

Fig.12 Low load test



A **Change load test mode**
B **Low power**

3. Select the **Low power** test in the menu **Change load test mode**.
   ⇨ The low load test starts. The selected load test mode is shown in the menu and the icon appears in the top right of the screen.
4. Check the load test settings and adjust if necessary.
   ⇨ Only the parameters shown in bold can be changed.
5. End the low load test by pressing the ⮌ button.
   ⇨ The message **Running load test(s) stopped!** is displayed.

4.3.2 Saving the commissioning settings

You can save all current settings on the control panel. These settings can be restored if necessary, for example after replacement of the control unit.

▶▶ ☰ > **Advanced Service Menu** > **Save as commissioning settings**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

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

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

4.4 Configuring the installation at installer level

Configure the installation by pressing the ☰ button and selecting **Installation Setup**. Select the control unit or circuit board you want to configure.

Tab.6 Configuring the control unit

Icon	Zone or function	Description
	CIRCA / CH	Central heating circuit
	Gas fired appliance	Gas boiler

Tab.7 Configuring a zone or function

Parameters, counters, signals	Description
Parameters	Set the parameters at installer level
Counters	Read the counters at installer level
Signals	Read the signals at installer level

4.4.1 Changing the control panel settings

You can change the control panel settings within system settings.

▶▶ ☰ > **System Settings**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **System Settings** ⚙.
3. Perform one of the operations described in the table below:

Tab.8 Control panel settings

System Settings menu	Settings
Set Date and Time	Set the current date and time
Select Country and Language	Select your country and language
Daylight Saving Time	Enable or disable daylight saving time. When enabled daylight saving time will update the systems internal time to correspond with summer and winter time.
Installer Details	Read out the name and phone number of the installer
Set Heating Activity Names	Create the names for the activities of the time program
Set Screen Brightness	Adjust the brightness of the screen
Set click sound	Enable or disable the click sound of the rotary knob
License Information	Read out detailed license information from the appliance

4.4.2 Setting the installer details

You can store your name and phone number in the control panel to be read by the user. When an error occurs these contact details will be displayed.

▶▶ ☰ > **System Settings** > **Installer Details**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
   Enable installer access if it is not enabled.
   1.1. Select **Enable installer access**.
   1.2. Use code **0012**.
2. Select **System Settings** ⚙.
3. Select **Installer Details**.
4. Enter the following data:

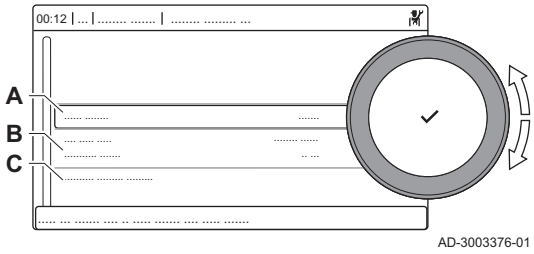
Installer name	Your company's name
Installer phone	Your company's phone number

4.4.3 Setting the fixed combinations

You can configure the functionality of the configurable input and output connectors with the following preconfigured settings.

Important
Some of the configurable input and output connectors will be used by these configurations. You will no longer be able to manually configure these inputs/outputs when enabling these configurations.

Fig.13 Setting the fixed combinations



A Enable or disable the function
B List of relevant settings
C Quick access to relevant parameters and signals

Activating cascade management

Enable the cascade manager functionality by enabling **Cascade management B** and configuring the relevant parameters.

▶▶ ☰ > **Installation Setup** > **Cascade management B** > **Enabled** > **Enable master func** > **Yes**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

Important
This function uses Multifunctional out 1.

1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **Cascade management B**.
4. Select **Toggle function**.
5. Select **Enabled**.
6. Enable cascade manager functionality:
   6.1. Select **Enable master func**.
   6.2. Select **Yes**.
   Only enable this functionality on the lead appliance. Verify the configuration for each appliance in the cascade system.

Activating DHW circulation

Activate DHW circulation by enabling the **DHW circulation** function.

▶▶ ☰ > **Installation Setup** > **DHW Mix/Circulation** > **Enabled** > **DHW circulation** > **On**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

Important
This function uses Multifunctional out 1.

1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **DHW Mix/Circulation**.
4. Select **Toggle function**.
5. Select **Enabled**.
6. Select **DHW circulation**.
7. Select **On**.

Activating DHW mixing

Activate DHW mixing by enabling the **DHW tank mixing** function.

▶▶ ☰ > **Installation Setup** > **DHW Mix/Circulation** > **Enabled** > **DHW tank mixing** > **On**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

Important
This function uses Multifunctional out 1.

1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **DHW Mix/Circulation**.
4. Select **Toggle function**.
5. Select **Enabled**.
6. Select **DHW tank mixing**.
7. Select **On**.

■ Activating DHW layered

You can enable the DHW layered functionality by configuring the **DHW load type**.

▶▶ ☰ > **Installation Setup** > > **Parameters, counters, signals** > **Parameters** > **DHW load type** > **Layered cylinder**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select .
4. Select **Parameters, counters, signals**.
5. Select **Parameters**.
6. Select **DHW load type**.
7. Select **Layered cylinder**.

■ Activating boiler room ventilation

Activate boiler room ventilation by enabling the **Boiler room ventilation** function.

▶▶ ☰ > **Installation Setup** > **Boiler room ventilation** > **Enabled**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

Important
This function uses Digital input 2 and Multifunctional out 2.

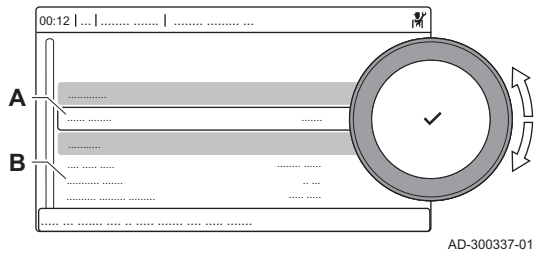
1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **Boiler room ventilation**.
4. Select **Toggle function**.
5. Select **Enabled**.

4.4.4 Setting the inputs and outputs

You can configure the functionality of the configurable input and output connectors manually.

Important
Some of the configurable input and output connectors could be in use by the preconfigured fixed combinations. Disable the conflicting fixed configuration if you encounter an error while configuring the inputs or outputs.

Fig.14 Setting the inputs and outputs



A Configure the function
B List of relevant settings

■ Setting the input

You can configure the input to support a wide range of different functionalities.

▶▶ ☰ > **Installation Setup** > **Digital input**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **Digital input 1** or **Digital input 2**.
   This menu lists all parameters for configuring the input.

– Input settings

Tab.9 Input settings

Setting	Description	Use
None	No feature selected.	-
Min gas pressure	Minimum gas pressure switch function.	Gas pressure switch: On/off contact to connect a gas pressure switch for low gas pressure detection. When the gas pressure is too low, all heat demands are blocked.
Max gas pressure	Maximum gas pressure switch function.	Gas pressure switch: On/off contact to connect a gas pressure switch for high gas pressure detection. When the gas pressure is too high, all heat demands are blocked.
Block CH	Block CH.	Blocking input: On/off contact to block the central heating function of the appliance.
Block DHW	Block DHW.	Blocking input: On/off contact to block the domestic hot water function of the appliance.
Block CH+DHW	Block CH+DHW.	Blocking input: On/off contact to block both the central heating and domestic hot water function of the appliance.
Lock appliance	Lock appliance.	Blocking input: On/off contact to generate a lock-out error.
Release CH	Release CH	Release input: On/off contact to release the central heating function. The release of the contact will activate the appliance to produce heat for central heating.
Release CH+DHW	Release CH+DHW	Release input: On/off contact to release the central heating and domestic hot water function. The release of the contact will activate the appliance to produce heat for central heating and domestic hot water.

Setting	Description	Use
Relieve from CH	Relieve from CH demand.	Boiler relief signal: On/off contact to relieve the appliance for central heating. Use this when other appliances can also produce heat for central heating. When the appliance is relieved for a heat demand, the pump activates only the appliance will not produce heat.
Relieve from DHW	Relieve from DHW demand.	Boiler relief signal: On/off contact to relieve the appliance for domestic hot water. Use this when other appliances can also produce heat for domestic hot water. When the appliance is relieved for a heat demand, the pump activates only the appliance will not produce heat.
Relieve CH+DHW	Relieve from CH+DHW demand.	Boiler relief signal: On/off contact to relieve the appliance for central heating and domestic hot water. Use this when other appliances can also produce heat for central heating and domestic hot water. When the appliance is relieved for a heat demand, the pump activates only the appliance will not produce heat.
Extern heat request	External heat request.	Heat demand signal: On/off contact to generate a heat demand from the appliance.

■ Setting the output

You can configure the output to support a wide range of different functionalities.

▶▶ ☰ > **Installation Setup** > **Multifunctional out**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **Multifunctional out 1** or **Multifunctional out 2**.
   This menu lists all parameters for configuring the output.

– Output settings

Tab.10 Output settings

Setting	Description	Use
None	None	-
External gas valve	External gas valve (EGV) function.	External gas valve.
Hydraulic valve	Hydraulic valve (HDV) function.	Hydraulic valve.
Secondary pump	Secondary pump feature	Secondary pump.
Locking	Notify external system when there is a locking error.	Status contact to report a lock-out error.
Locking or blocking	Notify external system when there is a locking or blocking error.	Status contact to report a lock-out or blocking error.
Burning	Notify external system if the burner is burning.	Status contact to report that the burner is active.
Service request	Notify external systems when there is a service request.	Status contact to report that there is a service request.
Boiler on CH	Notify external system when the boiler is producing for central heating.	Status contact to report that there is a request for central heating.
Boiler on DHW	Notify external system when the boiler is producing for domestic hot water.	Status contact to report that there is a request for domestic hot water.
CH pump on	Notify external system when the central heating pump is on.	Status contact to report that the central heating pump is on.

Setting	Description	Use
DHW pump on	Notify external system when the DHW pump is on.	Status contact to report that the domestic hot water pump is on.
Direct zone pump on	Control the direct zone pump.	On/off contact to connect the pump of a direct zone. When the boiler pump is active the zone pump will also be active. You can use this when there is a hydraulic separator between the primary and secondary side of the system (for example: a low loss header or plate heat exchanger). If used in a cascade system, this feature is only available on the lead boiler.

4.4.5 Setting the parameters

You can change the settings of the control unit and the connected expansion boards, sensors etc. to configure the installation. The factory settings support the most common heating systems. The user or the installer can optimise the parameters as required.

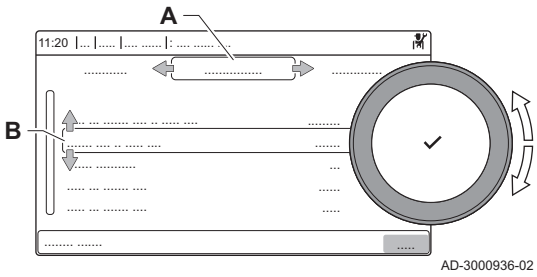
Important
Changing the factory settings may adversely affect the operation of the installation.

▶▶ ≡ > **Installation Setup** > select zone or device > **Parameters, counters, signals** > **Parameters**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ≡ button.
2. Select **Installation Setup**.
3. Select the zone or device you want to configure.
4. Select **Parameters, counters, signals**.
5. Select **Parameters**.

Fig.15 Parameters, counters, signals



A
- **Parameters**
- **Counters**
- **Signals**

B List of settings or values

⇨ The list of available parameters is displayed.

4.4.6 Setting the heating curve

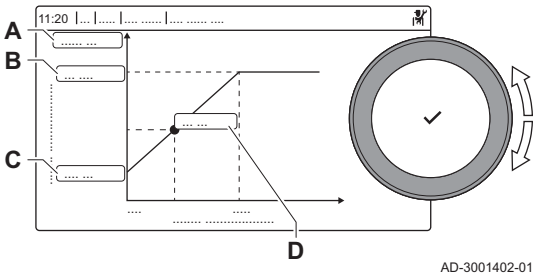
When an outdoor temperature sensor is connected to the installation, the relation between the outdoor temperature and the central heating flow temperature is controlled by a heating curve. This curve can be adjusted to the requirements of the installation.

▶▶ Select zone > **Heating Curve**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Select the tile of the zone you want to configure.
2. Select **Control strategy**.
3. Select the setting **Outdoor temp based** or **Outdoor & room based**.
   ⇨ The option **Heating Curve** appears in the **Zone setup** menu.
4. Select **Heating Curve**.
   ⇨ A graphic display of the heating curve is shown.

Fig.16 The heating curve



5. Adjust the following parameters:

Tab.11 Heating curve settings

	Setting	Description
A	**Slope:**	Slope of the heating curve: • Underfloor heating circuit: slope between 0.4 and 0.7 • Radiator circuit: slope at approximately 1.5
B	**Max:**	Maximum temperature of the heating circuit
C	**Base:**	Ambient temperature setpoint
D	xx°C ; xx°C	Relationship between the heating circuit flow temperature and the outdoor temperature. This information is visible throughout the slope.

4.4.7 Increasing the domestic hot water temperature temporarily

You can temporary increase the hot water temperature when the time program is active with the reduced temperature setpoint. Use this to deviate from the time program or testing of the hot water production.

▶▶ ☰ > **Installation Setup** > **Internal DHW** > **Hot water boost** > **Duration of temporary overwrite**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **Internal DHW**.
4. Select **Hot water boost**.
5. Select **Duration of temporary overwrite**.
6. Set the duration in hours and minutes.
   ⇨ The hot water temperature is increased to the **DHW comfort setpoint**.

You can abort the temporary increase by selecting **Reset**.

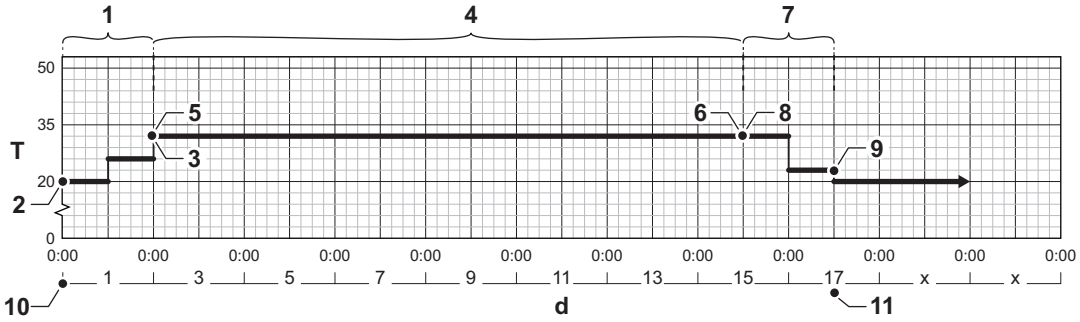
4.4.8 Screed drying

The screed drying function is used to force a constant flow temperature or a series of successive temperature levels to accelerate screed drying on underfloor heating.

Important

- The settings for these temperatures must follow the screed layer's recommendations.
- Activation of this function via the parameter **ZP090** deactivates all other regulator functions in the zone.
- When the screed drying function is active on one circuit, all other circuits and the domestic hot water circuit continue to run.
- It is possible to use the screed drying function on circuits A and B. The parameter settings must be made on the PCB that controls the circuit concerned.

Fig.17 Screed drying curve



d Number of days
T Heating setpoint temperature
1 Number of days in phase 1 of the screed drying function (parameter **ZP000**)
2 Phase 1 start temperature (parameter **ZP010**)
3 Phase 1 end temperature (parameter **ZP020**)
4 Number of days in phase 2 of the screed drying function (parameter **ZP030**)
5 Phase 2 start temperature (parameter **ZP040**)
6 Phase 2 end temperature (parameter **ZP050**)
7 Number of days in phase 3 of the screed drying function (parameter **ZP060**)
8 Phase 3 start temperature (parameter **ZP070**)
9 Phase 3 end temperature (parameter **ZP080**)
10 Start of the screed drying function
11 End of the screed drying function, back to normal running

Important
Every day at midnight, the screed drying function recalculates the start temperature setpoint and decreases the remaining number of days.

