United Kingdom - Ireland

en

BAXI

Service manual

High-efficiency wall-hung gas boiler

Quinta Ace

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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

Danger
Flue gas leakage
Chance of CO poisoning.

- Fit a CO detector near the appliance.

Danger
Gas fired appliance
Chance of fire.

- Install smoke alarms at suitable locations.

Danger of electric shock
High voltages
Risk of electric shock due to an incorrectly installed power cable.

- A damaged power cable must be replaced by the original manufacturer, the manufacturer's dealer or another qualified technician.

Danger of electric shock
High voltages
Risk of electric shock.

- It must be possible to shut off the power to the appliance at all times.

Notice
Frost damage
Damage to the product.

- Only install the appliance in a frost-free area.

Important
The appliance must be accessible at all times.

Important
Keep all delivered documentation near the appliance.

Important
Instruction and warning labels must never be removed or covered. They 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**.

1.2 Safety instructions for the installer

Danger
Gas leakage
Chance of explosion.

- If you smell gas, always do the following:
- Do not use naked flames, do not smoke, and do not operate electrical contacts like a doorbell, light switch or lift button.
- Shut off the gas supply.
- Open the windows.
- Trace possible leaks and seal them off immediately.
- If the leak is upstream of the gas meter, notify the gas company.

Danger
Flue gas leakage
Chance of CO poisoning.

- If you smell flue gases, always do the following:
- Switch off the boiler.
- Open the windows.
- Trace possible leaks and seal them off immediately.

Warning
Component incompatibility
Dangerous situations due to mismatching components.

- Use only genuine spare parts.

1.3 Safety instructions for the end user

Danger
Gas leakage
Chance of explosion.

- If you smell gas, always do the following:
- Do not use naked flames, do not smoke, and do not operate electrical contacts like a doorbell, light switch or lift button.
- Shut off the gas supply.
- Open the windows.
- Report any leaks immediately.
- Evacuate the property.
- Contact a qualified installer.

Danger
Flue gas leakage
Chance of CO poisoning.

- If you smell flue gases, always do the following:
- Switch off the boiler.
- Open the windows.
- Report any leaks immediately.
- Evacuate the property.
- Contact a qualified installer.

Caution
Hot parts
Burn hazard.

- Do not touch the flue gas pipes. The temperature of the flue gas pipes can rise to over 60 °C.

Caution
Hot parts
Burn hazard.

- Do not touch radiators for long periods. The temperature of the radiators can rise to over 60 °C.

Caution
Hot water
Burn hazard.

- Be careful when using the domestic hot water. The temperature of domestic hot water can rise to over 65 °C.

Caution
Component wear
Dangerous situations due to worn components.

- Make sure that the appliance is regularly serviced. Contact a qualified installer or arrange a maintenance contract for the servicing of the appliance.

Notice
Blocked condensate drain
Damage to the product.

- Do not modify or seal the condensate drain.
- If a condensate neutralisation system is used, the system must be cleaned regularly in accordance with the instructions provided by the manufacturer.

Notice
Low water level
Damage to the product.

- Regularly check the water level and pressure in the heating system.
- Top up the system if the pressure is too low.

Notice
Frost damage
Damage to the product.

- Keep the appliance switched on so the frost protection can work. The frost protection does not work if the appliance is switched off.
- Drain the appliance and heating system if you will be away from home for a long time and there is a chance of frost.

1.4 Liabilities

1.4.1 Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various directives applicable. They are therefore delivered with the UKCA 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.

1.4.2 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.

1.4.3 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
- Product information
- Water quality instructions

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
Indicates: an imminently hazardous situation
Consequence if not avoided: Will result in death or serious injury.
- This is how to avoid the hazard.

Danger
Indicates: an imminently hazardous situation
Consequence if not avoided: Will result in death or serious injury.
- This is how to avoid the hazard.

Warning
Indicates: a potentially hazardous situation
Consequence if not avoided: Could result in death or serious injury.
- This is how to avoid the hazard.

Caution
Indicates: a potentially hazardous situation
Consequence if not avoided: Could result in minor or moderate injury.
- This is how to avoid the hazard.

Notice
Indicates: a potential risk of damage to the supported product
Consequence if not avoided: Could result in damage to the product or other property.
- This is how to avoid the hazard.

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.

Helpful information or extra guidance.

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

3 Description of the product

3.1 Boiler types

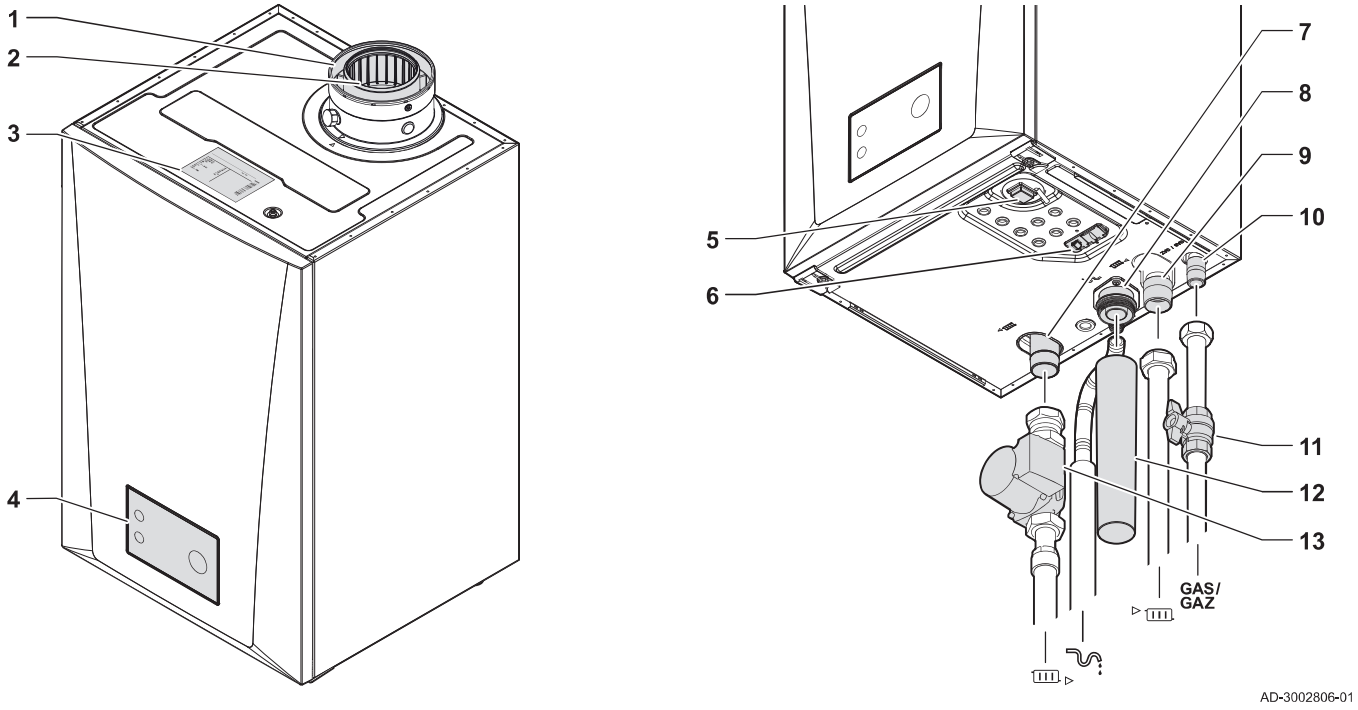
The following boiler types are available:

Tab.1 Boiler types

Name	Output(1)
Quinta Ace 30	30.9 kW
Quinta Ace 45	42.4 kW
Quinta Ace 55	58.6 kW
Quinta Ace 65	65.0 kW
Quinta Ace 90	89.5 kW
Quinta Ace 115	109.7 kW
(1) Nominal output P_{nc} 50/30 °C	

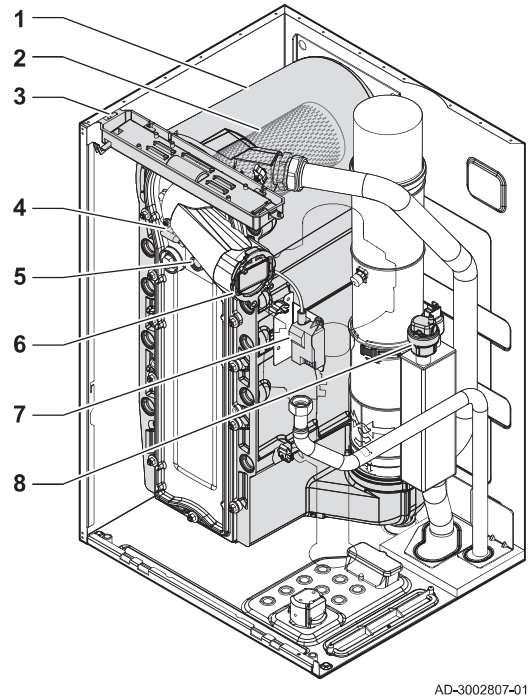
3.2 Main components

Fig.1 General



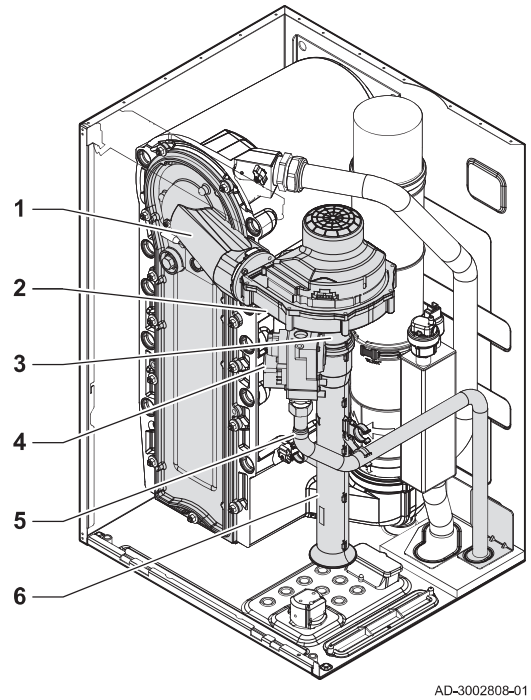
1 Air inlet connection
2 Flue gas outlet connection
3 Data plate
4 Control panel
5 Power button
6 Quick connect
7 Return connection
8 Condensate connection
9 Flow connection
10 Gas connection
11 Gas cock
12 Trap
13 Pump
System return pipe
Condensate drain pipe
System flow pipe
GAS/GAZ Gas supply pipe

Fig.2 Internal



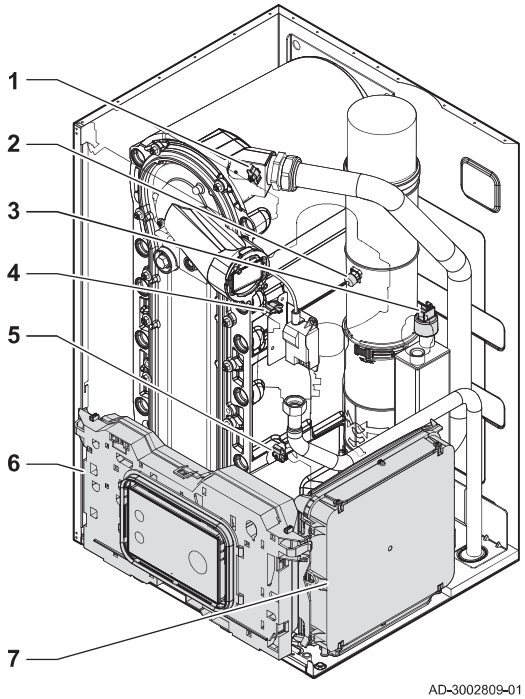
1 Heat exchanger
2 Burner
3 Interior light
4 Ignition / ionisation electrode
5 Flame inspection glass
6 Non-return valve
7 Ignition / ionisation transformer
8 Automatic air vent

Fig.3 Gas - air unit



1 Front plate with mixing tube
2 Fan
3 Venturi
4 Gas control valve
5 Gas supply tube
6 Air inlet silencer

Fig.4 Sensors and boxes

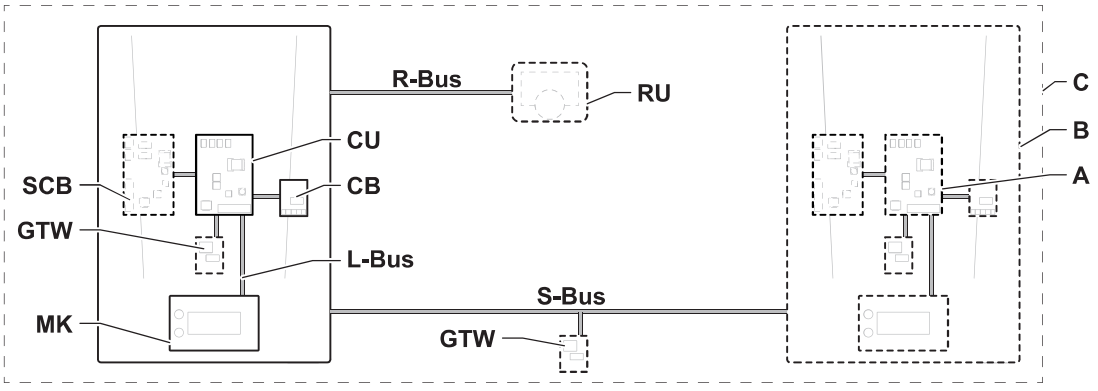


1 Flow temperature sensor
2 Flue gas temperature sensor
3 Water pressure sensor
4 Heat exchanger temperature sensor
5 Return temperature sensor
6 Control box
7 Expansion box

3.3 Introduction to the e-Smart controls platform

The Quinta Ace boiler is equipped with the e-Smart 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.

Item	Description	Function
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 boiler

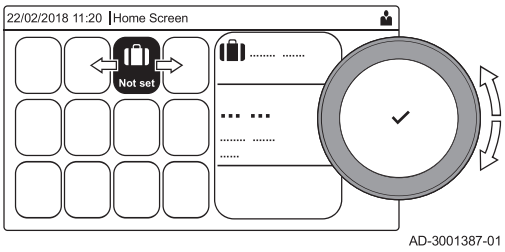
Name visible in display	Software version	Description	Function
CU-GH22	1.0	Control unit **CU-GH22**	The CU-GH22 control unit handles all basic functionality of the Quinta Ace boiler.
MK3	1.94	Control panel **HMI Advanced**	The HMI Advanced is the user interface to the Quinta Ace boiler.

4 Installer instructions

4.1 Accessing the user level menus

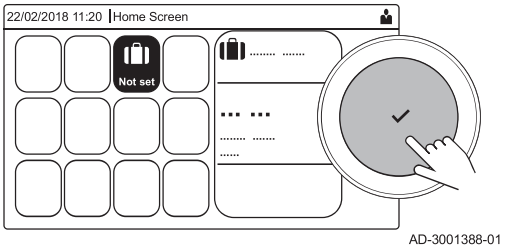
The tiles on the home screen provide quick access for the user to the corresponding menus.

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.

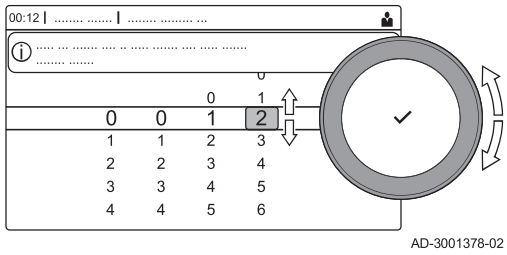
4.2 Accessing the installer level

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.

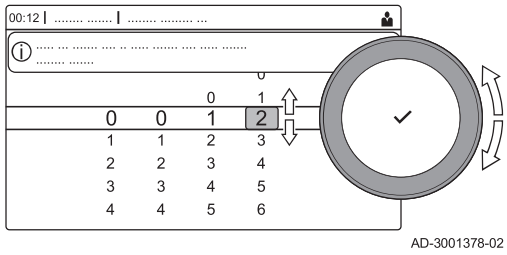
1. Access the installer level via the tile:
   1.1. Select the tile [🔧].

Fig.8 Installer level



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.9 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**.

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.

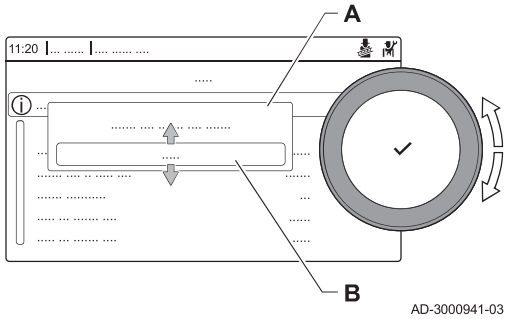
Important
The appliance might take a few minutes during certain steps while commissioning. Do not shut off the appliance or try to bypass steps, unless stated otherwise on the display.

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

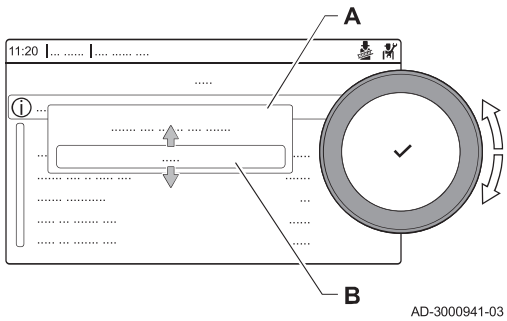
Load Test menu	Settings
Func test status	Select the load test to start the test.
System Flow Temp	Read the central heating flow temperature
T return	Read the central heating return temperature
Actual fan RPM	Read the actual fan speed
Actual flame current	Read the actual flame current
Fan RPM Max CH	Adjust 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

See also
Checking/setting values for O2 at full load, page 60
Checking/setting values for O2 at low load, page 62

■ Performing the full load test

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

Fig.11 Full load test



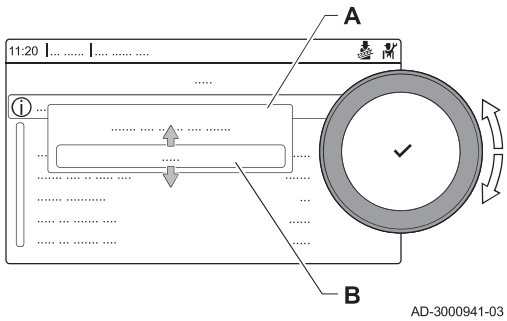
A Change load test mode
B Medium power

   ⇨ 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:

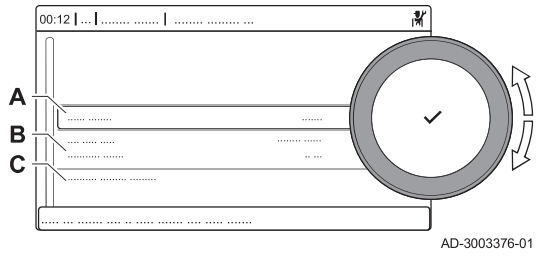
Installer name	Your company's name
Installer phone	Your company's phone number

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 Version information



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

■ Activating simple heating zone

Enable the Extern heat request functionality for on/off thermostats by configuring the **Digital Input**.

▶▶ ☰ > **Installation Setup** > **Digital Input 1** > **Extern heat request**

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

Important
This function uses Digital input 1 and Multifunctional out 1.

1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **Digital Input 1**.
4. Select **Extern heat request**.

■ Activating cascade management

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

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

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. Enable cascade manager functionality:
   4.1. Select **Enable master func**.
   4.2. Select **Yes**.

   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 boiler room ventilation

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

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

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

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

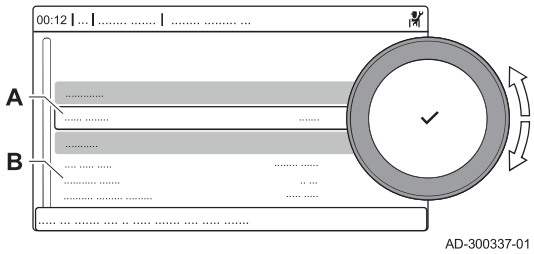
1. Press the ☰ button.
2. Select **Installation Setup**.
3. Select **Boiler room ventilation**.
4. Select **Boiler room ventilation active**.
5. Select **Yes**.

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 Version information



A Configure the function
B List of relevant settings

■ Setting the digital input

You can configure the digital output 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 digital input.

– Input settings

Tab.9 Digital Input

Setting	Description	Use
None	No feature selected.	-
Min gas pressure	Minimum gas pressure switch function.	
Max gas pressure	Maximum gas pressure switch function.	
Block CH	Block CH.	
Block DHW	Block DHW.	
Block CH+DHW	Block CH+DHW.	
Lock appliance	Lock appliance.	
Release CH	Release CH	
Release CH+DHW	Release CH+DHW	
Prioritize CH	Prioritize CH demand.	
Prioritize DHW	Prioritize DHW demand.	
Prioritize CH+DHW	Prioritize CH+DHW demand.	
Extern heat request	External heat request.	On/off contact for a simple heating zone

■ Setting the digital output

You can configure the digital 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 digital output.

– Output settings

Tab.10 Multifunctional Outp

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
Locking or blocking	Notify external system when there is a locking or blocking error.	
Burning	Notify external system if the burner is burning.	
Service request	Notify external systems when there is a service request.	
Boiler on CH	Notify external system when the boiler is producing for central heating.	
Boiler on DHW	Notify external system when the boiler is producing for domestic hot water.	
CH pump on	Notify external system when the central heating pump is on.	
DHW pump on	Notify external system when the DHW pump is on.	
Zone pump on	Notify external system when the zone pump is on.	

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.

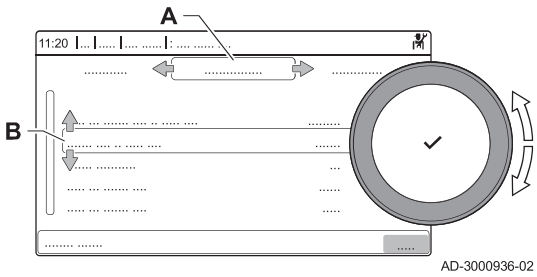
Important
Changing the factory settings may adversely affect the operation of the installation.

▶▶ ☰ > **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

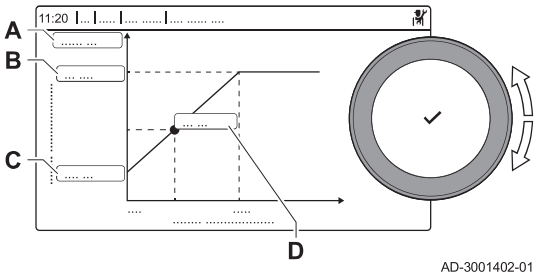
When an outdoor temperature sensor is connected to the installation, the relation between the outdoor temperature and the central heating flow temperature is controlled by a heating curve. This curve can be adjusted to the requirements of the installation.

▶▶ 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.
5. Adjust the following parameters:

Fig.16 The heating curve



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**.

