



Installation and user manual
High-efficiency standing gas boiler

Gas 210 Ace
80 - 120 - 160 - 200

Dear Customer,

Thank you very much for buying this appliance. Please read through the manual carefully before using the product, and keep it in a safe place for later reference. In order to ensure continued safe and efficient operation we recommend that the product is serviced regularly. Our service and customer service organisation can assist with this. We hope you enjoy years of problem-free operation with the product.

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1 Safety

1.1 General safety instructions

1.1.1 For the installer



Danger

If you smell gas:

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



Danger

If you smell flue gases:

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



Caution

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

1.1.2 For the end user



Danger

If you smell gas:

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



Danger

If you smell flue gases:

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



Warning

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



Warning

Do not touch radiators for long periods. Depending on the boiler settings, the temperature of the radiators can rise to over 60°C.



Warning

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



Warning

The use of the boiler and the installation by you as the end-user must be limited to the operations described in this manual. All other actions may only be undertaken by a qualified fitter/engineer.

**Warning**

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

**Caution**

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

**Caution**

Only genuine spare parts may be used.

**Important**

Regularly check for the presence of water and pressure in the heating installation.

1.2 Recommendations

**Danger**

This appliance can be used by children aged eight and above and people with a physical, sensory or mental disability, or with a lack of experience and knowledge, provided they are supervised and instructed in how to use the appliance in a safe manner and understand the associated dangers. Children must not be allowed to play with the appliance. Cleaning and user maintenance should not be carried out by children without adult supervision.

**Warning**

Installation and maintenance of the boiler must be carried out by a qualified installer in accordance with local and national regulations.

**Warning**

The installation and maintenance of the boiler must be undertaken by a qualified installer in accordance with the information in the supplied manual, doing otherwise may result in dangerous situations and/or bodily injury.

**Warning**

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

**Warning**

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

**Warning**

Always disconnect the mains supply and close the main gas tap when working on the boiler.

**Warning**

Check the entire system for leaks after maintenance and servicing work.

**Danger**

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

**Caution**

- Make sure the boiler can be reached at all times.
- The boiler must be installed in a frost-free area.
- If the power cord is permanently connected, you must always install a main bipolar switch with an opening gap of at least 3 mm (BS EN 60335-1).
- Drain the boiler and central heating system if you are not going to use your home for a long time and there is a chance of frost.
- The frost protection does not work if the boiler is out of operation.
- The boiler protection only protects the boiler, not the system.
- Check the system water pressure regularly. If the water pressure is below the recommended pressure, the system must be topped up.

**Important**

Keep this document near to the boiler.



Important

Only remove the casing for maintenance and repair operations. Refit all panels when maintenance work and servicing are complete.



Important

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



Important

Modifications to the boiler require the written approval of **Remeha**.

1.3 Liabilities

1.3.1 Manufacturer's liability

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

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

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

1.3.2 Installer's liability

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

- Read and follow the instructions given in the manuals provided with the appliance.
- Install the appliance in compliance with prevailing legislation and standards.
- Carry out initial commissioning and any checks necessary.
- Explain the installation to the user.
- If maintenance is necessary, warn the user of the obligation to check the appliance and keep it in good working order.
- Give all the instruction manuals to the user.

1.3.3 User's liability

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

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

2 About this manual

2.1 General

This manual is intended for the installer and end user of a Gas 210 Ace boiler.

2.2 Additional documentation

The following documentation is available in addition to this manual:

- Product information
- Service manual
- Water quality instructions

2.3 Symbols used in the manual

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

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

 **Danger of electric shock**
Risk of electric shock that may result in serious personal injury.

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

 **Caution**
Risk of material damage.

 **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:

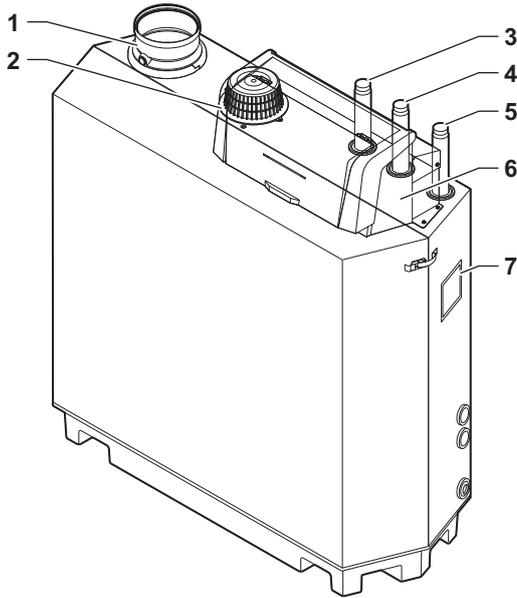
Tab.1 Boiler types

Name	Output ⁽¹⁾	Heat exchanger size
Gas 210 Ace 80	93 kW	3 sections
Gas 210 Ace 120	129 kW	4 sections
Gas 210 Ace 160	179 kW	5 sections
Gas 210 Ace 200	217 kW	6 sections

(1) Nominal output P_{nc} 50/30 °C

3.2 Main components

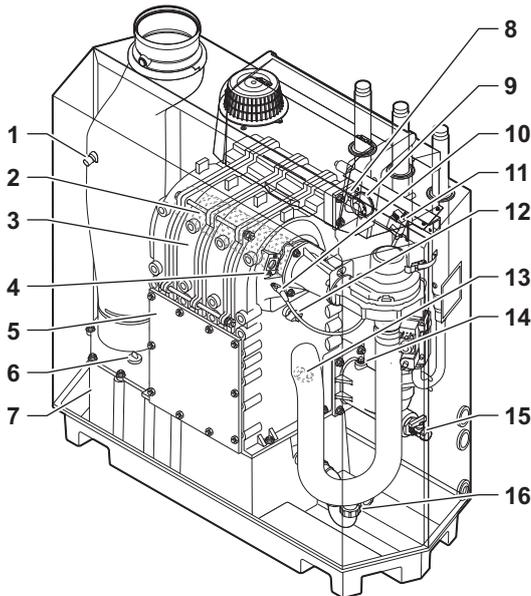
Fig.1 General



AD-3002429-01

- 1 Flue gas outlet connection
- 2 Air inlet connection
- 3 Flow connection
- 4 Return connection
- 5 Gas supply connection
- 6 Control box
- 7 Data plate

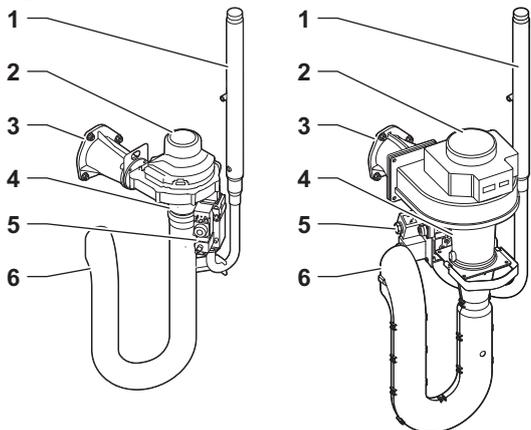
Fig.2 Internal



AD-3002430-01

- 1 Flue gas temperature sensor
- 2 Burner
- 3 Heat exchanger
- 4 Flame inspection glass
- 5 Inspection cover
- 6 Condensate collector cap
- 7 Condensate collector
- 8 Flow temperature sensor
- 9 Air pressure differential switch
- 10 Ignition / ionisation electrode
- 11 Ignition / ionisation transformer
- 12 Heat exchanger temperature sensor
- 13 Return temperature sensor
- 14 Water pressure sensor
- 15 Fill and drain valve
- 16 Trap

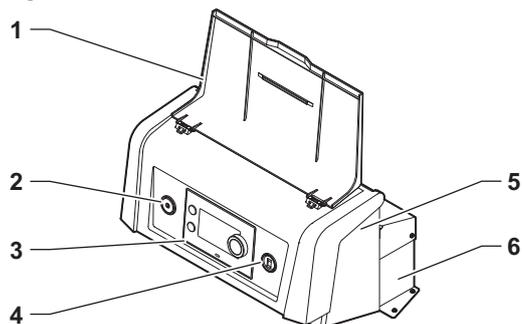
Fig.3 Gas - air unit



AD-3002431-01

- 1 Gas supply tube
- 2 Fan
- 3 Gas - air connection piece
- 4 Venturi
- 5 Gas control valve
- 6 Air inlet silencer

Fig.4 Control box



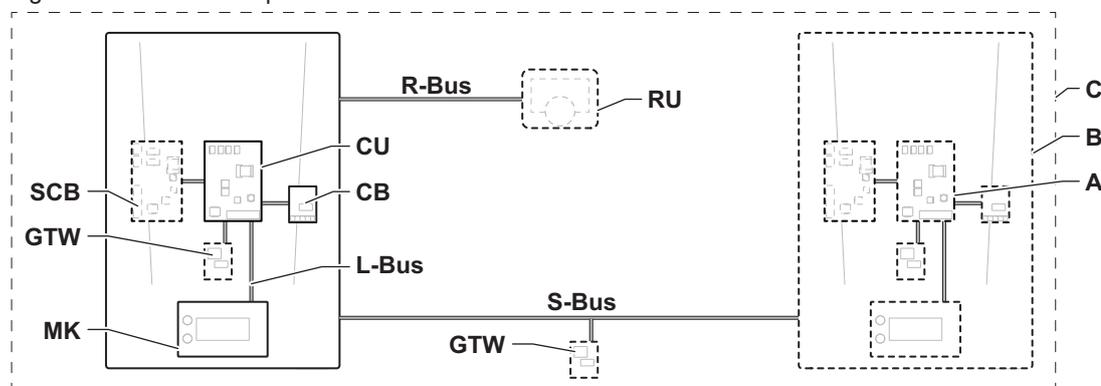
AD-3002432-01

- 1 Display cover
- 2 Power button
- 3 Control panel
- 4 Service connector
- 5 Control box front part - for expansion PCBs and gateways
- 6 Control box rear part - for the control unit and expansion PCBs

3.3 Introduction to the e-Smart controls platform

The Gas 210 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



AD-3001366-02

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: <ul style="list-style-type: none"> • Extra (wireless) connectivity • Service connections • Communication with other platforms
MK	Control panel: Control panel and display	The control panel is the user interface to the appliance.
RU	Room Unit: Room unit (for example, a thermostat)	A room unit measures the temperature in a reference room.
L-Bus	Local Bus: Connection between devices	The local bus provides communication between devices.
S-Bus	System Bus: Connection between appliances	The system bus provides communication between appliances.
R-Bus	Room unit Bus: Connection to a room unit	The room unit bus provides communication to a room unit.
A	Device	A device is a PCB, control panel or a room unit.
B	Appliance	An appliance is a set of devices connected via the same L-Bus
C	System	A system is a set of appliances connected via the same S-Bus

Tab.3 Specific devices delivered with the Gas 210 Ace boiler

Name visible in display	Software version	Description	Function
CU-GH13	2.0	Control unit CU-GH13	The CU-GH13 control unit handles all basic functionality of the Gas 210 Ace boiler.
MK3	1.94	Control panel HMI T-control	The HMI T-control is the user interface to the Gas 210 Ace boiler.
SCB-01	1.3	Expansion PCB SCB-01	The SCB-01 provides a 0-10 V connection for a PWM system pump and two potential-free contacts for status notification.
SCB-02	1.3	Expansion PCB SCB-02	The SCB-02 provides functionality for a DHW and central heating zone, a 0-10 V connection for a PWM system pump and two potential-free contacts for status notification.
GTW-Bluetooth	-	Gateway BLE Smart Antenna	The BLE Smart Antenna provides functionality to connect the boiler to an app via Bluetooth.

4 Before installation

4.1 Installation regulations



Important

The Gas 210 Ace must be installed by a qualified installer in accordance with local and national regulations.



Warning

The installer must be registered with Gas Safe and have the correct ACS qualifications.



Important

Practical guidelines - see the latest version.

4.2 Location requirements



Danger

It is forbidden to store, even temporarily, combustible products and substances in or near the boiler.



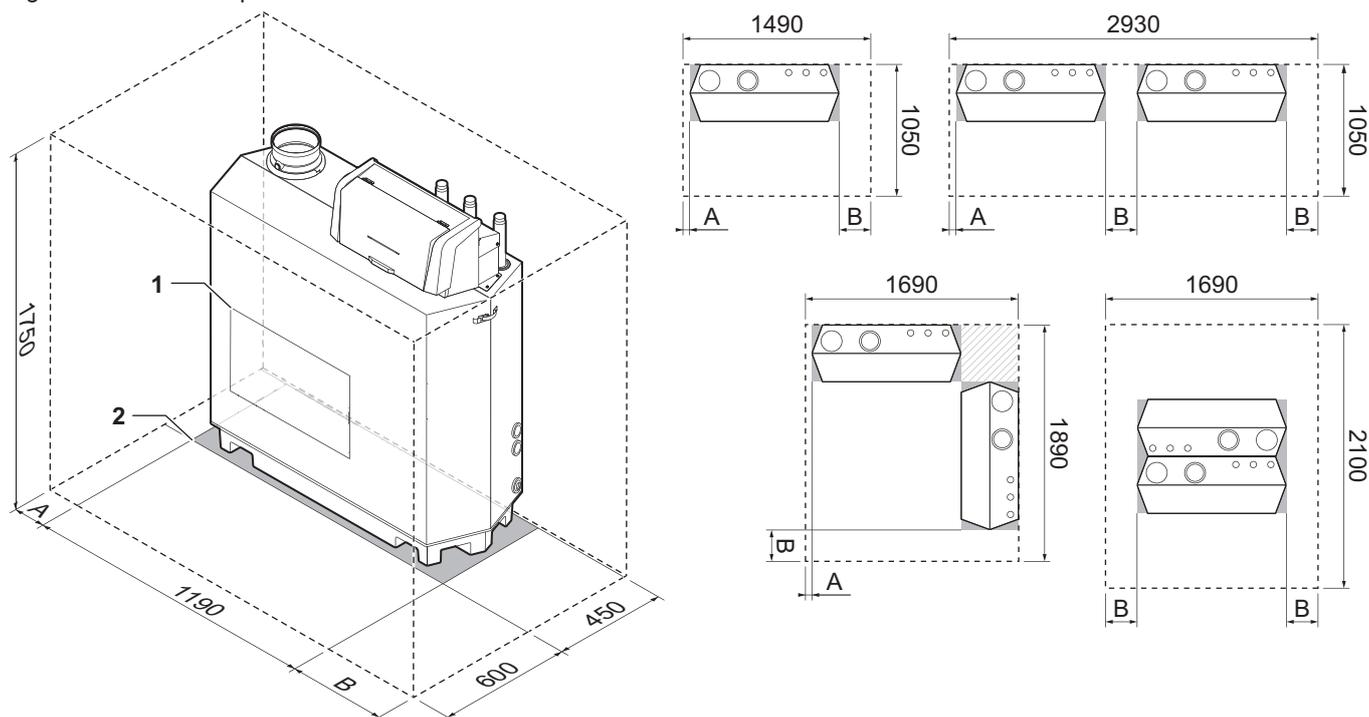
Caution

- The boiler must be installed in a frost-free area.
- An earthed electrical connection must be available close to the boiler.
- A connection to the drain must be present for the condensate drain close to the boiler.

When choosing the best installation location, consider:

- The regulations.
- The required installation space.
- The required space around the boiler for good access and to facilitate maintenance.
- The permitted position of the flue gas outlet and/or air supply opening.

Fig.6 Location requirements



- 1 Heat exchanger inspection hatch location
 2 Support surface
 A Clearance of 50 mm needed on the left side of the boiler

- B Clearance of 250 mm needed on the right side of the boiler

AD-3002433-01

4.3 Requirements for water connections

- Before installation, check that the connections meet the set requirements.
- Carry out any welding work required at a safe distance from the boiler.
- If using synthetic pipes, follow the manufacturer's instructions.

4.3.1 Requirements for the central heating connections

- We recommend installing a central heating filter in the return pipe to prevent clogging of boiler components.

4.3.2 Requirements for the condensate drain

- The drain pipe must be \varnothing 32 mm or larger, terminating in the drain.
- Use only plastic material for the discharge pipe due to the acidity (pH 2 to 5) of the condensate.
- Fit a trap in the drain pipe.
- The drain pipe must slope down at least 30 mm per metre, the maximum horizontal length is 5 metres.
- Do not make a fixed connection in order to prevent an overpressure in the trap.

4.3.3 Flushing the system

The installation must be cleaned and flushed in accordance with BS 7593 (2019) and BSRIA BG 33/2014.

Before a new boiler can be connected to a system, the entire system must be thoroughly cleaned by flushing it. The flushing will remove residue from the installation process (weld slag, fixing products etc.) and accumulations of dirt (silt, mud etc.)



Important

- Flush the heating system with a volume of water equivalent to at least three times the volume of the system.
- Flush the domestic hot water pipes with at least 20 times the volume of the pipes.



Important

Due to the presence of an aluminium heat exchanger, suitable chemicals and the correct use of these chemicals should be discussed with specialist water treatment companies.

4.4 Requirements for the gas connection

- Carry out any welding work required at a safe distance from the boiler.
- Before installing, check that the gas meter has sufficient capacity. Take into account the consumption of all appliances. Notify the local energy company if the gas meter has insufficient capacity.
- We recommend installing a gas filter to prevent clogging of the gas valve unit.

4.5 Requirements on the flue gas discharge system

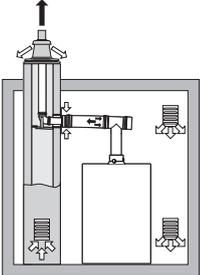
4.5.1 Classification



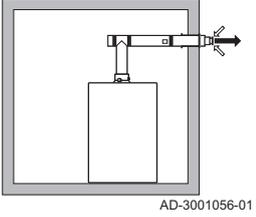
Important

- The installer is responsible ensuring that the right type of flue system is used and that the diameter and length are correct.
- Always use connection materials, roof terminal and/or horizontal flue terminal supplied by the same manufacturer. Consult the manufacturer for compatibility details.
- The use of flue systems from other manufacturers is allowed in addition to the recommended manufacturers listed in this manual. Use is only allowed when all our requirements are met and the description of flue system C₆₃ is respected.