■ Activating screed drying

You can activate screed drying for an underfloor heating zone. The function forces a constant flow temperature or a series of successive temperature levels to accelerate screed drying.

▶▶ Select zone > **Set Screed Drying**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Select the tile of the zone you want to configure.
2. Select **Set Screed Drying**.
3. Select the desired phase to modify the settings.
4. Adjust the following parameters:

Tab.12 Screed drying settings

Phase	Setting	Description
1	• **Screed drying time 1** • **Screed start temp 1** • **Screed drying time 1**	• Set the number of days spent in the first screed drying step • Set the start temperature for the first step of screed drying • Set the number of days spent in the first screed drying step
2	• **Screed drying time 2** • **Screed start temp 2** • **Screed end temp 2**	• Set the number of days spent in the second screed drying step • Set the start temperature for the second step of screed drying • The end temperature for the second step of screed drying
3	• **Screed drying time 3** • **Screed start temp 3** • **Screed end temp 3**	• Set the number of days spent in the third screed drying step • Set the start temperature for the third step of screed drying • The end temperature for the third step of screed drying

Select **Reset** to return to the default settings for each phase.

5. Select **Activate** to start with screed drying.

4.5 Maintaining the installation

4.5.1 Viewing the service notification

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

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Select the tile [🔧].
   ⇨ The **View Service Notification** menu opens.
2. Select the parameter or value you want to view.

4.5.2 Reading out measured values

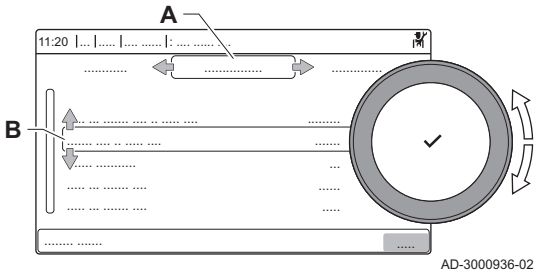
The appliance continually registers various measured values from the system. You can read these values on the control panel.

▶▶ ☰ > **Installation Setup** > select zone or device > **Parameters, counters, signals** > **Counters** or **Signals**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Installation Setup**.
   Enable installer access if **Installation Setup** is not available.
   2.1. Select **Enable installer access**.
   2.2. Use code **0012**.
3. Select the zone or device you want to read out.
4. Select **Parameters, counters, signals**.
5. Select **Counters** or **Signals** to read out a counter or signal.

Fig.18 Parameters, counters, signals



A - **Parameters**
- **Counters**
- **Signals**

B List of settings or values

4.5.3 Viewing production and software information

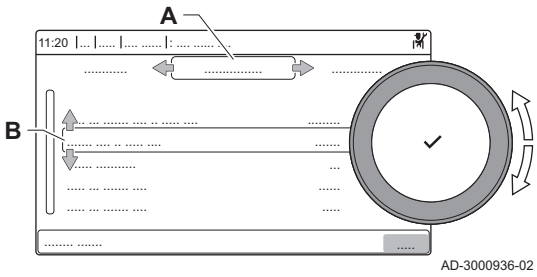
You can read details about the production dates, hardware and software versions of the appliance and all connected devices.

▶▶ ☰ > **Version Information**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Version Information**.

Fig.19 Version information



3. Select the appliance, control board or any other device you want to view.

   A Select the appliance, control board or device
   B List of information

4. Select the information you want to view.

4.5.4 Manual deaeration

You can manually deaerate your appliance.

▶▶ ☰ > **Commissioning Menu** > **Deaeration program**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Commissioning Menu**.
3. Select **Deaeration program**.
   ⇨ The manual deaeration menu opens.
4. Follow the instructions on the display.

You can press and hold ⮌ to abort the procedure.

4.6 Resetting or restoring settings

4.6.1 Resetting the configuration numbers CN1 and CN2

The configuration numbers must be reset when indicated by an error message or when the control unit has been replaced. The configuration numbers can be found on the data plate of the appliance.

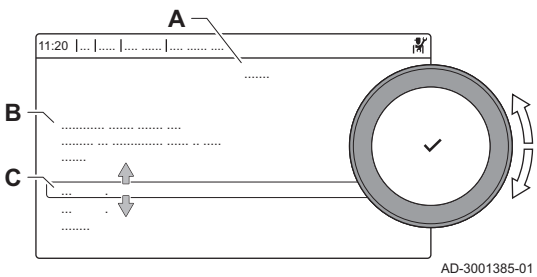
Important
All custom settings will be erased when the configuration numbers are reset. Depending on the appliance, there can be factory set parameters to enable certain accessories.

- Use the saved commissioning settings to restore these settings after the reset.
- If no commissioning settings were saved, write down custom settings before resetting. Include all relevant accessory related parameters.

▶▶ ☰ > **Advanced Service Menu** > **Set Configuration Numbers**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

Fig.20 Configuration numbers



A Select the control unit
B Extra information
C Configuration numbers

1. Press the ☰ button.
2. Select **Advanced Service Menu**.
3. Select **Set Configuration Numbers**.
4. Select the device you want to reset.
5. Select and change the **CN1** setting.
6. Select and change the **CN2** setting.
7. Select **Confirm** to confirm the changed numbers.

4.6.2 Carrying out an auto detect

The auto detect-function scans the installation for devices and other appliances connected to the L-Bus and S-Bus. You can use this function when a connected device or appliance has been replaced or removed from the installation.

▶▶ ☰ > **Advanced Service Menu** > **Auto Detect**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

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

4.6.3 Restoring the commissioning settings

This option is only available when the commissioning settings were saved on the control panel and allows you to restore these settings.

▶▶ ☰ > **Advanced Service Menu** > **Revert commissioning settings**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Advanced Service Menu**.
3. Select **Revert commissioning settings**.
4. Select **Confirm** to restore the commissioning settings.

4.6.4 Resetting to factory settings

You can reset the appliance to the default factory settings.

▶▶ ☰ > **Advanced Service Menu** > **Reset to Factory Settings**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ☰ button.
2. Select **Advanced Service Menu**.
3. Select **Reset to Factory Settings**.
4. Select **Confirm** to restore the factory settings.

4.7 Advanced settings

4.7.1 Service notification settings

This appliance can notify the user when service is needed. The controls will keep track of two counters:

- The total of burner operating hours since the last service (**AC002**)
- The total of hours on mains power supply since the last service (**AC003**)

When one of these counters meet the value set in parameters **AP009** or **AP011**, the user will be notified on the control panel.

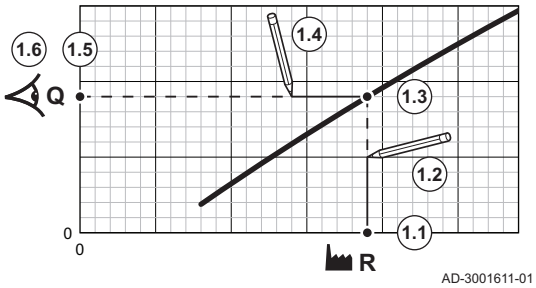
Tab.13 Service notification parameter settings

Code	Display text	Advice
AP009	Service hours	Set this to a value that fits the operation conditions. Typically this is 3000 hours for a commercial boiler in a normal heating set-up.
AP010	Service notification	Set this to 1 = Custom notification as to use the values set in AP009 and AP011
AP011	Service hours mains	Set this to a value that fits the operation conditions. Typically this is 8750 hours (1 year) for a commercial boiler in a normal heating set-up.

4.7.2 Setting the maximum input for CH operation

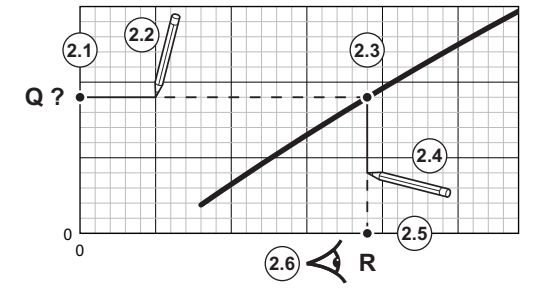
Use the graph to see the relationship between fan rotation speed and input.

Fig.21 Fill-in the factory setting



1. Use the table to fill-in the graph for your boiler type:
   1.1. Select the fan rotation speed on the horizontal axis of the graph.
   1.2. Draw a vertical line from the selected fan rotation speed.
   1.3. Stop when the line intersects with the curve.
   1.4. Draw a horizontal line from the intersection point with the curve.
   1.5. Stop when the line intersects with the vertical axis of the graph.
   1.6. Read the value where the horizontal line intersects with the vertical axis of the graph.
   ⇨ This value is the input (factory setting) for the selected fan rotation speed.

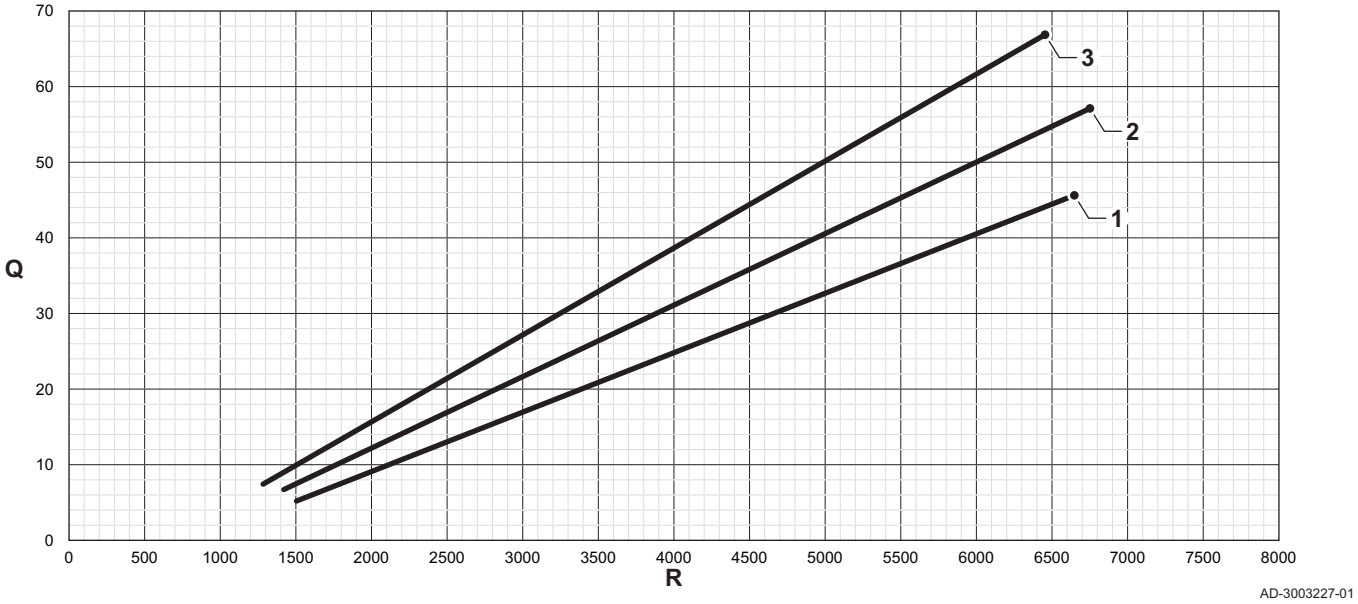
Fig.22 Fill-in the desired input



2. Use the graph to select the desired input and resulting fan rotation speed:
   2.1. Select the desired input on the vertical axis of the graph.
   2.2. Draw a horizontal line from the selected input.
   2.3. Stop when the line intersects with the curve.
   2.4. Draw a vertical line from the intersection point with the curve.
   2.5. Stop when the line intersects with the horizontal axis of the graph.
   2.6. Read the value where the vertical line intersects with the horizontal axis of the graph.
   ⇨ This value is the fan rotation speed for the desired input.

3. Change parameter **GP007** to set the desired maximum input.

Fig.23 Maximum input for central heating



Q Input (Hi) (kW)
R Fan rotation speed
1 Quinta Ace S 50
2 Quinta Ace S 60
3 Quinta Ace S 70

Tab.14 Fan rotation speeds

Boiler type	Minimum input	Factory setting(1)	Maximum input
Quinta Ace S 50	1500	6650	6650
Quinta Ace S 60	1420	6750	6750
Quinta Ace S 70	1270	6450	6450
(1) Parameter **GP007**.			

4.7.3 Setting for process heat application

Important
The service life of the boiler may be reduced if it is used for process heat applications.

For this application, adjust the following parameters:

1. Set parameter **DP140** to **Process heat**.
2. Set parameters **DP005** and **DP070** to the required value for this installation.
3. If using a DHW sensor; set parameters **DP006** and **DP034** to the required value for this installation.

4.7.4 Changing the ΔT setting

The ΔT can be increased with a parameter setting. The default ΔT setting is 20 °C and can be changed to a maximum of 35 °C

Important
When increasing the ΔT, the control unit limits the flow temperature to a maximum of 80 °C.

1. Set parameter **GP021** to the required temperature.

4.7.5 Setting the 0-10 Volt input function of SCB-10

There are three options for the 0-10 Volt input control of the SCB-10 print:

- Disable the input function.
- The input is temperature based.

• The input is heat output based.

The 0-10 Volt input control can be changed with parameter **EP014**

The temperature setpoints can be changed with parameter **EP030** (minimum) and parameter **EP031** (maximum).

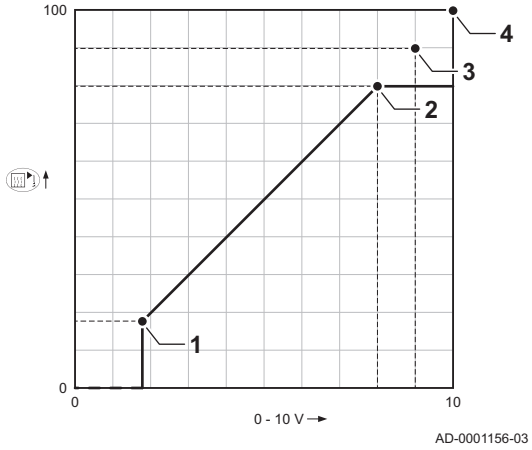
The power setpoints can be changed with parameter **EP032** (minimum) and parameter **EP033** (maximum).

The voltage setpoints can be changed with parameter **EP034** (minimum) and parameter **EP035** (maximum).

■ 0-10 Volt analogue temperature regulation (°C)

The appliance can be controlled by a 0-10 Volt input signal. When configured to temperature-based, the 0–10 V signal controls the boiler supply temperature.

Fig.24 Temperature regulation graph



1 Boiler on
2 Parameter **CP010**
3 Maximum flow temperature
4 Calculated value

Tab.15 Temperature regulation

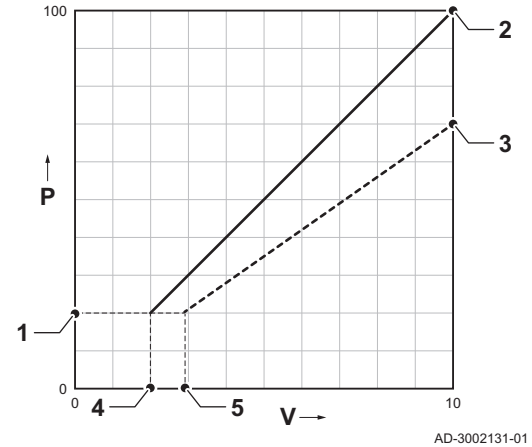
Input signal (V)	Temperature °C	Description
0–1.5	0–15	Boiler off
1.5–1.8	15–18	Hysteresis
1.8–10	18–100	Desired temperature

■ 0-10 Volt analogue output-based control

The appliance can be controlled by a 0-10 Volt input signal. When configured to output-based, the 0-10 Volt signal controls the boiler output.

Important
The start voltage depends on the relation between the fan speed range and the actual set maximum fan speed. An estimate of the start voltage can be calculated.