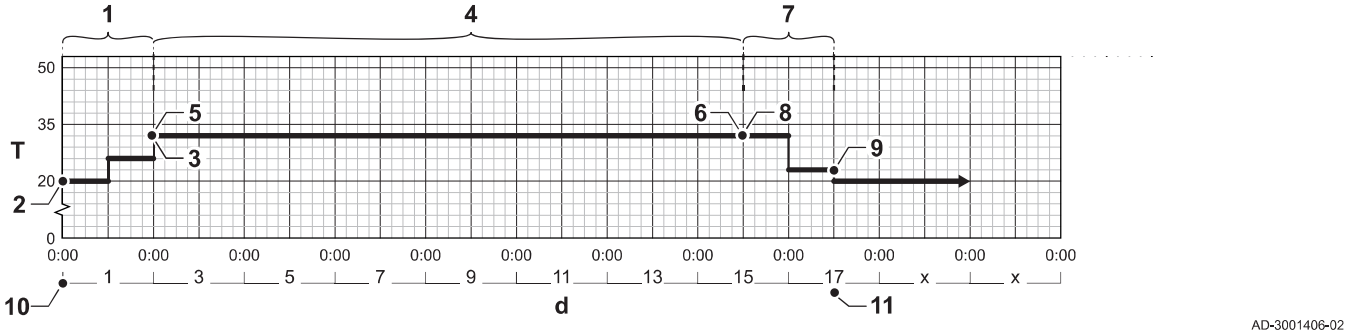
4.4.8 Screed drying

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.

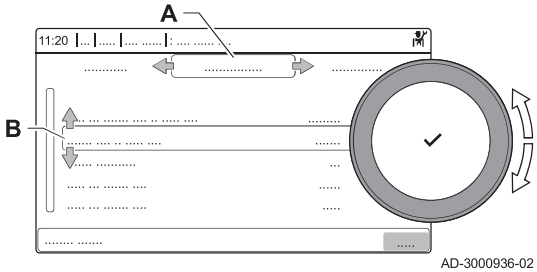
▶▶ ☰ > **Installation Setup** > select zone or device > **Parameters, counters, signals** > **Counters** or **Signals**

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

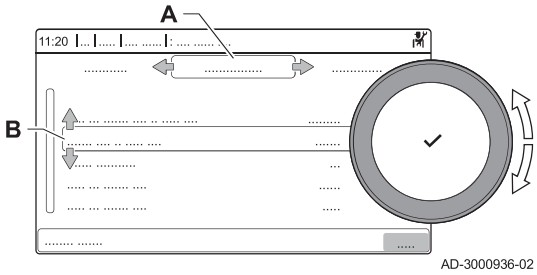
You can read details about the production dates, hardware and software versions of the appliance and all connected devices.

▶▶ ≡ > **Version Information**

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

1. Press the ≡ button.
2. Select **Version Information**.
3. Select the appliance, control board or any other device you want to view.

Fig.19 Version information



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.

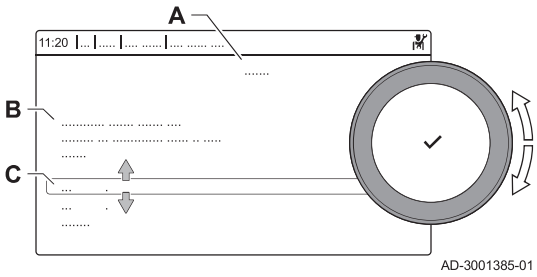
Important
All custom settings will be erased when the configuration numbers are reset. Depending on the appliance, there can be factory set parameters to enable certain accessories.

- 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.

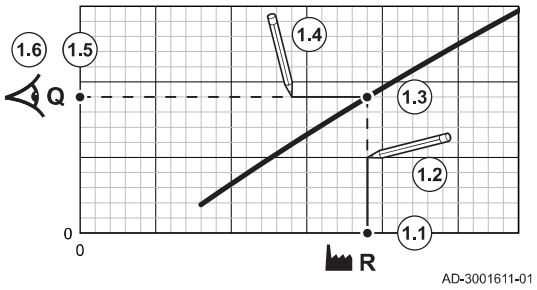
Tab.13 Service notification parameter settings

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 central heating operation

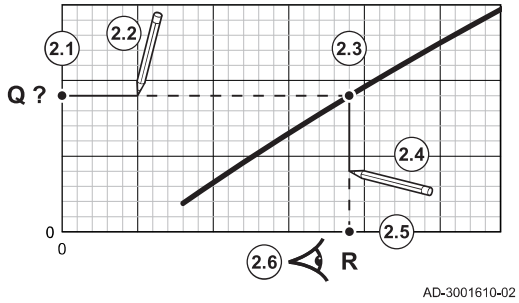
Use the graph to see the relationship between fan rotation speed and input.

Fig.21 Fill-in the factory setting



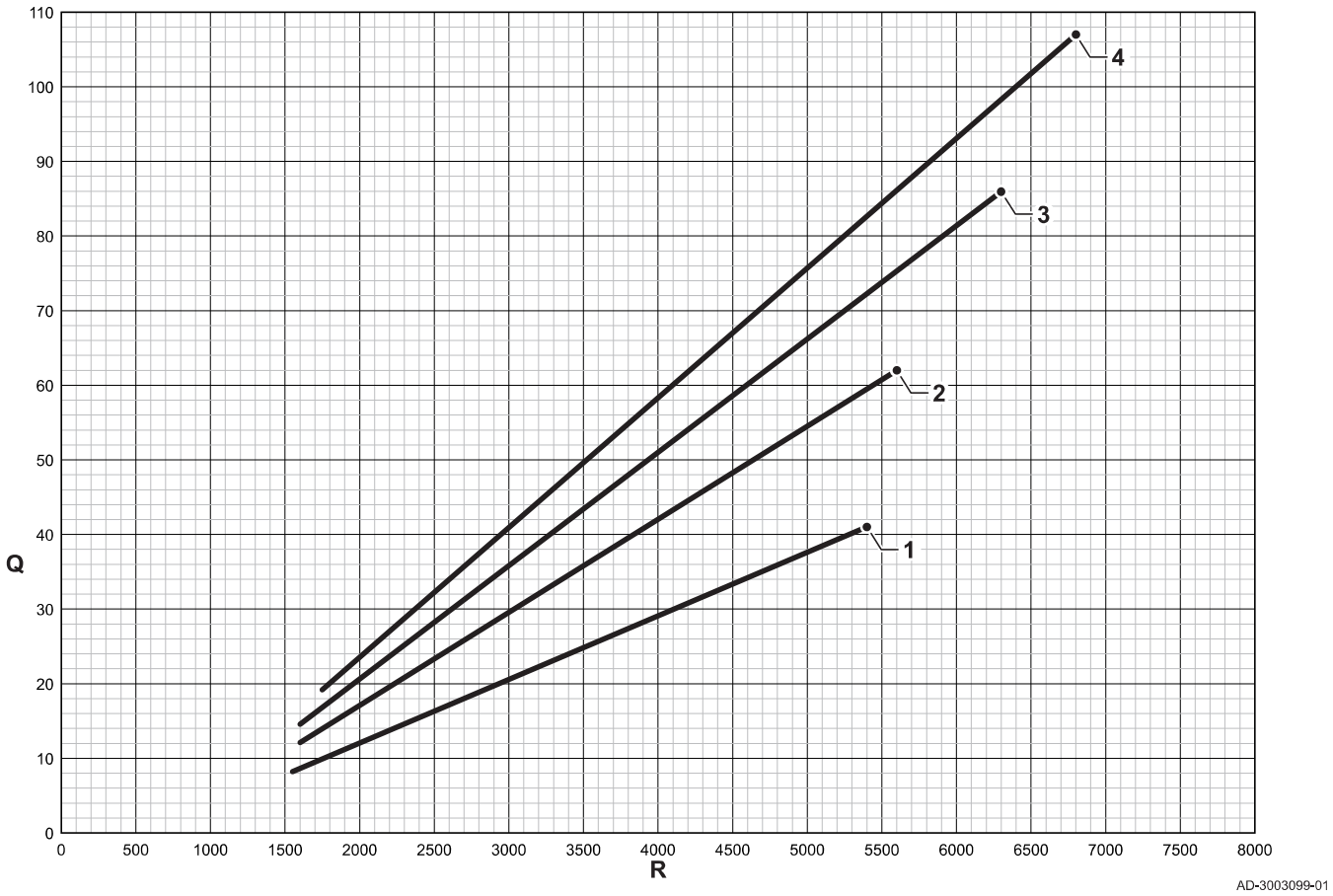
1. Use the table to fill-in the graph for your boiler type:
   1.1. Select the fan rotation speed on the horizontal axis of the graph.
   1.2. Draw a vertical line from the selected fan rotation speed.
   1.3. Stop when the line intersects with the curve.
   1.4. Draw a horizontal line from the intersection 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 30 - 45
2 Quinta Ace 55 - 65
3 Quinta Ace 90
4 Quinta Ace 115

Tab.14 Fan rotation speeds

Boiler type	Minimum input	Factory setting(1)	Maximum input
Quinta Ace 30	1550	4100	4100
Quinta Ace 45	1550	5400	5400
Quinta Ace 55	1600	5100	5100
Quinta Ace 65	1600	5600	5600
Quinta Ace 90	1600	6300	6300
Quinta Ace 115	1800	6800	6800
(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

You can increase the ΔT with a parameter setting.

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

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

Tab.15 Changing the ΔT setting

Boiler type	Minimum ΔT	Default ΔT	Maximum ΔT
Quinta Ace 30	5 °C	25 °C	45 °C
Quinta Ace 45	5 °C	25 °C	45 °C
Quinta Ace 55	5 °C	25 °C	45 °C
Quinta Ace 65	5 °C	25 °C	45 °C
Quinta Ace 90	5 °C	25 °C	45 °C
Quinta Ace 115	5 °C	20 °C	35 °C

2. If a PWM pump is connected to the boiler, set parameter **PP014** to **2** °C.

4.7.5 Settings for open-vented application

For this application, adjust the following parameter:

1. Set parameter **DP006** to 0,0 bar.
2. Set parameter **GP021** to 20°C.

4.7.6 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).

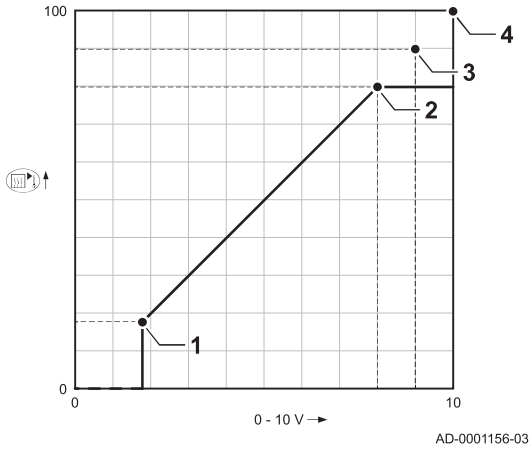
The power setpoints can be changed with parameter **EP032** (minimum) and parameter **EP033** (maximum).

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.16 Temperature regulation

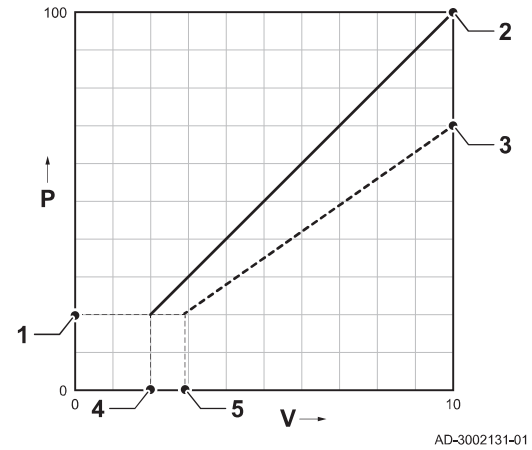
Input signal (V)	Temperature °C	Description
0–1.5	0–15	Boiler off
1.5–1.8	15–18	Hysteresis
1.8–10	18–100	Desired temperature

■ 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:

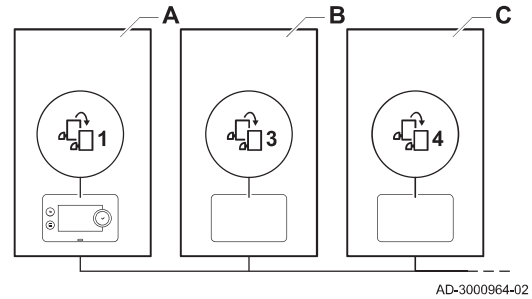
*Vstart = ((10.3 * GP008) - (0.5 * GP007factory)) / GP007current*

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.

4.7.7 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



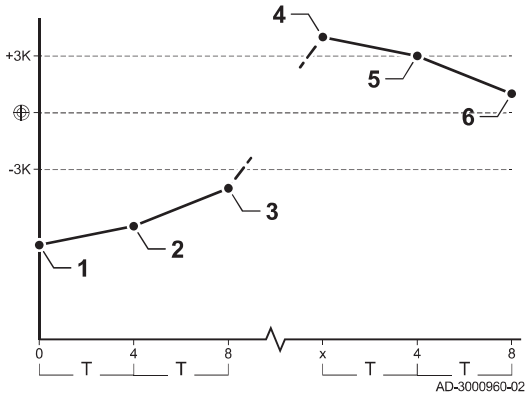
A The lead boiler is number 1.
B The first lag boiler is number 3 (number 2 does not exist).
C The second lag boiler is number 4, and so on.

There are two options for cascade control management:

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

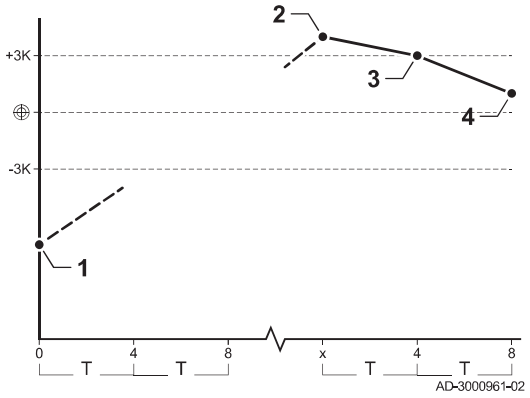
The cascade control management can be changed with parameter **NP006**.

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**.

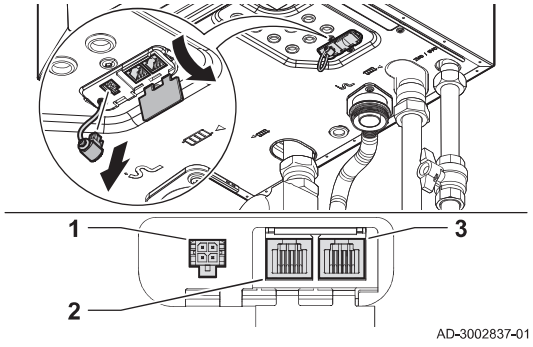
5 Installation examples

5.1 Electrical connections

5.1.1 Quick connect location

The Quick connect has L-Bus and S-Bus sockets for external connections. You can easily connect external devices and other appliances without opening the boiler.

Fig.29 Quick connect location



1 L-Bus socket for a 4 pin Molex Micro-Fit plug
2 S-Bus socket for a RJ12 plug
3 S-Bus socket for a RJ12 plug

Warning
Cable quality
Chance of electrical fire

- Only use original cables that are either available as an accessory, or are provided with an accessory.

■ Quick connect L-Bus connector

Fig.30 L-Bus connector

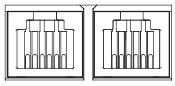
AD-3003126-01

You can connect an external device to the connector. This extends the local bus to a wall box or gateway. To use this connector, remove the L-Bus terminator.

- The L-Bus terminator has a retaining latch. Press the latch to remove the terminator.
- When you disconnect the external device, reconnect the L-Bus terminator.

■ Quick connect S-Bus connectors

Fig.31 S-Bus connectors (RJ12)

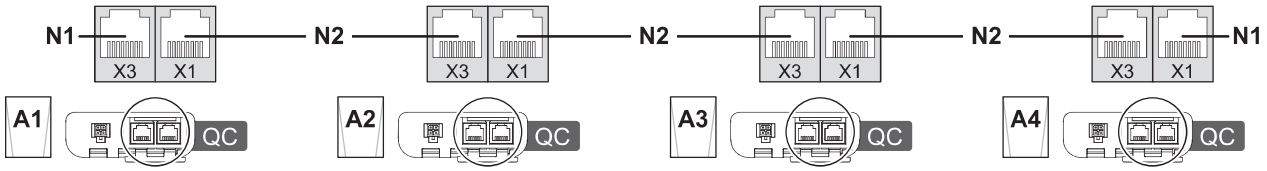


AD-3003127-01

You can build a cascade of boilers with the connectors. Use the S-Bus connectors to link up to four boilers in a cascade system. For more than four boilers in a cascade system, you will need to use an external cascade manager or expansion PCB's.

You can link the boilers to create the cascade system:

Fig.32 Cascade system



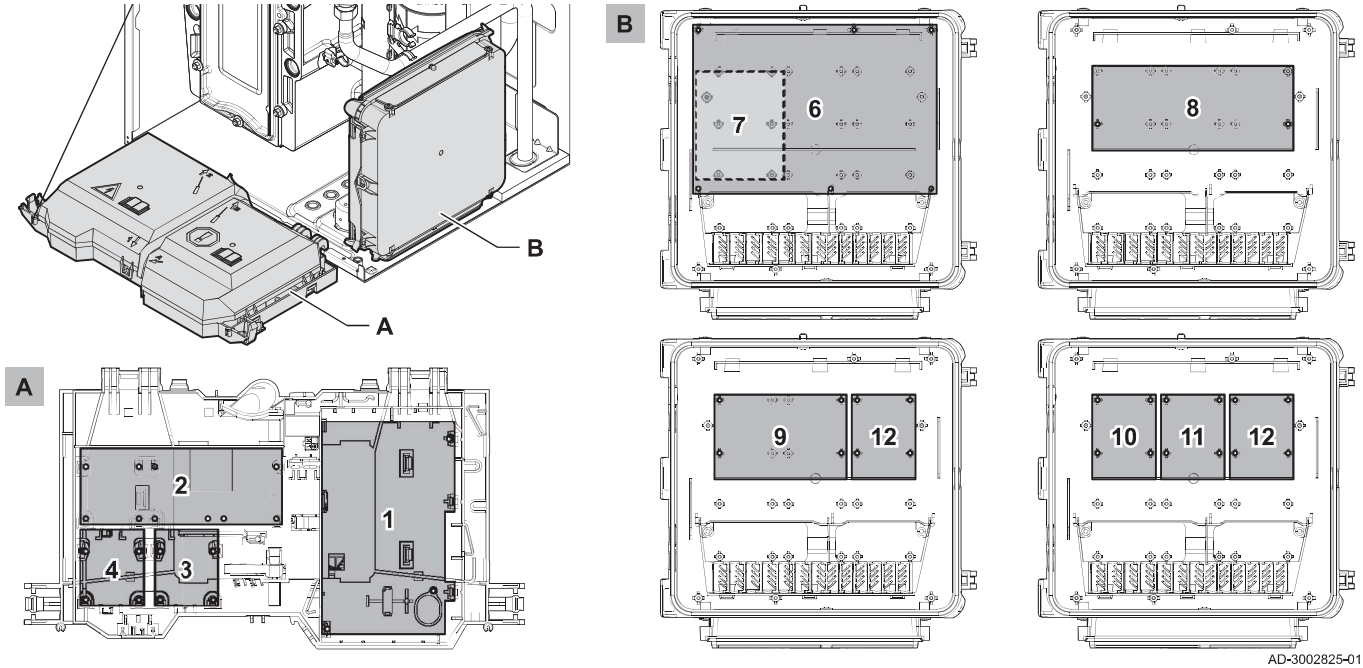
AD-3003128-01

A1 Lead boiler with Quick connect
A2 Lag boiler with Quick connect
A3 Lag boiler with Quick connect
A4 Lag boiler with Quick connect
N1 S-Bus terminator
N2 S-Bus connection between appliances

5.1.2 PCB locations

This illustration shows the location for each PCB. Both factory-fitted and optional PCBs are shown.

Fig.33 PCB locations



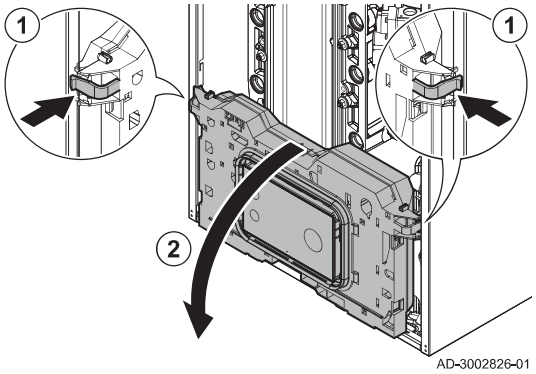
AD-3002825-01

Tab.17 Primary and optional locations

Device	Primary location	Location option
CU-GH22	1	-
CB-25	2	-
CB-08 (optional)	9	-
SCB-01 (optional)	10	11 / 12
SCB-02 (optional)	8	-
SCB-04 (optional)	9	-
SCB-09 (optional)	10	11 / 12
SCB-10 (optional)	6	-
SCB-13 (optional)	10	11 / 12
SCB-17+ (optional)	9	-
GTW-08 Modbus (optional)	3	4
GTW-21 BACNet (optional)	3	4

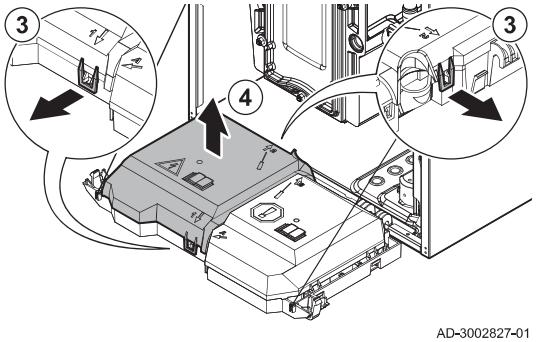
5.1.3 Access to the control box

Fig.34 Tilt the control box forward



1. Press the clips on the sides of the control box inwards slightly.
2. Tilt the control box forwards.

Fig.35 Lift the cover



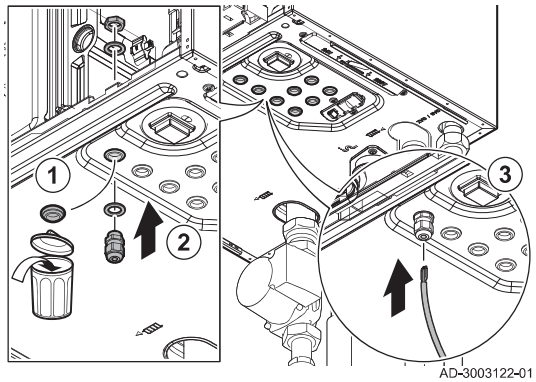
3. Gently pull forward the clips on the front side 1 and back side 2 of the cover simultaneously.
4. Lift the cover.
   ⇨ The connectors on the connection board are now accessible.

You can also access the control unit. Repeat the steps with the clips on the front side A and back side B of the other cover.

■ Cable routing to the control box

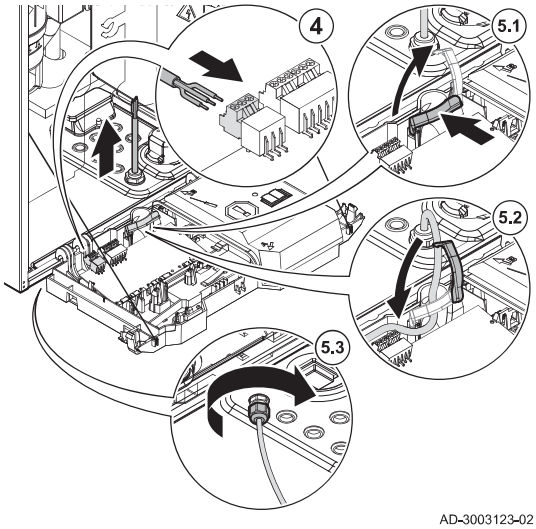
The boiler has eight cable gland positions. You can use the cable glands to route cables to the control box.