Tab.4 Type of flue system: B_{23P}

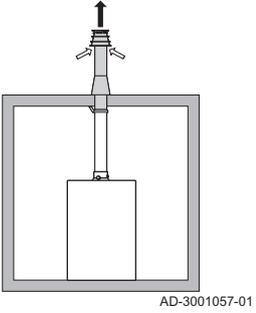
Principle	Description	Recommended manufacturers ⁽¹⁾
 <p>AD-3001055-01</p>	<p>Room-ventilated version.</p> <ul style="list-style-type: none"> • Without down-draught diverter. • Flue gas discharge via the roof. • Air supply from the installation area. • The air inlet connection of the boiler must stay open. • The installation area must be vented to ensure sufficient air supply. The vents must not be obstructed or shut off. • The IP rating of the boiler is lowered to IP20. 	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> • Alukan • Burgerhout • Cox Geelen • Muelink & Grol
<p>(1) The material must also satisfy the material property requirements from the relevant chapter.</p>		

Tab.5 Type of flue system: C₁₃

Principle	Description	Recommended manufacturers ⁽¹⁾
	<p>Room-sealed version.</p> <ul style="list-style-type: none"> • Flue gas discharge in the outside wall. • The air inlet is in the same pressure zone as the flue (e.g. a horizontal flue terminal). • Parallel wall terminal not permitted. 	<p>Horizontal flue terminal and connection material:</p> <ul style="list-style-type: none"> • Remeha, combined with connection material from Burgerhout • Remeha, combined with connection material from Muelink & Grol • Burgerhout • Cox Geelen • Muelink & Grol

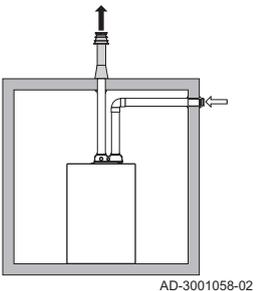
(1) The material must also satisfy the material property requirements from the relevant chapter.

Tab.6 Type of flue system: C₃₃

Principle	Description	Recommended manufacturers ⁽¹⁾
	<p>Room-sealed version.</p> <ul style="list-style-type: none"> • Flue gas discharge via the roof. • The air inlet is in the same pressure zone as the flue (e.g. a concentric roof terminal). 	<p>Roof terminal and connection material</p> <ul style="list-style-type: none"> • Remeha, combined with connection material from Burgerhout • Remeha, combined with connection material from Muelink & Grol • Remeha 350/350, in combination with connection material from Alukan (Only for Remeha -) • Burgerhout • Cox Geelen • Muelink & Grol

(1) The material must also satisfy the material property requirements from the relevant chapter.

Tab.7 Type of flue system: C₅₃

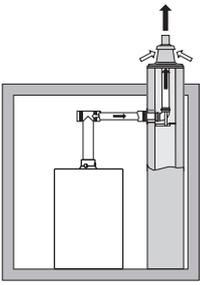
Principle	Description	Recommended manufacturers ⁽¹⁾
	<p>Connection in different pressure zones.</p> <ul style="list-style-type: none"> • Closed unit. • Separate air inlet and flue. • Discharging into various pressure areas. • The air inlet and flue must not be placed on opposite walls. 	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> • Alukan • Burgerhout • Cox Geelen • Muelink & Grol

(1) The material must also satisfy the material property requirements from the relevant chapter.

Tab.8 Type of flue system: C₆₃

Principle	Description	Recommended manufacturers ⁽¹⁾
	<p>This system is supplied by us without an air inlet and flue. When selecting the material, please note the following:</p> <ul style="list-style-type: none"> • Condensed water must flow back to the boiler. • The material must be resistant to the flue gas temperature of this boiler. • Maximum permissible recirculation of 10%. • The air inlet and flue must not be placed on opposite walls. • Minimum permitted pressure difference between the air inlet and the flue is -200 Pa (including -100 Pa wind pressure). 	Use is only allowed when all our requirements are met and the description of this type of flue system is respected.
<p>(1) The material must also satisfy the material property requirements from the relevant chapter.</p>		

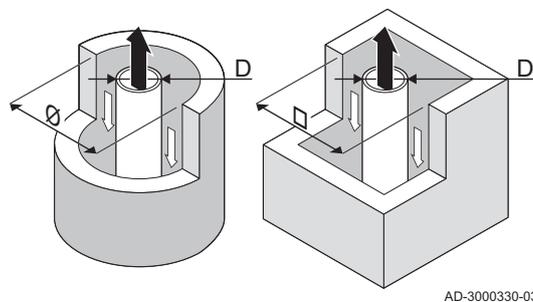
Tab.9 Type of flue system: C₉₃

Principle ⁽¹⁾	Description	Recommended manufacturers ⁽²⁾
 <p>AD-3001059-01</p>	<p>Room-sealed version.</p> <ul style="list-style-type: none"> • Air inlet and flue in shaft or duct: <ul style="list-style-type: none"> - Concentric. - Air supply from existing shaft or duct. - Flue gas discharge via the roof. - Air inlet is in the same pressure zone as the flue. 	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> • Alukan • Burgerhout • Cox Geelen • Muelink & Grol
<p>(1) See table for shaft or duct requirements. (2) The material must also satisfy the material property requirements from the relevant chapter.</p>		

Tab.10 Minimum dimensions of shaft or duct C₉₃

Version (D)	Without air supply		With air supply	
	Ø	□	Ø	□
Rigid 100 mm	Ø 160 mm	□ 160 x 160 mm	Ø 170 mm	□ 160 x 160 mm
Rigid 150 mm	Ø 200 mm	□ 200 x 200 mm	Ø 220 mm	□ 220 x 220 mm
Rigid 200 mm	Ø 250 mm	□ 250 x 250 mm	Ø 280 mm	□ 280 x 280 mm
Concentric 100/150 mm	Ø 170 mm	□ 170 x 170 mm	Ø 170 mm	□ 170 x 170 mm
Concentric 150/200 mm	Ø 270 mm	□ 270 x 270 mm	Ø 270 mm	□ 270 x 270 mm

Fig.7 Minimum dimensions of shaft or duct C₉₃



Important

The shaft must comply with the airtightness requirements of the local regulations.



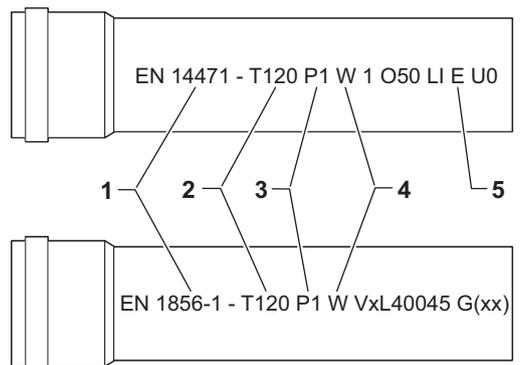
Important

- Always clean shafts thoroughly when using flue liners and/or an air supply connection.
- It must be possible to inspect the flue liner.

4.5.2 Material

Use the string on the flue gas outlet material to check whether it is suitable for use on this appliance.

Fig.8 Sample string



AD-3001120-01

- 1 **EN 14471 or EN 1856-1**: The material is UKCA approved according to this standard. For plastic this is EN 14471, For aluminium and stainless steel this is EN 1856-1.
- 2 **T120**: The material has temperature class T120. A higher number is also allowed, but not lower.
- 3 **P1**: The material falls into pressure class P1. H1 is also allowed.
- 4 **W**: The material is suitable for draining condensation water (W='wet'). D is not allowed (D='dry').
- 5 **E**: The material falls into fire resistance class E. Class A to D are also allowed, F is not allowed. Only applicable to plastic.

**Warning**

- The coupling and connection methods may vary depending on the manufacturer. It is not permitted to combine pipes, coupling and connection methods from different manufacturers. This also applies to roof terminal and common shared flue ducts.
- The materials used must comply with the prevailing regulations and standards.
- Please contact us to discuss using flexible flue gas outlet material.

Tab.11 Overview of material properties

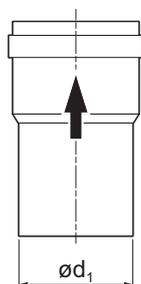
Version	Flue gas outlet		Air supply	
	Material	Material properties	Material	Material properties
Single-wall, rigid	<ul style="list-style-type: none"> • Plastic⁽¹⁾ • Stainless steel⁽²⁾ • Thick-walled, aluminium⁽²⁾ 	<ul style="list-style-type: none"> • With UKCA marking • Temperature class T120 or higher • Condensate class W (wet) • Pressure class P1 or H1 • Fire resistance class E or better⁽³⁾ 	<ul style="list-style-type: none"> • Plastic • Stainless steel • Aluminium 	<ul style="list-style-type: none"> • With UKCA marking • Pressure class P1 or H1 • Fire resistance class E or better⁽³⁾
(1) according to EN 14471 (2) according to EN 1856 (3) according to EN 13501-1				

4.5.3 Dimensions of flue gas outlet pipe

**Warning**

The pipes connected to the flue gas adapter must satisfy the following dimension requirements.

Fig.9 Dimensions of open connection



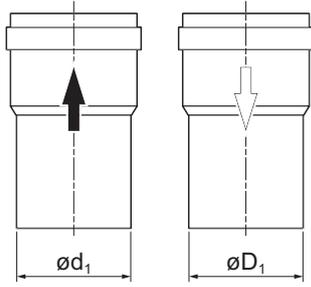
AD-3001094-01

d_1 External dimensions of flue gas outlet pipe

Tab.12 Dimensions of pipe

	d_1 (min-max)
100 mm	99.3 - 100.3 mm
110 mm	109.3 - 110.3 mm
150 mm	149 - 151 mm
200 mm	199 - 201 mm

Fig.10 Dimensions of parallel connection



AD-3000963-01

d_1 External dimensions of flue gas outlet pipe
 D_1 External dimensions of air supply pipe

Tab.13 Dimensions of pipe

	d_1 (min-max)	D_1 (min-max)
100/100 mm	99.3 - 100.3 mm	99.3 - 100.3 mm
110/110 mm	109.3 - 110.3 mm	109.3 - 110.3 mm
150/150 mm	149 - 151 mm	149 - 151 mm

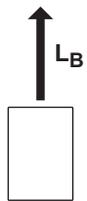
4.5.4 Length of the flue and air supply pipes

The maximum length of the flue and air supply vary per appliance type. Consult the relevant chapter for the correct lengths.

- If a boiler is not compatible with a specific flue system or diameter, it is indicated with "-" in the table.
- When using bends, the maximum flue length (L) must be shortened according to the reduction table.
- Use approved flue reducers for adaptation to another diameter.
- The boiler also supports other flue lengths and diameters than those specified in the tables. Contact us for more information.

■ Maximum flue lengths for B_{23P}

Fig.11 Flue system length



AD-3002009-01

L_B Length from the flue gas connection up to the terminal.

Calculation: $L = L_B$

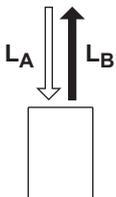
Tab.14 Maximum length (L)

Diameter ⁽¹⁾	100 mm	110 mm	130 mm	150 mm	180 mm
Gas 210 Ace 80	19 m	35 m	50 m ⁽¹⁾	50 m ⁽¹⁾	50 m ⁽¹⁾
Gas 210 Ace 120	-	20 m	48 m	50 m ⁽¹⁾	50 m ⁽¹⁾
Gas 210 Ace 160	-	8 m	22 m	45 m	50 m ⁽¹⁾
Gas 210 Ace 200	-	-	14 m	31 m	50 m ⁽¹⁾

(1) While maintaining the maximum length, additional 5 times 90° or 10 times 45° bends can be used (indicated for each boiler type and diameter).

■ Maximum flue lengths for C₁₃ , C₃₃ , C₆₃ , C₉₃

Fig.12 Flue system length



AD-3002010-01

L_A Length from the terminal up to the air inlet connection.

L_B Length from the flue gas connection up to the terminal.

Calculation: $L = L_A + L_B$

Tab.15 Maximum length (L)

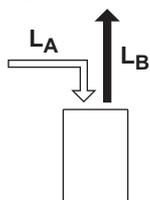
Diameter ⁽¹⁾	100 mm	130 mm	130 mm ⁽²⁾	150 mm	180 mm ⁽²⁾
Gas 210 Ace 80	14 m	50 m	60 m	60 m ⁽¹⁾	60 m ⁽¹⁾
Gas 210 Ace 120	4 m	38 m	44 m	60 m	60 m

Diameter ⁽¹⁾	100 mm	130 mm	130 mm ⁽²⁾	150 mm	180 mm ⁽²⁾
Gas 210 Ace 160	-	15 m	22 m	44 m	60 m
Gas 210 Ace 200	-	6 m	8 m	24 m	60 m

(1) While maintaining the maximum length, additional 5 times 90° or 10 times 45° bends can be used (indicated for each boiler type and diameter).
(2) With concentric roof terminal 150/220 mm.

Maximum flue lengths for C₅₃

Fig.13 Flue system length



L_A Length from the terminal up to the air inlet connection.

L_B Length from the flue gas connection up to the terminal.

$$\text{Calculation: } L = L_A + L_B$$



Important

The maximum permitted height difference between the air inlet and the roof terminal is 36 m.

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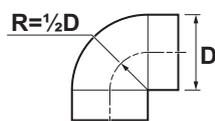
Tab.16 Maximum length (L)

Diameter ⁽¹⁾	150 mm
Gas 210 Ace 80	60 m ⁽¹⁾
Gas 210 Ace 120	60 m
Gas 210 Ace 160	32 m
Gas 210 Ace 200	19 m

(1) While maintaining the maximum length, additional 5 times 90° or 10 times 45° bends can be used (indicated for each boiler type and diameter).

Reduction table

Fig.14 Bend radius ½D

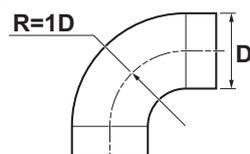


AD-3001608-01

Tab.17 Pipe reduction for each bend - radius ½D (parallel)

Diameter	100 mm	110 mm	130 mm	150 mm	180 mm	200 mm
45° bend	1.4 m	1.5 m	1.6 m	-	-	-
90° bend	4.9 m	5.4 m	6.2 m	-	-	-

Fig.15 Bend radius 1D



AD-3001609-01

Tab.18 Pipe reduction for each bend - radius 1D (parallel)

Diameter	100 mm	110 mm	130 mm	150 mm	180 mm	200 mm
45° bend	-	-	1 m	1.2 m	1.4 m	1.6 m
90° bend	-	-	1.8 m	2.1 m	2.5 m	2.8 m

4.5.5 Additional guidelines

Installation

- For installing the flue gas outlet and air supply materials, refer to the instructions of the manufacturer of the relevant material. After installation, check at least all flue gas outlet and air supply parts for tightness.



Warning

If the flue gas outlet and air supply materials are not installed in accordance with the instructions (e.g. not leak-proof, not correctly bracketed), this can result in dangerous situations and/or physical injury.

- Make sure that the flue gas outlet pipe towards the boiler has a sufficient gradient (at least 50 mm per metre) and that there is a sufficient condensate collector and discharge (at least 1 m before the outlet of the boiler). The bends used must be larger than 90° to guarantee the gradient and a good seal on the lip rings.

■ Condensation

- Direct connection of the flue gas outlet to structural ducts is not permitted because of condensation.
- If condensate from a plastic or stainless steel pipe section can flow back to an aluminium part in the flue gas outlet, this condensate must be discharged via a trap before it reaches the aluminium.
- Newly installed aluminium flue gas pipes with longer lengths can produce relatively larger quantities of corrosion products. Also casting sand and processing metal chips from new boilers can fill the boiler trap on short term after installation. Check and clean the trap more often for these reasons.

4.6 Requirements for the electrical connections

- Establish the electrical connections in accordance with all current local and national regulations and standards.
- Electrical connections must only be made by qualified installers, and only while the power supply is disconnected.
- The appliance is completely pre-wired. Never change the internal connections of the control panel.
- Always connect the appliance to a well-earthed installation.
- The wiring must comply with the instructions in the electrical diagrams.
- Follow the recommendations in this manual.
- Separate the sensor cables from the 230 V cables

Make sure the following requirements are met when connecting the cables to the CB and SCB connectors:

Tab.19 PCB connectors

Wire cross section	Stripping length	Tightening torque
solid wire: 0.14 – 4.0 mm ² (AWG 26 – 12)	8 mm	0.5 N·m
stranded wire: 0.14 – 2.5 mm ² (AWG 26 – 14)		
stranded wire with ferrule: 0.25 – 2.5 mm ² (AWG 24 – 14)		

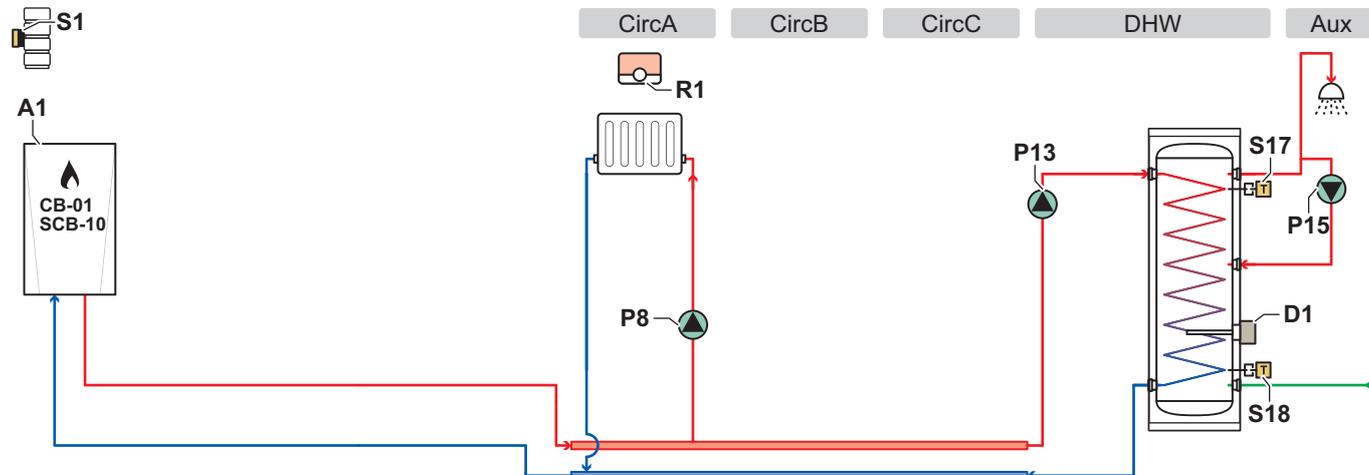
4.7 Water quality and water treatment

The quality of the heating water must comply with the limit values in our **Water quality instructions**. The guidelines in these instructions must be followed at all times. In many cases, the boiler and central heating system can be filled with normal tap water and water treatment will not be necessary.