Fig.25 Output regulation graph



V Voltage
P Boiler output
1 Minimum output
2 Maximum output
3 Reduced maximum output (example)
4 Start voltage
5 Start voltage for reduced output (example)

The formula for calculating the start voltage is:

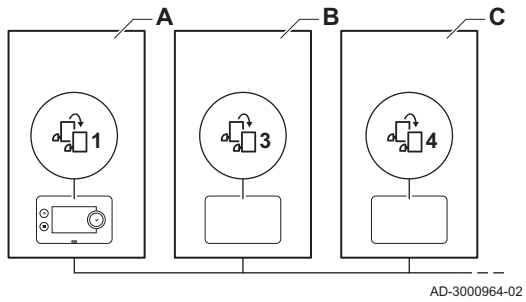
*Vstart = ((10.3 * GP008) - (0.5 * GP007factory)) / GP007current*

Vstart	Start voltage.
GP008	The fan speed set with parameter GP008.
GP007factory	The fan speed set from factory with parameter GP007.
GP007current	The fan speed currently set with parameter GP007.

4.7.6 Cascade control

With the HMI Advanced mounted in the lead boiler it is possible to manage up to 7 boilers in cascade. The system sensor is connected to the lead boiler. All the boilers in the cascade are connected by an S-BUS cable. The boilers are automatically numbered:

Fig.26 Cascade numbering



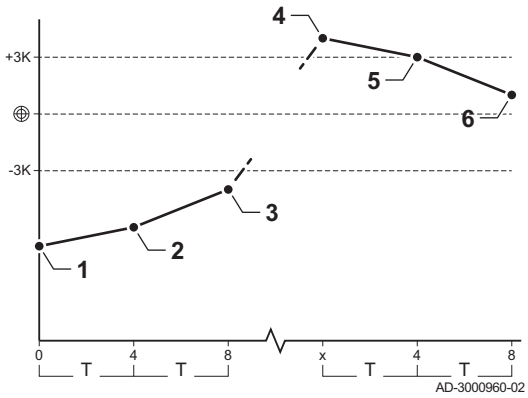
A The lead boiler is number 1.
B The first lag boiler is number 3 (number 2 does not exist).
C The second lag boiler is number 4, and so on.

There are two options for cascade control management:

- Adding supplementary boilers successively (traditional control).
- Adding supplementary boilers simultaneously (parallel control).

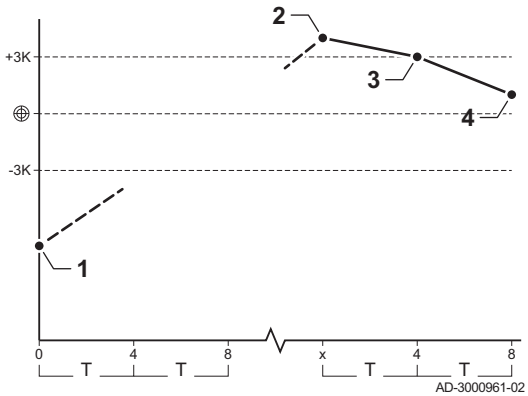
The cascade control management can be changed with parameter **NP006**.

Fig.27 Traditional cascade control management



1 The first boiler starts running when the system temperature is 3 °C below setpoint.
2 After 4 minutes the second boiler starts running if ΔT< 6 K and the system temperature is still more than 3 °C below setpoint.
3 After 8 minutes the third boiler starts running if ΔT< 6 K and the system temperature is still more than 3 °C below setpoint.
4 The first boiler stops running when the system temperature is 3 °C above setpoint.
5 After 4 minutes the second boiler stops running if ΔT< 6 K and the system temperature is still more than 3 °C above setpoint.
6 After 8 minutes the third boiler stops running if ΔT< 6 K and the system temperature is still more than 3 °C above setpoint.
T The duration between start and stop of the boilers can be changed with parameter **NP009**.

Fig.28 Parallel cascade control management



1 All boilers in the cascade start running when the system temperature is 3 °C below setpoint.
2 The first boiler stops running when the system temperature is 3 °C above setpoint.
3 After 4 minutes the second boiler stops running if ΔT< 6 K and the system temperature is still more than 3 °C above setpoint.
4 After 8 minutes the third boiler stops running if ΔT< 6 K and the system temperature is still more than 3 °C above setpoint.
T The duration between start and stop of the boilers can be changed with parameter **NP009**.

Temperature type cascade algorithm, the setpoint sent to the running boiler is:

- Output: Requested by the zones.
- Temperature: The output setpoint requested by the zones + error calculation.

Output type cascade algorithm, the setpoint sent to the running boiler is:

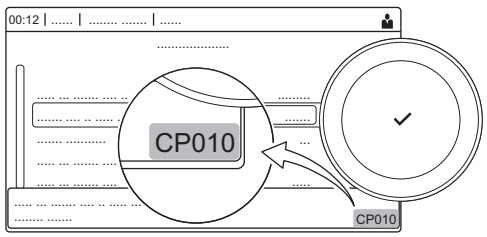
- Output: According to PI algorithms.
- Temperature: -90 °C

The type of cascade algorithm can be changed with parameter **NP011**.

5 Settings

5.1 Introduction to parameter codes

Fig.29 Code on a HMI Advanced



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.30 First letter

AD-3001375-01

The first letter is the category the code relates to.

- **A** Appliance: Appliance
- **B** Buffer: Hot water tank
- **C** Circuit: Zone
- **D** Domestic hot water: Domestic hot water
- **E** External: External options
- **G** Gas fired: Gas-fired heat engine
- **N** Network: Cascade
- **P** Producer: Central heating
- **Z** Zone: Zone

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.31 Second letter

AD-3001376-01

The second letter is the type.

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

Fig.32 Number

AD-3001377-01

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

5.2 Searching the parameters, counters and signals

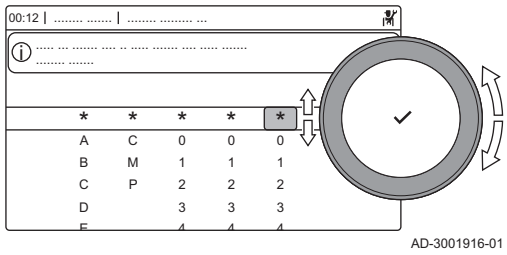
You can search and change data points (Parameters, counters, signals) of the appliance, connected control boards and sensors.

▶▶ ≡ > **Installation Setup** > **Search datapoints**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ≡ button.
2. Select **Installation Setup**.
3. Select **Search datapoints**.

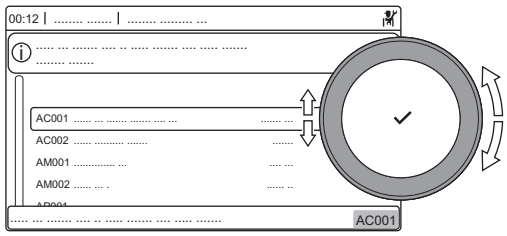
Fig.33 Search



4. Select the search criteria (code):
   4.1. Select the first letter (datapoint category).
   4.2. Select the second letter (datapoint type).
   4.3. Select the first number.
   4.4. Select the second number.
   4.5. Select the third number.

The * symbol can be used to indicate any character within the search field.

Fig.34 List of datapoints



⇨ The list of datapoints appears in the display. Only the first 30 results are shown when searching.

5. Select the desired datapoint.

5.3 List of parameters

5.3.1 CU-GH20 control unit parameters

All tables show the factory setting for the parameters.

Important
The tables also list parameters that are only applicable if the boiler is combined with other equipment.

Tab.16 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > **Installation Setup** > **CU-GH20** > Submenu (1) > **Parameters, counters, signals** > **Parameters** > **General** (2)

(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.
(2) The parameters can also be accessed directly via the Search datapoints function: ☰ > **Installation Setup** > **Search datapoints**

Tab.17 Factory settings at basic installer level

Code	Display text	Description	Adjustment range	Submenu	50	60	70
AP016	CH function on	Enable central heating demand processing	0 = Off 1 = On	Gas fired appliance	1	1	1
AP017	DHW function on	Enable domestic hot water heat demand processing	0 = Off 1 = On	Gas fired appliance	1	1	1
AP073	Summer Winter	Outdoor temperature; Upper limit for heating	10 – 30 °C	Outdoor temperature	22	22	22
AP074	Force summer mode	The heating is stopped, Hot water is maintained, Force summer mode	0 = Off 1 = On	Outdoor temperature	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	Mandatory bus master Producer Manager Cascade management B Cascade management B	0	0	0

Code	Display text	Description	Adjustment range	Submenu	50	60	70
AP089	Installer name	Name of the installer		Mandatory bus master	None	None	None
AP090	Installer phone	Telephone number of the installer		Mandatory bus master	0	0	0
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	0 – 90 °C	CIRCA	80	80	80
CP080 CP081 CP082 CP083 CP084 CP085	User T.Room Activity	Room setpoint temperature of the user zone activity	5 – 30 °C	CIRCA	16 20 6 21 22 20	16 20 6 21 22 20	16 20 6 21 22 20
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 – 30 °C	CIRCA	20	20	20
CP320	OperatingZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Off	CIRCA	1	1	1
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 – 30 °C	CIRCA	20	20	20
CP550	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	CIRCA	0	0	0
CP660	Icon display zone	Choice icon to display this zone	0 = None 1 = All 2 = Bedroom 3 = Livingroom 4 = Study 5 = Outdoor 6 = Kitchen 7 = Basement	CIRCA	0	0	0
DP060	DHW timeprog select	Time program selected for DHW.	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3	Internal DHW	0	0	0
DP070	DHW comfort setpoint	Comfort temperature setpoint for the Domestic Hot Water tank	40 – 65 °C	Internal DHW	60	60	60
DP080	DHW eco setpoint	Eco friendly temperature setpoint from the Domestic Hot Water tank	10 – 60 °C	Internal DHW	10	10	10
DP200	DHW mode	DHW primary mode current working setting	0 = Scheduling 1 = Manual 2 = Off	Internal DHW	1	1	1
DP337	DHW holiday setpoint	Holiday temperature setpoint from the Domestic Hot Water tank	10 – 60 °C	Internal DHW	10	10	10
DP410	DHW anti-leg runtime	Duration of the DHW anti-legionella program	5 – 60 Min	Internal DHW Tank DHW	10	10	10
DP455	DHW charge pump post	The post operating time of the DHW charge pump	0 – 99 Sec	Tank DHW	15	15	15

Tab.18 Navigation for installer level

Level	Menu path
Installer	☰ > **Installation Setup** > **CU-GH20** > Submenu (1) > **Parameters, counters, signals** > **Parameters** > **General** (2)

(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.
(2) The parameters can also be accessed directly via the Search datapoints function: ☰ > **Installation Setup** > **Search datapoints**

Tab.19 Factory settings at installer level

Code	Display text	Description	Adjustment range	Submenu	50	60	70
AP006	Min water pressure	The appliance will report low water pressure below this value	0.8 – 6 bar	Gas fired appliance	0.8	0.8	0.8
AP009	Service hours	Number of heat generator operating hours before raising a service notification	0 – 51000 Hours	Gas fired appliance	6000	6000	6000
AP010	Service notification	Select the type of service notification	0 = None 1 = Custom notification 2 = ABC notification	Gas fired appliance	2	2	2
AP011	Service hours mains	Hours powered to raise a service notification	0 – 51000 Hours	Gas fired appliance	35000	35000	35000
AP063	Max CH flow setpoint	Maximum central heating flow temperature setpoint	20 – 90 °C	Producer Generic Gas fired appliance	90	90	90
AP079	Building Inertia	Inertia of the building used for heat up speed	0 – 15	Outdoor temperature	3	3	3
AP080	Frost min out temp	Outdoor temperature below which the antifreeze protection is activated	-60 – 25 °C	Outdoor temperature	-10	-10	-10
AP082	Enable daylight save	Enable daylight saving for the system to save energy during winter	0 = Off 1 = On	Mandatory bus master	0	0	0
AP091	Outdoor sens source	Type of outdoor sensor connection to be used	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	Outdoor temperature	0	0	0
AP178	Pump output profile	Output profile of the 0-10V/PWM pump	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)	Pump Configuration	0	0	0
CP000	MaxZoneT-FlowSetpoint	Maximum Flow Temperature setpoint zone	0 – 90 °C	CIRCA	80	80	80
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct	CIRCA	1	1	1
CP060	Room T holiday	Wished room zone temperature on holiday period	5 – 20 °C	CIRCA	6	6	6
CP070	MaxReducedRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	5 – 30 °C	CIRCA	16	16	16
CP210	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit	15 – 90 °C	CIRCA	15	15	15
CP220	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit	15 – 90 °C	CIRCA	15	15	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 – 4	CIRCA	1.5	1.5	1.5
CP340	TypeReduced-NightMode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	CIRCA	1	1	1

Code	Display text	Description	Adjustment range	Submenu	50	60	70
CP570	ZoneTimeProg Select	Time Program of the zone selected by the user	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3	CIRCA	0	0	0
CP730	Zone Heat up speed	Selection of heat up speed of the zone	0 = Extra Slow 1 = Slowest 2 = Slower 3 = Normal 4 = Faster 5 = Fastest	CIRCA	3	3	3
CP740	Zone cool down speed	Selection of cool down speed of the zone	0 = Slowest 1 = Slower 2 = Normal 3 = Faster 4 = Fastest	CIRCA	2	2	2
CP750	MaxZone Preheat time	Maximum zone preheat time	0 – 240 Min	CIRCA	0	0	0
CP780	Control strategy	Selection of the control strategy for the zone	0 = Automatic 1 = Room temp based 2 = Outdoor temp based 3 = Outdoor & room based	CIRCA	0	0	0
DP004	Anti-legionella	Anti-legionella protection of the calorifier	0 = Disabled 1 = Weekly 2 = Daily	Internal DHW Tank DHW	0	0	0
DP024	Mix anti-leg mode	DHW mixing pump anti- legionella mode	0 = Off 1 = During charging 2 = Charging + disinfect	DHW mixing DHW Mix/ Circulation	0	0	0
DP025	DHW mixing pump	DHW mixing pump enable	0 = Off 1 = On	DHW mixing DHW Mix/ Circulation	0	0	0
DP026	Delta DHW tank temp	Maximum temperature difference between the top and bottom of the DHW tank	0 – 100 °C	DHW mixing DHW Mix/ Circulation	6	6	6
DP034	DhwCalorifier-Offset	Offset for calorifier sensor	0 – 10 °C	Tank DHW	0	0	0
DP044	Min DHW tank temp	Minimum bottom temperature DHW tank	0 – 120 °C	DHW mixing DHW Mix/ Circulation	70	70	70
DP045	Mix pump hysteresis	DHW mixing pump hysteresis temperature	0 – 20 °C	DHW mixing DHW Mix/ Circulation	2	2	2
DP049	DHW tank mixing	Enable/disable domestical hot water tank mixing	0 = Off 1 = On	DHW mixing DHW Mix/ Circulation	0	0	0
DP050	Circulation mode	DHW circulation pump mode selection	0 = Pump is off 1 = Pump on time program 2 = Pump for DHW comfort	DHW circulation DHW Mix/ Circulation	0	0	0
DP052	Circ pump on time	DHW circulation pump cyclic ON time	0 – 20 Min	DHW circulation DHW Mix/ Circulation	0	0	0