Fig.36 Cable routing



1. Select the desired cable gland position and remove the grommet.
2. Mount the cable gland.
3. Route the cable to the control box.

Fig.37 Connecting the cable



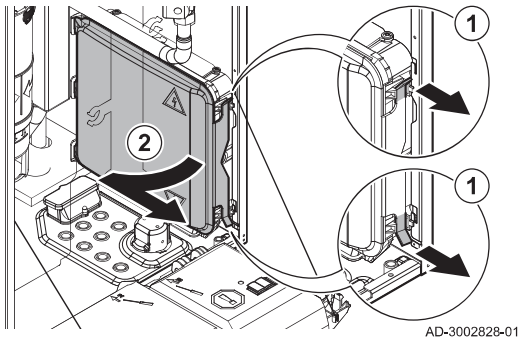
4. Connect the cable to the connection PCB.
5. Secure the cable:
   5.1. Open the clip in the control box.

To open the clip: Push in the middle and rotate.

   5.2. Close the clip in the control box.
   5.3. Tighten the sealing nut on the cable gland.

5.1.4 Access to the expansion box

Fig.38 Access to the expansion box

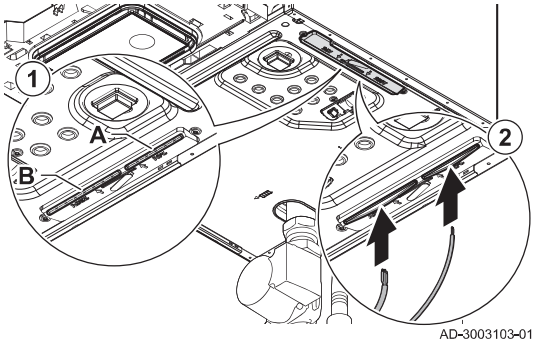


1. Gently pull forward the clips on the front side of the cover.
2. Remove the cover.

■ Cable routing to the expansion box

The expansion box has two possible openings for cables. You can use these openings to route cables to the expansion box.

Fig.39 Cable routing

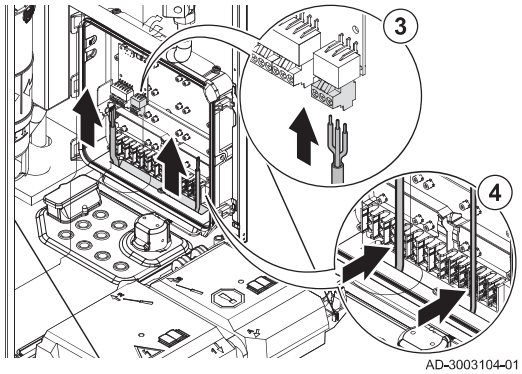


1. Cut the rubber seal in the desired opening.

   A Cable opening for low voltage cables (≤ 24 V)
   B Cable opening for power cables (≈ 230 V)

2. Route the cable to the expansion box.

Fig.40 Connecting the cable

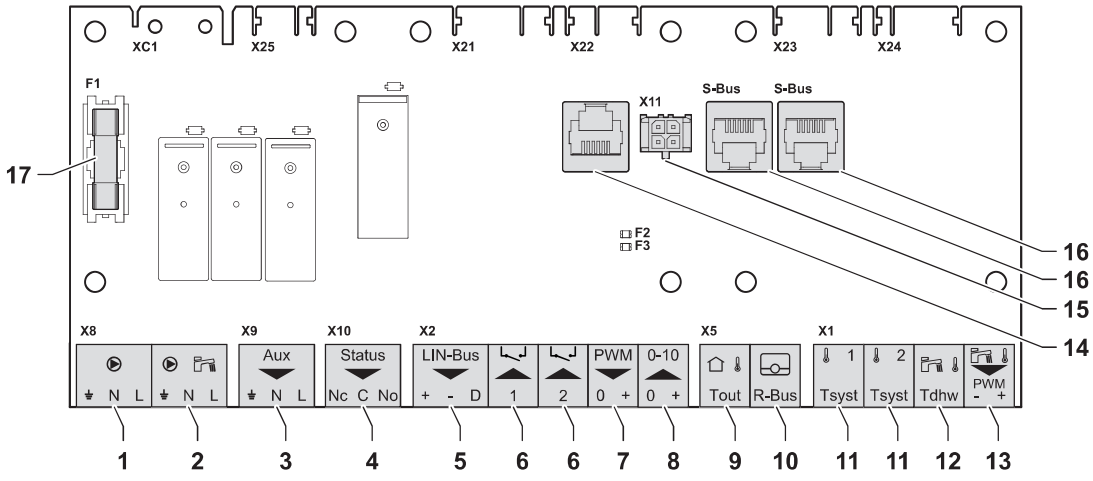


3. Connect the cable to the expansion PCB.
4. Secure the cable with the clips in the expansion box.

5.1.5 The CB-25 connection PCB

The **CB-25** is placed in the control box. It provides easy access to all the standard connectors.

Fig.41 Connection PCB CB-25



1 Pump connector, page 34
Connect a boiler pump.

2 DHW pump connector, page 34
Connect a DHW charge pump.

3 AUX connector, page 34
Connect a:

- Cascade system pump, page 35
- DHW circulation pump, page 35
- DHW mixing pump, page 35
- Zone pump, page 35
- Secondary pump, page 35
- Hydraulic valve, page 35
- External gas valve, page 35
- Status contact, page 35

4 Status connector, page 35
Connect a:

- Extractor fan, page 36
- Zone pump, page 36
- Secondary pump, page 36
- Hydraulic valve, page 36
- External gas valve, page 36
- Status contact, page 36

5 LIN-Bus connector, page 36
Connect a LIN pump.

6 Programmable input connectors, page 36
Connect a:

- Gas leakage sensor, page 37
- On/off contact for simple heating zone, page 37

- Third party boiler support, page 37
- Blocking input, page 37
- Releasing input, page 37
- Gas pressure switch, page 37

7 Pump PWM connector, page 37
Connect a PWM signal for the boiler pump.

8 0-10 V connector, page 37
Connect a 0-10 V signal.

9 Tout connector, page 38
Connect an outdoor temperature sensor.

10 R-Bus connector, page 39
Connect a room thermostat.

11 Tsyst connectors, page 39
Connect a:

- System temperature sensor, page 39
- DHW circulation temperature sensor, page 39
- DHW cylinder bottom temperature sensor, page 39
- DHW cylinder top temperature sensor, page 39

12 Tdhw connector, page 40
Connect a:

- DHW temperature sensor
- DHW temperature thermostat

13 DHW pump PWM connector, page 40
Connect a PWM signal for the DHW pump.

14 Service port connector, page 40
Connect a service tool.

15 L-Bus connector, page 40
Connect the expansion box (L-Bus).

16 S-Bus connectors, page 40
Do not use.

17 Fuse F1
Protects all connected components (for example, pumps, valves and PCBs).

■ Pump connector

You can connect a boiler pump to the connector.

Fig.42 Pump connector

AD-3001306-02

Connect the pump as follows:

⏚ Earth
N Neutral
L Phase

Important
The maximum power consumption is 300 VA.

You can change the post run time, maximum speed and minimum speed with parameters **PP015**, **PP016** and **PP018**.

■ DHW pump connector

You can connect a DHW charge pump to the connector.

Fig.43 DHW pump connector

AD-4000123-02

Connect the pump as follows:

⏚ Earth
N Neutral
L Phase

Important
The maximum power consumption is 300 VA.

You can change the post run time, maximum speed and minimum speed with parameters **DP020**, **DP037** and **DP038**.

■ AUX connector

You can connect a range of pumps, two types of valves or a contact to the connector. You can configure it as required. Each configuration has a specific setting.

One connector is available on the connection PCB. For more connections, you will need to use an expansion PCB.

Fig.44 AUX connector

AD-3002666-01

Connect the pump, valve or contact as follows:

⏚ Earth
N Neutral
L Phase

Important
The maximum power consumption is 300 VA.

– Cascade system pump

Fig.45 Cascade system pump

AD-3002666-01

You can connect a cascade system pump to the connector.

See also
Activating cascade management, page 17

– DHW circulation pump

Fig.46 DHW circulation pump

AD-3002666-01

You can connect a DHW circulation pump to the connector.

See also
Activating DHW circulation, page 17

– DHW mixing pump

Fig.47 DHW mixing pump

AD-3002666-01

You can connect a DHW mixing pump to the connector.

See also
Activating DHW mixing, page 17

– Zone pump

Fig.48 Zone pump

AD-3002666-01

You can connect a zone pump to the connector.

See also
Activating simple heating zone, page 16
Setting the digital output, page 19

– Secondary pump

Fig.49 Secondary pump

AD-3002666-01

You can connect a secondary pump to the connector. When you apply a low loss header, this pump creates flow on the secondary side of the system.

See also
Setting the digital output, page 19

– Hydraulic valve

Fig.50 Hydraulic valve

AD-3002666-01

You can connect an hydraulic valve to the connector.

See also
Setting the digital output, page 19

– External gas valve

Fig.51 External gas valve

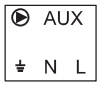
AD-3002666-01

You can connect an external gas valve to the connector.

See also
Setting the digital output, page 19

– Status contact

Fig.52 Status contact



AD-3002666-01

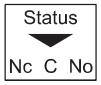
You can connect a status contact to the connector.

See also
Setting the digital output, page 19

■ Status connector

You can connect a ventilator, pump, two types of valves or a contact to the connector. You can configure it as required. Each configuration has a specific setting.

Fig.53 Status connector



AD-3002781-01

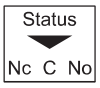
Connect the ventilator, pump valve or contact as follows:

Nc Normally closed contact (contact will open when status occurs)
C Main contact
No Normally opened contact (contact will close when status occurs)

Important
The status connector functions as a potential free contact. Apply an external 230 V power supply for a fan, pump and valve.

– Extractor fan

Fig.54 Extractor fan



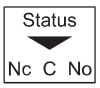
AD-3002781-01

You can connect an extractor fan for boiler room ventilation to the connector.

See also
Activating boiler room ventilation, page 18

– Zone pump

Fig.55 Zone pump



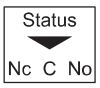
AD-3002781-01

You can connect a zone pump to the connector.

See also
Setting the digital output, page 19

– Secondary pump

Fig.56 Secondary pump



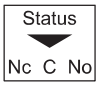
AD-3002781-01

You can connect a secondary pump to the connector. When you apply a low loss header, this pump creates flow on the secondary side of the system.

See also
Setting the digital output, page 19

– Hydraulic valve

Fig.57 Hydraulic valve



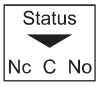
AD-3002781-01

You can connect an hydraulic valve to the connector.

See also
Setting the digital output, page 19

– External gas valve

Fig.58 External gas valve



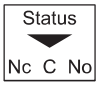
AD-3002781-01

You can connect an external gas valve to the connector.

See also
Setting the digital output, page 19

– Status contact

Fig.59 Status contact



AD-3002781-01

You can connect a relay to the connector. Depending on the setting, a particular status is transmitted.

See also
Setting the digital output, page 19

■ LIN-Bus connector

You can connect a LIN-Bus pump to the connector. The LIN-Bus controls the pump and receives data from the pump.

The LIN-Bus pumps from Grundfos have been tested and approved to work with the appliance. Pumps from other brands may also work, but have not been tested.

Fig.60 LIN-Bus connector

AD-3002779-01

Connect the LIN-Bus wires as follows:

- **+** Plus
- **-** Minus
- **D** Signal

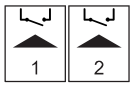
■ Programmable input connectors

You can connect a range of input signals to each connector. The programmable input connectors functions as a potential free contact.

Two programmable connectors are available on the connection PCB. For more connections, you will need to use an expansion PCB.

You can configure it as required. Depending on the setting, a type of input signal can be connected.

Fig.61 Programmable input connectors



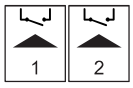
AD-3002780-01

Connect the input signal as follows:

The wires are interchangeable. It does not matter which wire is connected to which clamp.

– Gas leakage sensor

Fig.62 Gas leakage sensor



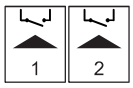
AD-3002780-01

You can connect a gas leakage sensor for boiler room ventilation to the connector.

See also
Activating boiler room ventilation, page 18

– On/off contact for simple heating zone

Fig.63 On/off contact for simple heating zone



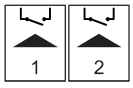
AD-3002780-01

You can connect an on/off contact for a simple heating zone to the connector.

See also
Activating simple heating zone, page 16

– Third party boiler support

Fig.64 Third party boiler support



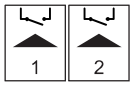
AD-3002780-01

You can connect a … to the connector.

See also
Setting the digital input, page 18

– Blocking input

Fig.65 Blocking input



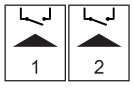
AD-3002780-01

You can use the connector as a blocking input.

See also
Setting the digital input, page 18

– Releasing input

Fig.66 Releasing input



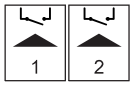
AD-3002780-01

You can use the connector as a releasing input.

See also
Setting the digital input, page 18

– Gas pressure switch

Fig.67 Gas pressure switch



AD-3002780-01

You can connect a gas pressure switch to the connector.

See also
Setting the digital input, page 18

■ Pump PWM connector

You can connect a PWM pump signal wire to the connector. The PWM signal modulates and controls the pump.

Fig.68 Pump PWM connector

AD-3002782-01

Connect the PWM signal wires as follows:

0 Zero
+ Plus

■ 0-10 V connector

You can connect a 0-10 V heat demand to the connector. The 0-10 V signal has two modes:

- Control based on temperature setpoint.
- Control based on power setpoint.

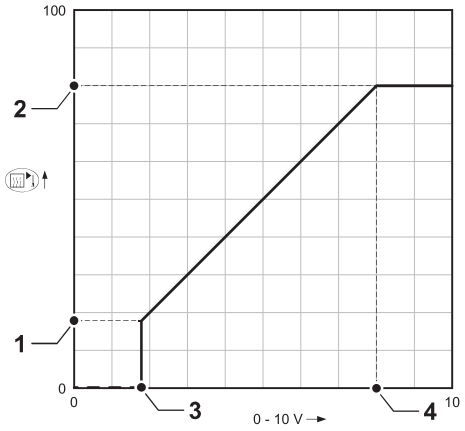
Fig.69 0-10 V connector

AD-3001304-03

Connect the 0-10 V signal as follows:

- \- Minus
- \+ Plus

Fig.70 0-10 V control



AD-3001543-01

You can change the mode of the analogue input with parameter **EP014**:

Temperature control: The 0-10 Volts controls the appliance flow temperature. The output varies between the minimum and maximum value on the basis of the flow temperature setpoint with a fixed power setpoint.

Power control: The 0-10 Volts controls the appliance heat output. The output will be converted towards a 0 – 100 % relative power setpoint with a fixed temperature setpoint. The minimum output is linked to the appliance modulation depth.

1. Minimum setpoint for temperature (parameter **EP030**) or power (parameter **EP032**)
2. Maximum setpoint for temperature (parameter **EP031**) or power (parameter **EP033**)
3. Minimum setpoint for voltage (parameter **EP034**)
4. Maximum setpoint for voltage (parameter **EP035**)

The measured values can be read with signals:

EM010 The voltage on the 0-10 V input.
EM018 When control based on temperature is set, the calculated temperature setpoint.
EM021 When control based on heat output is set, the calculated power setpoint.

■ Tout connector

Always connect the outdoor temperature sensor to the PCB that controls the zones. For example: when the zones are controlled by an SCB-02 or SCB-10, connect the sensor to that PCB.

You can connect an outdoor temperature sensor to the connector. The following sensors are available:

AF60 NTC 470 Ω/25 °C

Fig.71 Tout connector

AD-4000006-04

Connect the outdoor temperature sensor as follows:

The wires are interchangeable. It does not matter which wire is connected to which clamp.

You can change the outdoor temperature sensor type, building inertia and sensor connection type with parameters **AP056**, **AP079** and **AP091**.

Outdoor temperature sensor only: The flow temperature is determined by the outdoor temperature, together with the internal heating curve of the appliance.

When you only connect an outdoor temperature sensor, place a bridge on the R-Bus connector.

Outdoor temperature sensor with a thermostat: The flow temperature is determined by the outdoor temperature, together with the internal heating curve of the appliance. This internal heating curve is shifted upwards when the measured room temperature deviates from the desired room temperature. With an OpenTherm thermostat, the desired heating curve must be set on the thermostat.

You can change the influence of the room temperature and control strategy with parameters **CP240** and **CP780**.

■ R-Bus connector

You can connect a room thermostat to the connector. The following types are possible:

- R-Bus thermostat (for example, the **eTwist**)
- OpenTherm thermostat
- OpenTherm Smart Power thermostat
- On/off thermostat

Fig.72 R-Bus connector

AD-3001314-03

Connect the room thermostat as follows:

The wires are interchangeable. It does not matter which wire is connected to which clamp.

Connect the desired thermostat and the type of thermostat is automatically recognised.

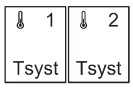
■ Tsyst connectors

You can connect a system temperature sensor to each connector. The following types are possible:

- System temperature sensor (NTC 10k Ω/25 °C)
- DHW circulation temperature sensor (NTC 10k Ω/25 °C)
- DHW cylinder bottom temperature sensor (NTC 10k Ω/25 °C)
- DHW cylinder top temperature sensor (NTC 10k Ω/25 °C)

You can configure it as required. Depending on the setting, a type of sensor can be connected.

Fig.73 Tsyst connectors



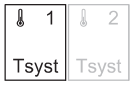
AD-4000008-03

Connect the sensor as follows:

The wires are interchangeable. It does not matter which wire is connected to which clamp.

– System temperature sensor

Fig.74 System temperature sensor



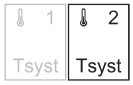
AD-3003105-01

You can connect a system temperature sensor to the Tsyst 1 connector.

See also
Activating cascade management, page 17

– DHW circulation temperature sensor

Fig.75 DHW circulation temperature sensor



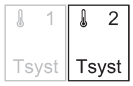
AD-3003349-01

You can connect a DHW circulation temperature sensor to the Tsyst 2 connector.

See also
Activating DHW circulation, page 17

– DHW cylinder bottom temperature sensor

Fig.76 DHW cylinder bottom temperature sensor



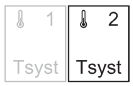
AD-3003349-01

You can connect a DHW cylinder bottom temperature sensor to the Tsyst 2 connector.

See also
Activating DHW mixing, page 17

– DHW cylinder top temperature sensor

Fig.77 DHW cylinder top temperature sensor



AD-3003349-01

You can connect a DHW cylinder top temperature sensor to the Tsyst 2 connector.

Tdhw connector

Important
For appliances with an **SCB-10** expansion PCB, please refer to the connection diagrams in this manual.

You can connect a DHW temperature sensor or thermostat to the connector. The following types are possible:

- DHW temperature sensor (NTC 10k Ω/25 °C)
- DHW temperature thermostat

You can configure it as required. Depending on the setting, a sensor or thermostat can be connected.

Fig.78 Tdhw connector

AD-3000971-03

Connect the sensor or thermostat as follows:

The wires are interchangeable. It does not matter which wire is connected to which clamp.

DHW pump PWM connector

You can connect a DHW pump PWM signal wire to the connector. The PWM signal modulates and controls the DHW pump.

Fig.79 DHW pump PWM connector

AD-3002783-01

Connect the PWM signal as follows:

- \- Minus
- \+ Plus

Service port connector

Fig.80 Service port connector (RJ12)

AD-3003112-01

You can connect a service tool to the connector. The service tool connects to the following devices:

- Laptop
- Smart phone
- Tablet

You can use the Recom Smart Service app to enter, change and read out various settings.

L-Bus connector

Fig.81 L-Bus connector

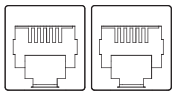
AD-3003113-01

You can connect the cable for the expansion box to the connector. This extends the local bus to the expansion box.

The connector is already in use for the expansion box.

S-Bus connectors

Fig.82 S-Bus connectors (RJ12)



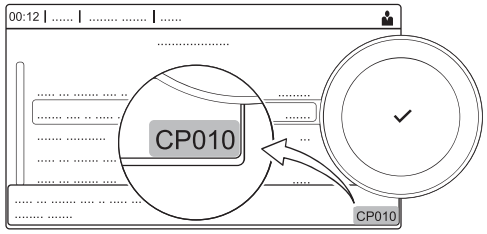
AD-3003114-01

Do not use these internal S-Bus connectors. You can use the Quick connect for the S-Bus connections.

6 Settings

6.1 Introduction to parameter codes

Fig.83 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.84 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
- **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.85 Second letter

AD-3001376-01

The second letter is the type.

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

Fig.86 Number

AD-3001377-01

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

6.2 Searching the parameters, counters and signals

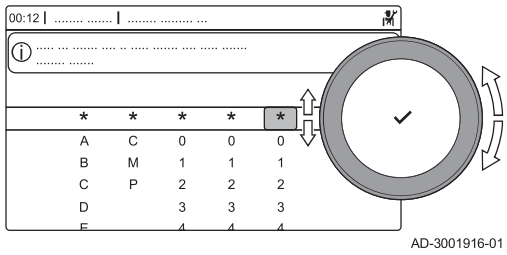
You can search and change data points (Parameters, counters, signals) of the appliance, connected control boards and sensors.

▶▶ ☰ > **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**.

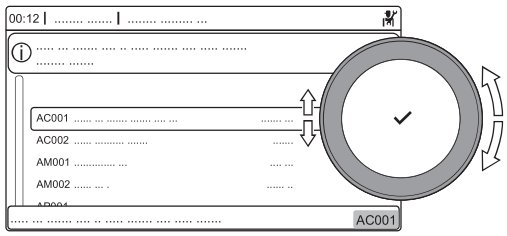
Fig.87 Search



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.88 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.