4.8 Installation examples

4.8.1 1 boiler - 1 circuit (radiator) - DHW cylinder with loop

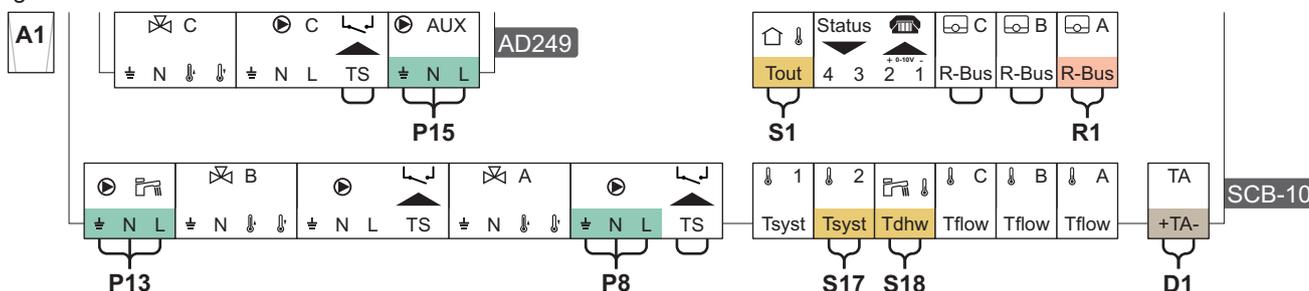
Fig.16 Diagram and components - 6000037



AD-6000037-01

- CircA** Circuit A (radiator)
- CircB** Circuit B
- CircC** Circuit C
- DHW** DHW circuit (DHW cylinder with two sensors)
- Aux** Auxiliary circuit (DHW recirculation loop)
- A1** Boiler
- D1** Sacrificial anode
- P8** Circuit A pump
- P13** DHW charging pump
- P15** DHW circulation loop pump
- R1** Circuit A room unit (thermostat)
- S1** Outdoor temperature sensor
- S17** DHW cylinder top temperature sensor
- S18** DHW cylinder bottom temperature sensor

Fig.17 Electrical connections boiler A1 - SCB-10



AD-6000039-01

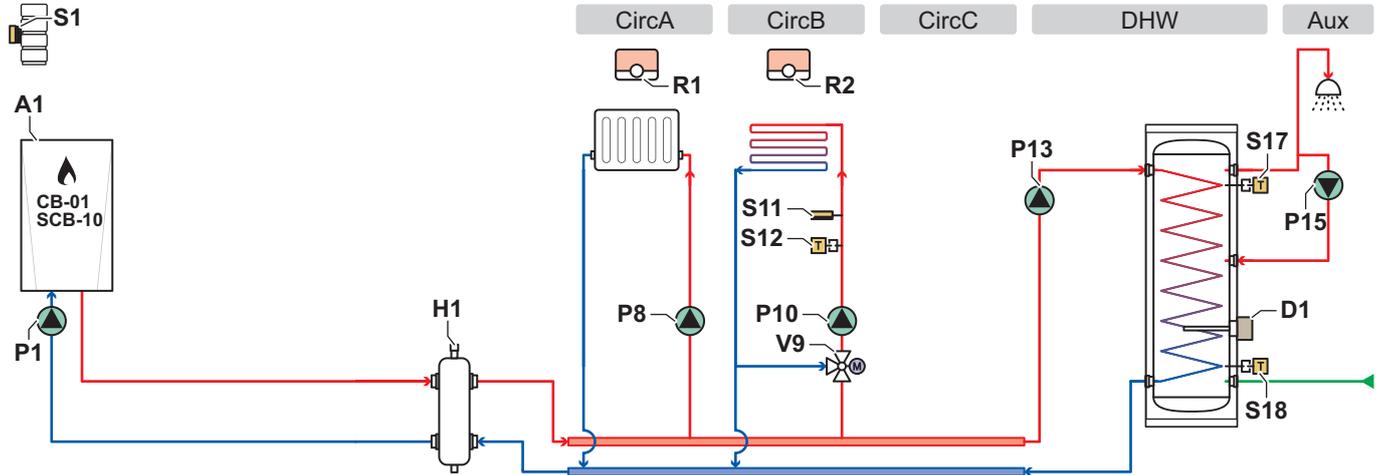
Tab.20 Parameter list

Code	Display text	Menu path	Set to
AP102	Boiler Pump function	≡ > Installation Setup > CU-GH13 > Gas fired appliance > Parameters, counters, signals > Parameters > General	0 = No
CP020	Zone Function	≡ > Installation Setup > CU-GH13 > CIRCA > Parameters, counters, signals > Parameters > General	0 = Disable
DP007	Dhw 3wv Standby	≡ > Installation Setup > CU-GH13 > Internal DHW > Parameters, counters, signals > Parameters > General	0 = CH position
CP020	Zone Function	≡ > Installation Setup > SCB-10 > CIRCA 1 > Parameters, counters, signals > Parameters > General	1 = Direct
CP021	Zone Function	≡ > Installation Setup > SCB-10 > CIRCB 1 > Parameters, counters, signals > Parameters > General	0 = Disable
CP023	Zone Function	≡ > Installation Setup > SCB-10 > CIRCC 1 > Parameters, counters, signals > Parameters > General	0 = Disable
CP022	Zone Function	≡ > Installation Setup > SCB-10 > DHW 1 > Parameters, counters, signals > Parameters > General	10 = DHW Layered
EP037	Sensor input config	≡ > Installation Setup > SCB-10 > DHW 1 > Parameters, counters, signals > Parameters > Advanced	2 = DHW tank top

Code	Display text	Menu path	Set to
CP024	Zone Function	≡ > Installation Setup > SCB-10 > AUX 1 > Parameters, counters, signals > Parameters > General	0 = Disable
CP294	ConfigZonePump-Out	≡ > Installation Setup > SCB-10 > AUX 1 > Parameters, counters, signals > Parameters > General	8 = DHW looping

4.8.2 1 boiler - 2 circuits (radiator, underfloor heating) - DHW cylinder with loop

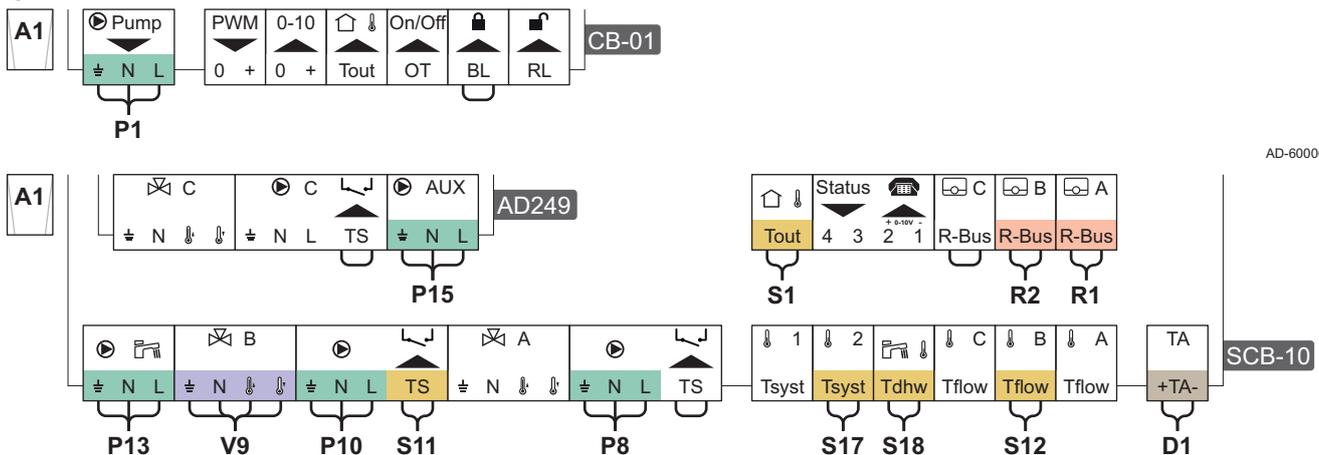
Fig.18 Diagram and components - 6000040



AD-6000040-01

- CircA** Circuit A (radiator)
- CircB** Circuit B (underfloor heating)
- CircC** Circuit C
- DHW** DHW circuit (DHW cylinder with two sensors)
- Aux** Auxiliary circuit (DHW recirculation loop)
- A1** Boiler
- D1** Sacrificial anode
- H1** Low loss header
- P1** Boiler pump
- P8** Circuit A pump
- P10** Circuit B pump
- P13** DHW charging pump
- P15** DHW circulation loop pump
- R1** Circuit A room unit (thermostat)
- R2** Circuit B room unit (thermostat)
- S1** Outdoor temperature sensor
- S11** Underfloor heating safety temperature limiter
- S12** Underfloor heating flow temperature sensor
- S17** DHW cylinder top temperature sensor
- S18** DHW cylinder bottom temperature sensor
- V9** Circuit B mixing valve

Fig.19 Electrical connections boiler A1 - CB-01, SCB-10 and AD249



AD-6000038-01

AD-6000042-01

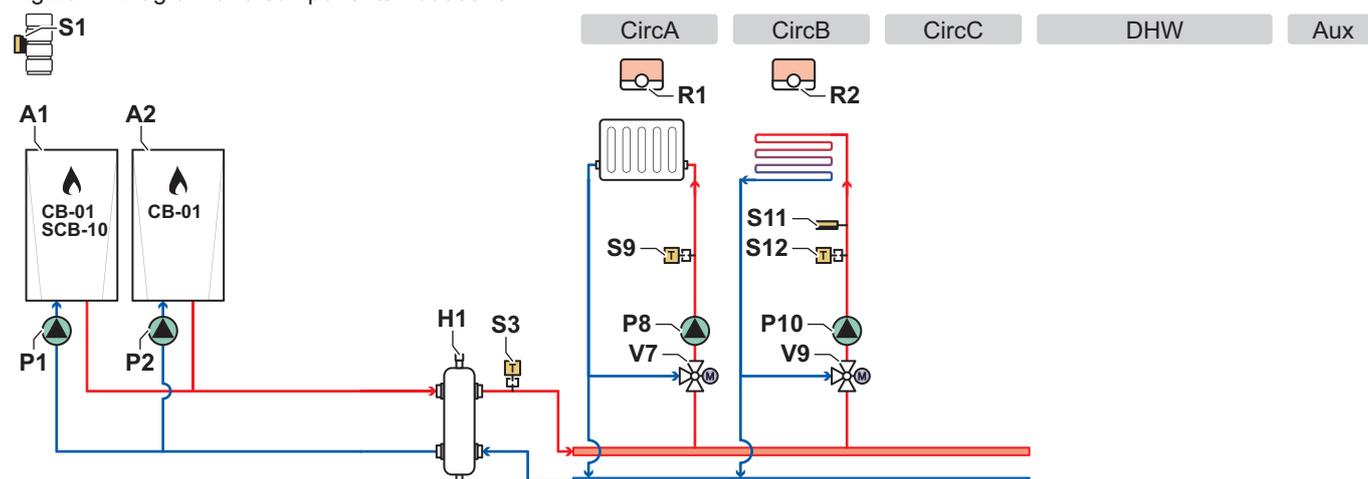
Tab.21 Parameter list

Code	Display text	Menu path	Set to
AP102	Boiler Pump function	≡ > Installation Setup > CU-GH13 > Gas fired appliance > Parameters, counters, signals > Parameters > General	0 = No
CP020	Zone Function	≡ > Installation Setup > CU-GH13 > CIRCA > Parameters, counters, signals > Parameters > General	0 = Disable

Code	Display text	Menu path	Set to
DP007	Dhw 3wv Standby	≡ > Installation Setup > CU-GH13 > Internal DHW > Parameters, counters, signals > Parameters > General	0 = CH position
CP020	Zone Function	≡ > Installation Setup > SCB-10 > CIRCA 1 > Parameters, counters, signals > Parameters > General	1 = Direct
CP021	Zone Function	≡ > Installation Setup > SCB-10 > CIRCB 1 > Parameters, counters, signals > Parameters > General	2 = Mixing Circuit
CP023	Zone Function	≡ > Installation Setup > SCB-10 > CIRCC 1 > Parameters, counters, signals > Parameters > General	0 = Disable
CP022	Zone Function	≡ > Installation Setup > SCB-10 > DHW 1 > Parameters, counters, signals > Parameters > General	10 = DHW Layered
EP037	Sensor input config	≡ > Installation Setup > SCB-10 > DHW 1 > Parameters, counters, signals > Parameters > Advanced	2 = DHW tank top
CP024	Zone Function	≡ > Installation Setup > SCB-10 > AUX 1 > Parameters, counters, signals > Parameters > General	0 = Disable
CP294	ConfigZonePump-Out	≡ > Installation Setup > SCB-10 > AUX 1 > Parameters, counters, signals > Parameters > General	8 = DHW looping

4.8.3 Cascade of 2 boilers - 2 circuits (radiator, underfloor heating)

Fig.20 Diagram and components - 6000043



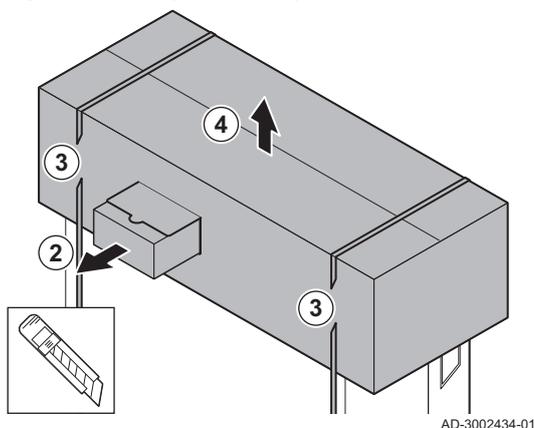
AD-6000043-01

- | | | | |
|--------------|--------------------------------|------------|---|
| CircA | Circuit A (radiator) | P10 | Circuit B pump |
| CircB | Circuit B (underfloor heating) | R1 | Circuit A room unit (thermostat) |
| CircC | Circuit C | R2 | Circuit B room unit (thermostat) |
| DHW | DHW circuit | S1 | Outdoor temperature sensor |
| Aux | Auxiliary circuit | S3 | Low loss header temperature sensor |
| A1 | Lead boiler | S9 | Radiator flow temperature sensor |
| A2 | Lag boiler | S11 | Underfloor heating safety temperature limiter |
| H1 | Low loss header | S12 | Underfloor heating flow temperature sensor |
| P1 | Lead boiler pump | V7 | Circuit A mixing valve |
| P2 | Lag boiler pump | V9 | Circuit B mixing valve |
| P8 | Circuit A pump | | |

5 Installation

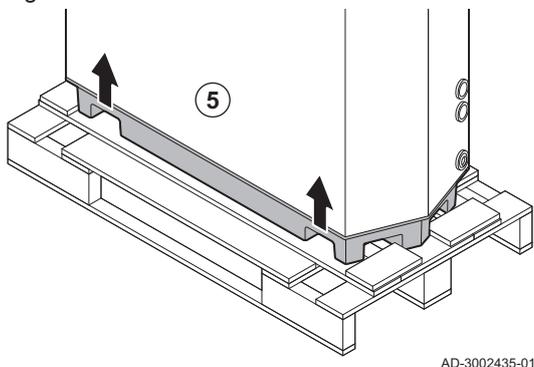
5.1 Positioning the boiler

Fig.24 Transport and unpack the boiler



1. Transport the boiler on the pallet to the installation location.
2. Remove the box with additional parts.
3. Remove the retaining straps.
4. Remove the other pieces of packaging.

Fig.25 Lift and manoeuvre the boiler



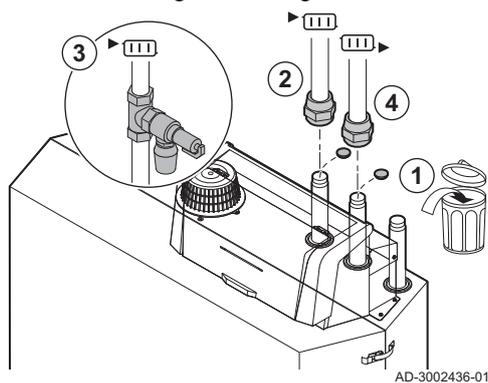
5. Lift the boiler off the pallet.

 The base frame has specific compartments to lift the boiler. You can use a pallet truck or forklift truck.

6. Manoeuvre the boiler to the exact location.
7. Level the boiler.

5.2 Connecting the heating circuit

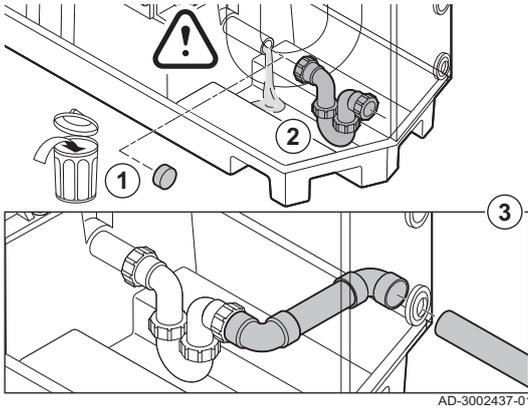
Fig.26 Connecting the heating circuit



1. Remove the dust caps from the flow and return connections.
2. Fit the system flow pipe to the flow connection.
3. Connect a safety valve to the system flow pipe.
4. Fit the system return pipe to the return connection.

5.3 Connecting the condensate drain pipe

Fig.27 Connecting the condensate drain pipe



1. Remove the protective cap from the condensate connection.



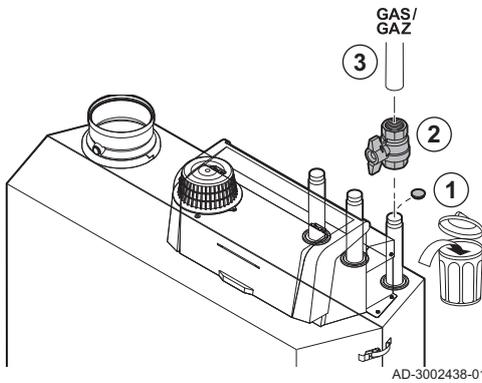
Caution

Water from the factory test may come out.

2. Fit the trap by screwing the swivel nut onto the connection.
3. Fit a plastic drain pipe of Ø 32 mm or larger to the trap, terminating in the drain.

5.4 Connecting the gas pipe

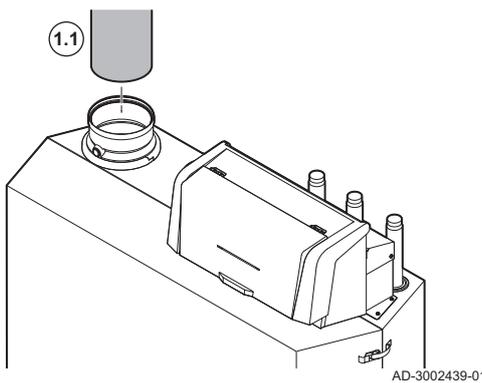
Fig.28 Connecting the gas pipe



1. Remove the dust cap from the gas connection ^{GAS/} _{GAZ}.
2. Fit a gas valve near the boiler.
3. Fit the gas supply pipe to the gas supply ^{GAS/} _{GAZ}.