Code	Display text	Description	Adjustment range	Submenu	50	60	70
DP053	Circ pump off time	DHW circulation pump cyclic OFF time	0 – 20 Min	DHW circulation DHW Mix/ Circulation	0	0	0
DP054	Circ pump anti leg	DHW circulation pump anti legionella	0 = Off 1 = On	DHW circulation DHW Mix/ Circulation	0	0	0
DP057	Circulation Toffset	DHW circulation offset temperature	0 – 20 °C	DHW circulation DHW Mix/ Circulation	0	0	0
DP140	DHW load type	DHW load type (0 = Combi, 1 = Solo)	1 = Solo 2 = Layered cylinder 3 = Process heat	Internal DHW Tank DHW Gas fired appliance	1	1	1
DP150	DHW Thermostat	Enable DHW Thermostat function	0 = Off 1 = On	Tank DHW	1	1	1
DP160	DHW AntiLeg Setpoint	Setpoint for DHW anti legionella	60 – 80 °C	Internal DHW Tank DHW	65	65	65
DP336	DHW pump hysteresis	DHW circulation pump hysteresis temperature	1 – 60 °C	DHW circulation DHW Mix/ Circulation	6	6	6
DP430	Start day anti-leg	Day to start the DHW anti-legionella program	1 = Monday 2 = Tuesday 3 = Wednesday 4 = Thursday 5 = Friday 6 = Saturday 7 = Sunday	Internal DHW Tank DHW	6	6	6
DP440	Start time anti-leg	Starting time for the DHW anti-legionella program	0 – 143 HoursMinutes	Internal DHW Tank DHW	18	18	18
DP450	DHW circulation	DHW circulation zone enabled	0 = Off 1 = On	DHW circulation DHW Mix/ Circulation	0	0	0
DP452	DHW priority	Selects the DHW priority	0 = Total 1 = Relative 2 = None	Tank DHW	0	0	0
DP473	Circulation Tsensor	DHW circulation temperature sensor connected	0 = No 1 = Yes	DHW circulation DHW Mix/ Circulation	1	1	1
EP014	SCB func 10V PWMin	Smart Control Board function 10 Volt PWM input	0 = Off 1 = Temperature control 2 = Power control	0-10 volt input	0	0	0
EP030	Min Setp Temp 0-10V	Sets the minimum set point temperature for 0 - 10 volts for the Smart Control Board	0 – 100 °C	0-10 volt input	0	0	0
EP031	Max Setp Temp 0-10V	Sets the maximum set point temperature for 0 - 10 volts for the Smart Control Board	0.5 – 100 °C	0-10 volt input	100	100	100
EP032	Min Setp Power 0-10V	Sets the minimum set point power for 0 - 10 volts for the Smart Control Board	0 – 100 %	0-10 volt input	0	0	0

Code	Display text	Description	Adjustment range	Submenu	50	60	70
EP033	Max Setp Power 0-10V	Sets the maximum set point power for 0 - 10 volts	5 – 100 %	0-10 volt input	100	100	100
EP034	Min Setp Volt 0-10V	Sets the minimum set point voltage for 0 - 10 volts for the Smart Control Board	0.5 – 10 V	0-10 volt input	0.5	0.5	0.5
EP035	Max Setp Volt 0-10V	Sets the maximum set point voltage for 0 - 10 volts	0 – 10 V	0-10 volt input	10	10	10
GP094	Chimney sweep power	Custom power setpoint for the chimney sweep mode	0 – 100 %	Gas fired appliance	50	50	50
NP005	Cascade Permutation	Choice of the leading generator, Default = Switching of order every 7 days	0 – 127	Cascade management B Cascade management B	0	0	0
NP006	Cascade Type	Cascading boilers by adding successively or in parallel, the boilers function simultaneously	0 = Traditional 1 = Parallel	Cascade management B Cascade management B	0	0	0
NP007	CascTOutdoorHeatParl	Outdoor start temperature heating of all stages in parallel mode	-10 – 20 °C	Cascade management B Cascade management B	10	10	10
NP008	CascPrimPumpPostRun	Duration of post operation of the cascade primary circulation pump	0 – 30 Min	Cascade management B Cascade management B	4	4	4
NP009	CascInterStageTime	Switch on and switch off timing for the producer of the cascade	1 – 60 Min	Cascade management B Cascade management B	10	10	10
NP010	CascTOutdoorCoolPara	Outdoor start temperature cooling of all stages in parallel mode	10 – 40 °C	Cascade management B Cascade management B	30	30	30
NP011	Cascade algorithm	Type of cascade management which is requested.	0 = Temperature 1 = Power	Cascade management B Cascade management B	0	0	0
NP012	CascPowerRiseTime	Cascade, Time to reach Temperature Septoint	1 – 10	Cascade management B Cascade management B	1	1	1

Code	Display text	Description	Adjustment range	Submenu	50	60	70
NP013	CascForce-Stop Pprim	Force Primary Pump to Stop on cascade	0 = No 1 = Yes	Cascade management B Cascade management B	0	0	0
NP014	Cascade Mode	Functionnement mode of cascade; Automatic, heating or cooling	0 = Automatic 1 = Heating 2 = Cooling	Cascade management B Cascade management B	0	0	0
PP015	CH Pump post-run time	Central heating pump postrun time	0 – 99 Min	Gas fired appliance	2	2	2
PP018	Min CH pump speed	Minimum central heating pump speed (%)	45 – 100 %	Gas fired appliance	55	55	66
PP023	CH Hysteresis	Temperature hysteresis for the generator to start on central heating	1 – 10 °C	Gas fired appliance	10	10	10

Tab.20 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > **Installation Setup** > **CU-GH20** > Submenu (1) > **Parameters, counters, signals** > **Parameters** > **Advanced** (2)

(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.

(2) The parameters can also be accessed directly via the Search datapoints function: ☰ > **Installation Setup** > **Search datapoints**

Tab.21 Factory settings at advanced installer level

Code	Display text	Description	Adjustment range	Submenu	50	60	70
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint	Gas fired appliance	0	0	0
AP004	Hydr valve wait time	Heat generator wait time to open the hydraulic valve	0 – 255 Sec	Gas fired appliance	1	1	1
AP026	Setpoint manual HD	Flow temperature setpoint for manual heat demand	10 – 90 °C	Gas fired appliance	40	40	40
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outdoor sensor 1 = AF60 2 = QAC34	Outdoor temperature	0	0	0
AP101	Deaeration program	Deaeration program settings	0 = No deair at power up 1 = Always deair at pwr 2 = Deair only at 1 pwr	Deaeration control	2	2	2
AP102	Appliance pump funct	Configuration of the appliance pump as zone pump or system pump (feed lowloss header)	0 = No 1 = Yes	Gas fired appliance	0	0	0
AP173	Pump control	Pump control signal/comms types	0 = LIN pump 1 = PWM pump 2 = PWM/0-10V profiles 3 = On/Off pump control	Pump Configuration	1	1	1
AP200	Temperature setpoint	Temperature setpoint requested when the input is active	7 – 100 °C	Multifunctional in	90	90	90
AP201	Temperature setpoint	Temperature setpoint requested when the input is active	7 – 100 °C	Multifunctional in	90	90	90
CP240	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit	0 – 10	CIRCA	3	3	3

Code	Display text	Description	Adjustment range	Submenu	50	60	70
CP250	Calibration sensor	Adjust the measured room temperature	-5 – 5 °C	CIRCA	0	0	0
CP450	Pump type	The connected pump type	0 = On/Off 1 = Modulating PWM 2 = Modulating LIN	CIRCA	1	1	1
CP770	Zone Buffered	The zone is after a Buffer tank	0 = No 1 = Yes	CIRCA	0	0	0
CP850	Hydronic balancing	Hydronic balancing operation possible	0 = No 1 = Yes	CIRCA	0	0	0
DP003	Abs max fan DHW	Maximum fan speed on Domestic Hot Water	1000 – 6900 Rpm	Gas fired appliance GVC Generic	6650	6750	6450
DP005	Calorifier Tf offset	Flow setpoint offset for loading calorifier	0 – 30 °C	Tank DHW	15	15	15
DP006	Hyst calorifier	Hysteresis to start heating calorifier	2 – 15 °C	Tank DHW	6	6	6
DP007	Dhw 3wv Standby	Position of three way valve during standby	0 = CH position 1 = DHW position	Tank DHW	0	0	0
DP010	Hysteresis DHW	Temperature hysteresis for the heat generator to start on domestic hot water production	1 – 10 °C	Gas fired appliance	1	1	1
DP011	Stop offset DHW	Temperature offset to stop heat generator on domestic hot water production	0 – 20 °C	Tank DHW Gas fired appliance	5	5	5
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 – 99 Sec	Gas fired appliance	15	15	15
DP035	Start pump DHW calo	Start pump for Domestic Hot Water calorifier	-20 – 20 °C	Tank DHW	-3	-3	-3
DP046	DhwMaxTemp	Maximum Domestic Hot Water temperature	0 – 95 °C	Tank DHW	90	90	90
DP474	DHW cylinder as zone	Domestic hot water cylinder connected as zone	0 = No 1 = Yes	Tank DHW	0	0	0
DP480	Pump on when DHW	Turn the pump on immediately for DHW heat demand	0 = No 1 = Yes	Tank DHW	1	1	1
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 – 7000 Rpm	Gas fired appliance GVC Generic	6650	6750	6450
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1250 – 4000 Rpm	Gas fired appliance GVC Generic	1500	1420	1270
GP009	Fan RPM Start	Fan speed at appliance start	1000 – 4000 Rpm	Gas fired appliance GVC Generic	2300	2200	2100
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	Gas fired appliance	0	0	0
GP017	Max power	Maximum power percentage in kilo Watt	0 – 260 kW	Gas fired appliance	49.1	59	73.2
GP021	Temp diff Modulating	Modulate back when delta temperature is larger than this threshold	10 – 40 °C	Gas fired appliance	35	35	35
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	0 – 255	Gas fired appliance	0	0	0
GP038	Flow test gradient	Gradient used for circulation test	0 – 30 °C	Circulation test	1	1	1

Code	Display text	Description	Adjustment range	Submenu	50	60	70
GP039	Flow test duration	Duration of the circulation test	0 – 25 Sec	Circulation test	15	15	15
GP040	Deair grad check en	Enable deaeration gradient	0 – 240 Sec	Circulation test	120	120	120
GP050	Power min	Minimum power in kilo Watt for RT2012 calculation	0 – 80 kW	Gas fired appliance	3.1	4.7	7.2
GP082	Chimney over DHW	Enable the DHW circuit during chimney sweep	0 = Off 1 = On	Gas fired appliance	0	0	0
NP001	CascProdMan Hys.High	Hysterese high for Producer Manager	0.5 – 10 °C	Cascade management B Cascade management B	3	3	3
NP002	CascProdMan Hys.Low	Hysterese low for Producer Manager	0.5 – 10 °C	Cascade management B Cascade management B	3	3	3
NP003	CascProdManErrRange	Maximum error gain for Producer Manager	0 – 10 °C	Cascade management B Cascade management B	10	10	10
NP004	CascPFactorAlgoTemp	Proportional Factor for cascade with Temperature algorithm	0 – 10	Cascade management B Cascade management B	1	1	1
PP014	ChPumpDTReduction	Reduction of temperature delta modulating for pump modulation	0 – 40 °C	Gas fired appliance	7	7	7
PP016	Max CH pump speed	Maximum central heating pump speed (%)	55 – 100 %	Gas fired appliance	100	100	100
ZP000	Screed drying time 1	Set the number of days spent in the first screed drying step	0 – 30 Days	Direct zone	3	3	3
ZP010	Screed start temp 1	Set the start temperature for the first step of screed drying	7 – 60 °C	Direct zone	20	20	20
ZP020	Screed end temp 1	The end temperature for the first step of screed drying	7 – 60 °C	Direct zone	32	32	32
ZP030	Screed drying time 2	Set the number of days spent in the second screed drying step	0 – 30 Days	Direct zone	11	11	11
ZP040	Screed start temp 2	Set the start temperature for the second step of screed drying	7 – 60 °C	Direct zone	32	32	32
ZP050	Screed end temp 2	The end temperature for the second step of screed drying	7 – 60 °C	Direct zone	32	32	32
ZP060	Screed drying time 3	Set the number of days spent in the third screed drying step	0 – 30 Days	Direct zone	2	2	2
ZP070	Screed start temp 3	Set the start temperature for the third step of screed drying	7 – 60 °C	Direct zone	32	32	32
ZP080	Screed end temp 3	The end temperature for the third step of screed drying	7 – 60 °C	Direct zone	24	24	24
ZP090	Screed drying enable	Enable the screed drying of the zone	0 = Off 1 = On	Direct zone	0	0	0

5.4 List of measured values

5.4.1 CU-GH20 control unit signals

Tab.22 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > **Installation Setup** > **CU-GH20** > Submenu (1) > **Parameters, counters, signals** > **Signals** > **General** (2)

(1) See the column "Submenu" in the following table for the correct navigation. The signals are grouped in specific functionalities.
(2) The signals can also be accessed directly via the Search datapoints function: ☰ > **Installation Setup** > **Search datapoints**

Tab.23 Signals at basic installer level

Code	Display text	Description	Range	Submenu
AM001	DHW active	Is the appliance currently in domestic hot water production mode?	0 = Off 1 = On	Tank DHW Gas fired appliance
AM010	Pump speed	The current pump speed	0 - 100%	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 45	Status information System Functionality
AM014	Sub status Appliance	Current sub status of the appliance.	**See** Status and sub-status, page 45	Status information System Functionality
AM015	Pump running?	Is the pump running?	0 = Inactive 1 = Active	Gas fired appliance
AM016	System Flow Temp	Flow temperature of appliance.	-25 - 150°C	Zone manager Tank DHW Producer Generic Gas fired appliance Prod manager bridge Circulation test
AM018	T return	Return temperature of appliance. The temperature of the water entering the appliance.	-25 - 150°C	Zone manager Tank DHW Gas fired appliance Circulation test
AM019	Water pressure	Water pressure of the primary circuit.	0 - 4bar	Gas fired appliance
AM022	On / Off heat demand	On / Off heat demand	0 = Off 1 = On	Gas fired appliance
AM027	Outdoor temperature	Instantaneous outdoor temperature	-60 - 60°C	Outdoor temperature Gas fired appliance
AM036	Flue gas temperature	Temperature of the exhaust gas leaving the appliance	0 - 250°C	Gas fired appliance
AM040	Control temperature	Temperature used for hot water control algorithms.	0 - 250°C	Gas fired appliance

Code	Display text	Description	Range	Submenu
AM046	Internet T.Outdoor	Outdoor temperature received from an internet source	-70 - 70°C	Outdoor temperature
AM055	FlueGas temperature2	Temperature of the exhaust gas leaving the appliance	0 - 250°C	Gas fired appliance
AM107	Cascade pump status	The current status of the cascade pump	0 = Off 1 = On	Cascade management B
BM000	Dhw Temperature	Dhw Temperature depending on loadtype this is TankTemperature or DhwOutTemperature	-25 - 150°C	Gas fired appliance
CM030	Zone RoomTemperature	Measure of the room temperature of the zone	0 - 50°C	CIRCA
CM190	Zone Troom setpoint	Wished room temperature setpoint of the zone	0 - 50°C	CIRCA
CM210	ZoneTout temp	Current outdoor temperature of the zone	-70 - 70°C	CIRCA
CM280	ZoneRTC TcalcRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	0 - 100°C	CIRCA
DM001	DHW tank temp bottom	Domestic Hot Water tank temperature (bottom sensor)	-20 - 120°C	Tank DHW
DM061	Status DHW antileg	DHW circulation pump anti-legionella function status	0 = Off 1 = Charging 2 = Disinfection	DHW mixing DHW circulation DHW Mix/ Circulation DHWE iAB
DM062	DHW tank temperature	DHW tank temperature	-25 - 150°C	DHW mixing DHW circulation DHW Mix/ Circulation DHWE iAB
DM067	DHW operating mode	DHW operating mode	1 = Eco 2 = Comfort 3 = Anti legionella	DHW circulation DHW Mix/ Circulation DHWE iAB
DM068	Circulation temp	DHW circulation temperature	-25 - 150°C	DHW circulation DHW Mix/ Circulation
DM082	Circulation status	Status of the DHW circulation zone	0 = Disabled 1 = Standby 2 = Normal operation 3 = Anti legionella 4 = Pump anti seize 5 = Frost protection	DHW circulation DHW Mix/ Circulation
DM134	DHW pump active	The DHW charge pump operating	0 = Inactive 1 = Active	Tank DHW
DM135	DHW pump speed	The DHW charge pump speed	0 - 100%	Tank DHW
GM001	Actual fan RPM	Actual fan RPM	0 - 7000Rpm	Gas fired appliance GVC Generic
GM002	Fan RPM setpoint	Actual fan RPM setpoint	0 - 7000Rpm	Gas fired appliance GVC Generic