6.3 List of parameters

6.3.1 CU-GH22 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.18 Navigation for basic installer level

Level	Menu path
Basic installer	≡ > **Installation Setup** > **CU-GH22** > 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 basic installer level

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
AP016	CH function on	Enable central heating demand processing	0 = Off 1 = On	Gas fired appliance	1	1	1	1	1	1
AP017	DHW function on	Enable domestic hot water heat demand processing	0 = Off 1 = On	Gas fired appliance	1	1	1	1	1	1
AP073	Summer Winter	Outdoor temperature; Upper limit for heating	15 – 30.5 °C	Outdoor temperature	22	22	22	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	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	0	0	0	0	0	0
AP089	Installer name	Name of the installer		Mandatory bus master	None	None	None	None	None	None

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
AP090	Installer phone	Telephone number of the installer		Mandatory bus master	0	0	0	0	0	0
AP107	Color display Mk2	Color display Mk2	0 = White 1 = Red 2 = Blue 3 = Green 4 = Orange 5 = Yellow 6 = Violet	Mandatory bus master	0	0	0	0	0	0
CP080 CP081 CP082 CP083 CP084 CP085	User T.Room Activity	Room setpoint temperature of the user zone activity	5 – 30 °C	CIRCA	16 16 16 16 16 16	16 16 16 16 16 16	16 16 16 16 16 16	16 16 16 16 16 16	16 16 16 16 16 16	16 16 16 16 16 16
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 – 30 °C	CIRCA	20	20	20	20	20	20
CP320	OperatingZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Off	CIRCA	0	0	0	0	0	0
CP350	ComfortZoneDHWtemp	Comfort Domestic Hot Water Temperature Setpoint of zone	40 – 80 °C	CIRCA	55	55	55	55	55	55
CP360	EcoZoneDHWtemp.	Eco Domestic Hot Water Temperature Setpoint of zone	10 – 60 °C	CIRCA	10	10	10	10	10	10
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 – 30 °C	CIRCA	20	20	20	20	20	20
CP550	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	CIRCA	0	0	0	0	0	0
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	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	0	0	0
CP750	MaxZone Preheat time	Maximum zone preheat time	0 – 240 Min	CIRCA	0	0	0	0	0	0
DP024	Mix anti-leg mode	DHW mixing pump anti-legionella mode	0 = Off 1 = During charging 2 = Charging + disinfect	DHW mixing	0	0	0	0	0	0
DP025	DHW mixing pump	DHW mixing pump enable	0 = Off 1 = On	DHW mixing	0	0	0	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	6	6	6	6	6	6
DP044	Min DHW tank temp	Minimum bottom temperature DHW tank	0 – 120 °C	DHW mixing	70	70	70	70	70	70
DP045	Mix pump hysteresis	DHW mixing pump hysteresis temperature	0 – 20 °C	DHW mixing	2	2	2	2	2	2

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
DP049	DHW tank mixing	Enable/disable domestical hot water tank mixing	0 = Off 1 = On	DHW mixing	1	1	1	1	1	1
DP060	DHW time-prog select	Time program selected for DHW.	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3	Internal DHW	0	0	0	0	0	0
DP070	DHW comfort setpoint	Comfort temperature setpoint for the Domestic Hot Water tank	35 – 65 °C	Internal DHW	60	60	60	60	60	60
DP080	DHW eco setpoint	Eco friendly temperature setpoint from the Domestic Hot Water tank	7 – 50 °C	Internal DHW	10	10	10	10	10	10
DP200	DHW mode	DHW primary mode current working setting	0 = Scheduling 1 = Manual 2 = Off	Internal DHW	1	1	1	1	1	1
DP337	DHW holiday setpoint	Holiday temperature setpoint from the Domestic Hot Water tank	10 – 60 °C	Internal DHW	10	10	10	10	10	10
DP410	DHW anti-leg runtime	Duration of the DHW anti-legionella program	0 – 600 Min	Internal DHW Tank DHW	60	60	60	60	60	60
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	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	18	18	18
DP455	DHW charge pump post	The post operating time of the DHW charge pump	0 – 99 Sec	Tank DHW	15	15	15	15	15	15
DP473	Circulation Tsensor	DHW circulation temperature sensor connected	0 = No 1 = Yes	DHW circulation	1	1	1	1	1	1

Tab.20 Navigation for installer level

Level	Menu path
Installer	☰ > **Installation Setup** > **CU-GH22** > 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.21 Factory settings at installer level

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
AP001	BL input setting	Blocking input setting (1: Full blocking, 2: Partial blocking, 3: User reset locking)	0 = Not used 1 = Full blocking 2 = Partial blocking 3 = User reset locking	Gas fired appliance	1	1	1	1	1	1
AP006	Min water pressure	The appliance will report low water pressure below this value	0 – 2 bar	Gas fired appliance	0.4	0.4	0.4	0.4	0.4	0.4

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
AP008	Release wait time	Waiting time after closing the release contact to start the heat generator.	0 – 255 Sec	Gas fired appliance	0	0	0	0	0	0
AP009	Service hours	Number of heat generator operating hours before raising a service notification	0 – 51000 Hours	Gas fired appliance	25500	25500	25500	25500	25500	25500
AP010	Service notification	Select the type of service notification	0 = None 1 = Custom notification 2 = ABC notification	Gas fired appliance	0	0	0	0	0	0
AP011	Service hours mains	Hours powered to raise a service notification	0 – 51000 Hours	Gas fired appliance	8750	8750	8750	8750	8750	8750
AP013	Release function	Function of the release input contact	0 = Disabled 1 = Full blocking 2 = Central heat blocked	Gas fired appliance	1	1	1	1	1	1
AP018	Sets release input	Configuration of the release input contact (normally open or normally closed)	0 = Normally open 1 = Normally closed	Gas fired appliance	0	0	0	0	0	0
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outdoor sensor 1 = AF60	Outdoor temperature	0	0	0	0	0	0
AP063	Max CH flow setpoint	Maximum central heating flow temperature setpoint	20 – 90 °C	Producer Generic Gas fired appliance	90	90	90	90	90	90
AP079	Building Inertia	Inertia of the building used for heat up speed	0 – 10	Outdoor temperature	3	3	3	3	3	3
AP080	Frost min out temp	Outdoor temperature below which the antifreeze protection is activated	-30 – 20 °C	Outdoor temperature	-10	-10	-10	-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	1	1	1	1	1	1
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	0	0	0
AP098	BL1 contact config	BL1 input contact configuration	0 = Open 1 = Closed	Gas fired appliance	0	0	0	0	0	0
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	25 – 90 °C	CIRCA	80	80	80	80	80	80
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct	CIRCA	1	1	1	1	1	1
CP040	Postrun zone pump	Pump post runtime of the zone	0 – 255 Min	CIRCA	0	0	0	0	0	0
CP060	Room T holiday	Wished room zone temperature on holiday period	5 – 20 °C	CIRCA	6	6	6	6	6	6

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
CP070	MaxReduceRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	5 – 30 °C	CIRCA	16	16	16	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	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	15	15	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 – 4	CIRCA	1.5	1.5	1.5	1.5	1.5	1.5
CP240	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit	0 – 10	CIRCA	3	3	3	3	3	3
CP250	Calibration sensor	Adjust the measured room temperature	-5 – 5 °C	CIRCA	0	0	0	0	0	0
CP340	TypeReducedNightMode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	CIRCA	1	1	1	1	1	1
CP370	Holiday ZoneDHWtemp	Holiday Domestic Hot Water Temperature Setpoint of zone	10 – 40 °C	CIRCA	10	10	10	10	10	10
CP380	Antileg ZoneDHWtemp	Antilegionellosis Domestic Hot Water Temperature Setpoint of zone	40 – 80 °C	CIRCA	65	65	65	65	65	65
CP390	Start Antileg	Start time of the function Antilegionellosis	0 – 143 HoursMinutes	CIRCA	18	18	18	18	18	18
CP400	Zone Dhw antileg.	Duration of the function Antilegionellosis	1 – 600 Min	CIRCA	60	60	60	60	60	60
CP420	Min temp DHW tank	Minimum temperature domestic hot water tank	1 – 60 °C	CIRCA	6	6	6	6	6	6
CP430	Optimise DHW Zone	Used to force DHW tank loading according to the primary temperature	0 – 1	CIRCA	0	0	0	0	0	0
CP440	Release DHW zone	Prevents the cooling of the Tank at the start	0 – 1	CIRCA	0	0	0	0	0	0
CP460	DHW Zone Priority	Choice of DHW Priority 0:TOTAL 1:RELATIVE 2:NONE	0 = Total 1 = Relative 2 = None	CIRCA	0	0	0	0	0	0
CP500	Tflow Sensor Enable	Enable/Disable Flow temperature sensor of the zone	0 = Off 1 = On	CIRCA	0	0	0	0	0	0
CP560	ZoneConfigDHWAntileg	Configuration of the Domestic Hot Watter Antilegionnella Protection of the zone	0 = Disabled 1 = Weekly 2 = Daily	CIRCA	0	0	0	0	0	0
CP630	StartdayAntileg zone	Startday of the function antilegionella of the zone	1 = Monday 2 = Tuesday 3 = Wednesday 4 = Thursday 5 = Friday 6 = Saturday 7 = Sunday	CIRCA	6	6	6	6	6	6
CP640	OTH LogicLev contact	Opentherm Logic level contact of the zone	0 = Open 1 = Closed	CIRCA	1	1	1	1	1	1
CP700	DHW Cal Offset zone	Offset for calorifier sensor per zone	0 – 30 °C	CIRCA	0	0	0	0	0	0

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
CP710	Zone IncTFlowStp DHW	Increase primary temperature setpoint for heating DHW calorifier of the zone	0 – 40 °C	CIRCA	20	20	20	20	20	20
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	0	0	0	0	0	0
CP740	Zone cool down speed	Selection of cool down speed of the zone	0 = Slowest 1 = Slower 2 = Normal 3 = Faster 4 = Fastest	CIRCA	0	0	0	0	0	0
CP760	Zone DHW TAS enable	The calorifier of the zone is equipped with a Titan Active System anode	0 = No 1 = Yes	CIRCA	0	0	0	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	0	0	0
DP004	Anti-legionella	Anti-legionella protection of the calorifier	0 = Disabled 1 = Weekly 2 = Daily	Internal DHW Tank DHW	1	1	1	1	1	1
DP007	Dhw 3wv Standby	Position of three way valve during standby	0 = CH position 1 = DHW position	Tank DHW	0	0	0	0	0	0
DP035	Start pump DHW calo	Start pump for Domestic Hot Water calorifier	-20 – 20 °C	Tank DHW	-3	-3	-3	-3	-3	-3
DP050	Circulation mode	DHW circulation pump mode selection	0 = Pump is off 1 = Pump on time program 2 = Pump for DHW comfort	DHW circulation	0	0	0	0	0	0
DP052	Circ pump on time	DHW circulation pump cyclic ON time	0 – 20 Min	DHW circulation	0	0	0	0	0	0
DP053	Circ pump off time	DHW circulation pump cyclic OFF time	0 – 20 Min	DHW circulation	0	0	0	0	0	0
DP054	Circ pump anti leg	DHW circulation pump anti legionella	0 = Off 1 = On	DHW circulation	0	0	0	0	0	0
DP057	Circulation Toffset	DHW circulation offset temperature	0 – 20 °C	DHW circulation	0	0	0	0	0	0
DP150	DHW Thermostat	Enable DHW Thermostat function	0 = Off 1 = On	Tank DHW	1	1	1	1	1	1
DP160	DHW Anti-Leg Setpoint	Setpoint for DHW anti legionella	50 – 90 °C	Internal DHW Tank DHW	70	70	70	70	70	70
DP336	DHW pump hysteresis	DHW circulation pump hysteresis temperature	1 – 60 °C	DHW circulation	6	6	6	6	6	6

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
DP450	DHW circulation	DHW circulation zone enabled	0 = Off 1 = On	DHW circulation	1	1	1	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	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	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	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	0	0	0
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	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 – 10 V	0-10 volt input	0.5	0.5	0.5	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	10	10	10
GP044	FlueGas pow lim temp	Manual heat demand on / off	20 – 200 °C	Gas fired appliance	100	100	100	100	100	100
GP094	Chimney sweep power	Custom power setpoint for the chimney sweep mode	0 – 100 %	Gas fired appliance	50	50	50	50	50	50
PP015	CH Pump postrun time	Central heating pump postrun time	1 – 99 Min	Gas fired appliance	3	3	3	3	3	3
PP016	Max CH pump speed	Maximum central heating pump speed (%)	20 – 100 %	Gas fired appliance	100	100	100	100	100	100

Tab.22 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > **Installation Setup** > **CU-GH22** > 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.23 Factory settings at advanced installer level

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint	Gas fired appliance	0	0	0	0	0	0
AP026	Setpoint manual HD	Flow temperature setpoint for manual heat demand	7 – 90 °C	Gas fired appliance	40	40	40	40	40	40
AP036	Function sensor 1	The function of the input sensor 1	0 = None 1 = System temp sensor	DHW extended iAB	0	0	0	0	0	0
AP040	Function sensor 2	The function of the input sensor 2	0 = None 1 = System temp sensor	DHW extended iAB	0	0	0	0	0	0
AP052	Water press range	Range for the water pressure sensor	0 – 20 bar	Gas fired appliance	6	6	6	6	6	6
AP061	Max corr system sens	Maximum system temperature correction when a system temperature sensor is available	0 – 20 °C	DHWE iAB Multifunct sensors Gas fired appliance	10	10	10	10	10	10
AP062	P-factor system sens	P-factor (gain factor) for the system temperature correction	0.5 – 5	DHWE iAB Multifunct sensors Gas fired appliance	1	1	1	1	1	1
CP450	Pump type	The connected pump type	0 = On/Off 1 = Modulating PWM 2 = Modulating LIN	CIRCA	1	1	1	1	1	1
CP520	Zone Power setpoint	Power setpoint per zone	0 – 100 %	CIRCA	100	100	100	100	100	100
CP530	Zone PWM Pump speed	Pulse Width Modulation pump speed per zone	0 – 100 %	CIRCA	100	100	100	100	100	100
CP680	ConfPairing RU Zone	Select the Bus channel of the room unit for this zone	0 – 1	CIRCA	0	0	0	0	0	0
CP850	Hydronic balancing	Hydronic balancing operation possible	0 = No 1 = Yes	CIRCA	0	0	0	0	0	0
DP003	Abs max fan DHW	Maximum fan speed on Domestic Hot Water	1400 – 7500 Rpm	Gas fired appliance GVC Generic	4100	5400	5100	5600	6300	6800
DP005	Calorifier Tf offset	Flow setpoint offset for loading calorifier	0 – 50 °C	Tank DHW	20	20	20	20	20	20
DP006	Hyst calorifier	Hysteresis to start heating calorifier	2 – 15 °C	Tank DHW	5	5	5	5	5	5
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 – 180 Sec	Gas fired appliance	10	10	10	10	10	10
DP034	DhwCalorifierOffset	Offset for calorifier sensor	0 – 10 °C	Tank DHW	2	2	2	2	2	2

Code	Display text	Description	Adjustment range	Submenu	30	45	55	65	90	115
DP452	DHW priority	Selects the DHW priority	0 = Total 1 = Relative 2 = None	Tank DHW	0	0	0	0	0	0
DP474	DHW tank behind LLH	The primary domestic hot water tank is installed behind the low loss header	0 = No 1 = Yes	Tank DHW	0	0	0	0	0	0
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1000 – 4000 Rpm	Gas fired appliance GVC Generic	1550	1550	1600	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	900 – 5000 Rpm	Gas fired appliance GVC Generic	2500	2500	2500	2500	2500	2500
GP021	Temp diff Modulating	Modulate back when delta temperature is larger than this threshold	5 – 45 °C	Gas fired appliance	25	25	25	25	25	20
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	1 – 50	Gas fired appliance	5	5	5	5	5	5
GP030	Flue Gas Temp Max	Maximum flue gas temperature	20 – 200 °C	Gas fired appliance	120	120	120	120	120	120
GP042	Fan RPM Max	Maximum fan speed	0 – 65535 Rpm	GVC Generic	8500	8500	8500	8500	8500	8500
GP082	Chimney over DHW	Enable the DHW circuit during chimney sweep	0 = Off 1 = On	Gas fired appliance	0	0	0	0	0	0
PP007	Min anti-cycle time	Minimum heat generator holding time that can be reached after a stop	1 – 20 Min	Gas fired appliance	3	3	3	3	3	3
PP012	Stabilization time	Stabilization time after heat generator start for central heating	0 – 180 Sec	Gas fired appliance	30	30	30	30	30	30
PP017	ChPumpSpeedMaxFactor	Maximum central heating at minimum load as percentage of max pump speed	0 – 100 %	Gas fired appliance	100	100	100	100	100	100
PP023	CH Hysteresis	Temperature hysteresis for the generator to start on central heating	1 – 25 °C	Gas fired appliance	10	10	10	10	10	10

6.4 List of measured values

6.4.1 CU-GH22 control unit signals

Tab.24 Navigation for basic installer level

Level	Menu path
Basic installer	☰ > **Installation Setup** > **CU-GH22** > 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 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 56	Status information System Functionality
AM014	Sub status Appliance	Current sub status of the appliance.	 **See** Status and sub-status, page 56	Status information System Functionality
AM016	System Flow Temp	Flow temperature of appliance.	-25 - 150°C	Zone manager Tank DHW Producer Generic Gas fired appliance Prod manager bridge
AM018	T return	Return temperature of appliance. The temperature of the water entering the appliance.	-25 - 150°C	Zone manager Tank DHW Gas fired appliance
AM019	Water pressure	Water pressure of the primary circuit.	0 - 3.5bar	Gas fired appliance
AM037	3 way valve	Status of the three way valve	0 = CH 1 = DHW	Gas fired appliance
AM046	Internet T.Outdoor	Outdoor temperature received from an internet source	-70 - 70°C	Outdoor temperature
AM101	Internal setpoint	Internal system flow temperature setpoint	0 - 1°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 load-type this is TankTemperature or DhwOutTemperature	-25 - 125°C	Gas fired appliance
CM030	Zone RoomTemperature	Measure of the room temperature of the zone	0 - 35°C	CIRCA
CM040	Zone Tflow /DHW temp	Measure Zone Flow Temperature or DHW temperature	-10 - 140°C	CIRCA
CM060	ZonePumpSpeed	Current Pump speed of zone	0 - 100%	CIRCA
CM120	ZoneCurrentMode	Zone Current Mode	0 = Scheduling 1 = Manual 2 = Off 3 = Temporary	CIRCA
CM130	ZoneCurrent activity	Current activity of the zone	0 = Off 1 = Eco 2 = Comfort 3 = Anti legionella	CIRCA
CM190	Zone Troom setpoint	Wished room temperature setpoint of the zone	5 - 30°C	CIRCA

Code	Display text	Description	Range	Submenu
CM210	ZoneTout temp	Current outdoor temperature of the zone	-70 - 70°C	CIRCA
DM009	Auto/Derog DHWstatus	Automatic/derogation status of Domestic Hot Water mode	0 = Scheduling 1 = Manual 2 = Off 3 = Temporary	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 set-point	0 - 655.35°C	Internal DHW
DM067	DHW operating mode	DHW operating mode	1 = Eco 2 = Comfort 3 = Anti legionella	DHW extended iAB DHW circulation DHWE iAB
DM068	Circulation temp	DHW circulation temperature	-25 - 150°C	DHW extended iAB DHW 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
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 - 12500Rpm	Gas fired appliance GVC Generic
GM002	Fan RPM setpoint	Actual fan RPM setpoint	0 - 12500Rpm	Gas fired appliance GVC Generic

Tab.26 Navigation for installer level

Level	Menu path
Installer	☰ > **Installation Setup** > **CU-GH22** > 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.27 Signals at installer level

Code	Display text	Description	Range	Submenu
AM006	Release input	Current status of the release input	0 = Open 1 = Closed 2 = Off	Gas fired appliance
AM015	Pump running?	Is the pump running?	0 = Inactive 1 = Active	Gas fired appliance
AM024	Actual rel power	Actual relative power of the appliance	0 - 100%	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

Code	Display text	Description	Range	Submenu
AM040	Control temperature	Temperature used for hot water control algorithms.	0 - 1°C	Gas fired appliance
AM041	Measurement sensor 1	Measurement of multifunctional sensor 1	-327.68 - 327.67°C	DHW extended iAB
AM042	Measurement sensor 2	Measurement of multifunctional sensor 2	-327.68 - 327.67°C	DHW extended iAB
AM043	Pwr dwn reset needed	A power down reset is needed	0 = No 1 = Yes	Gas fired appliance
AM044	Nr sensors supported	Number of sensors supported by the device	0 - 255	Gas fired appliance
AM045	Water pressure sens	Water pressure sensor present?	0 = No 1 = Yes	Gas fired appliance
AM155	Multifunct sensor 1	Current function of the multifunctional sensor 1	0 = None 1 = System temp sensor	DHWE iAB Multifunct sensors
AM156	Multifunct sensor 1	Current function of the multifunctional sensor 1	0 = None 1 = System temp sensor	DHWE iAB Multifunct sensors
AM157	Multifunct sensor 1	Current function of the multifunctional sensor 1	0 = None 1 = System temp sensor	DHWE iAB Multifunct sensors
AM158	Multifunct sensor 1	Current function of the multifunctional sensor 1	0 = None 1 = System temp sensor	DHWE iAB Multifunct sensors
AM160	Multifunct sensor 2	Current function of the multifunctional sensor 2	0 = None 1 = System temp sensor	DHWE iAB Multifunct sensors
AM161	Multifunct sensor 2	Current function of the multifunctional sensor 2	0 = None 1 = System temp sensor	DHWE iAB Multifunct sensors
AM162	Multifunct sensor 2	Current function of the multifunctional sensor 2	0 = None 1 = System temp sensor	DHWE iAB Multifunct sensors
AM163	Multifunct sensor 2	Current function of the multifunctional sensor 2	0 = None 1 = System temp sensor	DHWE iAB Multifunct sensors
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
AM175	Measurement sensor 2	Measurement of multifunctional sensor 2	-327.68 - 327.67°C	DHWE iAB Multifunct sensors
AM176	Measurement sensor 2	Measurement of multifunctional sensor 2	-327.68 - 327.67°C	DHWE iAB Multifunct sensors
AM177	Measurement sensor 2	Measurement of multifunctional sensor 2	-327.68 - 327.67°C	DHWE iAB Multifunct sensors
AM178	Measurement sensor 2	Measurement of multifunctional sensor 2	-327.68 - 327.67°C	DHWE iAB Multifunct sensors

Code	Display text	Description	Range	Submenu
CM070	Zone Tflow Set-point	Current Flow temperature setpoint of zone	0 - 150°C	CIRCA
CM140	ZoneOTContr present	OpenTherm controller is connected to the zone	0 = No 1 = Yes	CIRCA
CM150	ZoneState Heatde-mand	State of On Off heat demand per zone	0 = No 1 = Yes	CIRCA
CM160	Zone Mod HeatDe-mand	Presense of modulating heat demand per zone	0 = No 1 = Yes	CIRCA
CM200	ZoneCurrentHeat-Mode	Displaying current operating mode of the zone	0 = Standby 1 = Heating 2 = Cooling	CIRCA
DM001	DHW tank temp bottom	Domestic Hot Water tank temperature (bottom sensor)	-25 - 150°C	Tank DHW
DM005	DhwSolarTank-Temp	Domestic Hot Water solar tank tempera-ture	-25 - 150°C	Tank DHW
DM061	Status DHW anti-leg	DHW circulation pump anti-legionella function status	0 = Off 1 = Charging 2 = Disinfection	DHW exten-ded iAB DHW mixing DHW circula-tion DHWE iAB
DM062	DHW tank temper-ature	DHW tank temperature	-25 - 150°C	DHW exten-ded iAB DHW mixing DHW circula-tion DHWE iAB
DM063	DHW tank mixing T	Current DHW tank mixing water temper-ature	-25 - 150°C	DHW mixing
DM064	DHW mix pump status	DHW mix pump status	0 = Off 1 = On	DHW mixing
DM065	DHW mixing status	Current status of the DHW mixing func-tion group	0 = Disabled 1 = Standby 2 = Normal operation 3 = Anti legionella 4 = Pump anti seize 5 = Frost protection	DHW mixing
DM066	Anti seize delay	DHW mixing pump anti seize delay time	0 - 4294967295Min	DHW mixing
DM069	State DHW circ pump	Status of the DHW circulation pump	0 = Off 1 = On	DHW circula-tion
DM080	Anti seize delay	Circulation pump anti seize delay time	0 - 4294967295Min	DHW circula-tion
DM081	Circulation Tsetp	DHW circulation setpoint temperature	0 - 655.35°C	DHW circula-tion
DM083	DHW manager sta-tus	DHW manager status		DHW exten-ded iAB 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 ap-pliance GVC Generic
GM027	Flame Test Active	Flame test 1=active, 0=inactive	0 = Inactive 1 = Active	Gas fired ap-pliance GVC Generic

Code	Display text	Description	Range	Submenu
GM030	GVC Output	Gas Valve Control Output	0 - 255	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
PM002	CH Setpoint	Central heating setpoint of the appliance	0 - 125°C	Gas fired appliance
PM003	ChTflowAverage	Actual average flow temperature	-25 - 150°C	Gas fired appliance
ZM000	Screed temp setpoint	The current flow temperature setpoint for screed drying	7 - 60°C	Direct zone

Tab.28 Navigation for advanced installer level

Level	Menu path
Advanced installer	≡ > **Installation Setup** > **CU-GH22** > 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.29 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
AM022	On / Off heat demand	On / Off heat demand	0 = Off 1 = On	Gas fired appliance
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
CM050	Status Pump zone	Status of the Pump of zone	0 = No 1 = Yes	CIRCA
CM110	ZoneTRoomUnit setp	Room Unit temperature setpoint of zone	0 - 35°C	CIRCA
CM180	Zone RU present	Presense of Room Unit in this zone	0 = No 1 = Yes	CIRCA
CM240	Zone Tout connected	Outdoor temperature sensor is connected to the zone	0 = No 1 = Yes	CIRCA

Code	Display text	Description	Range	Submenu
CM280	ZoneRTC Tcal-cRoomStp	Internal room temperature setpoint calculated by the room temperature controller of the zone	0 - 100°C	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
DM004	DhwFlowTempSetpoint	Flow temperature setpoint Domestic Hot Water	0 - 95°C	Tank 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
GM005	Gas valve 2	Gas valve 2	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
GM008	Actual flame current	Actual flame current measured	0 - 25.5µA	Gas fired appliance GVC Generic
GM011	Power setpoint	Power setpoint in % of maximum	0 - 1%	Gas fired appliance
GM013	Blocking Input	Blocking input status	0 = Open 1 = Closed 2 = Off	Gas fired appliance
GM028	GVC Mode	Gas Valve Control Mode	0 = Normal 1 = Write 2 = Gas band detection 3 = Calibration 4 = Factory test 5 = Ion adjust mode 6 = Offset adaption 7 = Corr. Comb. slope 8 = Table data handling 9 = Calibr pre-ignition 10 = High calibration=OK 11 = Med.calibration=OK 12 = Low calibration=OK 13 = Calibr high load 14 = Calibr med load 15 = Calibration low load 16 = ADA supervision 17 = Flame protect	Gas fired appliance GVC Generic

6.4.2 Status and sub-status

Tab.30 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.