5.5 Connecting the air inlet and flue gas outlet

Fig.29 Fit the flue gas outlet pipe to the boiler



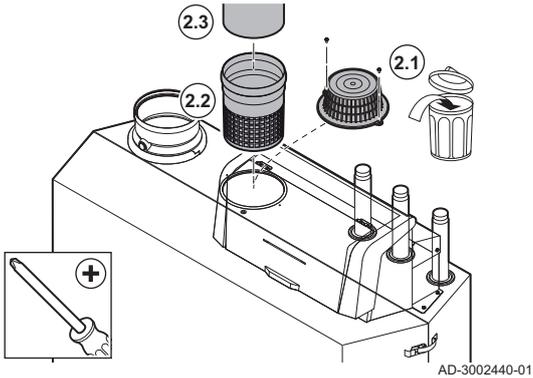
1. Connect the flue gas outlet:
 - 1.1. Fit the flue gas outlet pipe to the boiler.
 - 1.2. Fit the subsequent flue gas outlet pipes in accordance with the manufacturer's instructions.



Caution

- The pipes must not be resting on the boiler.
- Fit the horizontal parts sloping down towards the boiler, with a slope of 50 mm per metre.

Fig.30 Fit the air inlet pipe to the boiler



2. Connect the air inlet (only for room-sealed system):
 - 2.1. Remove the standard air supply filter.
 - 2.2. Fit the air inlet adaptor (optional).
 - 2.3. Fit the air supply pipe to the boiler.
 - 2.4. Fit the subsequent air supply pipes in accordance with the manufacturer's instructions.

Caution

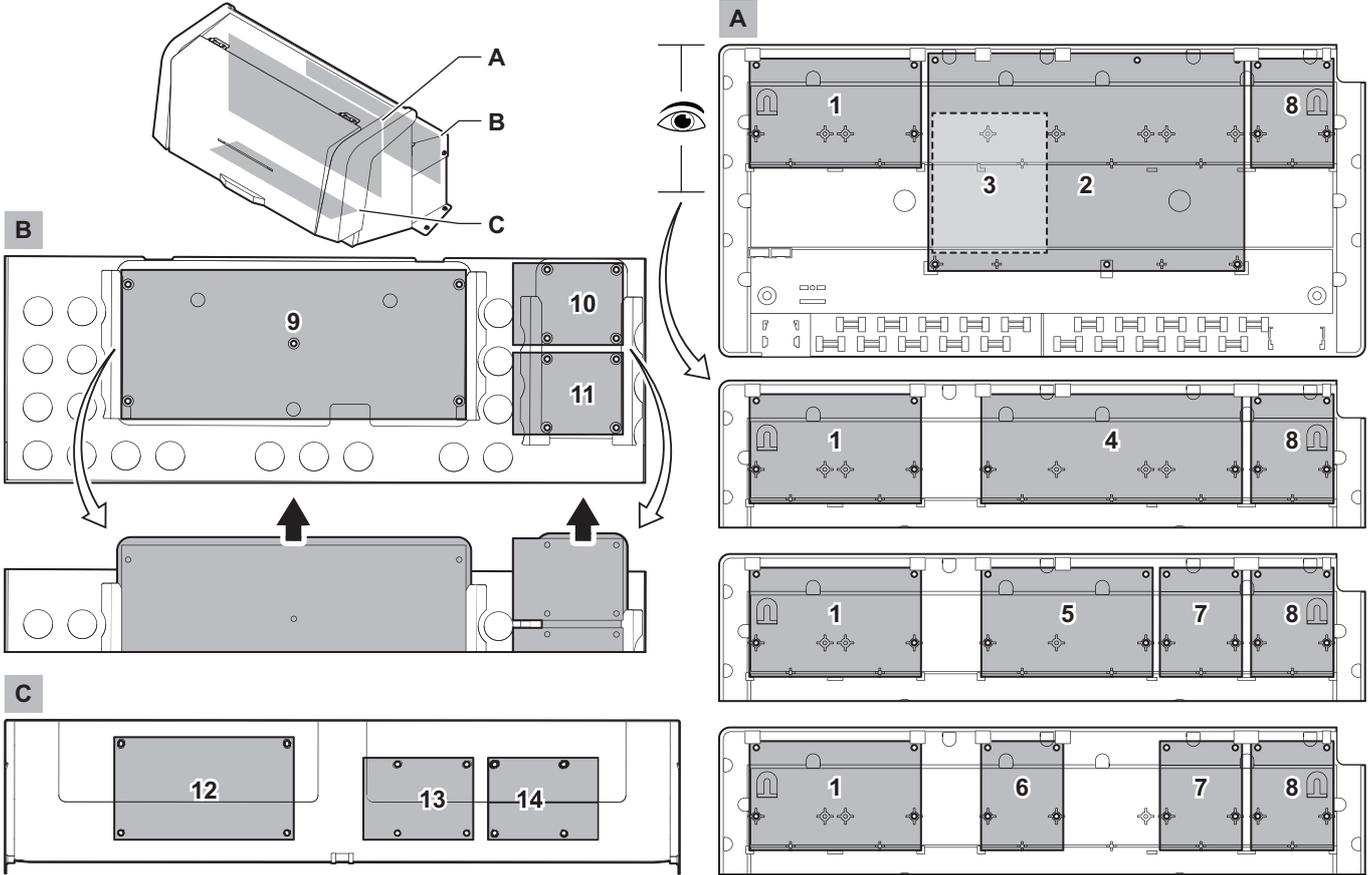
- The pipes must not be resting on the boiler.
- Fit the horizontal parts sloping down towards the air supply outlet.

5.6 Electrical connections

5.6.1 PCB locations

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

Fig.31 PCB locations



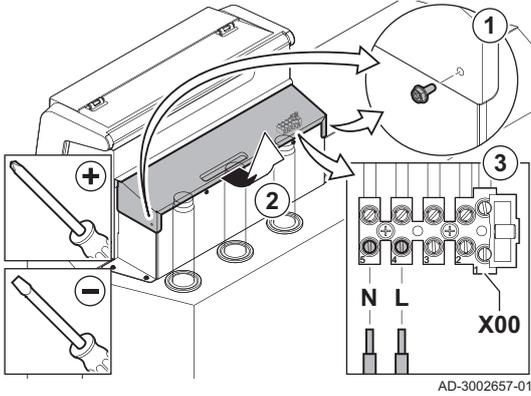
AD-3002441-01

Device	Primary location	Location option
CU-GH13	9	-
CB-01	1	-
SCB-01	8	7
SCB-02	4	-
SCB-04 (optional)	5	-
SCB-09 (optional)	10	-
SCB-10 (optional)	2	-
SCB-13 (optional)	11	-

Device	Primary location	Location option
GTW-08 (optional)	13	8 / 14
GTW-21 BACNet (optional)	13	8 / 14
BLE Smart Antenna	14	8 / 13
GTW-30 (optional)	14	8 / 13

5.6.2 Connecting the system pump

Fig.32 System pump



1. Undo the screws on both sides of the cover.
2. Remove the cover.
3. Connect a pump to the **X00-4** and **X00-5** terminals of the connector block.

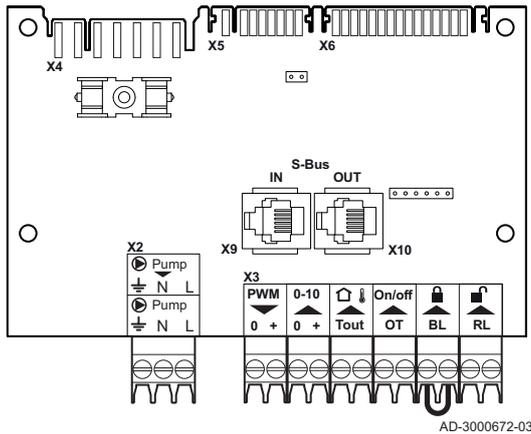
i Important
The maximum power consumption is 300 VA.

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

See also
Connecting a PWM system pump, page 28

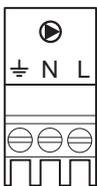
5.6.3 The CB-01 connection PCB

Fig.33 Connection PCB CB-01



The **CB-01** is placed in the control box. It provides easy access to all the standard connectors.

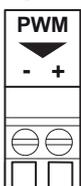
Fig.34 Flue gas valve



■ Connecting a flue gas valve

1. Connect a flue gas valve to the **Pump** terminals of the connector.
- You can change the wait time of the flue gas valve with parameter **AP003**.

Fig.35 PWM system pump



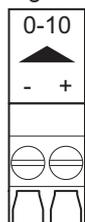
■ Connecting a PWM system pump

A PWM system pump can be connected to the boiler and can be controlled in a modulating way from the boiler

1. Connect the PWM pump to the **PWM** terminals of the connector.

i Important
Contact us for more information.

Fig.36 Analogue input



AD-3001304-02

■ Analogue input

This input has two modes: control based on temperature or based on heat output. If this input is used, the OT communication from the boiler is ignored.

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

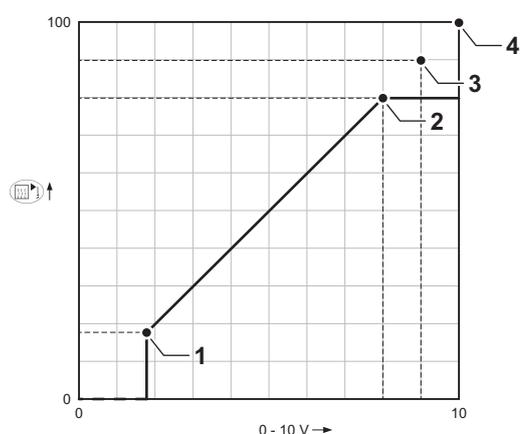
Change the mode of the analogue input using the parameter **EP014**.

– 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.

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

Fig.37 Temperature regulation graph



AD-0001156-03

Tab.23 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

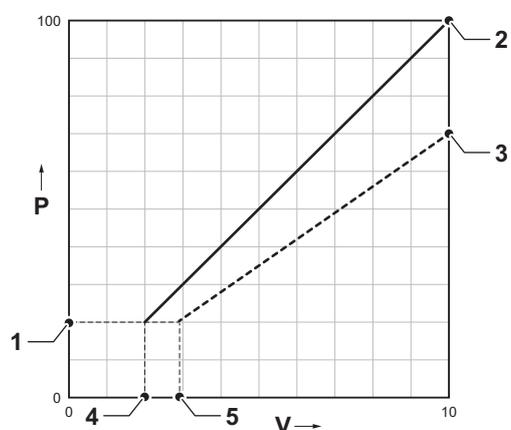
The appliance can be controlled by a 0-10 Volt input signal. When configured to output-based, the 0-10 Volt signal controls the boiler output.



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.38 Output regulation graph



AD-3002131-01

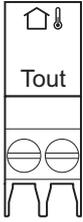
- V Voltage
- P Boiler output
- 1 Minimum output
- 2 Maximum output
- 3 Reduced maximum output (example)
- 4 Start voltage
- 5 Start voltage for reduced output (example)

The formula for calculating the start voltage is:

$$V_{start} = ((10.3 * GP008) - (0.5 * GP007_{factory})) / GP007_{current}$$

- 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.

Fig.39 Tout connector



AD-4000006-03

■ Connecting an outdoor temperature sensor

An outdoor temperature sensor can be connected to the **Tout** connector. Always connect the 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.

1. Connect the two-wire cable to the **Tout** connector.

Use below mentioned sensors, or sensors with identical characteristics. Set parameter **AP056** to the installed outdoor temperature sensor type.

- AF60 = NTC 470 Ω/25°C

When an outdoor temperature sensor is connected, the internal heating curve can be used to adopt the requested flow temperature based on the outdoor temperature.

When an on/off thermostat is also connected, the temperature will be controlled according to the set point from the internal heating curve.

OpenTherm controllers can also use the outdoor temperature sensor. In that case, the desired heating curve must be set on the controller.

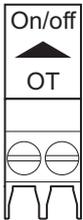
■ Room thermostat connector (On/off - OT)

The **On/off - OT** connector can be used to connect a room thermostat. The connector supports the following types:

- **OpenTherm** thermostat (for example, the **iSense**)
- **OpenTherm Smart Power** thermostat
- **On/off** thermostat

It does not matter which wire is connected to which cable clamp. The software recognizes which type of thermostat is connected.

Fig.40 On/off - OT connector



AD-3001599-02

■ Blocking input



Caution

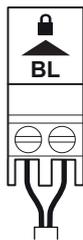
Only suitable for potential-free contacts (dry contact).



Important

First remove the bridge if this input is used.

Fig.41 Blocking input



AD-3000972-02

The boiler has a blocking input. A potential-free contact can be connected to the **BL** terminals of the connector. If the contact is opened, the boiler will be blocked.

Change the function of the input using parameter **AP001**. This parameter has the following 3 configuration options:

- Complete blocking: no frost protection with the outdoor sensor and no boiler frost protection (pump does not start and burner does not start)
- Partial blocking: boiler frost protection (pump starts when the temperature of the heat exchanger is < 6°C and the burner starts when the temperature of the heat exchanger is < 3°C)
- Lock out: no frost protection with outdoor sensor and partial boiler frost protection (pump starts when the temperature of the heat exchanger is < 6°C, the burner does not start when the temperature of the heat exchanger is < 3°C).

■ Release input



Caution

Only suitable for potential-free contacts (dry contact).

Fig.42 Release input



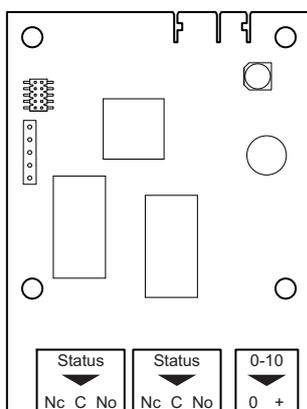
AD-3001303-02

The boiler has a release input. A potential-free contact can be connected to the **RL** terminals of the connector.

- If the contact is closed during a heat demand, the boiler will be blocked immediately.
- If the contact is closed when there is no heat demand, the contact does nothing until the main PCB receives a 'start burner'- command. After that command, a waiting time starts. If the contact is closed during this waiting time, the burner does not start and the boiler will be blocked. Set the waiting time with parameter **AP008**. A waiting time of 0 will disable the contact.

5.6.4 The SCB-01 expansion PCB

Fig.43 SCB-01 PCB



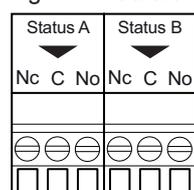
AD-3001514-01

The SCB-01 has the following features:

- Two potential free contacts for status notifications
- 0–10 V output connection for a PWM system pump

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

Fig.44 Status notifications



AD-3001312-01

■ Connecting status notifications

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

Connect a relays as follows:

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

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

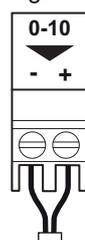
■ Connecting 0–10 V output

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

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

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

Fig.45 0–10 V output connector



AD-3001305-01

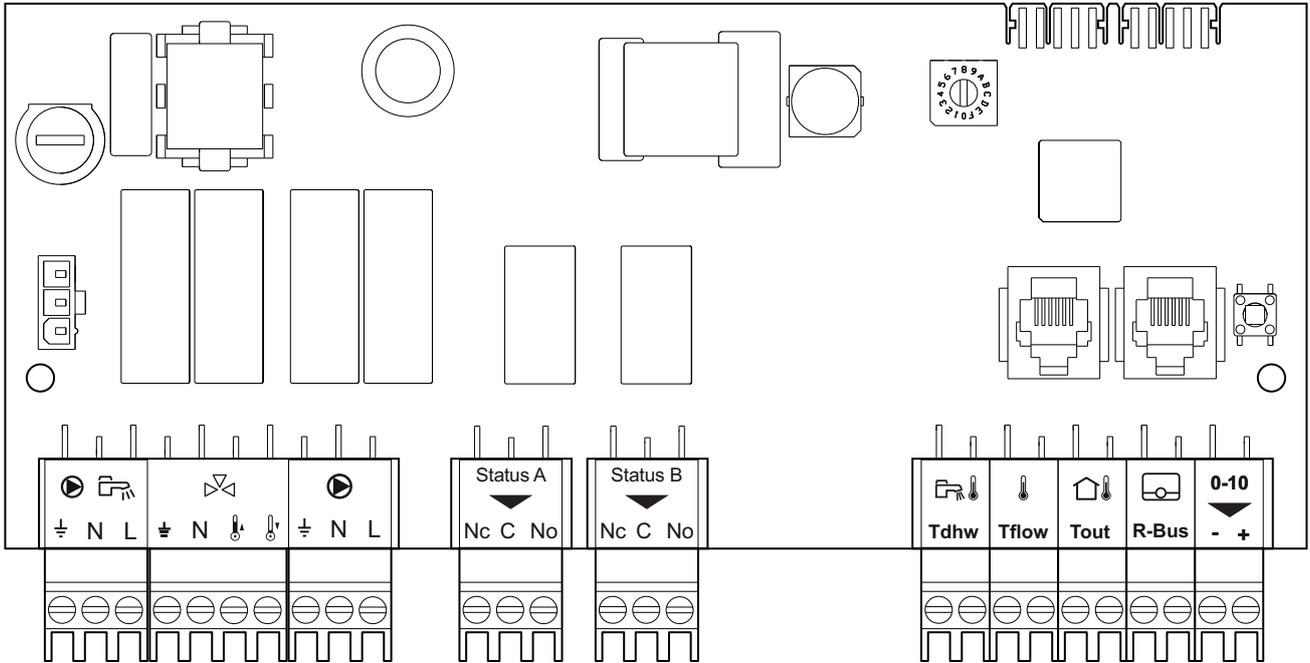


Caution

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

5.6.5 The SCB-02 expansion PCB

Fig.46 SCB-02 PCB



The SCB-02 has the following features:

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

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

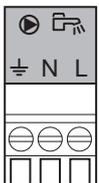
■ **Connecting a domestic hot water (DHW) pump**

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

Connect the pump as follows:

- ⊥ Earth
- N Neutral
- L Phase

Fig.47 DHW pump connector

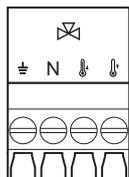


AD-4000123-01

■ **Connecting a mixing valve**

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

Fig.48 Mixing valve connector

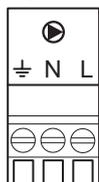


AD-4000015-03

Connect the mixing valve as follows:

- Earth
- N** Neutral
- Open
- Close

Fig.49 System pump



AD-3001306-01

■ Connecting the system pump

1. Connect a system pump to the **Pump** terminals of the connector.



Important

The maximum power consumption is 300 VA.

The function of the system pump can be changed using parameters **PP015**, **PP016** and **PP018**.

■ Connecting status notifications

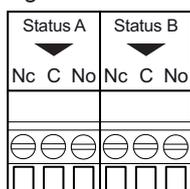
The two potential-free contacts, **Status**, can be configured as required. Depending on the setting, a particular status can be transmitted by the boiler.

Connect a relays as follows:

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

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

Fig.50 Status notifications



AD-3001312-01

■ Connecting the temperature sensor/thermostat of the DHW cylinder

A DHW temperature sensor or thermostat can be connected to the **Tdhw** terminals of the connector. Only NTC 10 kΩ/25°C sensors can be used.

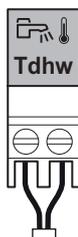


Important

For appliances with an **SCB-10** expansion PCB, use the connector on the **SCB-10** expansion PCB for this connection.