Code	Display text	Description	Range	Submenu
GM008	Actual flame current	Actual flame current measured	0 - 25µA	Gas fired appliance GVC Generic
PM002	CH Setpoint	Central heating setpoint of the appliance	0 - 250°C	Gas fired appliance

Tab.24 Navigation for installer level

Level	Menu path
Installer	☰ > **Installation Setup** > **CU-GH20** > Submenu (1) > **Parameters, counters, signals** > **Signals** > **General** (2)

(1) See the column "Submenu" in the following table for the correct navigation. The signals are grouped in specific functionalities.
(2) The signals can also be accessed directly via the Search datapoints function: ☰ > **Installation Setup** > **Search datapoints**

Tab.25 Signals at installer level

Code	Display text	Description	Range	Submenu
AM024	Actual rel power	Actual relative power of the appliance	0 - 100%	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 - 250°C	Gas fired appliance
AM170	Measurement sensor 1	Measurement of multifunctional sensor 1	-327.68 - 327.67°C	DHWE iAB Multifunct sensors
AM171	Measurement sensor 1	Measurement of multifunctional sensor 1	-327.68 - 327.67°C	DHWE iAB Multifunct sensors
AM172	Measurement sensor 1	Measurement of multifunctional sensor 1	-327.68 - 327.67°C	DHWE iAB Multifunct sensors
AM173	Measurement sensor 1	Measurement of multifunctional sensor 1	-327.68 - 327.67°C	DHWE iAB Multifunct sensors
CM070	Zone Tflow Setpoint	Current Flow temperature setpoint of zone	0 - 150°C	CIRCA
CM110	ZoneTRoomUnit setp	Room Unit temperature setpoint of zone	0 - 35°C	CIRCA
CM130	ZoneCurrent activity	Current activity of the zone	0 = Off 1 = Eco 2 = Comfort 3 = Anti legionella	CIRCA
CM140	ZoneOTContr present	OpenTherm controller is connected to the zone	0 = No 1 = Yes	CIRCA
CM150	ZoneState Heatdemand	State of On Off heat demand per zone	0 = No 1 = Yes	CIRCA
CM160	Zone Mod HeatDemand	Presense of modulating heat demand per zone	0 = No 1 = Yes	CIRCA
CM180	Zone RU present	Presense of Room Unit in this zone	0 = No 1 = Yes	CIRCA
DM063	DHW tank mixing T	Current DHW tank mixing water temperature	-25 - 150°C	DHW mixing DHW Mix/ Circulation
DM064	DHW mix pump status	DHW mix pump status	0 = Off 1 = On	DHW mixing DHW Mix/ Circulation

Code	Display text	Description	Range	Submenu
DM065	DHW mixing status	Current status of the DHW mixing function group	0 = Disabled 1 = Standby 2 = Normal operation 3 = Anti legionella 4 = Pump anti seize 5 = Frost protection	DHW mixing DHW Mix/ Circulation
DM066	Anti seize delay	DHW mixing pump anti seize delay time	0 - 4294967295Min	DHW mixing DHW Mix/ Circulation
DM069	State DHW circ pump	Status of the DHW circulation pump	0 = Off 1 = On	DHW circulation DHW Mix/ Circulation
DM080	Anti seize delay	Circulation pump anti seize delay time	0 - 4294967295Min	DHW circulation DHW Mix/ Circulation
DM081	Circulation Tsetp	DHW circulation setpoint temperature	0 - 655.35°C	DHW circulation DHW Mix/ Circulation
DM083	DHW manager status	DHW manager status		DHW Mix/ Circulation DHWE iAB
EM010	Meas 0-10V input SCB	Measurement of the Voltage on the 0-10V input of the Smart Control Board	0 - 10V	0-10 volt input
EM018	Tsetp 0-10V input	Temperature set point required by 0-10V Input	0 - 100°C	0-10 volt input
EM021	Power setp 0-10V	Power setpoint required by 0-10V input	0 - 100%	0-10 volt input
GM025	STB status	High limit status (0 = open, 1 = closed)	0 = Open 1 = Closed 2 = Off	Gas fired appliance GVC Generic
GM027	Flame Test Active	Flame test 1=active, 0=inactive	0 = Inactive 1 = Active	Gas fired appliance GVC Generic
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 12 = Poor combustion 13 = Solar T above stop T = =	Gas fired appliance
NM000	CascadeNbProducer	Cascade number of active producer	0 - 17	Cascade management B Cascade management B

Code	Display text	Description	Range	Submenu
NM001	CascSystemTF	Cascade system flow temperature	-10 - 120°C	Producer Generic Producer Manager Cascade management B Cascade management B Producer<>Consumer
NM022	CascNbStageAvailable	Number of stage available on the Cascade	0 - 255	Cascade management B Cascade management B
NM023	CascNbStageRequired	Number of stage required on the Cascade	0 - 255	Cascade management B Cascade management B
NM028	CascNbProdPresent	Cascade Number of Producer present recognized in the cascade	0 - 255	Cascade management B Cascade management B
ZM000	Screed temp setpoint	The current flow temperature setpoint for screed drying	7 - 60°C	Direct zone

Tab.26 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > **Installation Setup** > **CU-GH20** > Submenu (1) > **Parameters, counters, signals** > **Signals** > **Advanced** (2)

(1) See the column "Submenu" in the following table for the correct navigation. The signals are grouped in specific functionalities.
(2) The signals can also be accessed directly via the Search datapoints function: ☰ > **Installation Setup** > **Search datapoints**

Tab.27 Signals at advanced installer level

Code	Display text	Description	Range	Submenu
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
AP078	Out sensor detected	Outdoor sensor detected in the application	0 = No 1 = Yes	Outdoor temperature

Code	Display text	Description	Range	Submenu
CM120	ZoneCurrentMode	Zone Current Mode	0 = Scheduling 1 = Manual 2 = Off 3 = Temporary 4 = Zone is controlled via external optimization	CIRCA
CM200	ZoneCurrentHeatMode	Displaying current operating mode of the zone	0 = Standby 1 = Heating 2 = Cooling	CIRCA
CM220	ZoneTout aver short	Outdoor temperature average short time per zone	-70 - 70°C	CIRCA
CM240	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 = No 1 = Yes	CIRCA
CM390	Reason zone is off	Reason why zone activity is off	0 = None 1 = Holiday mode 2 = On/Off contact 3 = Hydronic balancing	CIRCA
DM009	Auto/Derog DHWstatus	Automatic/derogation status of Domestic Hot Water mode	0 = Scheduling 1 = Manual 2 = Off 3 = Temporary 4 = Zone is controlled via external optimization	Internal DHW Tank DHW
DM019	DHW activity	Domestic Hot Water current activity	0 = Off 1 = Eco 2 = Comfort 3 = Anti legionella	Internal DHW
DM029	DHW setpoint	Domestic Hot Water temperature setpoint	0 - 655.35°C	Internal DHW
GM003	Flame detection	Flame detection	0 = Off 1 = On	Gas fired appliance GVC Generic
GM004	Gas valve 1	Gas valve 1	0 = Open 1 = Closed 2 = Off	Gas fired appliance GVC Generic
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 GVC Generic
GM010	Power available	Available power in % of maximum	0 - 100%	Gas fired appliance
GM011	Power setpoint	Power setpoint in % of maximum	0 - 100%	Gas fired appliance
NM002	CascTempoBetwStage	Temporistation between start next stage	0 - 60Min	Cascade management B Cascade management B
PM003	ChTflowAverage	Actual average flow temperature	-25 - 150°C	Gas fired appliance

5.4.2 Status and sub-status

Tab.28 AM012 - Status

Code	Display text	Explanation
0	Standby	The appliance is in standby mode.
1	Heat Demand	A heat demand is active.
2	Generator start	The appliance starts.
3	Generator CH	The appliance is active for central heating.
4	Generator DHW	The appliance is active for domestic hot water.
5	Generator stop	The appliance has stopped.
6	Pump Post Run	The pump is active after the appliance stopped.
8	Controlled Stop	The appliance does not start because the starting conditions are not met.
9	Blocking Mode	A blocking mode is active.
10	Locking Mode	A locking mode is active.
11	Load test min	Low load test mode for central heating is active.
12	Load test CH max	Full load test mode for central heating is active.
13	Load test DHW max	Full load test mode for domestic hot water is active.
15	Manual Heat Demand	Manual heat demand for central heating is active.
16	Frost Protection	Frost protection mode is active.
17	Deaeration	The deaeration program operates.
19	Reset In Progress	The appliance resets.
21	Halted	The appliance has stopped. It must be reset manually.
200	Device Mode	The service tool interface controls the functions of the appliance.
254	Unknown	The actual state of the appliance is undefined.

Tab.29 AM014 - Sub status

Code	Display text	Explanation
0	Standby	The appliance waits for a process or an action.
1	AntiCycling	The appliance waits to restart, because there were too many consecutive heat demands (anti-short cycle).
3	ClosePump	The appliance starts the pump.
4	WaitingForStartCond.	The appliance waits for the temperature to meet the start conditions.
10	CloseExtGasValve	An external gas valve is opened, when this option is connected to the appliance. An external option board must be connected to drive the valve.
11	StartToGlueGasValve	The fan runs faster, before the flue gas valve is opened.
13	FanToPrePurge	The fan runs faster to pre-purge.
14	WaitForReleaseSignal	The appliance waits for the release input to close.
15	BurnerOnCommandToSu	A burner start command is sent to the safety core.
17	PreIgnition	Ignition starts before the gas valve opens.
18	Ignition	Ignition is active.
19	FlameCheck	The flame detection is active after the ignition.
20	Interpurge	The fan runs to purge the heat exchanger after a failed ignition.
30	Normal Int.Setpoint	The appliance operates to reach the desired value.
31	Limited Int.Setpoint	The appliance operates to reach the reduced internal desired value.
32	NormalPowerControl	The appliance operates on the desired power level.
33	GradLevel1PowerCtrl	The modulation is stopped due to a faster heat exchanger temperature change than gradient level 1.
34	GradLevel2PowerCtrl	The modulation is set to low load due to a faster heat exchanger temperature change than gradient level 2.
35	GradLevel3PowerCtrl	The appliance is in blocking mode due to a faster heat exchanger temperature change than gradient level 3.
36	ProtectFlamePwrCtrl	The burner power is increased due to a low ionisation signal.

Code	Display text	Explanation
37	StabilizationTime	The appliance is in stabilisation time. Temperatures should stabilise and temperature protections are switched off.
38	ColdStart	The appliance runs at start load to prevent cold start noise.
39	ChResume	The appliance resumes central heating after a domestic hot water interruption.
40	SuRemoveBurner	Burner demand is removed from safety core.
41	FanToPostPurge	The fan runs to purge the heat exchanger after the appliance stopped.
44	StopFan	The fan has stopped.
45	LimitedPwrOnTflueGas	The power of the appliance is decreased to lower the flue gas temperature.
48	Reduced Set Point	The desired flow temperature is reduced to protect the heat exchanger.
60	PumpPostRunning	The pump is active after the appliance stopped in order to bring the remaining heat into the system.
61	OpenPump	The pump has stopped.
63	Start anticycle time	Activates the duration of time between two central heating production cycles.
200	Initialising Done	Initialisation is finished.
201	Initialising Csu	The CSU is initialising.
202	Init identifiers	The identifiers are initialising.
203	Init.BL.Parameter	The blocking parameters are initialising.
204	Init safety unit	The safety unit is initialising.
205	Init blocking	The blocking is initialising.
254	StateUnknown	The sub state is undefined.
255	SuOutOfResetsWait1Hr	The safety unit is blocking due to too many resets. Wait for 60 minutes or turn the power off and on again.

6 Maintenance

6.1 Maintenance regulations

Danger of electric shock
Make sure that the boiler is switched off before starting any maintenance work.

Caution
Always wear safety goggles and a dust mask during cleaning work (involving compressed air).

Notice
During inspection and maintenance work:

- Replace defective or worn parts with original spare parts.
- Always replace all gaskets on the parts removed.
- Make sure that all gaskets have been positioned properly.
- Make sure that water never comes into contact with the electrical parts.

Important
Adjust the frequency of inspection and service to the conditions of use, especially if the appliance is:

- In constant use (for example as process heat).
- Used with a low supply temperature.
- Used with a high **ΔT**.

6.2 Maintenance notification

The appliance will indicate when preventive maintenance is required. You can use the notifications to keep possible problems to a minimum.

Important

- The maintenance notification must be followed up within 2 months.
- The maintenance notification must be reset following every service. A reset will clear all the counters for service hours.

The notification shows which service kit must be used. These kits contain all the parts and are available from BAXI spare parts suppliers.

Tab.30 Notification overview

Notification	Sequence				Service kit	
A	1	3	5	7	A	The first maintenance notification A appears after 8750 hours.
B	2		6		B	The first maintenance notification B appears after 17500 hours.
C		4		8	C	The first maintenance notification C appears after 35000 hours.

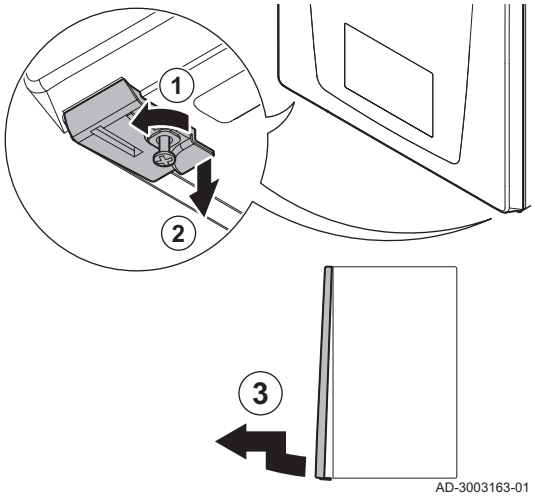
The maintenance notification D does not have a specific service kit. It is mandatory to clean the heat exchanger and condensate collector when it appears. You can combine this specific operation with the service kits (A, B or C) indicated by the next notification in the sequence. The next service indication can be read with counter **AM033**.

The maintenance notification D appears when the maximum hours has been reached for the heat exchanger in condensation mode. The first notification appears after 6000 hours. The current condensation hours can be read with counter **AC022**.

The hours for service and amount of starts can be read with counters **AC002**, **AC003** and **AC004**.

6.3 Opening the boiler

Fig.35 Opening the boiler

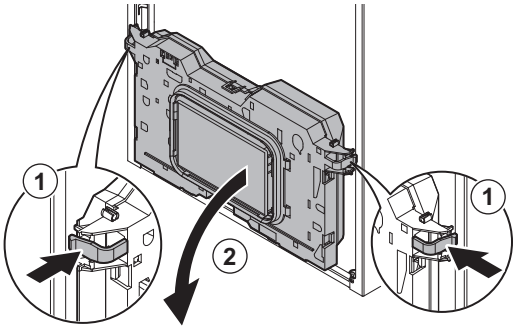


1. Unscrew the two screws located under the front panel.
   ⇨ The screws remain hanging in the clips.
2. Gently pull down the two clips to unlock them.
3. Remove the front panel.

6.4 Access to the boiler components

For easier access to the lower boiler components, the control box can be tilted.