Code	Display text	Explanation
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.31 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.
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.

Code	Display text	Explanation
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.

7 Maintenance

7.1 Maintenance regulations

Danger of electric shock
High voltages
Risk of electric shock.

- Always disconnect the mains power supply before working on the appliance.

Danger
Gas leakage
Chance of explosion.

- Always close the main gas tap when working on the appliance.

Danger
Leakage
Risk of poisoning, explosion and material damage.

- Always replace all gaskets on the parts removed.
- Make sure that all gaskets have been positioned properly.
- Check the entire system for leaks after maintenance and servicing work.

Warning
Component incompatibility
Dangerous situations due to mismatching components.

- Use only genuine spare parts.

Caution
Harmful dust particles
Risk of eye damage or inhalation of harmful particles.

- Always wear safety goggles and a dust mask when working with compressed air.

Notice
Water leakage
Damaged components due to leaking water.

- Never allow water to come into contact with 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**.

7.2 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.32 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**.

See also
Viewing the service notification, page 22

7.3 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 1.5 bar and 2.0 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.

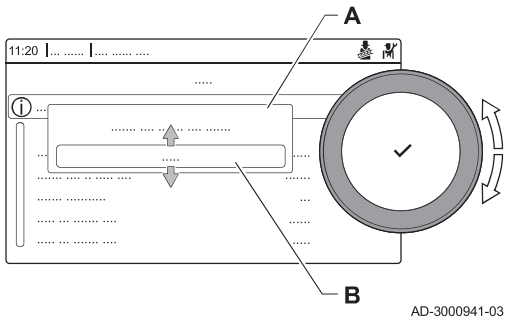
Important
- This appliance is suitable for category I_{2H} containing up to 20% Hydrogen gas (H_2). Due to variations in the H_2 percentage, the O_2 percentage can vary over time. (For example: a percentage of 20% H_2 in the gas can lead to an increase of 1,5% of O2 in the flue gasses)
- A significant adjustment of the gas valve may be needed. Adjustment can be done using the standard O_2 values of the gas used.

See also
Chimney sweep menu, page 13

7.3.1 Performing the full load test

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

Fig.89 Full load test



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.

7.3.2 Checking/setting values for O_2 at full load

1. Set the boiler to full load.
2. Measure the percentage of O_2 in the flue gases.
3. Compare the measured value with the checking values in the table. If a boiler is not suitable for a certain gas type, it is indicated with "-" in the table.

Tab.33 Checking/setting values for O_2 at full load for G20 (H gas)

Values at full load for G20 (H gas)	O_2 (%)(1)
Quinta Ace 30	4,3 - 4,8(1)
Quinta Ace 45	4,3 - 4,8(1)
Quinta Ace 55	4,3 - 4,8(1)
Quinta Ace 65	4,3 - 4,8(1)
Quinta Ace 90	4,3 - 4,7(1)
Quinta Ace 115	3,9 - 4,4(1)
(1) Nominal value.	

Tab.34 Checking/setting values for O_2 at full load for BREEAM with G20 (H gas)

Values at full load for G20 (H gas)	O_2 (%)(1)(2)
Quinta Ace 30	4,9 - 5,4(1)
Quinta Ace 45	5,6 - 6,1(1)
Quinta Ace 55	5,6 - 6,1(1)
Quinta Ace 65	5,4 - 5,9(1)

Values at full load for G20 (H gas)	O_2 (%)(1)(2)
Quinta Ace 90	5,3 - 5,7(1)
Quinta Ace 115	5,6 - 6,1(1)
(1) Nominal value. (2) These values are only applicable when the fan speeds have been set for BREEAM.	

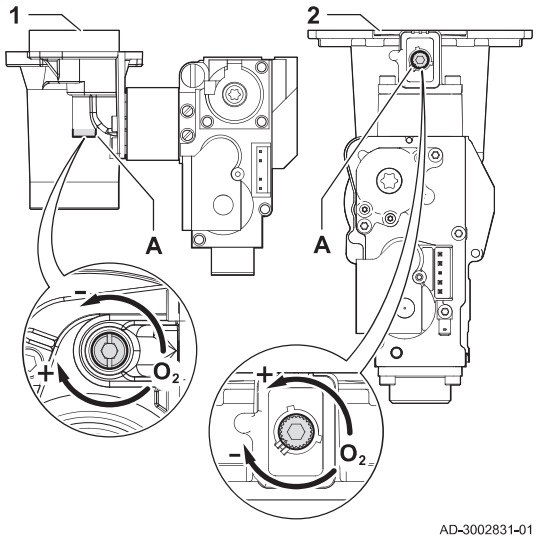
Tab.35 Checking/setting values for O_2 at full load for G30/G31 (butane/propane)

Values at full load for G30/G31 (butane/propane)	O_2 (%)(1)
Quinta Ace 30	4,7 - 5,2(1)
Quinta Ace 45	4,7 - 5,2(1)
Quinta Ace 55	4,9 - 5,4(1)
Quinta Ace 65	4,9 - 5,4(1)
Quinta Ace 90	4,9 - 5,4(1)
Quinta Ace 115	4,4 - 4,9(1)
(1) Nominal value.	

Notice
Incorrect settings
Damage to the product.
- The O2 values at full load must be lower than the O2 values at low load.

4. If the measured value is outside of the values given in the table, correct the gas/air ratio.
5. Use the adjusting screw **A** to set the percentage of O_2 for the gas type being used to the nominal value. This must always be inside the highest and lowest setting limit.
   Increasing the gas flow, will decrease O_2.
   See drawing for the position of adjusting screw **A** for full load.

Fig.90 Position of adjusting screw **A**



1 Gas control valve on the Quinta Ace 30 - 45 - 55 - 65 - 90
2 Gas control valve on the Quinta Ace 115

6. Check the flame through the inspection glass. The flame must not blow off.
7. Measure the CO value in the flue gasses. If the CO level is above 400 ppm perform the following actions:

Important
The CO-concentration in the flue gasses must always comply with the installation regulations of the country in which the boiler is installed.

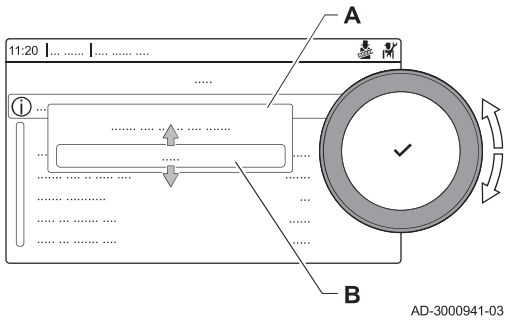
7.1. Check if the flue gas discharge system is installed correctly.
7.2. Check if the used gas type matches with the boiler settings.
7.3. Check the burner for damage and clean the burner.
7.4. Recheck the gas/air ratio setting.
7.5. Contact your supplier if the CO level is still above 400 ppm.

Notice
Incorrect settings
Damage to the product.
- If the CO level is above 1000 ppm, switch off the boiler and contact your supplier.

7.3.3 Performing the low load test

1. If the full load test is still running, press the ✔ button to change the load test mode.

Fig.91 Low load test



2. If the full load test was finished, select the tile [🧹] to restart the chimney sweep menu.

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.

7.3.4 Checking/setting values for O_2 at low load

1. Set the boiler to low load.
2. Measure the percentage of O_2 in the flue gases.
3. Compare the measured value with the checking values in the table. If a boiler is not suitable for a certain gas type, it is indicated with "-" in the table.

Tab.36 Checking/setting values for O_2 at low load for G20 (H gas)

Values at low load for G20 (H gas)	O_2 (%)(1)
Quinta Ace 30	5,7(1) - 6,2
Quinta Ace 45	5,7(1) - 6,2
Quinta Ace 55	4,8(1) - 5,3
Quinta Ace 65	4,8(1) - 5,3
Quinta Ace 90	5,2(1) - 5,6
Quinta Ace 115	5,7(1) - 6,2
(1) Nominal value.	

Tab.37 Checking/setting values for O_2 at low load for BREEAM with G20 (H gas)

Values at low load for G20 (H gas)	O_2 (%)(1)(2)
Quinta Ace 30	6,1(1) - 6,6
Quinta Ace 45	6,5(1) - 7,0
Quinta Ace 55	6,1(1) - 6,6
Quinta Ace 65	5,9(1) - 6,4
Quinta Ace 90	5,7(1) - 6,1
Quinta Ace 115	7,4(1) - 7,9
(1) Nominal value. (2) These values are only applicable when the fan speeds have been set for BREEAM.	

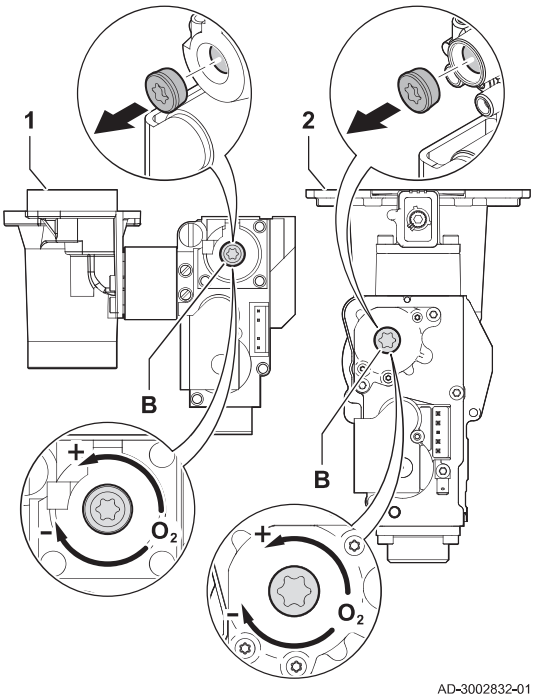
Tab.38 Checking/setting values for O_2 at low load for G30/G31 (butane/propane)

Values at low load for G30/G31 (butane/propane)	O_2 (%)(1)
Quinta Ace 30	5,7(1) - 6,2
Quinta Ace 45	5,7(1) - 6,2
Quinta Ace 55	5,7(1) - 6,2
Quinta Ace 65	5,7(1) - 6,2
Quinta Ace 90	5,7(1) - 6,2
Quinta Ace 115	6,1(1) - 6,6
(1) Nominal value.	

Notice
Incorrect settings
Damage to the product.
- The O2 values at low load must be higher than the O2 values at full load.

4. If the measured value is outside of the values given in the table, correct the gas/air ratio.
5. Use the adjusting screw **B** to set the percentage of O_2 for the gas type being used to the nominal value.
   Increasing the gas flow, will decrease O_2.
   See drawing for the position of adjusting screw **B** for low load.

Fig.92 Position of adjusting screw **B**



1 Gas control valve on the Quinta Ace 30 - 45 - 55 - 65 - 90
2 Gas control valve on the Quinta Ace 115

6. Check the flame through the inspection glass. The flame must not blow off.
7. Repeat the full load test and the low load test as often as necessary until the correct values are obtained.
8. Measure the CO value in the flue gasses. If the CO level is above 400 ppm perform the following actions:

Important
The CO-concentration in the flue gasses must always comply with the installation regulations of the country in which the boiler is installed.

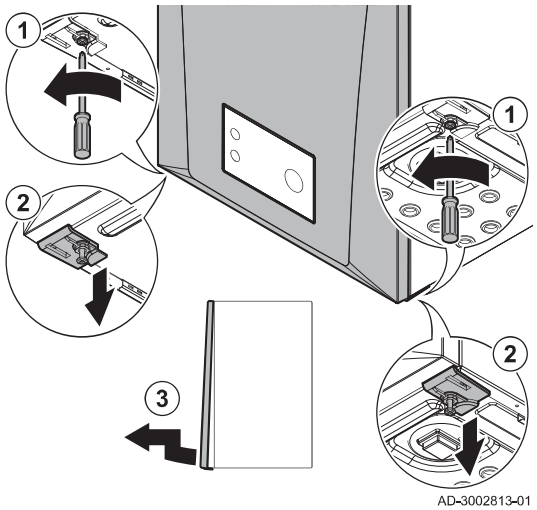
8.1. Check if the flue gas discharge system is installed correctly.
8.2. Check if the used gas type matches with the boiler settings.
8.3. Check the burner for damage and clean the burner.
8.4. Recheck the gas/air ratio setting.
8.5. Contact your supplier if the CO level is still above 400 ppm.

Notice
Incorrect settings
Damage to the product.
- If the CO level is above 1000 ppm, switch off the boiler and contact your supplier.

9. Set the boiler back to the normal operating status.

7.4 Opening the boiler

Fig.93 Removing the panel



1. Unscrew the two screws by a quarter turn.
2. Unlock the two clips.
3. Remove the panel.

7.5 Standard inspection and maintenance operations

For a service, always perform the following standard inspection and maintenance operations.

7.5.1 Checking the water quality

The quality of the heating water must comply with the limit values in our **Water quality instructions**. You can go to the website for the instruction.

Notice
Water quality
Damage to the product.
Warranty void.

- Make sure the water quality requirements are fulfilled.

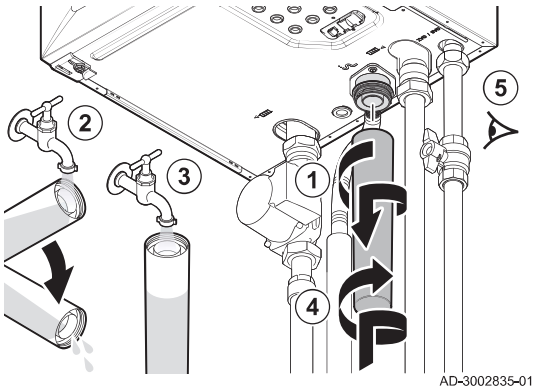
1. Fill a clean bottle with some water from the system (connected to the boiler).
2. Check the quality of this water sample or have it checked.

7.5.2 Cleaning the trap

Danger
Flue gas leakage
Chance of CO poisoning.

- Make sure the trap is sufficiently filled with water.

Fig.94 Cleaning the trap



1. Remove the trap.
2. Clean the trap with water.
3. Fill the trap with water.
4. Fit the trap.
5. Check for leaks.

7.6 Specific maintenance work

Perform the specific maintenance work if this proves to be necessary following the standard inspection and maintenance work. To conduct the specific maintenance work:

7.6.1 Replacing the ionisation/ignition electrode

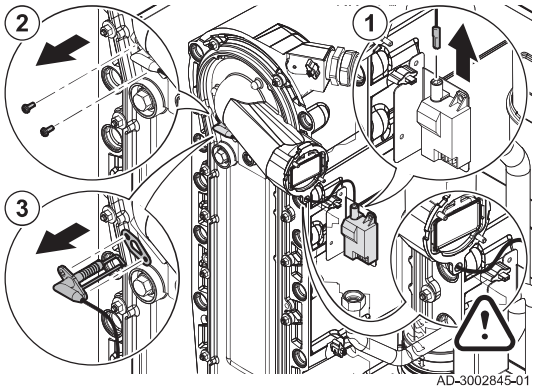
The ionisation/ignition electrode must be replaced if:

- The ionisation current is lower than 4 µA.
- The electrode is damaged or worn.
- The specific maintenance activities are carried out.

For this task, you will need the following tools:

⊕ Cross slot screwdriver **PH2**

Fig.95 Replacing the ionisation/ignition electrode



1. Remove the plug of the electrode from the ignition transformer.

Important
The ignition cable is fixed to the electrode and may not be removed.

2. Unscrew the 2 screws on the electrode.
   ⊕ **PH2**
3. Remove the electrode.

Notice
Maintenance damage
Damage to the product.
- Do not fit the new electrode until the burner has been cleaned and refitted.

See also
Mounting the ionisation/ignition electrode, page 72

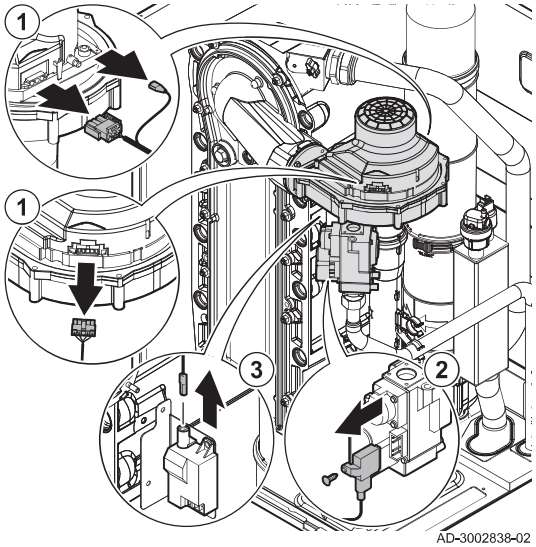
7.6.2 Cleaning the burner

■ Removing the front plate unit

For this task, you will need the following tools:

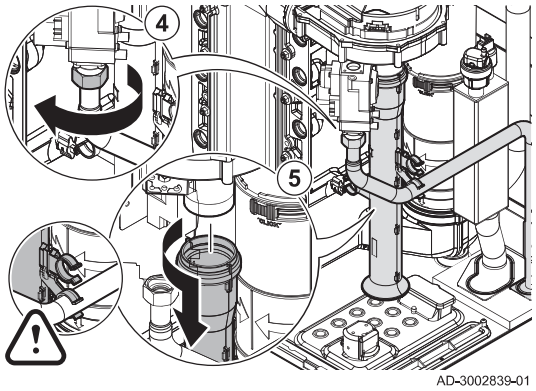
- ⬡ Socket wrench **10**
- ⬡ Hex spanner **30** or **36**
- ⊕ Cross slot screwdriver **PH2**

Fig.96 Removing the electrical connections



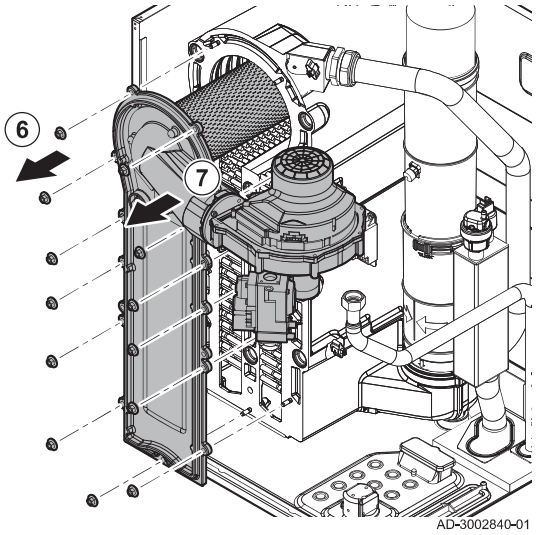
1. Remove the electrical connections from the fan.
2. Remove the electrical connection from the gas control valve.
   ⊕ **PH2**
3. If still connected, remove the plug of the electrode from the ignition transformer.

Fig.97 Disassembling the fan unit



4. Unscrew the nut under the gas control valve.
   ⬡ **30** or **36**
5. Remove the air inlet silencer from the venturi.

Fig.98 Removing the front plate unit



6. Unscrew the nuts from the front plate on the heat exchanger.
   ⬡ **10**
7. Carefully remove the front plate, the burner and the fan from the heat exchanger.

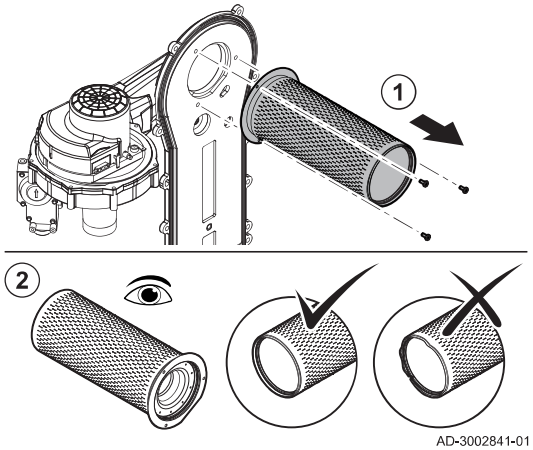
See also
Mounting the front plate unit, page 70

■ Cleaning the burner

For this task, you will need the following tools:

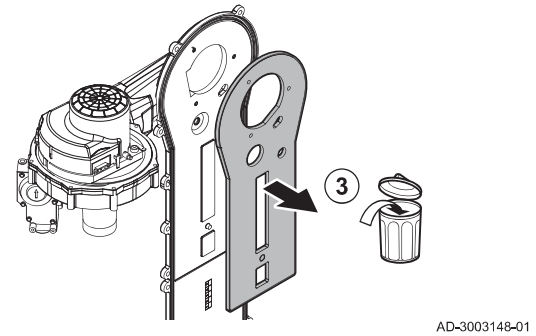
⊕ Cross slot screwdriver **PH2**

Fig.99 Checking the burner



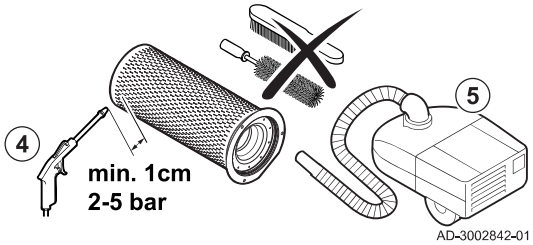
1. Unscrew the 3 screws from the front plate and remove the burner.
   ⊕ **PH2**
2. Check the burner.
   Replace the burner if faulty or seriously damaged.