1. Connect the two-wire cable to the **Tdhw** terminals of the connector.

Fig.51 Connecting the DHW temperature sensor/thermostat

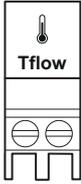


AD-3000971-02

■ Connecting a zone temperature sensor

A zone temperature sensor can be connected to the **Tflow** terminals of the connector.

Fig.52 Tflow connector



AD-3001311-01

1. Connect the two-wire cable to the **Tflow** terminals of the connector.

■ **Connecting an outdoor temperature sensor**

An outdoor temperature sensor can be connected to the **Tout** connector. Always connect the 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.

1. Connect the two-wire cable to the **Tout** connector.

Use below mentioned sensors, or sensors with identical characteristics. Set parameter **AP056** to the installed outdoor temperature sensor type.

- AF60 = NTC 470 Ω/25°C

When an outdoor temperature sensor is connected, the internal heating curve can be used to adopt the requested flow temperature based on the outdoor temperature.

When an on/off thermostat is also connected, the temperature will be controlled according to the set point from the internal heating curve. **OpenTherm** controllers can also use the outdoor temperature sensor. In that case, the desired heating curve must be set on the controller.

■ **Connecting thermostats**

The **R-Bus** connector can be used to connect a room thermostat. The connector supports the following types:

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

It does not matter which wire is connected to which cable clamp. The software recognizes which type of thermostat is connected.

■ **Connecting 0–10 V output**

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

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

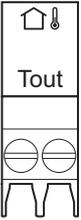
- Select the type of signal that will be sent from the boiler using the parameter **EP029**.
- Select the type of signal that controls the pump using the parameter **EP028**.



Caution

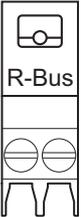
- If possible, use the pump modulation signal. This provides the most accurate pump control.
- If the automatic burner unit does not support pump modulation, the pump will behave as an on/off pump.

Fig.53 Tout connector



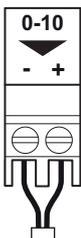
AD-4000006-03

Fig.54 R-Bus connector



AD-3001314-02

Fig.55 0–10 V output connector



AD-3001305-01

5.6.6 Connecting the power cable

The power connection is located in the rear part of the control box. The power connection is fitted with a 10AT fuse.

**Danger of electric shock**

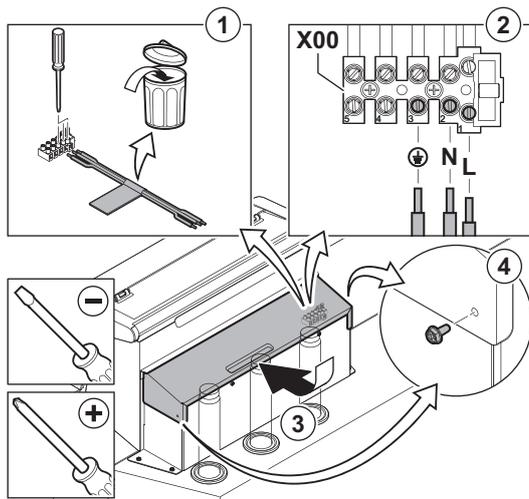
Always turn off the main power before working on the electrical connections.

Make sure the following requirements are met when connecting the power cable:

Tab.24 Power connection

Wire cross section	Stripping length	Tightening torque
solid wire: 2.5 mm ² (AWG 14)	7 mm	0.5 N·m
stranded wire: 2.5 mm ² (AWG 14)		
stranded wire with ferrule: 2.5 mm ² (AWG 14)		

Fig.56 Connecting the power cable



AD-3002443-01

1. Remove the short power cable.
2. Connect the power cable to the connector block.
3. Close the cover.
4. Tighten the screws on both sides of the cover.

6 Preparation of commissioning

6.1 Checklist before commissioning

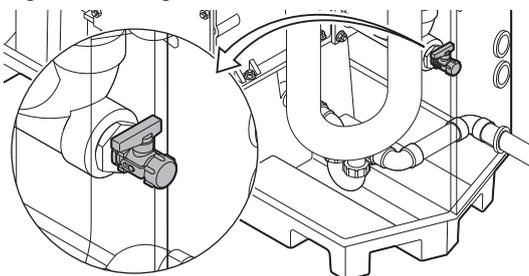
6.1.1 Filling the installation

The recommended water pressure is between 1.5 bar and 2.0 bar.

Proceed as follows to fill the installation:

1. Disconnect the boiler from the power supply.
2. Fill the central heating system with clean water, using the filling and drain valve (½", fitted on the return pipe).
3. Check the water-side connections for tightness.
4. Power up the boiler.

Fig.57 Filling and drain valve location



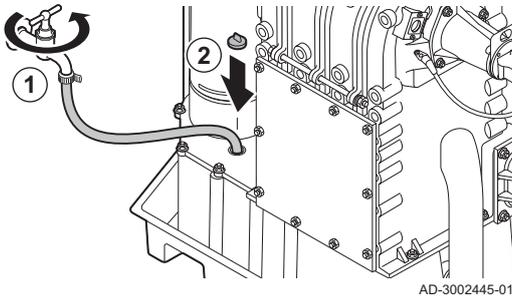
AD-3002444-01

6.1.2 Filling the trap

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

1. Fill the trap via the condensate collector.
2. Put the sealing cap back on the condensate collector.

Fig.58 Filling the trap



6.1.3 Preparing the gas circuit

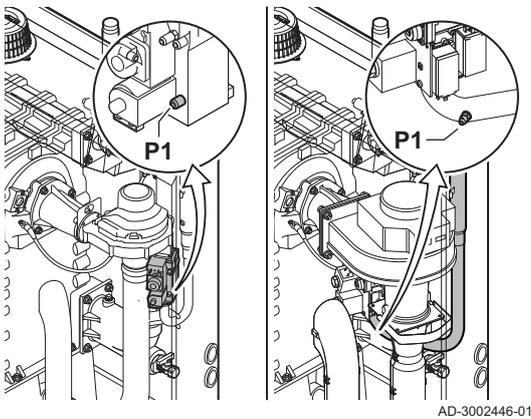
Warning
 Ensure that the boiler is disconnected from the power supply.

1. Open the main gas valve.
2. Open the boiler gas valve.
3. Check the tightness of the gas circuit.
4. Vent the gas supply pipe by unscrewing measuring point P1.
 ⇒ The gas supply pipe is properly vented when a gas smell can be noticed.
5. Check the gas inlet pressure at measuring point P1.
 The advised inlet pressure is shown on the data plate.

Caution
 The inlet pressure may never exceed the maximum pressure mentioned in the technical data table.

6. Tighten the measuring point again.

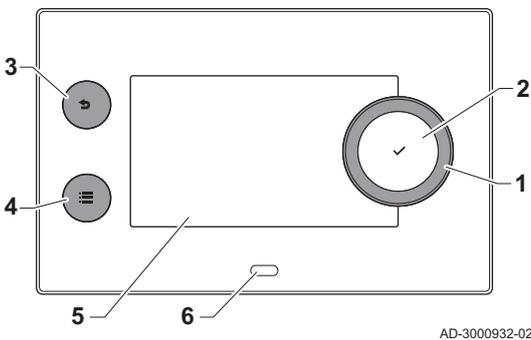
Fig.59 Gas inlet pressure measuring point



6.2 Control panel description

6.2.1 Control panel components

Fig.60 Control panel components



- 1 Rotary knob to select a tile, menu or setting
- 2 Confirm button ✓ to confirm the selection
- 3 Back button ←:
 - **Short button press:** Return to the previous level or previous menu
 - **Long button press:** Return to home screen
- 4 Menu button ≡ to go to the main menu
- 5 Display
- 6 Status LED

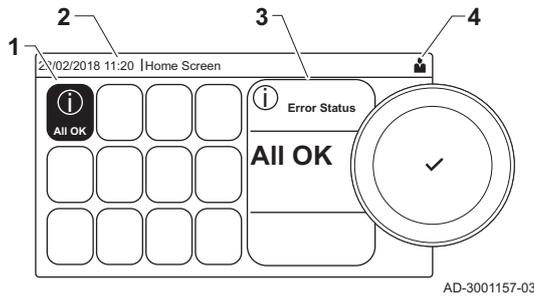
6.2.2 Description of the home screen

This screen is shown automatically after start-up of the appliance. The control panel automatically enters standby mode (black screen) if the buttons are not used for 5 minutes. Press one of the buttons on the control panel to activate the screen again.

You can navigate from any menu to the home screen by pressing the back button ← for several seconds.

The tiles on the home screen provide quick access to the corresponding menus. Use the rotary knob to navigate to the desired item and press the button ✓ to confirm the selection.

Fig.61 Icons on home screen

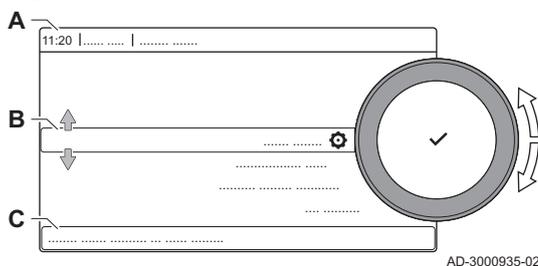


- 1 Tiles: the selected tile is highlighted
- 2 Date and time | Name of the screen (actual position in the menu)
- 3 Information about the selected tile
- 4 Icons indicating navigation level, operating mode, errors and other information.

6.2.3 Description of the main menu

You can navigate from any menu directly to the main menu by pressing the menu button ≡. The number of accessible menus depends on the access level (user or installer).

Fig.62 Items in the main menu



- A Date and time | Name of the screen (actual position in the menu)
- B Available menus
- C Brief explanation of the selected menu

Tab.25 Available menus for the user 👤

Description	Icon
Enable installer access	👤
Bluetooth	📶
System Settings	⚙️
Version Information	i

Tab.26 Available menus for the installer 🛠️

Description	Icon
Disable installer access	👤
Installation Setup	👤
Commissioning Menu	👤
Advanced Service Menu	👤
Error History	👤
Bluetooth	📶
System Settings	⚙️
Version Information	i

6.2.4 Description of the icons in the display

Tab.27 Icons

Icon	Description
👤	User menu: user-level parameters can be configured.
🛠️	Installer menu: installer-level parameters can be configured.
i	Information menu: read out various current values.
⚙️	System settings: system parameters can be configured.
⊗	Error indicator.
🔥	Gas boiler indicator.
🚰	Domestic hot water tank is connected.

Icon	Description
	The outdoor temperature sensor is connected.
	Boiler number in cascade system.
	The solar calorifier is on and its heat level is displayed.
	Burner output level (1 to 5 bars, with each bar representing 20% output).
	The pump is running.
	Three-way valve indicator.
	Display of the system water pressure.
	Chimney sweep mode is enabled (forced full load or low load for O ₂ /CO ₂ measurement).
	Energy saving mode is enabled.
	DHW boost is enabled.
	Timer program is enabled: The room temperature is controlled by a timer program.
	Manual mode is enabled: The room temperature is set to a fixed setting.
	Temporary overwrite of the timer program is enabled: The room temperature is changed temporarily.
	The holiday program (including frost protection) is active: The room temperature is reduced during your holiday to save energy.
	Frost protection is enabled: Protect the boiler and installation from freezing during winter.
	Service notification: service needed. Installer contact details are displayed or can be filled in.
	Cascade manager

Tab.28 Icons - On/off

Icon	Description	Icon	Description
	CH operation is enabled.		CH operation is disabled.
	DHW operation is enabled.		DHW operation is disabled.
	The burner is on.		The burner is off.
	Bluetooth enabled and connected (icon is non-transparent).		Bluetooth enabled and disconnected (icon is transparent).
	Heating enabled.		
	Cooling enabled.		
	Heating/cooling enabled.		Heating/cooling disabled.

Tab.29 Icons - Zones

Icon	Description
	All zones (groups) icon.
	Living room icon.
	Kitchen icon.
	Bedroom icon.
	Study icon.
	Cellar icon.

7 Commissioning

7.1 Commissioning procedure



Warning

- Commissioning must be done by a qualified installer.
- If adapting to another gas type, the gas valve unit must be adjusted before switching on the boiler.

1. Open the main gas valve.
2. Open the appliance gas valve.
3. Switch on the power with the boiler's on/off switch.
4. Configure the settings shown on the display.
 - ⇒ The start-up program will start and cannot be interrupted.
5. Set the components (thermostats, control) so that heat is demanded.



Important

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

7.2 Gas settings

7.2.1 Factory setting

The factory setting of the boiler is for operation with the natural gas group G20 (H gas).

Tab.30 Factory settings G20 (H gas)

Code	Display text	Description	80	120	160	200
DP003	Abs max fan DHW	Maximum fan speed on Domestic Hot Water	5100	6400	4800	5700
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	5100	6400	4800	5700
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1200	1300	1000	1200
GP009	Fan RPM Start	Fan speed at appliance start	1700	1700	1700	1700

Tab.31 Factory gas conversion restrictor

	80	120	160	200
Diameter in mm for G20 (H gas)	8.4	8.4	-	-

7.2.2 Adjusting to a different gas type



Warning

Only a qualified installer may carry out the following operations.

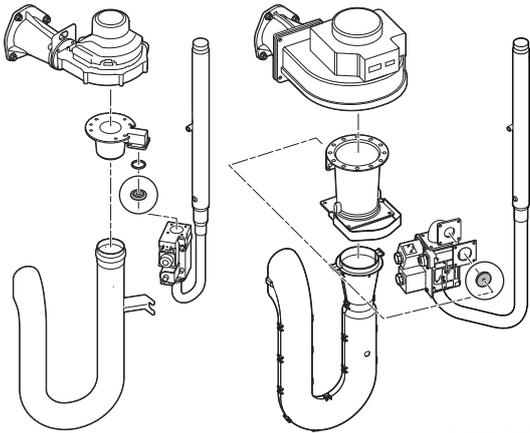


Important

If the boiler is adapted to another gas type, this must be stated on the sticker supplied. This sticker must be affixed next to the data plate.

Before operating with a different type of gas, carry out the following steps.

Fig.63 Installing gas conversion restrictor



AD-3002477-01

■ **Restrictor for different gas types**

1. Fit the correct gas conversion restrictor in the gas control valve if the boiler is used with different gas types:
The required diameters for the restrictors are listed in the table. A separate assembly instruction is available for this.

💡 Contact us for more information.

Tab.32 Change gas conversion restrictor

	80	120	160	200
Diameter in mm for G31 (propane)	6.5	6.5	10.0	10.0

■ **Adjusting fan speed parameters for different gas types**

The factory fan speed settings can be adjusted for a different type of gas at installer level.

▶▶ **[▲] > Parameters, counters, signals > Parameters**

💡 Use the rotary knob to navigate.
Use the **✓** button to confirm your selection.

1. Enable Installer access.
 - 1.1. Select the tile **[🔑]**.
 - 1.2. Enter code: **0012**.
2. Select the tile **[▲]**.
3. Select **Parameters, counters, signals**.
4. Select **Parameters**.
5. Select the required parameter.
6. Change the setting.

■ **Fan speeds for different gas types**

1. Adjust the fan speed (if necessary) for the gas type used according to the table. The setting can be changed with a parameter setting.

Tab.33 Adjustment for gas type G31 (propane)

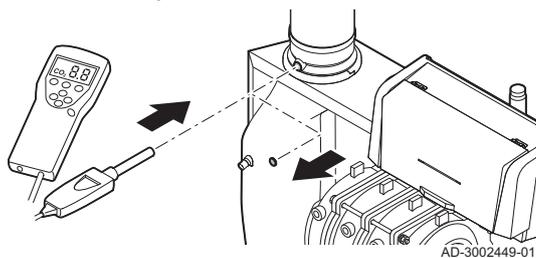
Code	Displayed text	Description	80	120	160	200
DP003	Abs max fan DHW	Maximum fan speed on Domestic Hot Water	5200	6100	6000	5500
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	5200	6100	6000	5500
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1500	1400	1500	1300
GP009	Fan RPM Start	Fan speed at appliance start	2000	2000	2200	2200

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

7.2.3 Checking and setting the gas/air ratio

- The flue gas analyser must meet the requirements of BS 7927 or BS-EN 503793 and be calibrated according to the manufacturer's requirements.
- The flue gas analyser must have a minimum accuracy of ±0.25% O₂/CO₂.

Fig.64 Insert the probe for the flue gas analyser



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

**Warning**

Fully seal the opening around the sensor during measurement.

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

**Important**

- This appliance is suitable for category I_{2H} containing up to 20% Hydrogen gas (H₂). Due to variations in the H₂ percentage, the O₂/CO₂ percentage can vary over time. (For example: a percentage of 20% H₂ 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 O₂/CO₂ values of the gas used.

■ Performing the full load test

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

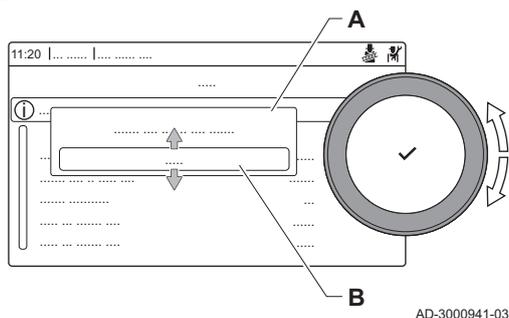
A Change load test mode

B Medium power

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

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

Fig.65 Full load test



■ Checking/setting values for O₂/CO₂ at full load

1. Set the boiler to full load.
2. Measure the percentage of O₂/CO₂ in the flue gases.
3. Compare the measured value with the checking values in the table.

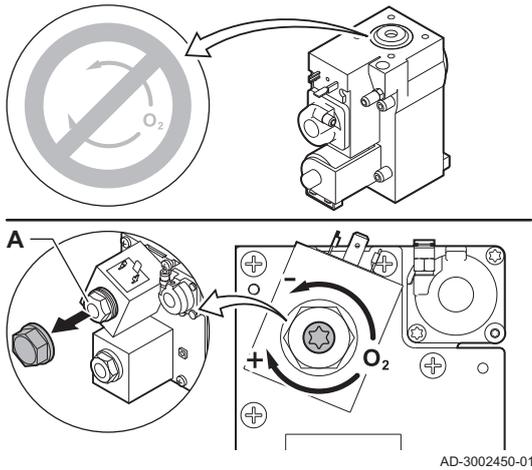
Tab.34 Checking/setting values for O₂/CO₂ at full load for G20 (H gas)

Values at full load for G20 (H gas)	O ₂ (%) ⁽¹⁾	CO ₂ (%) ⁽²⁾
Gas 210 Ace 80	3,9 – 5,2 ⁽¹⁾ – 6,5	8,1 – 8,8 ⁽²⁾ – 9,5
Gas 210 Ace 120	3,9 – 5,2 ⁽¹⁾ – 6,5	8,1 – 8,8 ⁽²⁾ – 9,5
Gas 210 Ace 160	4,3 – 5,2 ⁽¹⁾	8,8 ⁽²⁾ – 9,3
Gas 210 Ace 200	4,3 – 5,2 ⁽¹⁾	8,8 ⁽²⁾ – 9,3
(1) Nominal value. (2) Nominal value.		