Fig.36 Tilt the control box forwards



1. Gently press the clips on the sides of the control box.
2. Tilt the control box forwards.

6.5 Standard inspection and maintenance operations

6.5.1 Preparation

Carry out the following steps before commencing inspection and maintenance activities:

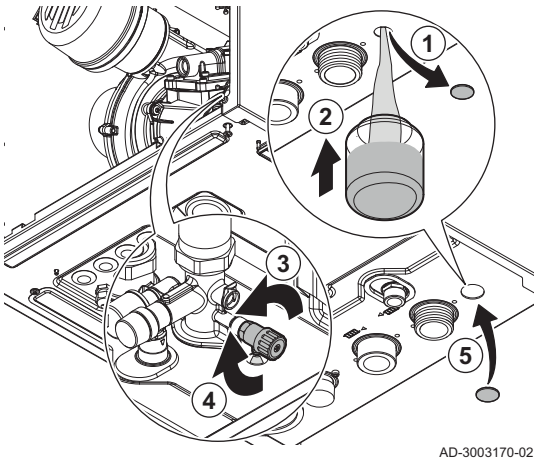
1. Set the boiler to full load until the return temperature is around 65 °C, to dry the heat exchanger on the flue gas side.
2. Check the water pressure.
   The minimum water pressure is 0.8 bar. The recommended water pressure is between 1.0 bar and 1.5 bar.
   2.1. If necessary, top up the central heating system.
3. Check the ionisation current at full load and at low load.
   The value is stable after 1 minute.
   3.1. If the value is lower than 4 µA, clean or replace the ionisation and ignition electrode.
4. Check the condition and tightness of the flue gas outlet and air supply system.
5. Check the combustion by measuring the O_2 percentage in the flue gasses.

6.5.2 Checking the water quality

Caution
Not fulfilling the water quality requirements can damage the boiler and will void the warranty.

1. Remove the protection cap at the bottom of the boiler.
2. Place a water sample bottle under the heating drain valve opening under the boiler.
3. Open the heat exchanger drain valve.
4. Close the valve when the sample bottle is filled.
5. Replace the protection cap.
6. Check the quality of this water sample or have it checked.

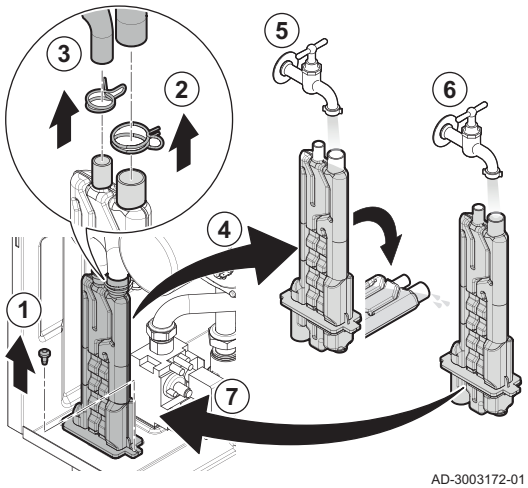
Fig.37 Open heat exchanger drain valve



6.5.3 Cleaning the trap

Danger
The trap must always be sufficiently filled with water. This prevents flue gases from entering the room.

Fig.38 Clean the trap



AD-3003172-01

1. Remove the trap fixing screw.
2. Undo the clip from the front water tube and remove it from the trap.
3. Undo the clip from the back water tube and remove it from the trap.
4. Remove the trap.
5. Clean the trap with water.
6. Fill the trap just below the top with water.
7. Fit the trap.
8. Check for leaks.

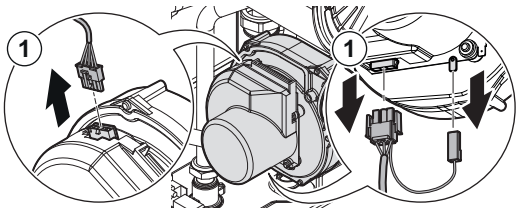
6.6 Specific maintenance operations

6.6.1 Removing the front plate unit

For this task, you will need the following tools:

- ⬡ Socket wrench **10**
- ⬡ Hex spanner **36**

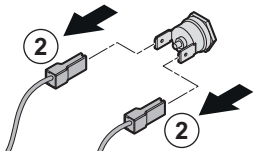
Fig.39 Removing the electric connectors from the fan



AD-3003183-02

1. Remove the electrical connections from the fan.

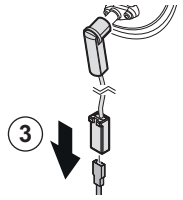
Fig.40 Removing the connectors from thermal switch



AD-3003329-01

2. Remove the connectors from the heat exchanger thermal switch.

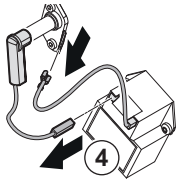
Fig.41 Removing the ionisation cable



AD-3003331-01

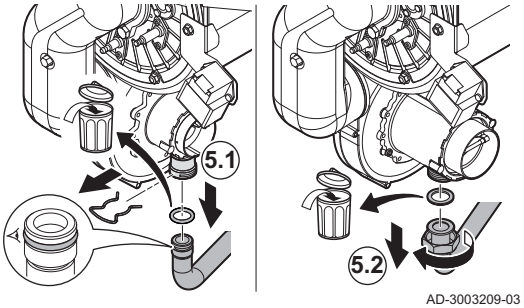
3. Remove the ionisation electrode cable from the **ION** connector.

Fig.42 Removing the ignition cable



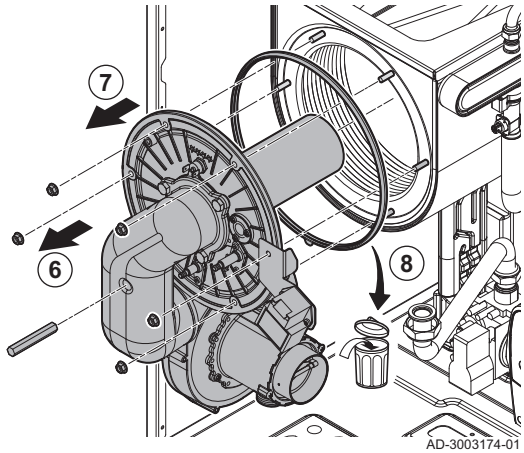
4. Remove the ignition electrode cables from the earthing clip and ignition transformer.

Fig.43 Removing the gas pipe from the venturi



5. Remove the gas pipe from the venturi. There are two types of gas pipe connections:
   5.1. For boiler types 50 - 60: Remove the gas pipe clip and O-ring.
   5.2. For boiler type 70: Remove the gas pipe nut and gasket.
   ⬡ **36**

Fig.44 Removing the front plate unit



6. Remove the nuts from the front plate of the heat exchanger.
   ⬡ **10**
7. Remove the front plate of the heat exchanger with fan and burner straight forward.
8. Remove the rubber gasket from between the front plate and the heat exchanger.

6.6.2 Checking the ionisation and ignition electrode

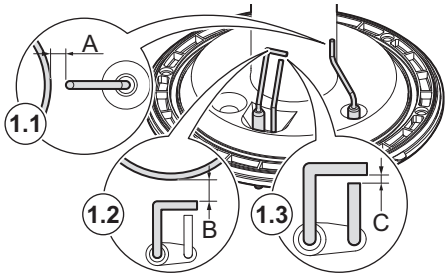
Replace the ionisation and/or ignition electrode if:

- The ionisation current from the ionisation electrode is lower than 4 µA.
- A new electrode is included in the maintenance set.

For this task, you will need the following tools:

Calliper
Sanding paper grit 200 or finer
Hexalobular key **T15**

Fig.45 Checking the electrode distances



AD-3003207-03

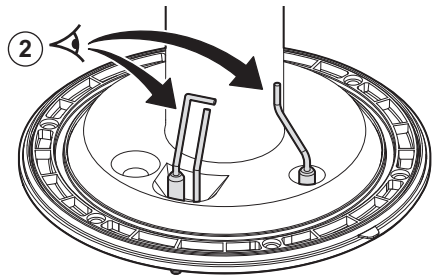
1. Check the electrode distances:
   1.1. Check the distance **A** between the ionisation electrode and the burner.
   1.2. Check the distance **B** between the ignition electrode and the burner.
   1.3. Check the distance **C** between the two pins of the ignition electrode.

Tab.31 Electrode distance values

Boiler type	Distance	A (mm)	B (mm)	C (mm)
Quinta Ace S 50	min max	6.5 8.5	9.0 11.0	3.5 4.5
Quinta Ace S 60	min max	6.5 8.5	9.0 11.0	3.5 4.5
Quinta Ace S 70	min max	6.5 8.5	9.0 11.0	3.5 4.5

Replace the electrode if the distances are not within the values given in the table.

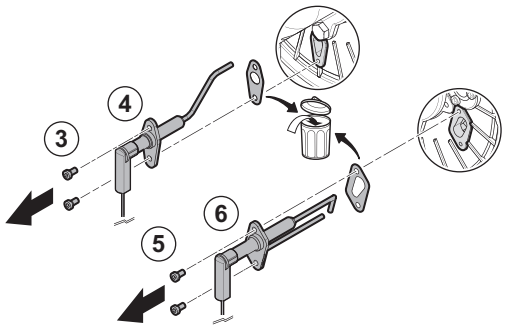
Fig.46 Checking the condition of the ionisation and ignition electrode



AD-3003206-03

2. Check the condition of the ionisation and ignition electrode and their porcelain housing.
   Replace the electrodes if they are damaged or worn.
   T15

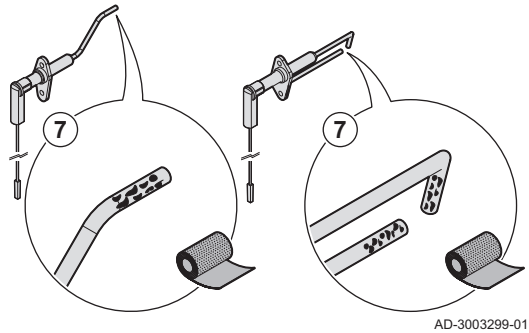
Fig.47 Removing the electrodes



AD-3003217-01

3. Unscrew the two screws on the ionisation electrode.
   T15
4. Remove the electrode and the gasket.
5. Unscrew the two screws on the ignition electrode.
   T15
6. Remove the electrode and the gasket.

Fig.48 Cleaning the electrodes



AD-3003299-01

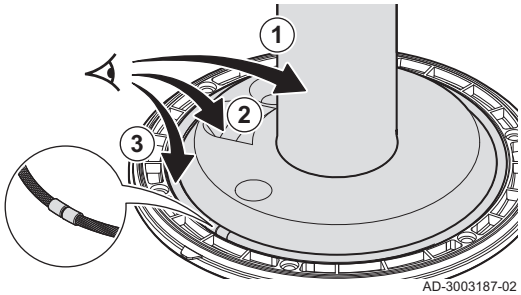
7. Gently remove any oxides and deposits from the electrodes with sandpaper.

Notice
To prevent damage, reassemble or replace an electrode after the front plate unit has been refitted.

6.6.3 Checking the burner and burner insulation

Warning
The burner insulating disc and the glass fibre cord gasket are important for the safe functioning of the boiler. Replace the burner insulating disc and the glass fibre cord gasket every 2 years.

Fig.49 Checking the burner and burner insulation



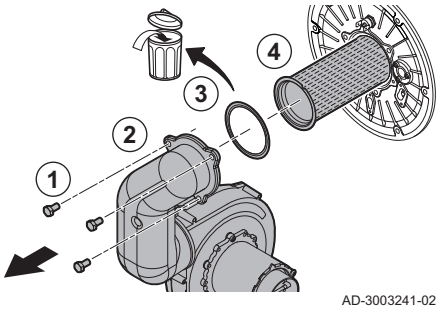
1. Check the burner surface for distortion or damage.
   Replace the burner if it is damaged or faulty.
2. Check the burner insulation.
   Replace the insulation disc:
   - If it is damaged or worn.
   - If it is included in the maintenance set.
3. Check the glass fibre cord gasket.
   Replace the glass fibre gasket:
   - If it is damaged or worn.
   - If it is included in the maintenance set.

6.6.4 Removing the burner

For this task, you will need the following tools:

⬡ Socket wrench **13**

Fig.50 Removing the burner in boiler types 50 - 60 - 70.



1. Unscrew the bolts from the mixing tube.
2. Remove the mixing tube from the front plate.
3. Remove the burner gasket.
4. Remove the burner.

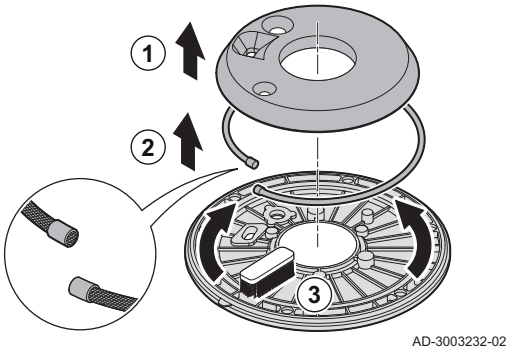
6.6.5 Removing the burner insulation

Warning
The burner insulating disc and the glass fibre cord gasket are important for the safe functioning of the boiler. Replace the burner insulating disc and the glass fibre cord gasket every 2 years.

For this task, you will need the following tools:

Protective gloves
Dust mask
Safety goggles
Stiff bristle nylon brush

Fig.51 Removing the burner insulation



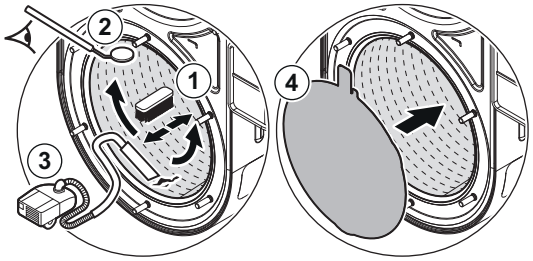
1. Remove the insulation plate.
2. Remove the glass fibre cord gasket.
3. Remove all debris from the front plate with the nylon brush.

6.6.6 Cleaning the heat exchanger

For this task, you will need the following tools:

Vacuum cleaner
Soft brush
Control mirror
Approved stainless steel cleaner in a spray bottle
Waterproof protection disc
Water hose

Fig.52 Brushing and vacuum the heat exchanger

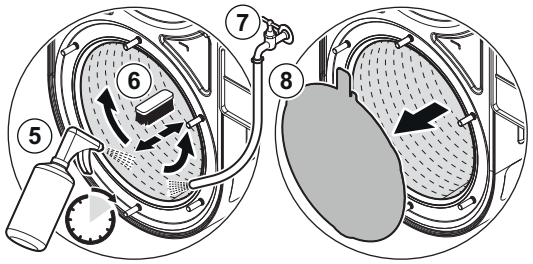


1. Clean the inside of the heat exchanger with a soft cleaning brush.
2. Make sure that all visible contamination is removed.

Use a mirror to check parts that aren't directly visible.

3. Vacuum up the debris.
4. Place a waterproof protection disc to the rear insulating plate of the heat exchanger.

Fig.53 Cleaning the heat exchanger



5. Evenly spray the cleaner inside the heat exchanger and allow it to set according the product's directions.
6. Scrub the heat exchanger thoroughly with the cleaning brush.
7. Carefully rinse with clean water.

Notice
Prevent water from getting into the boiler or hitting the back side of the heat exchanger.

8. Remove the waterproof protection disc from the rear insulating plate of the heat exchanger.

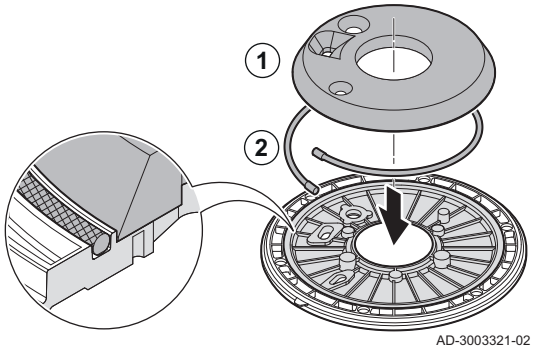
6.6.7 Assembly after maintenance

■ Mounting the burner insulation

For this task, you will need the following tools:

Protective gloves

Fig.54 Placing the burner insulation and glass fibre cord gasket



1. Place the new glass fibre cord gasket.
2. Place the new burner insulation on the front plate.

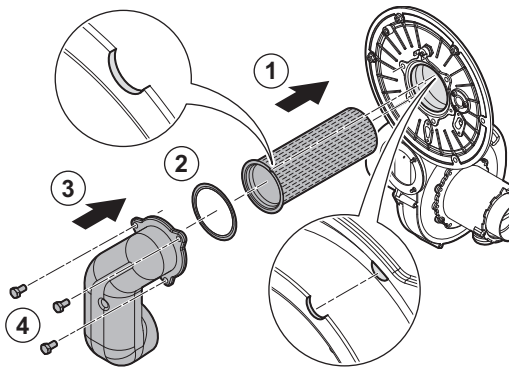
Make sure all the notches and holes for the ignition electrode and ionisation electrode are correctly positioned.