Fig.100 Removing the insulation gasket



3. Remove the insulation gasket.

Fig.101 Cleaning the burner



4. Clean the outside of the burner using compressed air with a pressure of 2 to 5 bar.

Notice
Maintenance damage
Damage to the product.
- Maintain a minimum distance of 1 cm from the surface of the burner.
- Never clean the burner's surface with a brush or similar item.

5. Clean the inside of the burner using a vacuum cleaner.

6. Set the burner aside, making sure it can not be damaged.

Notice
Maintenance damage
Damage to the product.
- Do not refit the burner until the heat exchanger, condensate collector and trap have been cleaned.

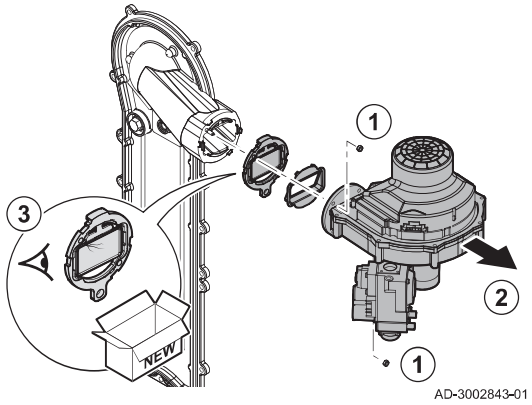
See also
Mounting the burner, page 70

7.6.3 Checking the non-return valve

For this task, you will need the following tools:

⬡ Hex spanner **8**

Fig.102 Checking the non-return valve

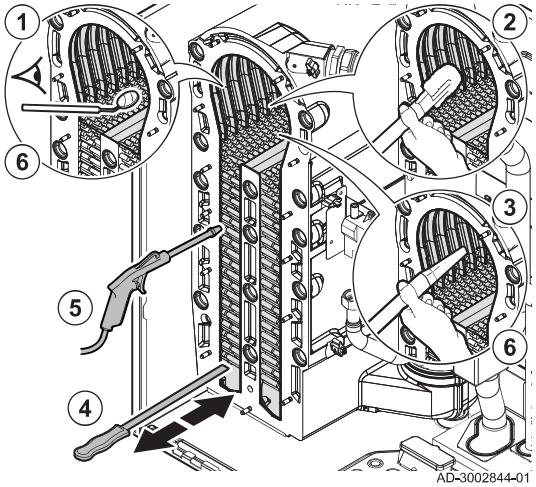


1. Unscrew the nuts on the fan output.
   ⬡ **8**
2. Remove the fan and gas control valve assembly.
3. Inspect the non-return valve and replace if it is faulty, seriously damaged or part of the maintenance kit.

See also
Mounting the fan and gas control valve, page 70

7.6.4 Cleaning the heat exchanger

Fig.103 Cleaning the heat exchanger



1. Visually inspect the burner area.
2. Use a vacuum cleaner to remove any visible soiling from the burner area.

Use a brush end piece for the vacuum cleaner (optional).

3. Vacuum again without the brush on the end piece.
4. Clean the areas between the pins of the heat exchanger using the cleaning knife. Always work from the bottom to the top. Move the cleaning knife between the pins horizontally.

Notice
Maintenance damage
Damage to the product.
- Always use a cleaning knife specially designed for the heat exchanger.

- The 360 mm cleaning knife is for the: Quinta Ace 30 - 45 - 55 - 65.
- The 460 mm cleaning knife is for the: Quinta Ace 90 - 115.

5. Use compressed air to blow the cleaned parts through in turn.
6. Check whether any visible contamination has been left behind. Remove it with the vacuum cleaner.

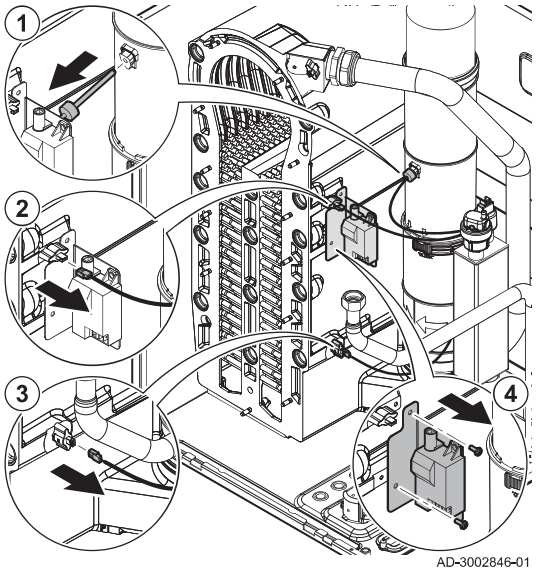
7.6.5 Cleaning the condensate collector

■ Removing the internal flue gas pipe

For this task, you will need the following tools:

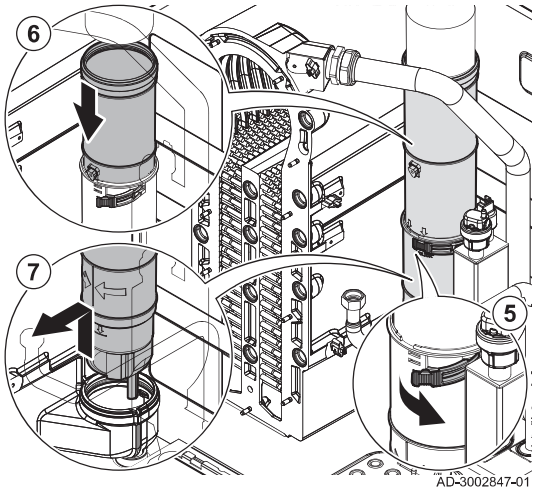
⊕ Cross slot screwdriver **PZ2**

Fig.104 Disassembling the flue gas pipe



1. Remove the flue gas temperature sensor.
2. Remove the electrical connection from the heat exchanger temperature sensor.
3. Remove the electrical connection from the return temperature sensor.
4. Remove the bracket with the ignition / ionisation transformer.
   PZ2

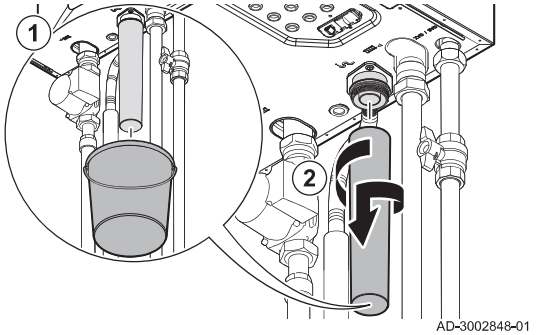
Fig.105 Removing the flue gas pipe



5. Open the clicker.
6. Push the upper telescopic part down as far as possible.
7. Lift the flue gas pipe out of the condensate collector.

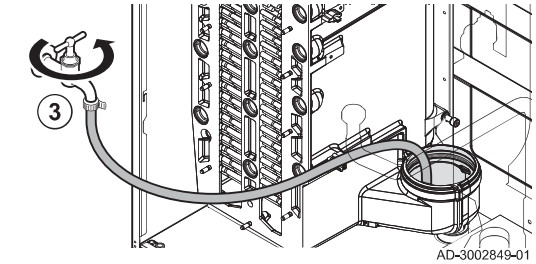
■ Rinsing the condensate collector

Fig.106 Removing the trap



1. Place a bucket under the boiler.
2. Remove the trap.

Fig.107 Rinsing the condensate collector



3. Rinse the condensate collector with the largest possible water flow.

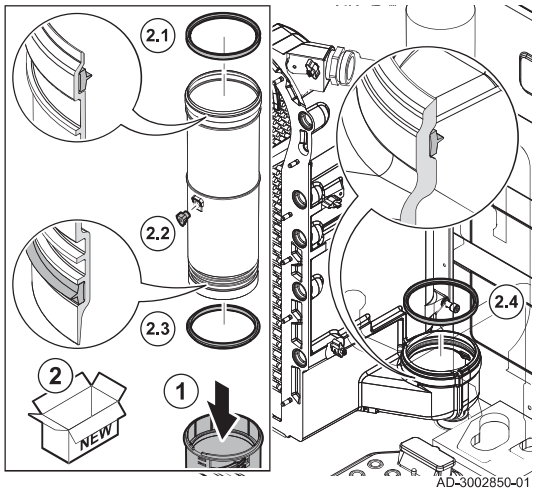
Notice
Maintenance damage
Damage to the product.
- Prevent water from getting into the boiler while rinsing.

Fitting the internal flue gas pipe

For this task, you will need the following tools:

Torque cross slot screwdriver **PZ2**

Fig.108 Placing the new gaskets

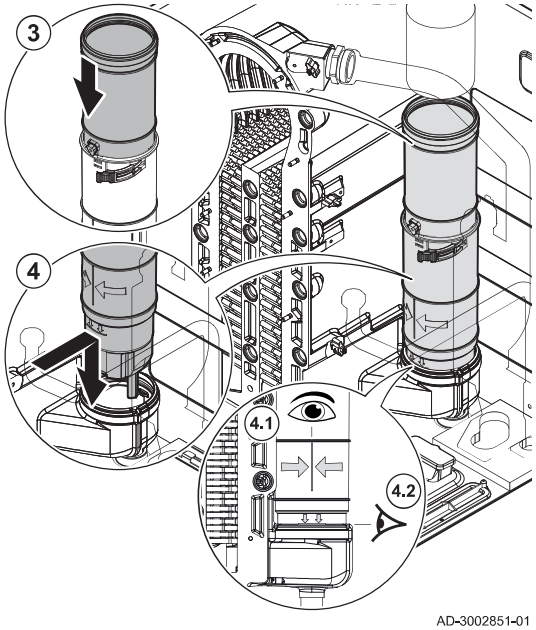


1. Remove the upper telescopic part from the lower part.
2. Replace all the gaskets:
   2.1. Place the gasket in the top of the upper part.
   2.2. Place the grommet of the flue gas temperature sensor.
   2.3. Place the gasket in the bottom of the upper part.

Danger
Flue gas leakage
Chance of CO poisoning.
- Make sure to place the gasket in the correct groove.

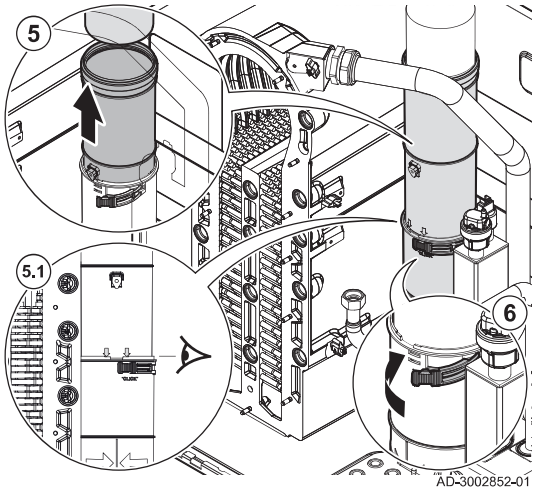
   2.4. Place the gasket in the condensate collector.

Fig.109 Placing the flue gas pipe



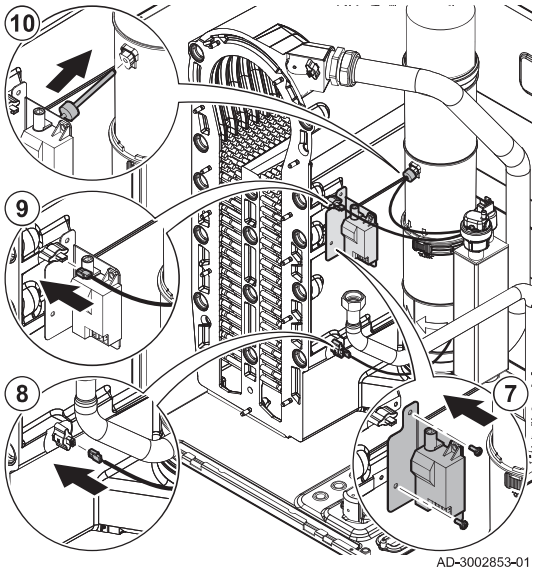
3. Fit the upper part into the lower part and push it down as far as possible.
4. Place the flue gas pipe into the condensate collector:
   4.1. Rotate the flue gas pipe until the vertical line is facing forward.
   4.2. Push the flue gas pipe down until the horizontal line.

Fig.110 Re-assembling the flue gas pipe



5. Pull up the upper part of the flue gas pipe and slide it over the flue gas connection.
   5.1. Pull the flue gas pipe up until the horizontal line.
6. Close the clicker.

Fig.111 Re-assembling the flue gas pipe



7. Mount the bracket with the ignition / ionisation transformer.
   Tightening torque: 2 N·m ⊕ **PZ2**
8. Connect the electrical connection to the return temperature sensor.
9. Connect the electrical connection to the heat exchanger temperature sensor.
10. Place the flue gas temperature sensor.

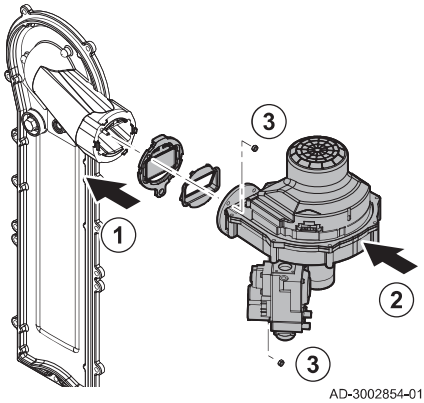
7.6.6 Assembly after maintenance

■ Mounting the fan and gas control valve

For this task, you will need the following tools:

⬡ Torque wrench **8**

Fig.112 Mounting the fan and gas control valve



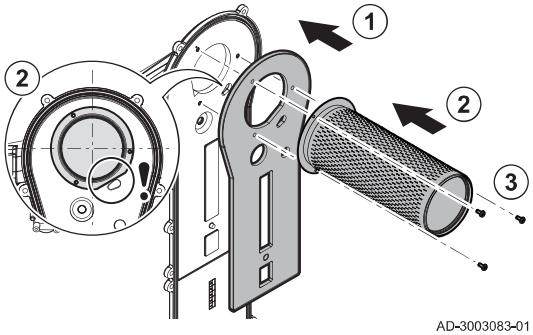
1. Place the non-return valve.
2. Mount the assembly.
3. Tighten the nuts on the fan output.
   Tightening torque: 3.8 N·m ⬡ **8**

■ Mounting the burner

For this task, you will need the following tools:

⊕ Torque cross slot screwdriver **PH2**

Fig.113 Mounting the burner



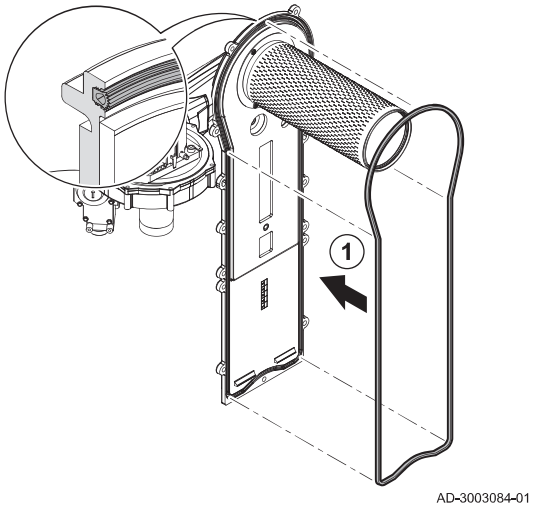
1. Place the new insulation gasket on the front plate.
2. Mount the burner with the flat side to the bottom right.
3. Tighten the screws on the burner.
   Tightening torque: 2 N·m ⊕ **PH2**

■ Mounting the front plate unit

For this task, you will need the following tools:

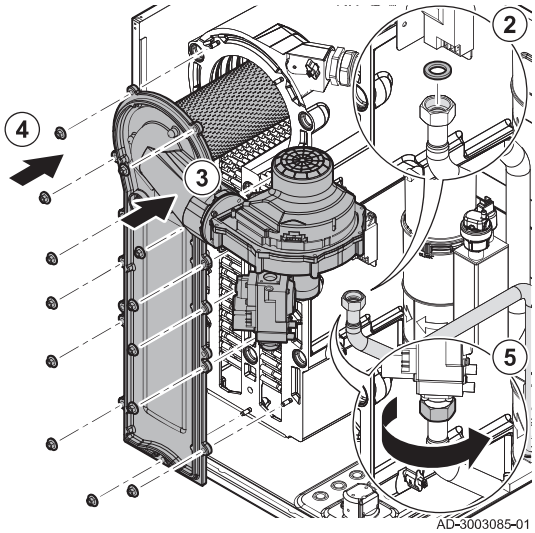
⬡ Torque wrench **10**
⬡ Torque wrench **30** or **36**
⊕ Torque cross slot screwdriver **PH2**

Fig.114 Mounting the gasket



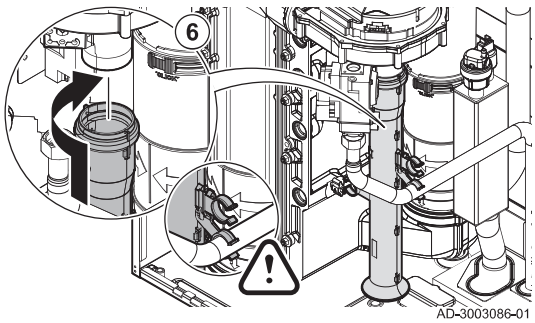
1. Place the new gasket in the front plate.

Fig.115 Mounting the front plate



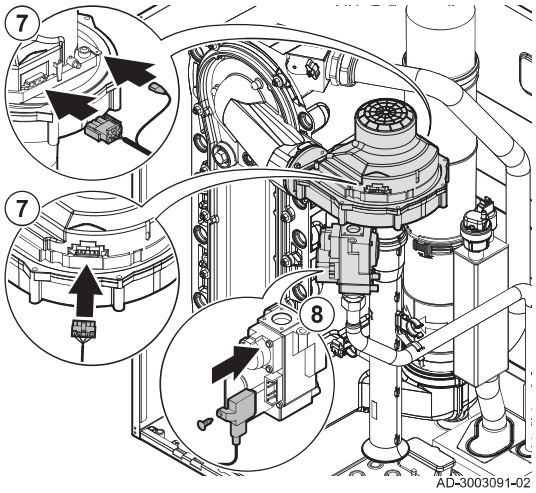
2. Place the new gasket in the gas pipe.
3. Mount the front plate unit.
4. Tighten the nuts on the front plate unit.
   Tightening torque: 10 N·m ⬡ **10**
5. Tighten the nut under the gas control valve.
   Tightening torque: 27.5 N·m ⬡ **30** or **36**

Fig.116 Mounting the air inlet silencer



6. Mount the air inlet silencer to the venturi.

Fig.117 Fitting the electrical connections



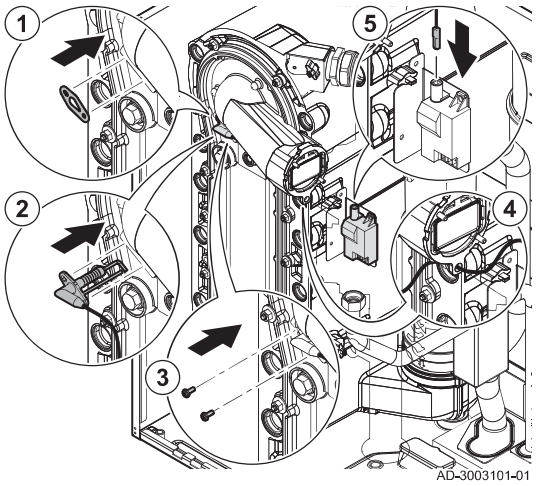
7. Connect the electrical connections to the fan.
8. Connect the electrical connection to the gas control valve.
   Tightening torque: 1 N·m ⊕ **PH2**

■ Mounting the ionisation/ignition electrode

For this task, you will need the following tools:

⊕ Torque cross slot screwdriver **PH2**

Fig.118 Mounting the electrode



1. Place the new gasket.
2. Mount the new electrode.
3. Tighten the screws on the electrode.
   Tightening torque: 2 N·m ⊕ **PH2**
4. Pass the cable through the hole in the gasket.
5. Connect the plug of the electrode to the ignition transformer.

7.7 Finalising work

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

Danger
Leakage
Risk of poisoning, explosion and material damage.
- Always replace all gaskets on the parts removed.
- Make sure that all gaskets have been positioned properly.
- Check the entire system for leaks after maintenance and servicing work.

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.

7.8 Disposal and recycling

Fig.119


MW-3000179-03

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

7.8.1 Removal

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.

8 Troubleshooting

8.1 Error codes

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

Tab.39 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.

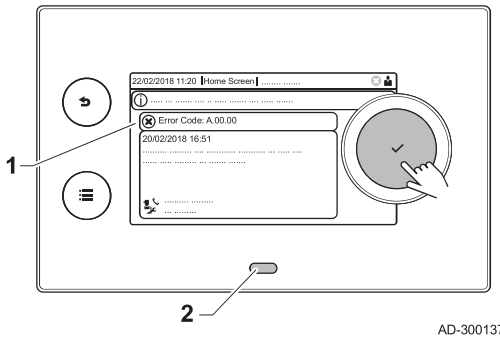
The meaning of the code can be found in the various error code tables.

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

8.1.1 Display of error codes

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

Fig.120 Error code display on HMI Advanced



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.

8.1.2 Warning

Tab.40 Warning codes

Code	Display text	Description	Solution
A.00.30	TSolar Missing	Solar temperature sensor was expected but not detected	-
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.00.41	WaterPressureClosed	Water pressure sensor is either shorted or measures a pressure above range	-
A.00.42	WaterPressureMissing	Water pressure sensor was expected but not detected	Water pressure sensor not detected • Water pressure sensor is not connected: connect the sensor • Water pressure sensor is not connected correctly: connect the sensor correctly
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.

Code	Display text	Description	Solution
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
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.02.48	Funct Gr Conf Fault	Function Group Configuration Fault	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

8.1.3 Blocking

Tab.41 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

Code	Display text	Description	Solution
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
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

Code	Display text	Description	Solution
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.
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.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.02.09	Partial block	Partial blocking of the device recognized	Blocking input active or frost protection active: • External cause: remove external cause • Wrong parameter set: check the parameters • Bad connection: check the connection

Code	Display text	Description	Solution
H.02.10	Full Block	Full blocking of the device recognized	Blocking input is active (without frost protection): • External cause: remove external cause • Wrong parameter set: check the parameters • Bad connection: check the connection
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.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	• When the device is switched on or off, an entry is made in the error memory
H.03.254	Unknown	Unknown Error	-

8.1.4 Locking

Tab.42 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

Code	Display text	Description	Solution
E.00.07	dTReturn Too High	Return temperature difference is too large	Difference between the flow and return temperatures too great: • No circulation: - Vent the central heating system to remove air - Check the water pressure - If present: check the boiler type parameter setting - Check the circulation (direction, pump, valves) - Check that the heating pump is operating correctly - Check the cleanliness of the heat exchanger • Sensor not connected or incorrectly connected: - Check that the sensors are operating correctly - Check that the sensor has been fitted properly • Faulty sensor: replace the sensor if necessary
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.
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.

Code	Display text	Description	Solution
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
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.

Code	Display text	Description	Solution
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
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

Code	Display text	Description	Solution
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
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.

8.2 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.

8.2.1 Reading out and clearing the error history

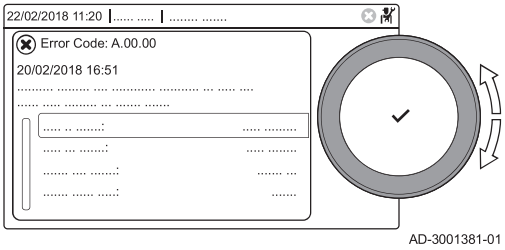
You can read out the errors on the control panel. The error history can also be cleared.