Tab.35 Checking/setting values for O₂/CO₂ at full load for G31 (propane)

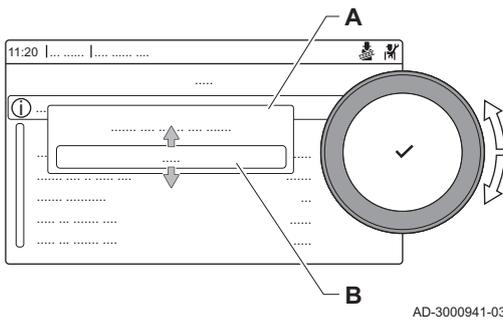
Values at full load for G31 (propane)	O ₂ (%) ⁽¹⁾	CO ₂ (%) ⁽²⁾
Gas 210 Ace 80	4,7 – 5,7 ⁽¹⁾ – 6,7	9,3 – 10,0 ⁽²⁾ – 10,7
Gas 210 Ace 120	4,7 – 5,7 ⁽¹⁾ – 6,7	9,3 – 10,0 ⁽²⁾ – 10,7
Gas 210 Ace 160	4,9 – 5,7 ⁽¹⁾	10,0 ⁽²⁾ – 10,5
Gas 210 Ace 200	4,9 – 5,7 ⁽¹⁾	10,0 ⁽²⁾ – 10,5
(1) Nominal value. (2) Nominal value.		

Fig.66 Adjusting screw A



4. If the measured value is outside of the values given in the table, correct the gas/air ratio.
5. Use the adjustment screw **A** to set the percentage of O₂/CO₂ for the gas type being used to the nominal value. Increasing the gas flow, will decrease O₂ and increase CO₂. The direction in which the adjusting screw must be turned to increase or decrease the gas flow is indicated on the gas control valve. The 3- to 4-section boilers are supplied with a different gas control valve from the 5- to 6-section boiler. The 3- to 4-section boilers can therefore only be set at low load. See drawing for the position of adjusting screw **A** for full load.
6. Check the flame through the inspection glass. The flame must not blow off.

Fig.67 Low load test



■ **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.

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.

■ **Checking/setting values for O₂/CO₂ at low load**

1. Set the boiler to low load.
2. Measure the percentage of O₂/CO₂ in the flue gases.
3. Compare the measured value with the checking values in the table.

Tab.36 Checking/setting values for O₂/CO₂ at low load for G20 (H gas)

Values at low load for G20 (H gas)	O ₂ (%) ⁽¹⁾	CO ₂ (%) ⁽²⁾
Gas 210 Ace 80	3,8 – 4,3 ⁽¹⁾	9,3 ⁽²⁾ – 9,6
Gas 210 Ace 120	3,8 – 4,3 ⁽¹⁾	9,3 ⁽²⁾ – 9,6
Gas 210 Ace 160	3,4 – 4,3 ⁽¹⁾	9,3 ⁽²⁾ – 9,8
Gas 210 Ace 200	3,4 – 4,3 ⁽¹⁾	9,3 ⁽²⁾ – 9,8
(1) Nominal value.		
(2) Nominal value.		

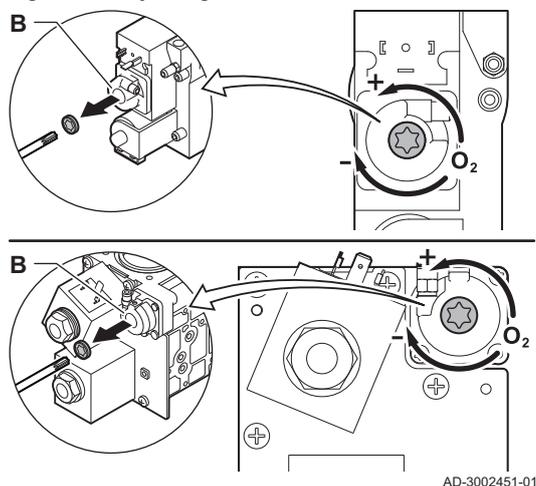
Tab.37 Checking/setting values for O₂/CO₂ at low load for G31 (propane)

Values at low load for G31 (propane)	O ₂ (%) ⁽¹⁾	CO ₂ (%) ⁽²⁾
Gas 210 Ace 80	4,1 – 4,9 ⁽¹⁾	10,5 ⁽²⁾ – 11,0
Gas 210 Ace 120	4,1 – 4,9 ⁽¹⁾	10,5 ⁽²⁾ – 11,0

Values at low load for G31 (propane)	O ₂ (%) ⁽¹⁾	CO ₂ (%) ⁽²⁾
Gas 210 Ace 160	4,1 – 4,9 ⁽¹⁾	10,5 ⁽²⁾ – 11,0
Gas 210 Ace 200	4,1 – 4,9 ⁽¹⁾	10,5 ⁽²⁾ – 11,0

(1) Nominal value.
(2) Nominal value.

Fig.68 Adjusting screw B



- If the measured value is outside of the values given in the table, correct the gas/air ratio.
- Use the adjustment screw **B** to set the percentage of O₂/CO₂ for the gas type being used to the nominal value. Increasing the gas flow, will decrease O₂ and increase CO₂. The direction in which the adjusting screw must be turned to increase or decrease the gas flow is indicated on the gas control valve. The 3- to 4-section boilers are supplied with a different gas control valve from the 5- to 6-section boilers. See drawing for the position of adjusting screw **B** for low load.
- Check the flame through the inspection glass. The flame must not blow off.
- Repeat the full load test and the low load test as often as necessary until the correct values are obtained.
- Set the boiler back to the normal operating status.

7.3 Final instructions

- Remove the measuring equipment.
- Screw the cap on to the flue gas measuring point.
- Seal the gas valve unit.
- Put the front casing back.
- Heat up the central heating system to approximately 70°C.
- Switch the boiler off.
- Vent the central heating system after approx. 10 minutes.
- Turn on the boiler.
- Check the water pressure. If necessary, top up the central heating system.
- Fill in the following data on the sticker included, and attach it next to the data plate on the appliance.
 - The gas type, if adapted to another gas;
 - The gas supply pressure;
 - The flue type, if set to overpressure application;
 - The parameters modified for the changes mentioned above;
 - Any fan speed parameters modified for other purposes.
- Optimise the settings as required for the system and user preferences.

Fig.69 Example filled-in sticker

<p>Adjusted for / Réglée pour / Ingesteld op / Eingestellt auf / Regolato per / Ajustado para / Ρυθμισμένο για / Nastawiony na / настроен для / Reglat pentru / настроен за / ayarlanmıştır / Nastavijen za / beállitva / Nastaveno pro / Asetettu kaasulle / Justert for / indstillet til / ل تنظیم : G20</p> <p><input checked="" type="checkbox"/> Gas 20 mbar</p> <p><input checked="" type="checkbox"/> C_{(10)3(X)} <input type="checkbox"/> C_{(11)3(X)} <input type="checkbox"/> C_{(13)3(X)} <input type="checkbox"/> C_{(12)3(X)}</p>	<p>Parameters / Paramètres / Parameter / Parametri / Parámetros / Παράμετροι / Parametry / Параметри / Parametrii / Параметри / Parametreler / Paraméterek / Parametrit / Parametere / Parameter : شامل عمل :</p> <p>DP003 - 3300 GP007 - 3300 GP008 - 2150 GP009 -</p>
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See

For more information; Settings, page 44 and User instructions, page 66.

- Save the commissioning settings on the control panel, so they can be restored after a reset.
- Instruct the user in the operation of the system, boiler and controller.
- Inform the user of the maintenance to be performed.
- Hand over all manuals to the user.

7.3.1 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.

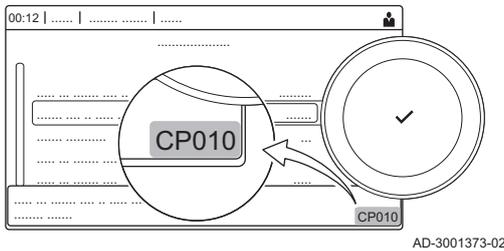
1. Press the ≡ button.
2. Select **Advanced Service Menu**.
3. Select **Save as commissioning settings**.
4. Select **Confirm** to save the settings.

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

8 Settings

8.1 Introduction to parameter codes

Fig.70 Code on a HMI T-control



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.71 First letter



The first letter is the category the code relates to.

- A** Appliance: Appliance
- 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.72 Second letter



The second letter is the type.

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

Fig.73 Number



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

8.2 Searching the parameters, counters and signals

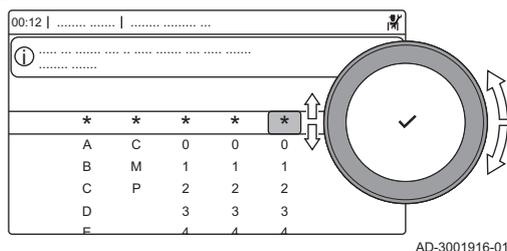
You can search and change data points (Parameters, counters, signals) of the appliance, connected control boards and sensors.

▶▶ ≡ > **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**.

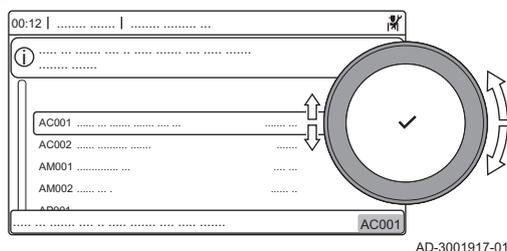
Fig.74 Search



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.75 List of datapoints



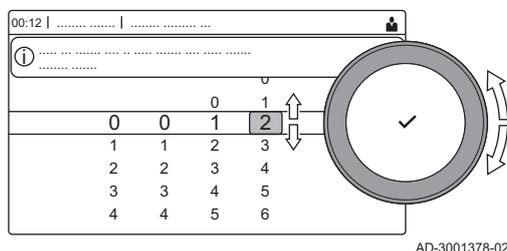
- ⇒ The list of datapoints appears in the display. Only the first 30 results are shown when searching.
5. Select the desired datapoint.

8.3 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.

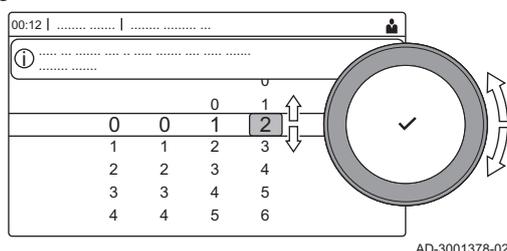
Fig.76 Installer level



1. Access the installer level via the tile:
 - 1.1. Select the tile [🔧].
 - 1.2. Use code: **0012**.

⇒ The tile [🔧] shows that the installer access is **On**, and the icon in the top right of the display changes into 🔧.

Fig.77 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 by:

- Selecting the tile [🔧].
- Selecting **Disable installer access** from the **Main Menu**.

8.3.1 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.38 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

8.3.2 Establishing a Bluetooth connection

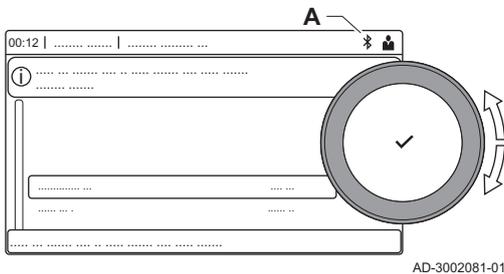
A GTW-35 is needed to connect to the appliance via Bluetooth.

Proceed as follows to establish a Bluetooth connection:

▶▶ ≡ > **Bluetooth**

- 💡 Use the rotary knob to navigate.
- Use the ✓ button to confirm your selection.

Fig.78 Bluetooth enabled



1. Enable Bluetooth on the appliance:

A Bluetooth is enabled when the Bluetooth icon is displayed

- 💡 In most cases Bluetooth is enabled in the factory settings.

- 1.1. Press the ≡ button.
- 1.2. Select **Bluetooth**.
- 1.3. Select **Bluetooth**.
- 1.4. Select **On**.
⇒ Bluetooth is now enabled.

2. Connect to the appliance with a mobile device:

- 2.1. On the mobile device, connect to **CU-GH13_.....** or **GTW-35_.....**.
⇒ The appliance detects the incoming pairing request and displays the pairing code and Bluetooth status.
- 2.2. Use the pairing code displayed on the appliance.
- 2.3. Wait for the pairing process to finish before interacting with the appliance.

8.4 List of parameters

8.4.1 CU-GH13 control unit parameters

All tables show the factory setting for the parameters.

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

Tab.39 Navigation for basic installer level

Level	Menu path
Basic installer	≡ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General ⁽²⁾
<p>(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.</p> <p>(2) The parameters can also be accessed directly via the Search datapoints function: ≡ > Installation Setup > Search datapoints</p>	

Tab.40 Factory settings at basic installer level

Code	Display text	Description	Adjustment range	Submenu	80	120	160	200
AP016	CH function on	Enable central heating heat demand processing	0 = Off 1 = On	Gas fired appliance	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
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
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
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 – 30 °C	CIRCA	20	20	20	20
CP320	OperatingZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Off	CIRCA	0	0	0	0
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 – 30 °C	CIRCA	20	20	20	20
CP550	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	CIRCA	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
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
CP750	MaxZone Pre-heat time	Maximum zone preheat time	0 – 240 Min	CIRCA	0	0	0	0

Tab.41 Navigation for installer level

Level	Menu path
Installer	☰ > Installation Setup > CU-GH13 > 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.42 Factory settings at installer level

Code	Display text	Description	Adjustment range	Submenu	80	120	160	200
AP001	BL function	BL input function selection	1 = Full blocking 2 = Partial blocking 3 = User reset locking	Gas fired appliance	1	1	1	1
AP006	Min water pressure	Appliance will report low water pressure below this value	0 – 6 bar	Gas fired appliance	0.8	0.8	0.8	0.8
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

Code	Display text	Description	Adjustment range	Submenu	80	120	160	200
AP009	Service hours	Number of heat generator operating hours for raising a service notification	100 – 25500 Hours	Gas fired appliance	8750	8750	8750	8750
AP010	Service notification	Select the type of service notification	0 = None 1 = Custom notification 2 = ABC notification 3 = D notification	Gas fired appliance	3	3	3	3
AP011	Service hours mains	Hours powered to raise a service notification	100 – 51000 Hours	Gas fired appliance	17500	17500	17500	17500
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
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
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outside sensor 1 = AF60	Outdoor temperature	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
AP073	Summer Winter	Outdoor temperature; Upper limit for heating	15 – 30.5 °C	Outdoor temperature	22	22	22	22
AP079	Building Inertia	Inertia of the building used for heat up speed	0 – 10	Outdoor temperature	3	3	3	3
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated	-30 – 20 °C	Outdoor temperature	-10	-10	-10	-10
AP091	Outside sensor source	Type of outside sensor connection to be used	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	Outdoor temperature	0	0	0	0
AP098	BL1 contact config.	BL1 input contact configuration	0 = Open 1 = Closed	Gas fired appliance	1	1	1	1
CP000	MaxZoneT-FlowSetpoint	Maximum Flow Temperature setpoint zone	7 – 100 °C	CIRCA	80	80	80	80
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convectector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank	CIRCA	1	1	1	1
CP040	Postrun zone pump	Pump post runtime of the zone	0 – 20 Min	CIRCA	0	0	0	0
CP060	Room T holiday	Wished room zone temperature on holiday period	5 – 20 °C	CIRCA	6	6	6	6

Code	Display text	Description	Adjustment range	Submenu	80	120	160	200
CP070	MaxReduce- dRoomT.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
CP210	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit	15 – 90 °C	CIRCA	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
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 – 4	CIRCA	1.5	1.5	1.5	1.5
CP240	ZoneRoomU- nitInfl	Adjustment of the influence of the zone room unit	0 – 10	CIRCA	3	3	3	3
CP250	CalSon- deAmbZone	Calibration of Zone Room Unit	-5 – 5 °C	CIRCA	0	0	0	0
CP340	TypeRedu- cedNight- Mode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	CIRCA	1	1	1	1
CP640	OTH LogicLev contact	Opentherm Logic level contact of the zone	0 = Open 1 = Closed	CIRCA	1	1	1	1
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
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
CP780	Control strat- egy	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
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
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1000 – 4500 Rpm	Gas fired appliance	5100	6400	4800	5700
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	900 – 3700 Rpm	Gas fired appliance	1200	1300	1000	1200
GP009	Fan RPM Start	Fan speed at appliance start	900 – 5000 Rpm	Gas fired appliance	1700	1700	1700	1700
GP021	Temp diff Modulating	Modulate back when delta temperature is larger than this threshold	5 – 40 °C	Gas fired appliance	30	30	30	30
PP015	CH Pump postrun time	Central heating pump post run time	1 – 99 Min	Gas fired appliance	3	3	3	3
PP016	Max CH pump speed	Maximum central heating pump speed (%)	20 – 100 %	Gas fired appliance	100	100	100	100
PP018	Min CH pump speed	Minimum central heating pump speed (%)	20 – 100 %	Gas fired appliance	20	20	20	20

Code	Display text	Description	Adjustment range	Submenu	80	120	160	200
PP023	CH Hysteresis	Temperature hysteresis for the generator to start on central heating	1 – 25 °C	Gas fired appliance	10	10	10	10
ZP000	Screed drying time 1	Set the number of days spent in the first screed drying step	0 – 30 Days	Direct zone	3	3	3	3
ZP010	Screed start temp 1	Set the start temperature for the first step of screed drying	7 – 60 °C	Direct zone	20	20	20	20
ZP020	Screed end temp 1	The end temperature for the first step of screed drying	7 – 60 °C	Direct zone	32	32	32	32
ZP030	Screed drying time 2	Set the number of days spent in the second screed drying step	0 – 30 Days	Direct zone	11	11	11	11
ZP040	Screed start temp 2	Set the start temperature for the second step of screed drying	7 – 60 °C	Direct zone	32	32	32	32
ZP050	Screed end temp 2	The end temperature for the second step of screed drying	7 – 60 °C	Direct zone	32	32	32	32
ZP060	Screed drying time 3	Set the number of days spent in the third screed drying step	0 – 30 Days	Direct zone	2	2	2	2
ZP070	Screed start temp 3	Set the start temperature for the third step of screed drying	7 – 60 °C	Direct zone	32	32	32	32
ZP080	Screed end temp 3	The end temperature for the third step of screed drying	7 – 60 °C	Direct zone	24	24	24	24
ZP090	Screed drying enable	Enable the screed drying of the zone	0 = Off 1 = On	Direct zone	0	0	0	0

Tab.43 Navigation for advanced installer level

Level	Menu path
Advanced installer	☰ > Installation Setup > CU-GH13 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > Advanced ⁽²⁾
<p>(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.</p> <p>(2) The parameters can also be accessed directly via the Search datapoints function: ☰ > Installation Setup > Search datapoints</p>	