■ Mounting the burner

For this task, you will need the following tools:

⬡ Torque wrench **13**

Fig.55 Mounting the burner in boiler types 50 - 60 - 70.



1. Mount the burner in the front plate by aligning the notch.
2. Place the new gasket.
3. Place the mixing tube on the front plate.
4. Tighten the bolts of the mixing tube.

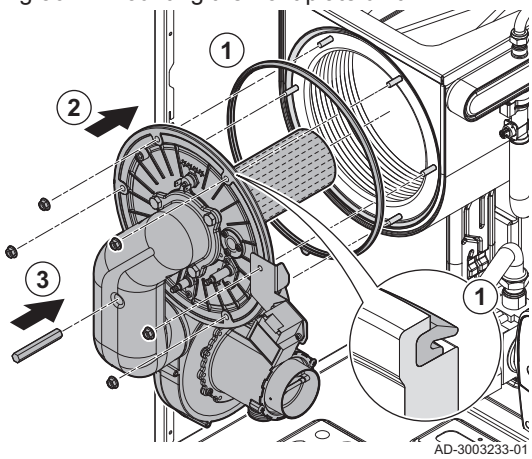
   Tightening torque: 5 N·m ⬡ **13** for boiler types 50 - 60 - 70

■ Mounting the front plate unit

For this task, you will need the following tools:

⬡ Torque wrench **10**
⬡ Torque wrench **36**

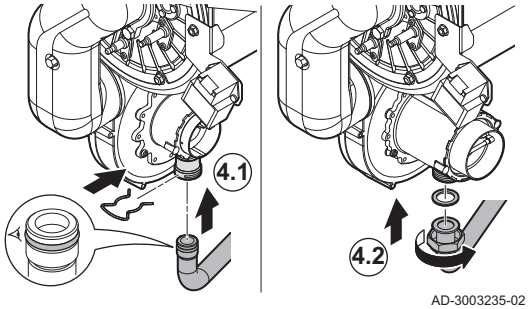
Fig.56 Mounting the front plate unit



1. Place the new gasket in the front plate.
2. Mount the front plate unit.
3. Tighten the nuts of the front plate unit.

   Tightening torque: 5.5 N·m ⬡ **10**

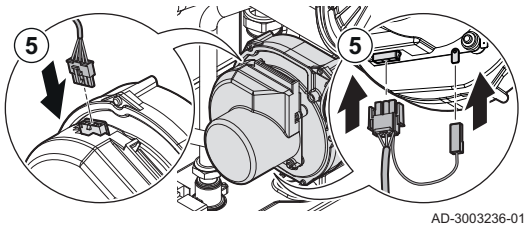
Fig.57 Mounting the gas pipe on the venturi



4. Mount the gas pipe on the venturi. There are two types of gas pipe connections:
   - 4.1. For boiler types 50 - 60: Place a new O-ring on the gas pipe and fix the gas pipe to the venturi with the clip.
   - 4.2. For boiler type 70: Place a new gasket and mount the gas pipe to the venturi and tighten the nut.

     Tightening torque: 40 N·m ⬡ **36**

Fig.58 Fitting the electric connectors of the fan



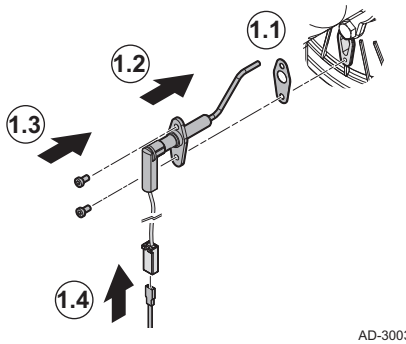
5. Connect the electrical connections to the fan.

Replacing or re-assembling the ionisation and ignition electrode

For this task, you will need the following tools:

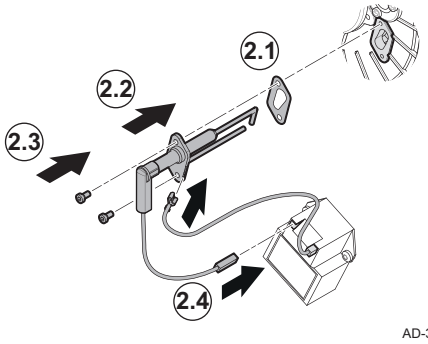
- Torque hexalobular key **T15**

Fig.59 Mounting the ionisation and ignition electrode



1. Replace or re-assemble the ionisation electrode:
   1.1. Place the new gasket for the ionisation electrode.
   1.2. Mount the electrode.
   1.3. Tighten the screws on the electrode.
   Tightening torque: 2.5 N·m **T15**
   1.4. Connect the ionisation electrode cable to the **ION** connector.

Fig.60 Mounting the ionisation and ignition electrode



2. Replace or re-assemble the ignition electrode:
   2.1. Place the new gasket for the ignition electrode.
   2.2. Mount the electrode.
   2.3. Tighten the screws on the electrode.
   Tightening torque: 2.5 N·m **T15**
   2.4. Connect the ignition electrode cables on the earthing clip and to the ignition transformer.

6.7 Finalising work

1. Fit all removed parts in the reverse order, but do not close the casing yet.

Caution
During inspection and maintenance operations, always replace all gaskets on the parts removed.

2. Fill the trap with water.
3. Put the trap back in place.
4. Carefully open all system and supply valves which were closed to carry out the maintenance.
5. Fill the central heating system with water if necessary.
6. Vent the central heating system.
7. Top up with more water if necessary.
8. Check the tightness of the gas and water connections.
9. Put the boiler back into operation.
10. Carry out an auto-detect when a control board has been replaced or removed from the boiler.
11. Set the boiler to full load and carry out a gas leak detection and a thorough visual check.
12. Set the boiler to normal operation.
13. Close the casing.

6.8 Disposal and recycling

Fig.61


MW-3000179-03

Important
Removal and disposal of the boiler must be carried out by a qualified person in accordance with local and national regulations.

To remove the boiler, proceed as follows:

1. Cut the power supply to the boiler.
2. Shut off the gas supply.
3. Shut off the water supply.
4. Drain the system.
5. Remove the trap.
6. Remove the air supply/flue gas outlet pipes.
7. Disconnect all pipes on the boiler.
8. Remove the boiler.

7 Troubleshooting

7.1 Error codes

The Quinta Ace S is fitted with an electronic regulation and control unit. The heart of the control is a **BDR** microprocessor, which controls and also protects. In the event of an error, a corresponding code is displayed.

Tab.32 Error codes are displayed at three different levels

Code	Type	Description
A .00.00 (1)	Warning	The controls continue to operate, but the cause of the warning must be investigated. A warning can change into a blocking or lock-out.
H .00.00 (1)	Blocking	The controls will stop normal operation, and will check with set intervals if the cause of the blocking still exists.(2) Normal operation will resume when the cause of the blocking has been rectified. A blocking can become a lock-out.
E .00.00 (1)	Lock out	The controls will stop normal operation. The cause of the lock-out must be rectified and the controls must be reset manually.

(1) The first letter indicates the type of error.
(2) For some blocking errors, this checking interval is ten minutes. In those cases, it may seem that the controls do not start automatically. Wait ten minutes before resetting.

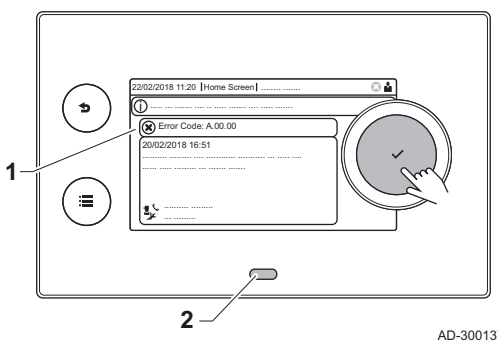
The meaning of the code can be found in the various error code tables.

Important
The error code is needed to find the cause of the error quickly and correctly and for any support from BAXI.

7.1.1 Display of error codes

When an error occurs in the installation, the control panel will show the following:

Fig.62 Error code display on HMI Advanced



AD-3001379-01

1 The display will show a corresponding code and message.
2 The status LED of the control panel will show:

- Continuous green = Normal operation
- Flashing green = Warning
- Continuous red = Blocking
- Flashing red = Lock out

When an error occurs, proceed as follows:

1. Press and hold the ✔ button to reset the appliance.

Important
You can reset the appliance for a maximum of 10 times. After that the appliance will be blocked for one hour. Do a restart (disconnect the power) to avoid the one hour delay.

⇨ The appliance starts up again.
2. If the error code reappears, correct the problem by following the instructions in the error code tables.

Important
Only qualified professionals are authorised to work on the appliance and system.

⇨ The error code remains visible until the problem is solved.
3. Note the error code when the problem cannot be resolved.
4. Contact BAXI for support.

7.1.2 Warning

Tab.33 Warning codes

Code	Display text	Description	Solution
A.00.34	TOutdoor Missing	Outdoor temperature sensor was expected but not detected	Outdoor sensor not detected: • Outdoor sensor is not connected: Connect the sensor • Outdoor sensor is not connected correctly: Connect the sensor correctly
A.00.40	WaterPressureOpen	Water pressure sensor is either removed or measures a temperature below range	-
A.01.23	Poor Combustion	Poor combustion	Configuration error: No flame during operation: • No ionisation current: - Purge the gas supply to remove air. - Check whether the gas tap is properly open. - Checking the gas supply pressure. - Check the operation and setting of the gas valve unit. - Check that the air inlet and flue gas discharge flues are not blocked. - Check that there is no recirculation of flue gases.
A.02.06	Water Press Warning	Water Pressure Warning active	Water pressure warning: • Water pressure too low; check the water pressure
A.02.18	OBD Error	Object Dictionary Error	Configuration error: • Reset **CN1** and **CN2** **See** The data plate for the **CN1** and **CN2** values.
A.02.36	Funct device lost	Functional device has been disconnected	SCB not found: • Bad connection: check the wiring and connectors • Faulty SCB: Replace SCB
A.02.37	Uncritic device lost	Uncritical device has been disconnected	SCB not found: • Bad connection: check the wiring and connectors • Faulty SCB: Replace SCB

Code	Display text	Description	Solution
A.02.45	Full Can Conn Matrix	Full Can Connection Matrix	SCB not found: • Carry out an auto-detect
A.02.46	Full Can Device Adm	Full Can Device Administration	SCB not found: • Carry out an auto-detect
A.02.49	Failed Init Node	Failed Initialising Node	SCB not found: • Carry out an auto-detect
A.02.55	Inval or miss SerNR	Invalid or missing device serial number	Contact your supplier.
A.02.69	Fair mode active	Fair mode active	Contact your supplier.
A.02.76	Memory full	The reserved space in memory for custom parameters value is full. No more user changed possible	Configuration error: • Reset **CN1** and **CN2** • Faulty CSU: Replace CSU • Replace the CU-GH
A.02.80	Missing Cascade Ctrl	Missing Cascade controller	Cascade controller not found: • Reconnect the cascade master • Carry out an auto-detect
A.08.06	LIN pump 1 warning	LIN pump 1 warning operating on limited conditions	-

7.1.3 Blocking

Tab.34 Blocking codes

Code	Display text	Description	Solution
H.00.81	RoomTempMissing	Room Temperature sensor was expected but not detected	Room temperature sensor not detected: • Room temperature sensor is not connected: Connect the sensor • Room temperature sensor is not connected correctly: Connect the sensor correctly
H.01.00	Comm Error	Communication Error occured	Communication error with the security kernel: • Restart the boiler • Replace the CU-GH
H.01.05	Max Delta TF-TR	Maximum difference between flow temperature and return temperature	Maximum difference between the flow and return temperature exceeded: • No flow or insufficient flow: - Check the flow (direction, pump, valves) - Check the water pressure - Check the cleanliness of the heat exchanger • Sensor error: - Check that the sensors are operating correctly - Check that the sensor has been fitted properly

Code	Display text	Description	Solution
H.01.06	Max Delta TH-TF	Maximum difference between heat exchanger temperature and flow temperature	Maximum difference between heat exchanger and flow temperature exceeded: • No flow or insufficient flow: - Check the circulation (direction, pump, valves). - Check the water pressure. - Check the cleanliness of the heat exchanger. - Check that the installation has been de-aired. - Check water quality according to supplier's specifications. • Sensor error: - Check that the sensors are operating correctly. - Check that the sensor has been fitted properly.
H.01.07	Max Delta TH-TR	Maximum difference between heat exchanger temperature and return temperature	Maximum difference between heat exchanger and return temperature exceeded: • No flow or insufficient flow: - Check the circulation (direction, pump, valves). - Check the water pressure. - Check the cleanliness of the heat exchanger. - Check that the installation has been correctly vented to remove air. • Sensor error: - Check that the sensors are operating correctly. - Check that the sensor has been fitted properly.
H.01.08	CH temp grad level3	Maximum CH temperature gradient level3 exceeded	Maximum heat exchanger temperature increase has been exceeded: • No flow or insufficient flow: - Check the circulation (direction, pump, valves) - Check the water pressure - Check the cleanliness of the heat exchanger - Check that the central heating system has been correctly vented to remove air • Sensor error: - Check that the sensors are operating correctly - Check that the sensor has been fitted properly
H.01.09	Gas Pressure Switch	Gas Pressure Switch	Gas pressure too low: • No flow or insufficient flow: - Make sure that the gas valve is fully opened - Check the gas supply pressure - If a gas filter is present: Make sure that the filter is clean • Wrong setting on the gas pressure switch: - Make sure that the switch has been fitted properly - Replace the switch if necessary
H.01.13	Max THeat Ex	Heat Exchanger temperature has exceeded the maximum operating value	Maximum heat exchanger temperature exceeded: • Check the circulation (direction, pump, valves). • Check the water pressure. • Check that the sensors are operating correctly. • Check that the sensor has been fitted properly. • Check the cleanliness of the heat exchanger. • Check that the central heating system has been correctly vented to remove air.