▶▶ ≡ > **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.

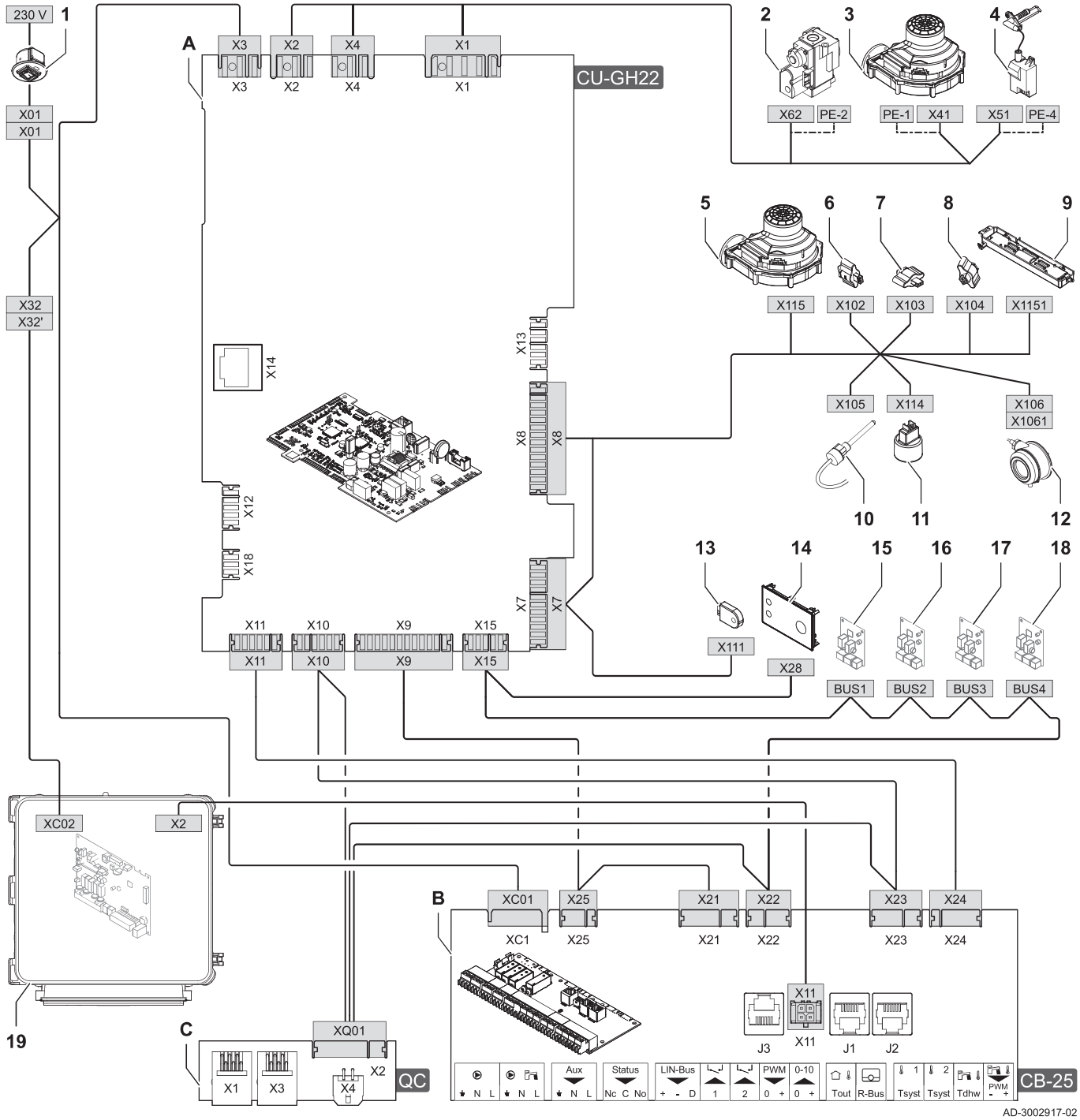
Fig.121 Error details



9 Technical specifications

9.1 Electrical diagram

Fig.122 Electrical diagram



A Control unit - CU-GH22
B Connection board - CB-25
C Quick connection board - Quick connect
1 On / off switch
2 Gas control valve
3 Fan power supply
4 Ignition transformer power supply
5 Fan PWM signal
6 Return temperature sensor
7 Heat exchanger temperature sensor
8 Flow temperature sensor
9 Interior light
10 Flue gas temperature sensor
11 Water pressure sensor
12 Air pressure differential switch (optional)
13 Configuration storage unit (CSU)
14 Control panel (HMI)
15 CAN connection for PCB
16 CAN connection for PCB
17 CAN connection for PCB
18 CAN connection for PCB
19 Expansion box

10 Spare parts

10.1 General

Only replace defective or worn parts with original or recommended parts.

Important
When ordering a part, you must state the part number that appears in the list beside the position number of the required part.

11 Appendix

11.1 Settings explanation

11.1.1 Controls platform - Parameters

Tab.43 Parameter list

Code	Display text	Explanation
AP003	Flue valve wait time	Waiting time (in seconds) before the appliance starts. During this time the flue gas valve is opened.
AP004	Hydr valve wait time	Parameter to set the waiting time before the hydraulic valve will be openend before the pump starts operating.
AP008	Release wait time	Parameter to set the waiting time before starting the appliance. When the release contact is closed within the waiting time, the appliance will start directly. When the release contact is not closed within this time, the appliance will be blocked for 10 minutes.
AP013	Release function	Sets the function of the release input contact. The appliance will act according the selected function, when the contact of the input is closed or opened (this can be configured with AP018)
AP018	Sets release input	Sets the release input contact when it is not activated (= normally) open or closed.
AP036	Function sensor 1	Sets the function of the input sensor 1.
AP052	Water press range	Parameter to set the working range for the water pressure sensor.
AP056	Outdoor sensor	Type of outdoor sensor that is connected to the appliance.
AP061	Max corr system sens	Sets the maximum delta for the system temperature correction. When a system sensor is connected, this value will limit the maximum correction on the flow temperature setpoint.
AP062	P-factor system sens	Sets the P-factor of the PID controller for the system temperature correction. It will modify the rate of increasing or decreasing the system sensor temperature correction. The delta of the setpoint to the system sensor value is multiplied by this parameter every second.
AP073	Summer Winter	Threshold for the outdoor temperature. When the outdoor temperature is above this threshold, the appliance is in summer mode and will not start for central heating. When the outdoor temperature is below this temperature, the appliance is in winter mode.
AP074	Force summer mode	Enable (1) or disable (0) summer mode of the appliance. Enabling this function will stop the central heating mode. The domestic hot water mode will be maintained. When disabled, summer mode can be activated by threshold AP073.
AP075	Season cross-over	Temperature range for the switch between summer and winter mode for cooling. This results in an instantaneous switch to winter and a slower switch to summer. A low value will result in a quicker switch to summer mode.
AP079	Building Inertia	Thermal heat absorption and discharge time (= inertia) of a building. The inertia depends on the building isolation. 0 = 10 hours for bad isolation. 3 = 22 hours for standard isolation. 10 = 50 hours for very good isolation. This parameter is used for outdoor temperature control and affects the switch-over between summer and winter mode.

Code	Display text	Explanation
AP080	Frost min out temp	Minimum outdoor temperature. When the outdoor temperature is below this temperature, the frost protection mode for the appliance is activated.
AP082	Enable daylight save	Enable (1) or disable (0) the daylight saving time setting.
AP083	Enable master func	Enable (1) or disable (0) the master functionality on the S-BUS of this appliance. If multiple appliances in the cascade have this parameter, they all will be reset to 0 (No) automatically.
AP089	Installer name	Name of the service company.
AP090	Installer phone	Phone number of the service company.
AP091	Outdoor sens source	Type of connection for the outdoor sensor.
AP107	Color display Mk2	Colour of the display.
AP108	Outdoor sens enabled	Detected type of connection for the outdoor sensor. You cannot set this parameter.
AP111	CAN line length	Cable length for the S-BUS. Select the value that is equal to or larger than the actual cable length.
AP112	CAN line length	Cable length for the S-BUS. Select the value that is equal to or larger than the actual cable length.
CP000 CP001 CP002 CP003 CP004	MaxZoneTFlowSetpoint	Maximum flow temperature of the central heating water for a zone.
CP010 CP011 CP012 CP013 CP014	Tflow setpoint zone	Desired flow temperature of the central heating water for a zone if there is no room unit and no outdoor sensor is connected to the appliance.
CP020 CP021 CP022 CP023 CP024	Zone Function	The function of a zone. The selected function can have several default settings.
CP030 CP031 CP032 CP033 CP034	Bandwidth mix valve	Change the temperature band width for the mixing valve of a zone in which modulation takes place. Increase this value if the valve is rapid; reduce it if the valve is slow. If the zone does not have a mixing valve this parameter will be ignored.
CP040 CP041 CP042 CP043 CP044	Postrun zone pump	Maximum over run time of the zone pump after the heat demand has stopped. A longer over run time will bring more of the remaining heat in the device into the system and can save energy consumption.
CP050 CP051 CP052 CP053 CP054	Mixing Valve shift	Minimum difference between the water temperature at the appliance and the temperature for the mixing zone. The lower this value the more often the appliance will start.
CP060 CP061 CP062 CP063 CP064	Room T holiday	Desired room temperature for holiday periods.
CP070 CP071 CP072 CP073 CP074	MaxReducedRoomT.Lim	Threshold room temperature. When the room temperature in the zone is below this temperature, the appliance will operate in comfort mode. Otherwise the appliance will operate in reduced mode.

Code	Display text	Explanation
CP080 CP081 CP082 CP083 CP084 CP085	User T.Room Activity	Desired room temperatures of the user activities for central heating in a zone.
CP086 CP087 CP088 CP089 CP090 CP091	User T.Room Activity	Desired room temperatures of the user activities for central heating in a zone.
CP092 CP093 CP094 CP095 CP096 CP097	User T.Room Activity	Desired room temperatures of the user activities for central heating in a zone.
CP098 CP099 CP100 CP101 CP102 CP103	User T.Room Activity	Desired room temperatures of the user activities for central heating in a zone.
CP104 CP105 CP106 CP107 CP108 CP109	User T.Room Activity	Desired room temperatures of the user activities for central heating in a zone.
CP130	T.OutdoorToZone	Type of outdoor temperature sensor for a zone. You cannot set this parameter.
CP140 CP141 CP142 CP143 CP144 CP145	RoomCoolTempSetpoint	Desired room temperatures of the user activities for central cooling in a zone.
CP146 CP147 CP148 CP149 CP150 CP151	RoomCoolTempSetpoint	Desired room temperatures of the user activities for central cooling in a zone.
CP152 CP153 CP154 CP155 CP156 CP157	RoomCoolTempSetpoint	Desired room temperatures of the user activities for central cooling in a zone.
CP158 CP159 CP160 CP161 CP162 CP163	RoomCoolTempSetpoint	Desired room temperatures of the user activities for central cooling in a zone.
CP164 CP165 CP166 CP167 CP168 CP169	RoomCoolTempSetpoint	Desired room temperatures of the user activities for central cooling in a zone.

Code	Display text	Explanation
CP200 CP201 CP202 CP203 CP204	Manu ZoneRoomTempSet	Desired room temperature when the zone is in manual mode.
CP210 CP211 CP212 CP213 CP214	Zone HCZP Comfort	Base point of the heating curve for this zone in comfort mode. This temperature is constant in the heating curve if the gradient is zero.
CP220 CP221 CP222 CP223 CP224	Zone HCZP Reduced	Base point of the heating curve for this zone in reduced mode. This temperature is constant in the heating curve if the gradient is zero.
CP230 CP231 CP232 CP233 CP234	Zone Heating Curve	Gradient of the heating curve for this zone. The higher this value the faster the desired temperature will be reached.
CP240 CP241 CP242 CP243 CP244	ZoneRoomUnitInfl	Influence of the room thermostat on the desired temperature for this zone. 0 = No influence (with a fire place in the room or the sun is shining directly on the room sensor). 1 = Slight influence 3 = Average influence (recommended) 10 = Room thermostat controls the desired temperature completely.
CP250	Calibration sensor	Sets the value to adjust the measured room temperature.
CP270 CP271 CP272 CP273 CP274	Floor cool setpoint	Desired flow temperature in cooling mode for the mixing zone.
CP280 CP281 CP282 CP283 CP284	Fan cool setpoint	Desired flow temperature in cooling mode for the fan convector.
CP290 CP291 CP292 CP293 CP294	ConfigZonePumpOut	Parameter to select the pump function for this zone.
CP320 CP321 CP322 CP323 CP324	OperatingZoneMode	Operating mode for the zone.
CP330 CP331 CP332 CP333 CP334	Opening Valve Time	The time required by the mixing valve to open completely. When a new heat demand is initiated, the appliance will only start up after this time.
CP340 CP341 CP342 CP343 CP344	TypeReducedNightMode	Appliance behaviour during reduced mode for zones without a room thermostat. When the room temperature is lower than the desired temperature: the reduced water temperature is maintained during reduced periods. The zone pump runs constantly. When the room temperature is higher than the desired temperature: heating is shut down during reduced periods. When the frost protection mode is active, the reduced water temperature is maintained during reduced periods. This parameter has no influence in zones with a room thermostat.

Code	Display text	Explanation
CP350 CP351 CP352 CP353 CP354	ComfortZoneDHWtemp	Desired domestic hot water temperature for comfort mode.
CP360 CP361 CP362 CP363 CP364	EcoZoneDHWtemp.	Desired domestic hot water temperature for eco mode.
CP370 CP371 CP372 CP373 CP374	Holiday ZoneDHWtemp	Desired domestic hot water temperature during holiday periods.
CP380 CP381 CP382 CP383 CP384	Antileg ZoneDHWtemp	Desired temperature for the anti-legionella program in the domestic hot water tank.
CP390 CP391 CP392 CP393 CP394	Start Antileg	The starting time of the anti-legionella program after 00:00.
CP400 CP401 CP402 CP403 CP404	Zone Dhw antileg.	Duration of the anti-legionella program.
CP420 CP421 CP422 CP423 CP424	Min temp DHW tank	Minimum temperature of the domestic hot water tank. When the temperature is below this temperature the tank will be loaded.
CP430 CP431 CP432 CP433 CP434	Optimise DHW Zone	Optimisation of loading the domestic hot water tank. The loading starts when the boiler flow temperature or system temperature is 3°C higher than the domestic hot water tank flow temperature.
CP440 CP441 CP442 CP443 CP444	Release DHW zone	Prevents cooling of the water in the calorifier tank and starts the domestic hot water pump when the boiler temperature or system temperature is 5°C higher than the desired domestic hot water flow temperature.
CP450	Pump type	Selects which pump type is connected to the zone.
CP460 CP461 CP462 CP463 CP464	DHW Zone Priority	Priority of the domestic hot water production. Total (0) DHW has total priority over pool heating.
CP470 CP471 CP472 CP473 CP474	Zone screed drying	Number of days for the screed drying program. This program is used to force a constant flow temperature to accelerate screed drying at underfloor heating. When the floor drying program is active in a zone, all other zones (also domestic hot water) are shut down.
CP480 CP481 CP482 CP483 CP484	ScreedStartTemp	Start temperature for the screed drying program. The settings of these temperatures must follow the screed-layer's recommendations.

Code	Display text	Explanation
CP490 CP491 CP492 CP493 CP494	ScreedStopTemp	End temperature for the screed drying program.
CP500 CP501 CP502 CP503 CP504	Tflow Sensor Enable	Enable(1) or disable (0) the flow temperature sensor in the zone.
CP510 CP511 CP512 CP513 CP514	Temporary Room Setp	Desired room temperature for this zone during a short temperature change.
CP520 CP521 CP522 CP523 CP524	Zone Power setpoint	Desired power for the zone (in a percentage of the maximum power) during heat demand.
CP530 CP531 CP532 CP533 CP534	Zone PWM Pump speed	Pump speed per zone (in percentage of the maximum pump speed) for a pulse with modulating (PWM) pump.
CP540 CP541 CP542 CP543 CP544	Zone TSwimmPool setp	Desired temperature for the swimming pool function.
CP550 CP551 CP552 CP553 CP554	Zone, fire place	Enable (1) or disable (0) the fire place mode. When enabled the temperature of the central heating water is maintained at the current level.
CP560 CP561 CP562 CP563 CP564	ZoneConfigDHWAntileg	Frequency of the anti-legionella program for this zone. Advise: Disable (0) in holiday situations. Weekly (1) for low water volume domestic hot water systems. Daily (2) for large water volume domestic hot water systems.
CP570 CP571 CP572 CP573 CP574	ZoneTimeProg Select	Select and activate the heating or cooling schedule.
CP600 CP601 CP602 CP603 CP604	ProcessHeat Spt zone	Desired temperature for heating the zone, when process heat is active.
CP610 CP611 CP612 CP613 CP614	Hys PH on per zone	Temperature to activate the switch delay for process heat in the zone.
CP620 CP621 CP622 CP623 CP624	Hys PH off per zone	Temperature to deactivate the switch delay for process heat in the zone.

Code	Display text	Explanation
CP630 CP631 CP632 CP633 CP634	StartdayAntileg zone	Starting day for the domestic hot water anti-legionella program.
CP640 CP641 CP642 CP643 CP644	OTH LogicLev contact	Heating behaviour for the zone when an on/off controller is used. If the contacts of the controller are normally closed (1): Contact closed: Start heating Contact open: Stop heating If the contacts of the controller are normally open (0): Contact closed: Stop heating Contact open: Start heating.
CP650 CP651 CP652 CP653 CP654	Cool stop Room T.	Minimum temperature for the zone. If the appliance is in cooling mode and the measured room temperature is lower than the minimum temperature, the appliance will heat the zone comfort mode. Otherwise the appliance will put the zone in reduced mode.
CP660 CP661 CP662 CP663 CP664	Icon display zone	Icon for the zone at the HMI and the thermostat.
CP670 CP671 CP672 CP673 CP674	ConfPairing RU Zone	Serial number of the thermostat that provides the measured room temperature for the zone.
CP680 CP681 CP682 CP683 CP684	ConfPairing RU Zone	R-Bus channel of the room unit for the zone.
CP690 CP691 CP692 CP693 CP694	RevContactOTH cool	Cooling behaviour for the zone when an on/off controller is used. Yes (1) opposite to the heating behaviour in CP640. No (0) same as the heating behaviour in CP640.
CP700 CP701 CP702 CP703 CP704	DHW Cal Offset zone	Parameter to set the added value for domestic hot water temperature, to end the heat demand.
CP710 CP711 CP712 CP713 CP714	Zone IncTFlowStp DHW	Increase of the flow temperature above the required tank temperature for the zone.
CP720 CP721 CP722 CP723 CP724	Zone, IncFT ProcHeat	Increase the desired temperature for the DHW tank in this zone.
CP730 CP731 CP732 CP733 CP734	Zone Heat up speed	Response rate of the appliance to a heat demand. This setting affects the preheating and the control response. Use Slowest (1) for underfloor heating. Use Fastest (5) for fan heating.
CP740 CP741 CP742 CP743 CP744	Zone cool down speed	Indication for the time the building cools, which depends on the building insulation. The better the insulation, the slower the home cools down. This parameter affects the time between turning off and turning on of the appliance.

Code	Display text	Explanation
CP750 CP751 CP752 CP753 CP754	MaxZone Preheat time	Maximum preheat time for the zone.
CP760 CP761 CP762 CP763 CP764	Zone DHW TAS enable	Enable (1) or disable (0) the Titan Active System function on the DHW tank. Enable if the tank is equipped with this anode.
CP770 CP771 CP772 CP773 CP774	Zone Buffered	Specify a zone after a buffer tank. For a standalone appliance without the use of zones always select No (0). The parameter is taken into account only if a buffer tank is configured in the system.
CP780 CP781 CP782 CP783 CP784	Control strategy	Strategy for the flow temperature calculation.
CP850	Hydronic balancing	Selects if hydronic balancing operation is possible; Yes (1) or No (0). If this mode is possible, the hydronic balancing of a zone can be activated via an app. The HMI of the device can now display which zone is in the hydronic balancing mode.
DP003	Abs max fan DHW	Maximum fan speed for domestic hot water mode. This fan speed can be used for slightly increase power or compensate for a longer flue length.
DP005	Calorifier Tf offset	Added value for the calculation of the flow temperature. The added temperature is needed to reach the desired water temperature in the domestic hot water tank. The higher this value the faster the desired temperature of the domestic hot water tank will be reached.
DP006	Hyst calorifier	Offset temperature which is subtracted from the desired calculated flow temperature to create a threshold value. The appliance will load the hot water tank when the tank temperature drops below this threshold. The higher this value the less often the appliance will load the tank.
DP010	Hysteresis DHW	Parameter to set the switch delay for the generator temperature, before the domestic hot water production will start.
DP011	Stop offset DHW	Parameter to set the added value for domestic hot water temperature to define when the generator will stop producing domestic hot water.
DP020	Postrun DHW pump/3wv	Over run time of the DHW pump after the appliance stops loading the DHW tank. This is meant to avoid water boiling in the appliance.
DP024	Mix anti-leg mode	Selects the DHW mixing pump mode during the anti-legionella process.
DP025	DHW mixing pump	Enable (1) or disable (0) the DHW mixing pump.
DP026	Delta DHW tank temp	Sets the maximum temperature difference between the top and bottom of the DHW tank, before starting the DHW mixing pump.
DP034	DhwCalorifierOffset	Value to be added to the desired temperature for the DHW tank. The appliance stops loading the tank when the total temperature is reached.
DP035	Start pump DHW calo	Number of starts from the pump for domestic hot water tank.
DP044	Min DHW tank temp	Sets the minimum bottom temperature of the DHW tank, before starting the DHW mixing pump.
DP045	Mix pump hysteresis	Sets the temperature threshold conditioning for the DHW mixing pump to switch from ON to OFF.
DP049	DHW tank mixing	Enable (1) or disable (0) the domestical hot water tank mixing.
DP050	Circulation mode	Selects the functioning mode of the DHW circulation pump.
DP052	Circ pump on time	Sets a fixed operating time for the cyclic ON time for the DHW circulation pump. When set to 0, the circulation pump is always in ON mode.
DP053	Circ pump off time	Sets the fixed non-operating time for the cyclic OFF time for the DHW circulation pump. When set to 0, the circulation pump is always in ON mode.
DP054	Circ pump anti leg	Enable (1) or disable (0) the anti legionella function for the DHW circulation pump.