Tab.44 Factory settings at advanced installer level

Code	Display text	Description	Adjustment range	Submenu	80	120	160	200
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint	Gas fired appliance	0	0	0	0
AP003	Flue valve wait time	Heat generator wait time to open the flue gas	0 – 255 Sec	Gas fired appliance	0	0	0	0
AP004	Hydr Valve Wait Time	Heat generator wait time to open the hydraulic valve	0 – 255 Sec	Gas fired appliance	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
AP061	Max corr system sens	Maximum system temperature correction when a system temperature sensor is available	0 – 20 °C	Gas fired appliance	10	10	10	10
AP062	P-factor system sens	P-factor (gain factor) for the system temperature correction	0.5 – 5	Gas fired appliance	1	1	1	1
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed lowloss header)	0 = No 1 = Yes	Gas fired appliance	0	0	0	0

Code	Display text	Description	Adjustment range	Submenu	80	120	160	200
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 – 100 °C	CIRCA	90	90	90	90
CP290	ConfigZone-PumpOut	Configuration of Zone Pump Output	0 = Zone output 1 = CH mode 2 = DHW mode 3 = Cooling mode 4 = Error report 5 = Burning 6 = Service flag 7 = System error 8 = DHW looping 9 = Primary pump	CIRCA	0	0	0	0
CP450	Pump type	The connected pump type	0 = On/Off 1 = Modulating PWM 2 = Modulating LIN	CIRCA	0	0	0	0
CP520	Zone Power setpoint	Power setpoint per zone	0 – 100 %	CIRCA	100	100	100	100
CP530	Zone PWM Pump speed	Pulse Width Modulation pump speed per zone	20 – 100 %	CIRCA	100	100	100	100
CP680	ConfPairing RU Zone	Select the Bus channel of the room unit for this zone	0 – 255	CIRCA	0	0	0	0
CP850	Hydronic balancing	Hydronic balancing operation possible	0 = No 1 = Yes	CIRCA	0	0	0	0
DP003	Abs max fan DHW	Maximum fan speed on Domestic Hot Water	1000 – 7000 Rpm	Gas fired appliance	5100	6400	4800	5700
DP010	Hysteresis DHW	Temperature hysteresis for the heat generator to start on domestic hot water production	1 – 10 °C	Gas fired appliance	5.5	5.5	5.5	5.5
DP011	Stop offset DHW	Temperature offset to stop heat generator on domestic hot water production	0 – 100 °C	Gas fired appliance	5	5	5	5
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 – 99 Sec	Gas fired appliance	15	15	15	15
DP140	DHW load type	DHW load type (0 = Combi, 1 = Solo)	0 = Combi 1 = Solo	Gas fired appliance	1	1	1	1
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	Gas fired appliance	1	1	1	1
GP017	Max power	Maximum power percentage in kilo Watt	0 – 1000 kW	Gas fired appliance	92.4	126.9	177.3	212.3
GP019	Pre Purge Time	Fan running time before burner start	1 – 255 Sec	Gas fired appliance	20	20	20	20
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	0 – 255	Gas fired appliance	10	10	10	10
GP024	VPS Check	Valve Proofing System check on / off	0 = No 1 = Yes	Gas fired appliance	1	1	1	1
GP050	Power Min	Minimum power in kilo Watt for RT2012 calculation	0 – 300 kW	Gas fired appliance	17	23	31	41
GP082	Chimney over DHW	Enable the DHW circuit during chimney sweep	0 = Off 1 = On	Gas fired appliance	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

Code	Display text	Description	Adjustment range	Submenu	80	120	160	200
PP012	Stabilization time	Stabilization time after heat generator start for central heating	0 – 180 Sec	Gas fired appliance	30	30	30	30
PP017	ChPump-SpeedMax-Factor	Maximum central heating at minimum load as percentage of max pump speed	0 – 100 %	Gas fired appliance	30	30	30	30

9 Maintenance

9.1 Maintenance regulations



Important

The boiler must be maintained by a qualified installer in accordance with local and national regulations.



Important

An annual inspection is mandatory.

- Perform the standard checking and maintenance procedures once a year.
- Perform the specific maintenance procedures if necessary.



Important

Adjust the frequency of inspection and service to the conditions of use. This applies especially if the boiler is:

- In constant use (for specific processes).
- Used with a low supply temperature.
- Used with a high ΔT .



Caution

- Replace defective or worn parts with original spare parts. Not doing so will void warranty.
- During inspection and maintenance work, always replace all gaskets on the parts removed.
- Check whether all gaskets have been positioned properly (absolutely flat in the appropriate groove means they are gas, air and water tight).
- During the inspection and maintenance work, water (drops, splashes) must never come into contact with the electrical parts.



Warning

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

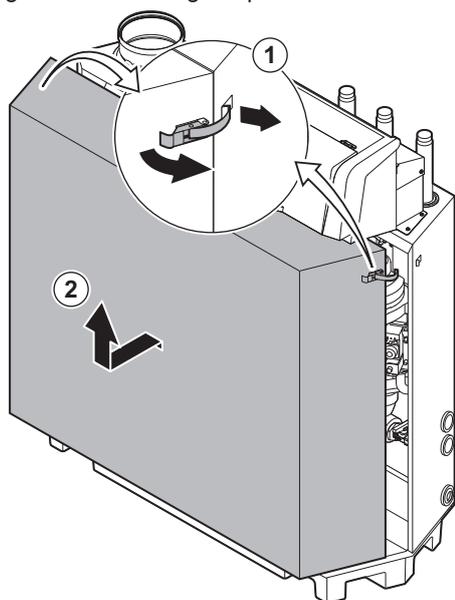


Danger of electric shock

Ensure that the boiler is switched off.

9.2 Opening the boiler

Fig.79 Removing the panel



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1. Unlock the over centre latches on both sides of the boiler.
2. Remove the panel.

9.3 Standard inspection and maintenance operations

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



See

The boiler service manual for the specific maintenance work.

9.3.1 Preparation

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

1. Set the boiler to full load until the return temperature is around 65 °C, to dry the heat exchanger on the flue gas side.
2. Check the water pressure.
The minimum water pressure is 0.8 bar. The recommended water pressure is between 1.5 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 O₂/CO₂ percentage in the flue gasses.



Important

- This appliance is suitable for category I_{2H} containing up to 20% Hydrogen gas (H₂). Due to variations in the H₂ percentage, the O₂/CO₂ percentage can vary over time. (For example: a percentage of 20% H₂ 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 O₂/CO₂ values of the gas used.



See also

Checking and setting the gas/air ratio, page 40

9.3.2 Checking the water quality

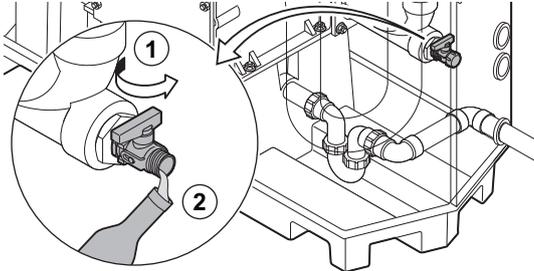
The requirements for the water quality can be found in our **Water quality instructions**.



Caution

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

Fig.80 Checking the water quality

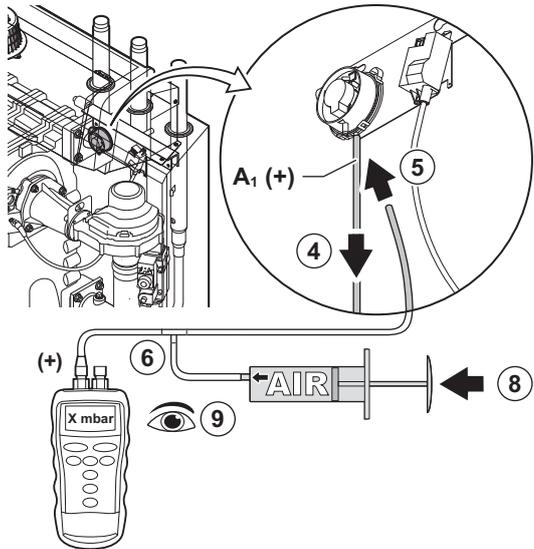


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1. Fill a clean bottle with some water from the boiler using the filling/drain valve.
2. Check the quality of this water sample or have it checked.

9.3.3 Checking the air pressure differential switch

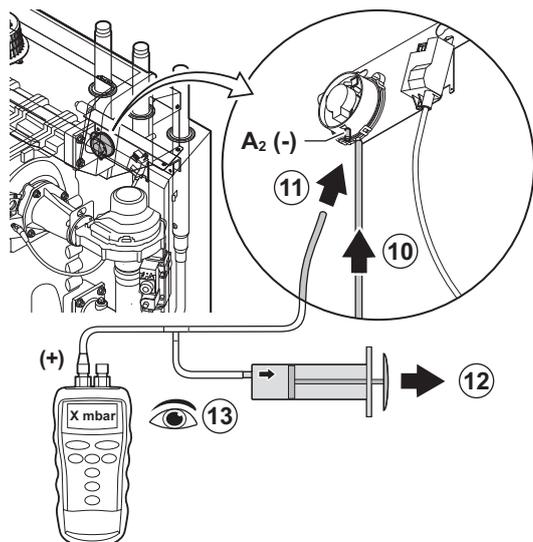
Fig.81 Positive (+) side of the air pressure differential switch



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1. Switch off the boiler.
2. Remove any dirt from all the connection points for hoses and the air pressure differential switch.
3. Check the condition and tightness of the hoses of the air pressure differential switch.
⇒ Replace the hoses if necessary.
4. Disconnect the silicon hose from the + side (A1) of the air pressure differential switch.
5. Connect a hose to the + side of the air pressure differential switch.
6. Take a T piece and connect it as follows:
 - 6.1. Connect one end of the T piece to the hose from the + side of the air pressure differential switch.
 - 6.2. Connect one end of the T piece to a large plastic syringe.
 - 6.3. Connect the other end of the T piece to a pressure gauge.
7. Switch on the boiler.
8. Push the syringe in very slowly until error code **E.04.08** appears on the display.
9. Check the pressure indicated by the pressure gauge at that point. This is the switch pressure.
⇒ A switch pressure between 5.5 and 6.5 mbar is good. A lower or higher switch pressure indicates a problem with the air pressure differential switch.

Fig.82 Negative (-) side of the air pressure differential switch



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10. Remove the syringe hose from the + side of the air pressure differential switch and reconnect the original hose.
11. Connect the - side (A2) of the air pressure differential switch the hose coming from the T piece.
12. Pull out the syringe very slowly until error code **E.04.08** appears on the display.
13. Check the pressure indicated by the pressure gauge at that point. This is the switch pressure.
⇒ A switch pressure between -5.5 and -6.5 mbar is good. A lower or higher switch pressure indicates a problem with the air pressure differential switch.

9.4 Finalising work

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



Caution

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

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

9.5 Disposal and recycling



Caution

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

Fig.83



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

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

10 Troubleshooting

10.1 Error codes

The Gas 210 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.45 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 Remeha.

10.1.1 Display of error codes

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

- 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.



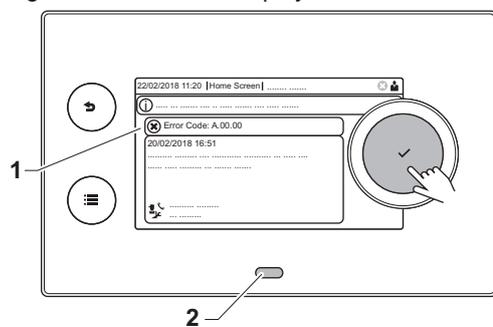
Important

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 your installer or Remeha for support.

Fig.84 Error code display on HMI T-control



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10.1.2 Warning

Tab.46 Warning codes

Code	Display text	Description	Solution
A.00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range	Zone flow temperature sensor open: <ul style="list-style-type: none"> • Sensor is not present. • Wrong Zone Function setting: check the setting of parameter CP02x. • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: make sure that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
A.00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range	Zone flow temperature sensor short-circuited: <ul style="list-style-type: none"> • Sensor is not present. • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
A.01.21	Dhw Temp GradLevel3	Maximum Dhw Temperature Gradient Level3 Exceeded	Temperature warning: <ul style="list-style-type: none"> • Check the flow.
A.02.06	Water Press Warning	Water Pressure Warning active	Water pressure warning: <ul style="list-style-type: none"> • Water pressure too low; check the water pressure
A.02.37	Uncritic device lost	Uncritical device has been disconnected	SCB not found: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • Carry out an auto-detect
A.02.46	Full Can Device Adm	Full Can Device Administration	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect
A.02.49	Failed Init Node	Failed Initialising Node	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect
A.02.55	Inval or miss SerNR	Invalid or missing device serial number	Contact your supplier.
A.03.17	Safety check	Periodically safety check ongoing	Safety check procedure active: <ul style="list-style-type: none"> • No action

10.1.3 Blocking

Tab.47 Blocking codes

Code	Display text	Description	Solution
H.00.16	DHW sensor Open	Domestic Hot Water tank temperature sensor is either removed or measures a temperature below range	Domestic hot water temperature sensor open: <ul style="list-style-type: none"> • Sensor is not present • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Bad connection: check the wiring and connectors • Faulty sensor: replace the sensor
H.00.17	DHW sensor Closed	Domestic Hot Water tank temperature sensor is either shorted or measures a temperature above range	Domestic hot water temperature sensor short-circuited: <ul style="list-style-type: none"> • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Bad connection: check the wiring and connectors • Faulty sensor: replace the sensor
H.00.36	T 2nd Return Open	Second return temperature sensor is either removed or measures a temperature below range	Second return temperature sensor open: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
H.00.37	T 2nd Return Closed	Second return temperature sensor is either shorted or measures a temperature above range	Second return temperature sensor short-circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
H.01.00	Comm Error	Communication Error occurred	Communication error with the security kernel: <ul style="list-style-type: none"> • Restart the boiler • Replace the CU-GH
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: <ul style="list-style-type: none"> • No flow or insufficient flow: <ul style="list-style-type: none"> - Check the circulation (direction, pump, valves). - Check the 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: <ul style="list-style-type: none"> - Check that the sensors are operating correctly. - Check that the sensor has been fitted properly.

Code	Display text	Description	Solution
H.01.07	Max Delta TH-TR	Maximum difference between heat exchanger temperature and return temperature	<p>Maximum difference between heat exchanger and return temperature exceeded:</p> <ul style="list-style-type: none"> • No flow or insufficient flow: <ul style="list-style-type: none"> - Check the circulation (direction, pump, valves). - Check the water pressure. - Check the cleanliness of the heat exchanger. - Check that the installation has been correctly vented to remove air. • Sensor error: <ul style="list-style-type: none"> - Check that the sensors are operating correctly. - Check that the sensor has been fitted properly.
H.01.08	CH temp grad level3	Maximum CH temperature gradient level3 exceeded	<p>Maximum heat exchanger temperature increase has been exceeded:</p> <ul style="list-style-type: none"> • No flow or insufficient flow: <ul style="list-style-type: none"> - Check the circulation (direction, pump, valves) - Check the water pressure - Check the cleanliness of the heat exchanger - Check that the central heating system has been correctly vented to remove air • Sensor error: <ul style="list-style-type: none"> - Check that the sensors are operating correctly - Check that the sensor has been fitted properly
H.01.09	Gas Pressure Switch	Gas Pressure Switch	<p>Gas pressure too low:</p> <ul style="list-style-type: none"> • No flow or insufficient flow: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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	<p>Maximum heat exchanger temperature exceeded:</p> <ul style="list-style-type: none"> • 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	<p>Flow temperature sensor above normal range:</p> <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • No flow or insufficient flow: <ul style="list-style-type: none"> - Check the circulation (direction, pump, valves) - Check the water pressure - Check the cleanliness of the heat exchanger
H.01.15	Max Tflue Gas	Flue gas temperature has exceeded the maximum operating value	<p>Maximum flue gas temperature exceeded:</p> <ul style="list-style-type: none"> • 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

Code	Display text	Description	Solution
H.02.00	Reset In Progress	Reset In Progress	Reset procedure active: <ul style="list-style-type: none"> • No action
H.02.02	Wait Config Number	Waiting For Configuration Number	Configuration error or unknown configuration number: <ul style="list-style-type: none"> • Reset CN1 and CN2
H.02.03	Conf Error	Configuration Error	Configuration error or unknown configuration number: <ul style="list-style-type: none"> • Reset CN1 and CN2
H.02.04	Parameter Error	Parameter Error	Factory settings incorrect: <ul style="list-style-type: none"> • Parameters are not correct: <ul style="list-style-type: none"> - Restart the boiler - Reset CN1 and CN2 - Replace the CU-GH PCB
H.02.05	CSU CU mismatch	CSU does not match CU type	Configuration error: <ul style="list-style-type: none"> • Reset CN1 and CN2
H.02.09	Partial block	Partial blocking of the device recognized	Blocking input active or frost protection active: <ul style="list-style-type: none"> • External cause: remove external cause • Wrong parameter set: check the parameters • Bad connection: check the connection
H.02.10	Full Block	Full blocking of the device recognized	Blocking input is active (without frost protection): <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • External cause: remove external cause • Wrong parameter set: check the parameters • Bad connection: check the connection
H.02.15	Ext CSU Timeout	External CSU Timeout	CSU time out: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Faulty CSU: replace CSU.
H.02.18	OBD Error	Object Dictionary Error	<ul style="list-style-type: none"> • Reset CN1 and CN2  See The data plate for the CN1 and CN2 values.
H.02.36	Funct device lost	Functional device has been disconnected	Communication error with the SCB PCB: <ul style="list-style-type: none"> • Bad connection with BUS: check the wiring. • No PCB: reconnect PCB or retrieve from memory using auto-detect.
H.02.48	Funct Gr Conf Fault	Function Group Configuration Fault	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect
H.02.50	Funct Gr Comm Err	Function Group Communication Error	SCB not found: <ul style="list-style-type: none"> • Carry out an auto-detect.
H.02.62	Unsupported function	Zone B doesn't support the selected function	Zone B function setting is not correct or is not allowed on this circuit: <ul style="list-style-type: none"> • Check the setting of parameter CP021.
H.02.64	Unsupported function	Zone D doesn't support the selected function	Zone C function (DHW) setting is not correct or is not allowed on this circuit: <ul style="list-style-type: none"> • Check the setting of parameter CP022.
H.02.80	Missing Cascade Ctrl	Missing Cascade controller	Cascade controller not found: <ul style="list-style-type: none"> • Reconnect the cascade master • Carry out an auto-detect

Code	Display text	Description	Solution
H.03.00	Parameter Error	Safety parameters level 2, 3, 4 are not correct or missing	Parameter error: security kernel <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Restart the boiler
H.03.02	Flame loss detected	Measured ionisation current is below limit	No flame during operation: <ul style="list-style-type: none"> No ionisation current: <ul style="list-style-type: none"> 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 occurred	Security kernel error: <ul style="list-style-type: none"> Restart the boiler Replace the CU-GH