Code	Display text	Description	Solution
H.01.14	Max Tflow	Flow temperature has exceeded the maximum operating value	Flow temperature sensor above normal range: • Bad connection: check the wiring and connectors • No flow or insufficient flow: - Check the circulation (direction, pump, valves) - Check the water pressure - Check the cleanliness of the heat exchanger
H.01.15	Max Tflue Gas	Flue gas temperature has exceeded the maximum operating value	Maximum flue gas temperature exceeded: • Check the flue gas outlet system • Check the heat exchanger to ensure that the flue gas side is not clogged • Faulty sensor: replace the sensor
H.01.21	Dhw Temp GradLevel3	Maximum Dhw Temperature Gradient Level3 Exceeded	The flow temperature has risen too fast: • Check the flow (direction, pump, valves) • Check that the pump is operating correctly
H.01.26	Gas pressure max	Gas pressure exceeded	Gas pressure too high: • Check the gas supply pressure • Wrong setting on the gas pressure switch: - Make sure that the switch has been fitted properly - Replace the switch if necessary • No gas pressure switch available: - Make sure that parameter **GP010** is set to **No** (0)
H.02.00	Reset In Progress	Reset In Progress	Reset procedure active: • No action
H.02.02	Wait Config Number	Waiting For Configuration Number	Configuration error or unknown configuration number: • Reset **CN1** and **CN2**
H.02.03	Conf Error	Configuration Error	Configuration error or unknown configuration number: • Reset **CN1** and **CN2**
H.02.04	Parameter Error	Parameter Error	Factory settings incorrect: • Parameters are not correct: - Restart the boiler - Reset **CN1** and **CN2** - Replace the CU-GH PCB
H.02.05	CSU CU mismatch	CSU does not match CU type	Configuration error: • Reset **CN1** and **CN2**
H.02.12	Release Signal	Release Signal input of the Control Unit from device external environment	Waiting time release signal has elapsed: • External cause: remove external cause • Wrong parameter set: check the parameters • Bad connection: check the connection
H.02.91	CH blocked	CH heatdemand is blocked by the multifunctional input	The blocking input (Block CH) is active. • If the error code must not be shown: Make sure **Display error** is set to **No** (0).
H.02.92	DHW blocked	DHW heatdemand is blocked by the multifunctional input	The blocking input (Block DHW) is active. • If the error code must not be shown: Make sure **Display error** is set to **No** (0).
H.02.93	CH and DHW blocked	CH and DHW heatdemands are blocked by the multifunctional input	The blocking input (Block CH+DHW) is active. • If the error code must not be shown: Make sure **Display error** is set to **No** (0).

Code	Display text	Description	Solution
H.03.00	Parameter Error	Safety parameters level 2, 3, 4 are not correct or missing	Parameter error: security kernel • Restart the boiler • Replace the CU-GH
H.03.01	CU to GVC data error	No valid data from CU to GVC received	Communication error with the CU-GH: • Restart the boiler
H.03.02	Flame loss detected	Measured ionisation current is below limit	No flame during operation: • No ionisation current: - Vent the gas supply to remove air - Check that the gas valve is fully opened - Check the gas supply pressure - Check the operation and setting of the gas valve unit - Check that the air supply inlet and flue gas outlet are not blocked - Check that there is no recirculation of flue gases
H.03.05	Internal blocking	Gas Valve Control internal blocking occured	Security kernel error: • Restart the boiler • Replace the CU-GH
H.03.07	Parameter error	Not matching parameter set detected (P-type)	-
H.03.09	Mains voltage low	Supply voltage is below the minimum operating value	-
H.08.07	LIN pump 1 error	LIN pump 1 operation in error	-
H.08.08	LIN pump 1 lock out	LIN pump 1 operation lock out error	-
H.08.09	LIN pump 1 comm lost	LIN pump 1 communication lost due to failure to communicate with bus master (BDR devices)	-

7.1.4 Locking

Tab.35 Locking codes

Code	Display text	Description	Solution
E.00.04	TReturn Open	Return temperature sensor is either removed or measures a temperature below range	Return temperature sensor open: • Bad connection: check the wiring and connectors • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Faulty sensor: replace the sensor
E.00.05	TReturn Closed	Return temperature sensor is either shorted or measures a temperature above range	Return temperature sensor short-circuited: • Bad connection: check the wiring and connectors • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Faulty sensor: replace the sensor
E.00.06	TReturn Missing	Return temperature sensor was expected but not detected	No connection to temperature return sensor: • Bad connection: check the wiring and connectors. • Faulty sensor: replace the sensor
E.00.08	THeat Ex Open	Heat exchanger temperature sensor is either removed or measures a temperature below range	Heat exchanger temperature sensor open: • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.

Code	Display text	Description	Solution
E.00.09	THeat Ex Closed	Heat exchanger temperature sensor is either shorted or measures a temperature above range	Heat exchanger temperature sensor short-circuited: • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.16	DHW sensor Open	Domestic Hot Water tank temperature sensor is either removed or measures a temperature below range	Calorifier sensor open: • Bad connection: check the wiring and connectors • Faulty sensor: replace the sensor
E.00.17	DHW sensor Closed	Domestic Hot Water tank temperature sensor is either shorted or measures a temperature above range	Calorifier sensor short-circuited: • Bad connection: check the wiring and connectors • Faulty sensor: replace the sensor
E.00.18	DHW sensor Missing	Domestic Hot Water tank temperature sensor was expected but not detected	-
E.00.20	TFlue Gas Open	Flue gas temperature sensor is either removed or measures a temperature below range	Open circuit in flue gas sensor: • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.21	TFlue Gas Closed	Flue gas temperature sensor is either shorted or measures a temperature above range	Flue gas sensor short-circuited: • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.01.04	5x Flame Loss Error	5x Error of unintended Flame Loss occurance	Flame loss occurs 5 times: • Vent the gas supply to remove air • Check that the gas valve is fully opened • Check the gas supply pressure • Check the operation and setting of the gas valve unit • Check that the air supply inlet and flue gas outlet are not blocked • Check that there is no recirculation of flue gases
E.01.11	Fan Out Of Range	Fan speed has exceeded normal operating range	Fan fault: • 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
E.01.12	Return Higher Flow	Return temperature has a higher temperature value than the flow temperature	Flow and return reversed: • 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

Code	Display text	Description	Solution
E.01.24	Combustion Error	Several combustion errors occurs with 24 hours	Low ionisation current: • Vent the gas supply to remove air. • Check that the gas valve is fully opened. • Check the gas supply pressure. • Check the operation and setting of the gas valve unit. • Check that the air supply inlet and flue gas outlet are not blocked. • Check that there is no recirculation of flue gases.
E.02.13	Blocking Input	Blocking Input of the Control Unit from device external environment	Blocking input is active: • External cause: remove external cause • Wrong parameter set: check the parameters
E.02.15	Ext CSU Timeout	External CSU Timeout	CSU time out: • Bad connection: check the wiring and connectors • Faulty CSU: Replace CSU
E.02.17	GVC CommTimeout	Gas Valve Control unit communication has exceeded feedback time	Communication error with the security kernel: • Restart the boiler • Replace the CU-GH
E.02.35	Safety device lost	Safety critical device has been disconnected	Communication fault • Carry out an auto-detect
E.02.47	Failed Conn Funct Gr	Failed Connecting Function Groups	Function group not found: • Carry out an auto-detect • Restart the boiler • Replace the CU-GH
E.02.90	Room ventilation	Boiler room ventilation timeout. The ventilator did not start or stop in time.	-
E.04.00	Parameter error	Safety parameters Level 5 are not correct or missing	Replace the CU-GH.
E.04.01	TFlow Closed	Flow temperature sensor is either shorted or measuring a temperature above range	Flow temperature sensor short circuited: • Bad connection: check the wiring and connectors • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Faulty sensor: replace the sensor
E.04.02	TFlow Open	Flow temperature sensor is either removed or measuring a temperature below range	Flow temperature sensor open: • Bad connection: check the wiring and connectors • Faulty sensor: replace the sensor
E.04.03	Max Flow temp	Measured flow temperature above safety limit	No flow or insufficient flow: • Check the circulation (direction, pump, valves) • Check the water pressure • Check the cleanliness of the heat exchanger
E.04.04	TFlue Closed	Flue temperature sensor is either shorted or measuring a temperature above range	Flue gas temperature sensor short-circuited: • Bad connection: check the wiring and connectors • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Faulty sensor: replace the sensor
E.04.05	TFlue Open	Flue temperature sensor is either removed or measuring a temperature below range	Flue gas temperature sensor open: • Bad connection: check the wiring and connectors • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Faulty sensor: replace the sensor

Code	Display text	Description	Solution
E.04.06	Max Flue temp	Measured flue temperature above limit	-
E.04.07	TFlow Sensor	Deviation in flow sensor 1 and flow sensor 2 detected	Flow temperature sensor deviation: • Bad connection: check the connection • Faulty sensor: replace the sensor
E.04.08	Safety input	Safety input is open	Air pressure differential switch activated: • Bad connection: check the wiring and connectors • Pressure in flue gas duct is or was too high: - Non-return valve does not open - Trap blocked or empty - Check that the air supply inlet and flue gas outlet are not blocked - Check the cleanliness of the heat exchanger
E.04.09	TFlue Sensor	Deviation in flue sensor 1 and flue sensor 2 detected	Flue gas temperature sensor deviation: • Bad connection: check the connection • Faulty sensor: replace the sensor
E.04.10	Unsuccessful start	5 Unsuccessful burners starts detected	Five failed burner starts: • No ignition spark: - Check the wiring between the CU-GH and the ignition transformer - Check the ionisation/ignition electrode - Check breakdown to earth - Check the condition of the burner cover - Check the earthing - Replace the CU-GH • Ignition spark but no flame: - Vent the gas pipes to remove air - Check that the air supply inlet and flue gas outlet are not blocked - Check that the gas valve is fully opened - 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 • Flame present, but ionisation has failed or is inadequate: - Check that the gas valve is fully opened - Check the gas supply pressure - Check the ionisation/ignition electrode - Check the earthing - Check the wiring on the ionisation/ignition electrode.
E.04.12	False flame	False flame detected before burner start	False flame signal: • The burner remains very hot: Set the O_2 • Ionisation current measured but no flame should be present: check the ionisation/ignition electrode • Faulty gas valve: replace the gas valve • Faulty ignition transformer: replace the ignition transformer
E.04.13	Fan	Fan speed has exceeded normal operating range	Fan fault: • 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

Code	Display text	Description	Solution
E.04.15	FlueGas Pipe Blocked	The flue gas pipe is blocked	Flue gas outlet is blocked: • Check that the flue gas outlet is not blocked • Restart the boiler
E.04.17	GasValve Driver Err.	The driver for the gas valve is broken	Gas valve unit fault: • Bad connection: check the wiring and connectors • Faulty gas valve unit: Replace the gas valve unit
E.04.18	Min Temp Flow Error	The flow temperature is less than the minimum defined by the GVC parameter	-
E.04.23	Internal Error	Gas Valve Control internal locking	• Restart the boiler • Replace the CU-GH
E.04.29	Out of reset	Safety maximum amount of resets exceeded	-
E.04.44	Gas pressure switch	The gas pressure switch is open	-
E.04.254	Unknown	Unknown	Unknown error: • Replace the PCB.

7.2 Error history

The control panel has an error history that stores the last 32 errors. Specific details are stored for each error, for example:

- Status
- Sub-status
- Flow temperature
- Return temperature

These details and others can contribute to the error solution.

7.2.1 Reading out and clearing the error history

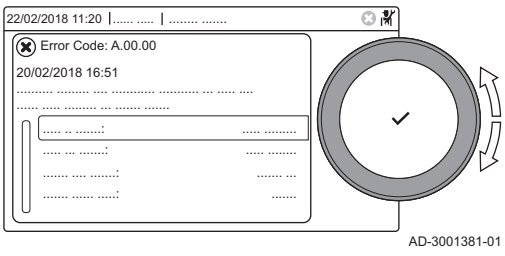
You can read out the errors on the control panel. The error history can also be cleared.

▶▶ ≡ > **Error History**

Use the rotary knob to navigate.
Use the ✔ button to confirm your selection.

1. Press the ≡ button.
2. Select **Error History**.
   Enable installer access if **Error History** is not available.
   2.1. Select **Enable installer access**.
   2.2. Use code **0012**.
   ⇨ A list up to 32 most recent errors is displayed with:
   - The error code.
   - A short description.
   - The date.
3. Select the error code you want to investigate.
   ⇨ The display shows an explanation of the error code and several details of the appliance when the error occurred.
4. To clear the error memory, press and hold the ✔ button.

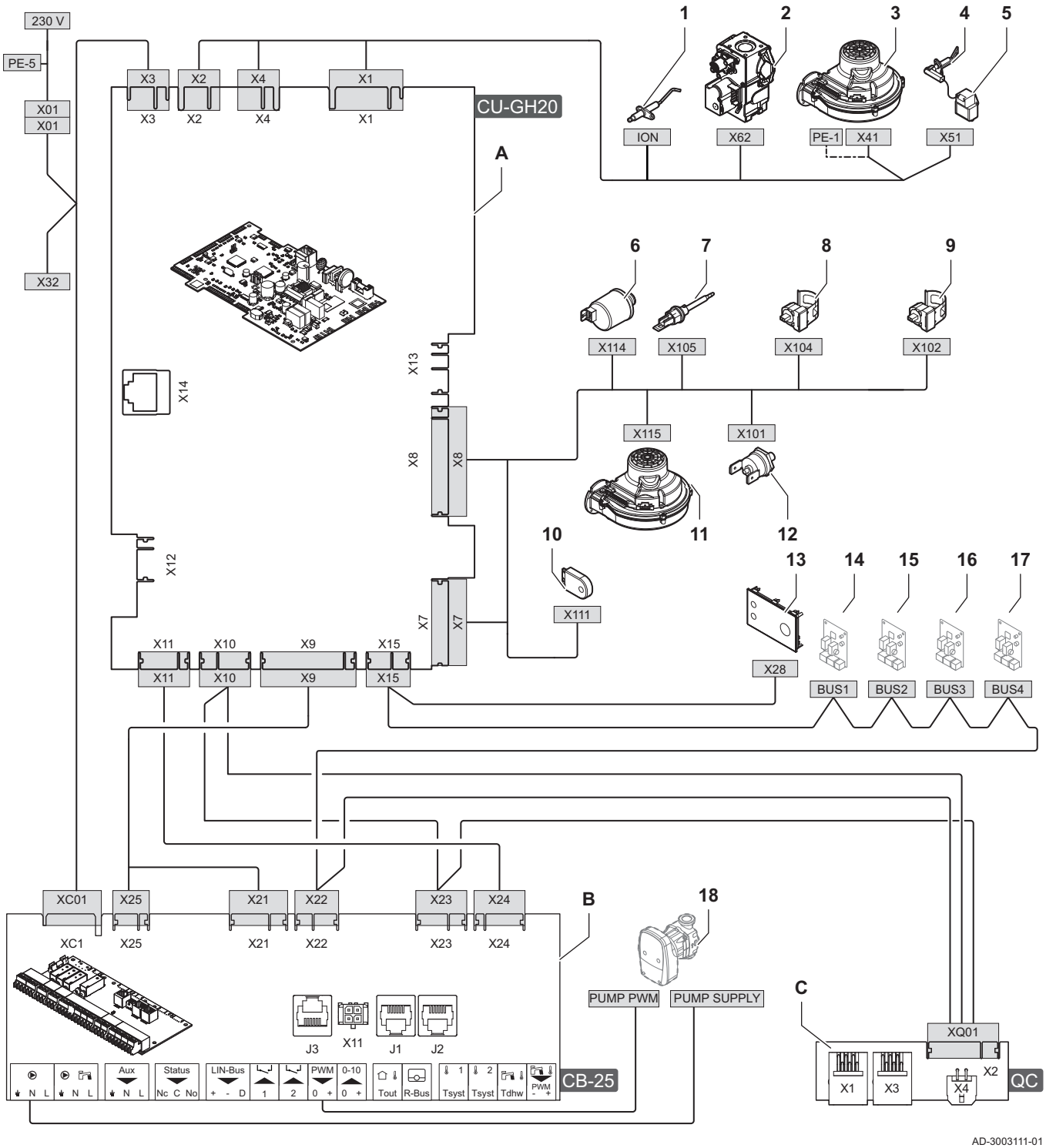
Fig.63 Error details



8 Technical specifications

8.1 Electrical diagram

Fig.64 Electrical diagram for boiler types 50 - 60 - 70



A Control unit - CU-GH20
B Connection board - CB-25
C Quick connection board - Quick connect
1 Ionisation electrode
2 Gas control valve
3 Fan power supply
4 Ignition electrode
5 Ignition transformer
6 Water pressure sensor
7 Flue gas temperature sensor
8 Flow temperature sensor
9 Return temperature sensor
10 Configuration storage unit (CSU)
11 PWM signal fan
12 Thermal switch
13 Control panel (HMI)

14 CAN connection for expansion PCB
15 CAN connection for expansion PCB
16 CAN connection for expansion PCB
17 CAN connection for expansion PCB
18 Boiler pump

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