Code	Display text	Explanation
DP057	Circulation Toffset	Sets the DHW circulation water offset temperature. This value is substracted from the DHW tank top sensor temperature to obtain the circulation setpoint value.
DP060	DHW timeprog select	Select and activate the heating or cooling schedule for domestic hot water.
DP070	DHW comfort setpoint	Desired domestic hot water temperature for comfort mode.
DP080	DHW eco setpoint	Desired domestic hot water temperature for the eco friendly mode.
DP140	DHW load type	Type of domestic hot water producing appliance.
DP160	DHW AntiLeg Setpoint	Desired domestic hot water temperature for the anti-legionella program.
DP170	Start time holiday	Starting date of the holiday period for the domestic hot water circuit.
DP180	End time holiday	End date of the holiday period for the domestic hot water circuit.
DP190	End change mode	Parameter to set the end time for temporary comfort mode. The zone will produce domestic hot water until this time. After this, the zone switches back to the mode before the temporary mode.
DP200	DHW mode	Operational mode for the domestic hot water circuit.
DP336	DHW pump hysteresis	Sets the temperature treshold conditioning for the DHW circulation pump to switch from ON to OFF.
DP337	DHW holiday setpoint	Desired domestic hot water temperature during Holiday or Frostprotection period.
DP403	Time prog Monday	Sets the time program interval for the DHW circulation pump on Monday. The setting starts at 00:00 am and works with a 10 minutes multiplier. So value "15" means 15 x10 = 150 minutes devided by 60 = 2 hours and 30 min; 02.30.
DP404	Time prog Tuesday	Sets the time program interval for the DHW circulation pump on Tuesday. The setting starts at 00:00 am and works with a 10 minutes multiplier. So value "15" means 15 x10 = 150 minutes devided by 60 = 2 hours and 30 min; 02.30.
DP405	Time prog Wednesday	Sets the program time interval for the DHW circulation pump on Wednesday. The setting starts at 00:00 am and works with a 10 minutes multiplier. So value "15" means 15 x10 = 150 minutes devided by 60 = 2 hours and 30 min; 02.30.
DP406	Time prog Thursday	Sets the time program interval for the DHW circulation pump on Thursday. The setting starts at 00:00 am and works with a 10 minutes multiplier. So value "15" means 15 x10 = 150 minutes devided by 60 = 2 hours and 30 min; 02.30.
DP407	Time prog Friday	Sets the time program interval for the DHW circulation pump on Friday. The setting starts at 00:00 am and works with a 10 minutes multiplier. So value "15" means 15 x10 = 150 minutes devided by 60 = 2 hours and 30 min; 02.30.
DP408	Time prog Saturday	Sets the time program interval for the DHW circulation pump on Saturday. The setting starts at 00:00 am and works with a 10 minutes multiplier. So value "15" means 15 x10 = 150 minutes devided by 60 = 2 hours and 30 min; 02.30.
DP409	Time prog Sunday	Sets the time program interval for the DHW circulation pump on Sunday. The setting starts at 00:00 am and works with a 10 minutes multiplier. So value "15" means 15 x10 = 150 minutes devided by 60 = 2 hours and 30 min; 02.30.
DP410	DHW anti-leg runtime	Sets the duration of the DHW anti-legionella program.
DP430	Start day anti-leg	Sets the starting day for the DHW anti-legionella program.
DP440	Start time anti-leg	Sets the starting time for the DHW anti-legionella program.
DP450	DHW circulation	Enable (1) or disable (0) the DHW circulation zone.
DP452	DHW priority	Selects the DHW preparation priority. When both CH and DHW demand heat, the "DHW priority" function ensures that during DHW charging the boilers capacity is used primarily for DHW. CH will then only operat when there is enough capicity.
DP455	DHW charge pump post	Sets the post operating time of the DHW charge pump.
DP473	Circulation Tsensor	Selects if a DHW circulation temperature sensor is connected; Yes (1) or No (0).
EP014	SCB func 10V PWMin	Configuration of the 0-10 volt input. Set it to control the appliance supply temperature or the appliance output power.
EP018	Status relay func.	Configure the function of the status contacts.
EP030	Min Setp Temp 0-10V	Minimum desired temperature for 0 - 10 volts contact.
EP031	Max Setp Temp 0-10V	Maximum flow temperature for a 0 - 10 volts contact. The higher the voltage the hotter the maximum flow temperature.
EP032	Min Setp Power 0-10V	Minimum power output for a 0 - 10 volts contact. The higher the voltage the larger the minimum power output.

Code	Display text	Explanation
EP033	Max Setp Power 0-10V	Maximum power output for a 0 - 10 volts contact. The higher the voltage the larger the maximum power output.
EP034	Min Setp Volt 0-10V	Minimum voltage level within a 0 - 10 volts range.
EP035	Max Setp Volt 0-10V	Maximum voltage level within a 0 - 10 volts range.
GP007	Fan RPM Max CH	Maximum fan speed for central heating.
GP008	Fan RPM Min	Minimum fan speed for central heating and domestic hot water.
GP009	Fan RPM Start	Fan speed at the start of the appliance.
GP010	GPS Check	Enable the usage of an external gas pressure switch. Enabling this function (Yes) the pressure switch will check the gas pressure at each start. When gas pressure is insufficient, the appliance will not start. This option can be used only if a GPS connection is available on the standard or optional PCB.
GP017	Max power	Maximum power output of the appliance. The appliance can produce this power when the parameters are set at the absolute maximum values.
GP019	Pre Purge Time	Parameter to set the fan operating time before the generator starts.
GP021	Temp diff Modulating	Maximum temperature difference between in and output of the heat exchanger. Once this threshold will be reached the appliance is triggered to modulate back to protect the heat exchanger against too high dT's.
GP022	Tfa Filter Tau	Parameter to set a internal calculation value. A higher value decreases the effect of a rising flow temperature on the average system temperature.
GP030	Flue Gas Temp Max	Parameter to set the maximum flue gas temperature before the appliance will go in blocking mode.
GP042	Fan RPM Max	Sets the maximum fan speed.
GP044	FlueGas pow lim temp	Parameter to set the flue gas temperature before the appliance starts operating on limited power.
GP050	Power min	Minimum power output of the device. This value is used for power calculation and can be adjusted to correct the calculation.
GP082	Chimney over DHW	Parameter to enable (1) or disable (0) the swichting to domestic hot water production during the chimney sweep mode when a domestic hot water flow is detected.
GP094	Chimney sweep power	Sets the custom power setpoint for the chimney sweep mode
PP007	Min anti-cycle time	Parameter to set the minimum anti-short cycle time after a generator stop.
PP012	Stabilization time	Parameter to set the time for which the appliance will be active at part load after a burner start. This is used to stabilise the central heating system.
PP014	ChPumpDTReduction	Reduction of the temperature difference between flow and return temperature to prevent the appliance will have a controlled stop. A high value will result in a reduction of flow temperature, which is achieved by an increased pump speed.
PP017	ChPumpSpeedMaxFactor	Maximum pump speed at minimal load of the appliance. The maximum pump speed increases when the load increases.
PP023	CH Hysteresis	Increase of temperature to define the activation temperature for central heating. This value is subtracted from the central heating desired temperature. Be aware that a fixed temperature value (5°C) is added to this desired temperature, so the value set by this parameter has to be more than 5. A high value will result in less starts of the appliance.
ZP000	Screed drying time 1	Sets the number of days for the first step of screed drying. This program is used to force a constant flow temperature to accelerate screed drying at underfloor heating.
ZP010	Screed start temp 1	Sets the start temperature for the first step of screed drying. The settings of these temperatures must follow the screed-layer's recommendations.
ZP020	Screed end temp 1	Sets the end temperature for the first step of screed drying.
ZP030	Screed drying time 2	Sets the number of days for the second step of screed drying. This program is used to force a constant flow temperature to accelerate screed drying at underfloor heating.
ZP040	Screed start temp 2	Sets the start temperature for the second step of screed drying. The settings of these temperatures must follow the screed-layer's recommendations.
ZP050	Screed end temp 2	Sets the end temperature for the second step of screed drying.
ZP060	Screed drying time 3	Sets the number of days for the third step of screed drying. This program is used to force a constant flow temperature to accelerate screed drying at underfloor heating.

Code	Display text	Explanation
ZP070	Screed start temp 3	Sets the start temperature for the third step of screed drying. The settings of these temperatures must follow the screed-layer's recommendations.
ZP080	Screed end temp 3	Sets the end temperature for the third step of screed drying.
ZP090	Screed drying enable	Enable (1) or disable (0) the screed drying program.

11.1.2 Controls platform - Counters

Tab.44 Counters list

Code	Display text	Explanation
AC001	Hours on mains	This counter displays the number of hours that the appliance has been on mains power.
AC002	Service run hours	Number of energy producing hours since last service.
AC003	Hours since service	Number of hours on mains power supply since last service.
AC004	Starts since service	Number of starts since last service.
AC005	CH consumed	This counter displays the total energy (kWh) that the appliance has used for central heating.
AC006	DHW consumed	This counter displays the total energy (kWh) that the appliance has used for domestic hot water production.
AC007	Cooling consumed	This counter displays the total energy (kWh) that the appliance has used for cooling.
AC026	Pump running hours	Total running hours of the pump.
AC027	Pump starts	This counter displays the total number of pump starts.
CC001	Zone Pump Run Hours	This counter displays the total operating hours of the zone pump.
CC010	Zone Nbr Pump Starts	This counter displays the total number of starts for the zone pump.
DC001	DhwTotalPower Cons	Counter displaying the total hours the three way valve has been in domestic hot water position.
DC002	DHW valve cycles	Number of times the three way valve for domestic hot water has been switched.
DC003	Hrs DHW 3wv	Total number of hours the three way valve has been in domestic hot water position.
DC004	DHW starts	Total number of starts for domestic hot water.
DC005	DHW run hours	Total number of hours for producing energy for domestic hot water.
GC007	Failed starts	This counter displays the total number of failed starts.
PC001	ChCtrTotalPowerCons.	This counter displays the appliance power consumption used by central heating.
PC002	Total starts	Total number of starts for central heating and domestic hot water.
PC003	Heat gen run hrs	Total number of hours for producing energy for central heating.
PC004	Burner flame loss	Total amount of flame losses.

11.1.3 Controls platform - Signals

Tab.45 Signals list

Code	Display text	Explanation
AM001	DHW active	This signal indicates if the appliance is currently active for domestic hot water production: On (1) or Off (0). 0 = Off : Off. 1 = On : On.
AM004	Blocking code	This signal indicates the current blocking code.
AM005	Locking code	This signal indicates the current locking code.
AM010	Pump speed	Current pump speed.
AM011	Service required?	Service is required: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.

Code	Display text	Explanation
AM012	Status Appliance	 **See** Status and sub-status, page 56
AM014	Sub status Appliance	 **See** Status and sub-status, page 56
AM015	Pump running?	Pump runs: Active (1) or Inactive (0). 0 = Inactive : Not active. 1 = Active : Active.
AM016	System Flow Temp	Current flow temperature.
AM017	T heat exchanger	This signal indicates the current heat exchanger temperature.
AM018	T return	Current return temperature.
AM019	Water pressure	This signal indicates the current water pressure of the primary circuit.
AM022	On / Off heat demand	Heat demand is active (0). 0 = Off : Off. 1 = On : On.
AM024	Actual rel power	This signal indicates the current relative power (%) produced by the appliance.
AM027	Outdoor temperature	Current outdoor temperature.
AM033	Next Service Ind.	Upcoming indication of service type A, B or C (to be displayed in the future). 0 = None : No service notification. 1 = A : Notification of service type A. 2 = B : Notification of service type B. 3 = C : Notification of service type C. 4 = Custom : A custom service notification.
AM036	Flue gas temperature	This signal indicates the current flue gas temperature.
AM037	3 way valve	Current position of the three way valve. 0 = CH : Central heating. 1 = DHW : Domestic hot water.
AM040	Control temperature	Desired flow temperature.
AM043	Pwr dwn reset needed	Reset is not possible. Wait for 60 minutes or turn the power off and on again. 0 = No : No. 1 = Yes : Yes.
AM044	Nr sensors supported	This signal indicates the total number of current sensors detected.
AM045	Water pressure sens	This signal indicates if a water pressure sensor is connected to the appliance: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
AM046	Internet T.Outdoor	This signal indicates the outdoor temperature received from an internet source.
AM047	Actual power	This signal indicates the current absolute power.
AM055	FlueGas temperature2	This signal indicates the current flue gas outlet temperature measured by sensor 2.
AM091	SeasonMode	This signal indicates the current operating seasonal mode. 0 = Winter : Central heating is active according to heat demand. 1 = Frost protection : Central heating is active to avoid frost in the system, even when there is no heat demand. 2 = Summer neutral band : Temperature settings to form a no switching zone between Summer and Winter. 3 = Summer : Central heating is switched off automatically.
AM100	Progress of status	This signal indicates the time progress of the current status e.g. for a deaeration program and calibration.
AM101	Internal setpoint	This signal indicates the current internal system desired flow temperature.
AM200	Status contact 1	This signal indicates the current status of status contact 1. The meaning is dependant on the function setting (see EP018 or EP019). 0 = Off : Off. 1 = On : On.
AP078	Out sensor detected	Parameter to indicate if an outdoor temperature sensor is connected to the appliance: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.

Code	Display text	Explanation
BM000	Dhw Temperature	This signal indicates the current domestic hot water temperature. This can be the tank temperature or domestic hot water temperature, depending on the loadtype.
BM013	ForceDeaeration	This signal indicates if a forced deaeration program is in operation: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
CM010	Zone 3WV closing	Signal displaying the current water temperature of the solar tank. 0 = No : No. 1 = Yes : Yes.
CM020	Zone 3WV opening	Counter displaying the number of times the 3-way valve for domestic hot water has been switched. 0 = No : No. 1 = Yes : Yes.
CM030	Zone RoomTemperature	This signal indicates the current room temperature for the zone.
CM040	Zone Tflow /DHW temp	This signal indicates the current temperature of the flow water in the zone. In the case of domestic hot water hot water this is the temperature measured inside the hot water tank.
CM050	Status Pump zone	This signal indicates if the zone pump is in operation: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
CM060	ZonePumpSpeed	This signal indicates the current pump speed.
CM070	Zone Tflow Setpoint	This signal indicates the current desired flow temperature for the zone.
CM080	Zone PowMod Setp..	This signal indicates the current power modulation level requested from the system. The device can produce a varying amount power (= modulate) from 100% down to a certain low %, depending on the characteristics of the device.
CM090	Zone Tflow average	
CM100	BitHeatDem Cmdzone	This signal indicates the current operating mode of the zone.
CM110	ZoneTRoomUnit setp	This signal indicates the current desired zone temperature set on the room unit in the zone.
CM120	ZoneCurrentMode	This signal indicates the current operating mode of the zone. 0 = Scheduling : According to the selected heating schedule. 1 = Manual : Manual control. 2 = Off : Frost protection of the heating and / or domestic hot water zone. 3 = Temporary : Short temperature change.
CM130	ZoneCurrent activity	This signal indicates the current activity of the zone. 0 = Off : The domestic hot water temperature will be kept just high enough to avoid frost damage. 1 = Eco : This is the domestic hot water temperature when the hot water production is switched off. 2 = Comfort : This is the domestic hot water temperature when the hot water production is switched on. 3 = Anti legionella : The temperature for domestic hot water will be kept high enough to prevent the development of the legionella bacteria.
CM140	ZoneOTContr present	This signal indicates if there is an Open Therm controller connected to the zone: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
CM150	ZoneState Heatdemand	This signal indicates if there is a heat demand in operation for the zone: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
CM160	Zone Mod HeatDemand	This signal indicates if there is a modulating heat demand in operation for the zone: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
CM170	Zone OTSmartPower	This signal indicates if there is an Open Therm smart power controller connected to the zone: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.

Code	Display text	Explanation
CM180	Zone RU present	This signal indicates if there is a room unit connected to the zone: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
CM190	Zone Troom setpoint	This signal indicates the current desired room temperature for the zone.
CM200	ZoneCurrentHeatMode	This signal indicates the current type of heat requested by the zone. 0 = Standby : In standby mode. 1 = Heating : In operation for heating. 2 = Cooling : In operation for cooling.
CM210	ZoneTout temp	This signal indicates the current outdoor temperature of the zone.
CM220	ZoneTout aver short	This signal indicates the current short time average (2 hours) outdoor temperature of the zone. This value is used to calculate the switch between winter and summer mode.
CM230	ZoneTout aver long	This signal indicates the current long time average (22 hours) outdoor temperature of the zone. This value is used to calculate the switch between wanter and summer mode.
CM240	Zone Tout connected	This signal indicates if there is an outdoor temeprature sensor connected to the zone: Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
CM260	Zone T Room Sensor	This signal indicates the current room temperature of the zone, which is used for the room temperature control (RTC).
CM280	ZoneRTC TcalcRoomStp	This signal indicates the current internal desired room temperature for the zone calculated by the room temperature control (RTC).
CM290	ZoneSecSwimPoolPump	0 = Off : Off. 1 = On : On.
CM300	ZoneElecBackupOutput	0 = Off : Off. 1 = On : On.
DM001	DHW tank temp bottom	This signal indicates the current domestic hot water tank temperature (measured by the bottom sensor).
DM004	DhwFlowTempSetpoint	Desired flow temperature for domestic hot water.
DM005	DhwSolarTankTemp	Current water temperature of the solar tank.
DM007	Error TAS DHW	Counter displaying the number of times the 3-way valve for domestic hot water has been switched. 0 = Off : Off. 1 = On : On.
DM009	Auto/Derog DHWstatus	This signal indicates the current status of the domestic hot water mode. 0 = Scheduling : According to the selected heating schedule. 1 = Manual : Manual control. 2 = Off : Frost protection of the heating and / or domestic hot water zone. 3 = Temporary : Short temperature change.
DM019	DHW activity	This signal indicates the current activity of the domestic hot water mode. 0 = Off : The domestic hot water temperature will be kept just high enough to avoid frost damage. 1 = Eco : This is the domestic hot water temperature when the hot water production is switched off. 2 = Comfort : This is the domestic hot water temperature when the hot water production is switched on. 3 = Anti legionella : The temperature for domestic hot water will be kept high enough to prevent the development of the legionella bacteria.
DM029	DHW setpoint	This signal indicates the current desired domestic hot water temperature.
EM010	Meas 0-10V input SCB	
EM018	Tsetp 0-10V input	
EM021	Power setp 0-10V	

Code	Display text	Explanation
EM022	Type HD 0-10V input	0 = None : 1 = DHW primary : 2 = DHW High : 3 = Process heat : 4 = Screed Drying : 5 = DHW Medium : 6 = DHW Low : 7 = Central Heating : 8 = Cooling : 9 = Electrical active : 10 = Electrical Reactive :
GM000	Burner on/off cond	This signal indicates when the appliance switches on or off, depending on the state of the appliance.
GM001	Actual fan RPM	This signal indicates the current fan speed.
GM002	Fan RPM setpoint	This signal indicates the current desired fan speed.
GM003	Flame detection	This signal indicates when an ionisation current has been detected. 0 = Off : Off. 1 = On : On.
GM004	Gas valve 1	This signal indicates the current status of gas valve 1. 0 = Open : Open 1 = Closed : Closed 2 = Off : Off
GM005	Gas valve 2	This signal indicates the current status of gas valve 2. 0 = Open : Open 1 = Closed : Closed 2 = Off : Off
GM006	GPS status	This signal indicates the current status of the gas pressure switch (GPS). 0 = Open : Open 1 = Closed : Closed 2 = Off : Off
GM007	Ignite	This signal indicates if the appliance is igniting (1) or off (0) 0 = Off : Off. 1 = On : On.
GM008	Actual flame current	This signal indicates the current measured ionisation current.
GM010	Power available	This signal indicates the current available power in % of the maximum power.
GM011	Power setpoint	This signal indicates the current power setpoint in % of the maximum power.
GM012	Release Input	This signal indicates if there is a release signal for the control unit (CU): Yes (1) or No (0). 0 = No : No. 1 = Yes : Yes.
GM013	Blocking Input	Displays the current status of the blocking input. 0 = Open : Open 1 = Closed : Closed 2 = Off : Off
GM015	Vps Switch	This signal indicates the current status of the valve proving system (VPS) switch. 0 = Open : Open 1 = Closed : Closed 2 = Off : Off
GM020	Safety Temperature1	This signal indicates the current safety temperature 1 measured by the safety unit. This can be a different measurement for each appliance. Either flow temperature, return temperature or heat exchanger temperature depending on the implementation of the safety unit.
GM021	Safety Temperature2	This signal indicates the current safety temperature 2 measured by the safety unit. This can be a different measurement for each appliance. Either flow temperature, return temperature or heat exchanger temperature depending on the implementation of the safety unit.
GM022	Release Input	This signal indicates the current status of the release input.

Code	Display text	Explanation
GM025	STB status	This signal indicates the status of the high limit temperature switch (STB). When the switch is open (0) the measured temperature is above a pre-set safety limit. 0 = Open : Open 1 = Closed : Closed 2 = Off : Off
GM027	Flame Test Active	This signal indicates the current status of the flame test. 0 = Inactive : Not active. 1 = Active : Active.
GM028	GVC Mode	This signal indicates the current status of the gas valve control (GVC).
GM029	GVC Input	This signal indicates the current status of the gas valve control (GVC) input. 0 = Normal : The gas valve control (GVC) is in normal mode. 1 = Write : The gas valve control (GVC) is sending data to the controller. 2 = Gas band detection : The gas valve control (GVC) is detecting the gas band. 3 = Calibration : The gas valve control (GVC) is calibrating. 4 = Factory test : The gas valve control (GVC) is in test mode for factory end test. 5 = Ion adjust mode : The gas valve control (GVC) is adjusting the ionisation. 6 = Offset adaption : The gas valve control (GVC) is adapting the offset. 7 = Corr. Comb. slope : The gas valve control (GVC) is is adjusting the lowest ionisation value of the gradient. 8 = Table data handling : The gas valve control (GVC) is processing received data from the controller.
GM030	GVC Output	This signal indicates the current status of the gas valve control output.
GM031	GVC State	This signal indicates the current status of the gas valve control.
GM032	GVC Sub State	This signal indicates the current sub status of the gas valve control.
GM033	GVC Locking Code	This signal indicates that the gas valve control is in locking mode.
GM034	GVC Blocking code	This signal indicates that the gas valve control is in blocking mode.
GM035	GVC Power Output	This signal indicates the current power output (in %) from the gas valve control to the control unit (CU).
GM036	GVC Power Setpoint	This signal indicates the current desired power (in %) from the gas valve control to the control unit (CU).
GM040	Fan PWM signal	This signal indicates the current pulse-width modulation (PWM) signal (in %) to the fan or PWM feedback from the gas valve control (GVC). A PWM signal consists of two main components that define its behavior: a duty cycle and a frequency. By cycling a digital signal off and on at a fast enough rate, and with a certain duty cycle, the output will appear to behave like a constant voltage analog signal.
GM042	Flow Temerature 2	This signal indicates the current secundary flow temperature.
GM043	FlueGas Temperature3	This signal indicates the current safety temperature (TS3) for protecting the heat exchanger.

Code	Display text	Explanation
GM044	ControlledStopReason	This signal indicates the possible causes for a blocking status of the appliance. 0 = None : Normal situation. 1 = CH Blocking : Blocking state for central heating (CH). 2 = DHW Blocking : Blocking state for domestic hot water (DHW). 3 = Wait for burner : Waiting for burner start. 4 = TFlow > absolute max : The flow temperature has exceeded the maximum operating value. 5 = TFlow > start temp. : The flow temperature has exeeded the start temperature. 6 = Theat exch > Tstart : The heat exchanger temperature has exeeded the start temperature 7 = Avg Tflow > Tstart : The average flow temperature has exeeded the start temperature. 8 = TFlow > max setpoint : The flow temperature has exeeded the maximum setpoint. 9 = T difference too big : The difference between flow temperature and return temperature has exeeeded the maximum value 10 = TFlow > stop temp. : The flow temperature has exeeded the stop temperature. 11 = Anti cycle on off HD : Anti-short cycle due to an on/ off heat demand. 12 = Poor combustion : Blocking state due to poor combustion. 13 = Solar T above stop T : The solar temperature has exceeded the maximum value.
NM001	CascSystemTF	This signal indicates the current desired cascade flow temperature.
PM002	CH Setpoint	Desired flow temperature for central heating. This desired temperature is a result of the room temperature control.
PM003	ChTflowAverage	This signal indicates the current average flow temperature used for the low flow algorithm.

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