10.1.4 Locking

Tab.48 Locking codes

Code	Display text	Description	Solution
E.00.00	TFlow Open	Flow temperature sensor is either removed or measures a temperature below range	Zone flow temperature sensor open: <ul style="list-style-type: none"> Sensor is not present. Wrong Zone Function setting: check the setting of parameter CP02x. Bad connection: check the wiring and connectors. Incorrectly fitted sensor: make sure that the sensor has been correctly fitted. Faulty sensor: replace the sensor.
E.00.01	TFlow Closed	Flow temperature sensor is either shorted or measures a temperature above range	Zone flow temperature sensor short-circuited: <ul style="list-style-type: none"> Sensor is not present. Bad connection: check the wiring and connectors. Incorrectly fitted sensor: check that the sensor has been correctly fitted. Faulty sensor: replace the sensor.
E.00.04	TReturn Open	Return temperature sensor is either removed or measures a temperature below range	Return temperature sensor open: <ul style="list-style-type: none"> Bad connection: check the wiring and connectors Incorrectly fitted sensor: check that the sensor has been correctly fitted Faulty sensor: replace the sensor
E.00.05	TReturn Closed	Return temperature sensor is either shorted or measures a temperature above range	Return temperature sensor short-circuited: <ul style="list-style-type: none"> Bad connection: check the wiring and connectors Incorrectly fitted sensor: check that the sensor has been correctly fitted Faulty sensor: replace the sensor

Code	Display text	Description	Solution
E.00.08	THeat Ex Open	Heat exchanger temperature sensor is either removed or measures a temperature below range	Heat exchanger temperature sensor open: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
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: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
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: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.21	TFlue Gas Closed	Flue gas temperature sensor is either shorted or measures a temperature above range	Flue gas sensor short-circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.40	WaterPressureOpen	Water pressure sensor is either removed or measures a temperature below range	Hydraulic pressure sensor open: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.00.41	WaterPressureClosed	Water pressure sensor is either shorted or measures a temperature above range	Hydraulic pressure sensor short-circuited: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Incorrectly fitted sensor: check that the sensor has been correctly fitted. • Faulty sensor: replace the sensor.
E.01.04	5x Flame Loss Error	5x Error of unintended Flame Loss occurrence	Flame loss occurs 5 times: <ul style="list-style-type: none"> • 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.01.12	Return Higher Flow	Return temperature has a higher temperature value than the flow temperature	Flow and return reversed: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Water circulation in wrong direction: check the circulation (direction, pump, valves) • Incorrectly fitted sensor: check that the sensor has been correctly fitted • Malfunctioning sensor: check the Ohmic value of the sensor • Faulty sensor: replace the sensor

Code	Display text	Description	Solution
E.02.04	Parameter Error	Parameter Error	Configuration error: <ul style="list-style-type: none"> Reset CN1 and CN2  See The data plate for the CN1 and CN2 values.
E.02.13	Blocking Input	Blocking Input of the Control Unit from device external environment	Blocking input is active: <ul style="list-style-type: none"> External cause: remove external cause Wrong parameter set: check the parameters
E.02.15	Ext CSU Timeout	External CSU Timeout	CSU time out: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Restart the boiler Replace the CU-GH
E.02.35	Safety device lost	Safety critical device has been disconnected	Communication fault <ul style="list-style-type: none"> Carry out an auto-detect
E.02.47	Failed Conn Funct Gr	Failed Connecting Function Groups	Function group not found: <ul style="list-style-type: none"> Carry out an auto-detect Restart the boiler Replace the CU-GH
E.02.48	Funct Gr Conf Fault	Function Group Configuration Fault	SCB not found: <ul style="list-style-type: none"> Carry out an auto-detect.
E.02.70	HRU test error	External heat recovery unit test failed	Heat recovery unit non-return valve check failed: <ul style="list-style-type: none"> Check the external heat recovery unit non-return valve.
E.04.00	Parameter error	Safety parameters Level 5 are not correct or missing	Replace the CU-GH.
E.04.01	TFlow Closed	Flow temperature sensor is either shorted or measuring a temperature above range	Flow temperature sensor short circuited: <ul style="list-style-type: none"> Bad connection: check the wiring and connectors Incorrectly fitted sensor: check that the sensor has been correctly fitted Faulty sensor: replace the sensor
E.04.02	TFlow Open	Flow temperature sensor is either removed or measuring a temperature below range	Flow temperature sensor open: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Bad connection: check the wiring and connectors Incorrectly fitted sensor: check that the sensor has been correctly fitted Faulty sensor: replace the sensor
E.04.05	TFlue Open	Flue temperature sensor is either removed or measuring a temperature below range	Flue gas temperature sensor open: <ul style="list-style-type: none"> Bad connection: check the wiring and connectors Incorrectly fitted sensor: check that the sensor has been correctly fitted Faulty sensor: replace the sensor

Code	Display text	Description	Solution
E.04.07	TFlow Sensor	Deviation in flow sensor 1 and flow sensor 2 detected	Flow temperature sensor deviation: <ul style="list-style-type: none"> • Bad connection: check the connection • Faulty sensor: replace the sensor
E.04.08	Safety input	Safety input is open	Air pressure differential switch activated: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Pressure in flue gas duct is or was too high: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> • Bad connection: check the connection • Faulty sensor: replace the sensor
E.04.10	Unsuccessful start	5 Unsuccessful burners starts detected	Five failed burner starts: <ul style="list-style-type: none"> • No ignition spark: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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.04.11	VPS	VPS Gas Valve proving failed	Gas leakage control fault: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Gas leakage control VPS faulty: Replace the valve proving system (VPS) • Gas valve unit faulty: Replace the gas valve unit
E.04.12	False flame	False flame detected before burner start	False flame signal: <ul style="list-style-type: none"> • The burner remains very hot: Set the O₂ • 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

Code	Display text	Description	Solution
E.04.13	Fan	Fan speed has exceeded normal operating range	Fan fault: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors. • Fan operates when it should not be operating: check for excessive chimney draught • Faulty fan: replace the fan
E.04.15	FlueGas Pipe Blocked	The flue gas pipe is blocked	Flue gas outlet is blocked: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • Bad connection: check the wiring and connectors • Faulty gas valve unit: Replace the gas valve unit
E.04.23	Internal Error	Gas Valve Control internal locking	<ul style="list-style-type: none"> • Restart the boiler • Replace the CU-GH
E.04.250	Internal error	Gas valve relay error detected	Internal error: <ul style="list-style-type: none"> • Replace the PCB.
E.04.254	Unknown	Unknown	Unknown error: <ul style="list-style-type: none"> • Replace the PCB.

10.2 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.

10.2.1 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**

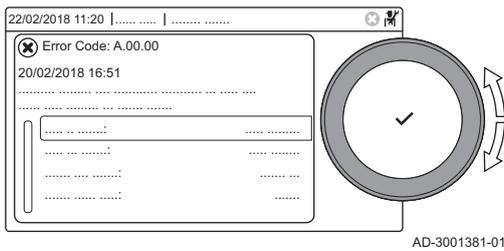


Use the rotary knob to navigate.

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.

Fig.85 Error details



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.

11 User instructions

11.1 Start-up

Start up the boiler as follows:

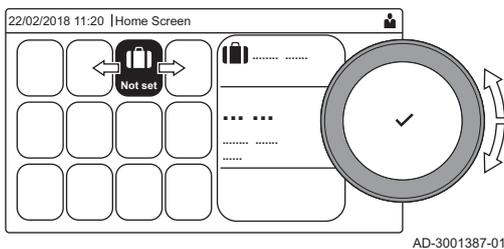
1. Open the boiler gas tap.
2. Power up the boiler.
3. Check the water pressure of the system. If necessary, top up the system.

The current operating condition of the boiler is shown on the display.

11.2 Accessing the user level menus

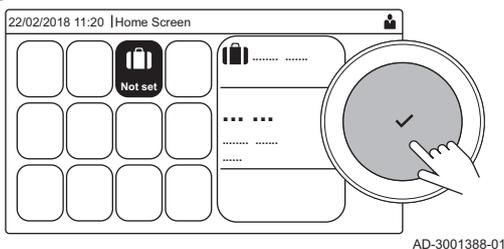
The tiles on the home screen provide quick access for the user to the corresponding menus.

Fig.86 Menu selection



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

Fig.87 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.

11.3 Home screen

The tiles on the home screen provide quick access to the corresponding menus. Use the rotary knob to navigate to the menu of your choice and press the ✓ button to confirm the selection. All options for change will appear in the display (**Cannot edit read-only datapoint** will appear in the display if a setting cannot be changed).

Tab.49 Selectable tiles for the user

Tile	Menu	Function
	Information menu.	Read out various current values.
	Error indicator.	Read out details about the current error. With some errors the  icon will appear with installer contact details (when filled in).
	Holiday Mode.	Set the start and end date of your holiday to lower the room and domestic hot water temperatures of all zones.
	Operating mode.	Change whether your appliance is set to heating, or both, or is turned off.
	Gas boiler indicator.	Read out burning details of the boiler and switch the heating function of the boiler on or off.
	Water pressure indicator.	Shows the water pressure. Top-up the installation when the water pressure is too low.
	Zone setup	Configure the settings per heating circuit.
	DHW setup.	Configure the domestic hot water settings.
	Outdoor sensor setup.	Configure the temperature regulation using the outdoor sensor.
	Cascade settings.	Configure the cascade manager settings.

11.4 Activating holiday programs for all zones

When you go on holiday, the room temperature and domestic hot water temperature can be reduced to save energy. Using the following procedure you can activate the holiday mode for all zones and domestic hot water temperature.

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

1. Select the tile .
2. Select **Start date holiday**.
3. Configure the start date.
4. Select **End date holiday**.
⇒ The day after the start date of your holiday is displayed.
5. Configure the end date.
6. Select **Wished room zone temperature on holiday period**.
7. Configure the temperature.

You can reset or cancel the holiday program by selecting **Reset** in the holiday mode menu.

11.5 Heating circuit configuration

For every heating circuit there is a quick user settings menu available. Select the heating circuit you want to configure by selecting the tile , , , ,  or .

Tab.50 Menu to configure heating circuit

Menu	Function
Set heating temperatures	Set the temperatures for the timer program.
Operating mode	Set the operating mode.
Time programs heating	Set and configure the time programs used when in operating mode Scheduling .
Zone configuration	Configure the settings of the zone circuit.

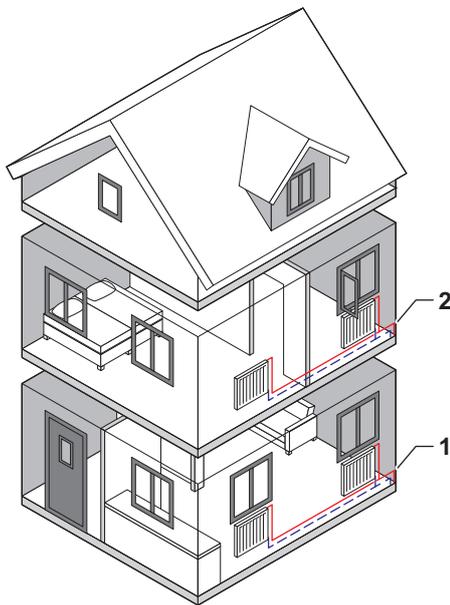
Tab.51 Extended menu to configure a heating circuit **Zone configuration**

Menu	Function
Short temperature change	Change the room temperature temporarily.
OperatingZoneMode	Select the heating operating mode: Scheduling, Manual.
Manu ZoneRoomTempSet	Set the room temperature manually to a fixed setting.
Holiday Mode	Set the start and end date of your holiday and the reduced temperature for this zone.
Zone friendly Name	Create or change the name of the heating circuit.
Icon display zone	Select the icon of the heating circuit.

11.6 Changing the heating temperature of a zone

11.6.1 Definition of zone

Fig.88 Two zones



AD-3001404-01

Zone is the term given to the different hydraulic circuits CIRCA, CIRCB and so on. It designates several areas of a building served by the same circuit.

Multiple zones are only possible with an expansion PCB.

Tab.52 Example of two zones

	Zone	Factory name
1	Zone 1	CIRCA
2	Zone 2	CIRCB

11.6.2 Changing the name and symbol of a zone

The zones have a factory set symbol and name. Depending on your appliance you can change the symbol and name for the zones, not all appliances and zone types will support changing the symbol and name.

- ▶▶ Select zone > **Zone configuration** > **Zone friendly Name** or **Icon display zone**
 Installer access enabled: Select zone > **Zone friendly Name** or **Icon display zone**

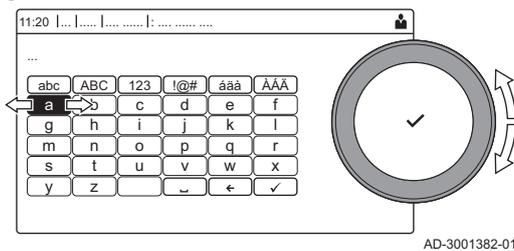
💡 Use the rotary knob to navigate.
 Use the ✓ button to confirm your selection.

1. Select the tile of the zone you want to change.
2. Select **Zone configuration**

💡 This menu will not appear if you have installer access enabled, continue to the next step.

3. Select **Zone friendly Name**
 ⇒ A keyboard with letters, numbers and symbols (characters) is shown.
4. Change the name of the zone (20 characters maximum):

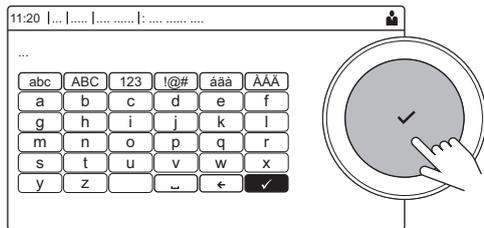
Fig.89 Letter selection



AD-3001382-01

- 4.1. Use the top row to change between capitalisation, numbers, symbols or special characters.
- 4.2. Select a character or action.
- 4.3. Select ← to delete a character.
- 4.4. Select ␣ to add a space.

Fig.90 Finish changing the zone name



AD-3001383-01

- 4.5. Select ✓ to finish changing the zone name.
5. Select **Icon display zone**.
⇒ All available icons appear in the display.
6. Select the desired icon of the zone.

11.6.3 Changing the operating mode of a zone

To regulate the room temperature of the different areas of the house, you can choose from 5 operating modes:

▶▶ Select zone > **Operating mode**

💡 Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

1. Select the tile of the zone you want to change.
2. Select **Operating mode**
3. Select the desired operating mode:

Tab.53 Operating modes

Icon	Mode	Description
	Scheduling	The room temperature is controlled by a timer program
	Manual	The room temperature is set to a fixed setting
	Short temperature change	The room temperature is changed temporarily
	Holiday	The room temperature is reduced during your holiday to save energy
	Antifrost	Protect the boiler and installation from freezing in winter

11.6.4 Time program to control the zone temperature

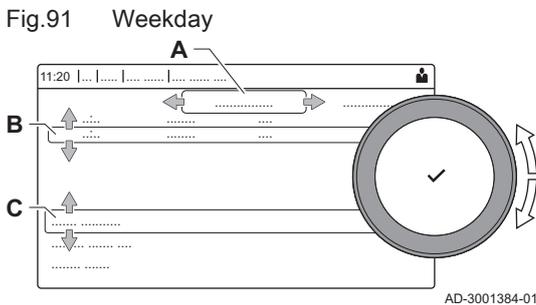
■ Creating a time program

A time program allows you to vary the room temperature per hour and per day. The room temperature is linked to the activity of the time program. You can create up to three time programs per zone. For example, you can create a program for a week with normal working hours and a program for a week when you are at home most of the time.

▶▶ Select zone > **Time programs heating**

💡 Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

1. Select the tile of the zone you want to change.
2. Select **Time programs heating**.

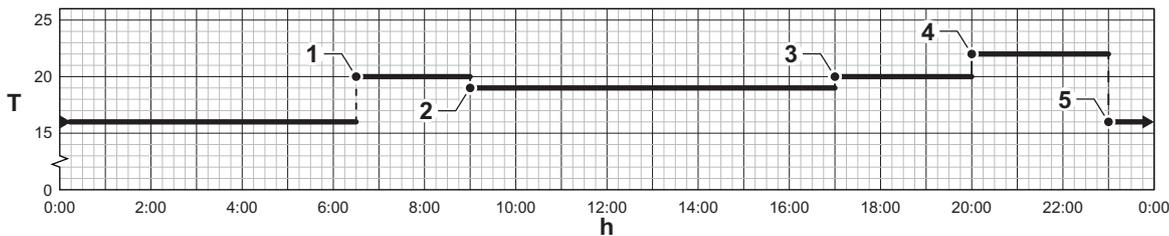


3. Select the time program you want to modify: **Schedule 1, Schedule 2 or Schedule 3.**
 ⇒ Activities scheduled for Monday are displayed. The last scheduled activity of a day is active until the first activity of the next day. At initial start-up, all weekdays have two standard activities; **Home** starting at 6:00 and **Sleep** starting at 22:00.
4. Select the weekday you want to modify.
 - A Weekday
 - B Overview of scheduled activities
 - C List of actions
5. Choose one of the following actions:
 - 5.1. Select scheduled activity to edit the time this activity will start, change the temperature or delete the selected activity.
 - 5.2. **Add time and Activity** to add a new activity to the scheduled activities. Deleting times or activities can be done here.
 - 5.3. **Copy to other day** to copy the scheduled activities of the weekday to other days. The activities including the configured time and temperature will be copied to the selected days.
 - 5.4. **Set activity temperatures** to change the temperature.

■ **Definition of activity**

Activity is the term used when programming time slots in a time program. The time program sets the room temperature for different activities during the day. A temperature setpoint is associated with each activity. The last activity of the day is valid until the first activity of the next day.

Fig.92 Activities of a time program



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Tab.54 Example of activities

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

■ **Changing the name of an activity**

You can change the names of the activities in the time program.

▶ ≡ > **System Settings > Set Heating Activity Names**

- 💡 Use the rotary knob to navigate.
- Use the ✓ button to confirm your selection.

1. Press the ≡ button.
2. Select **System Settings** ⚙️.

3. Select **Set Heating Activity Names**.

⇒ A list of 6 activities and their standard names is shown:

Activity 1	Sleep
Activity 2	Home
Activity 3	Away
Activity 4	Morning
Activity 5	Evening
Activity 6	Custom

4. Select an activity.

⇒ A keyboard with letters, numbers and symbols is shown.

5. Change the name of the activity (20 characters maximum):

- 5.1. Use the top row to change between capitalization, numbers, symbols or special characters.
- 5.2. Select a letter, number or action.
- 5.3. Select ← to delete a letter, number or symbol.
- 5.4. Select ▢ to add a space.
- 5.5. Select ✓ to finish changing the activity name.

Fig.93 Letter selection

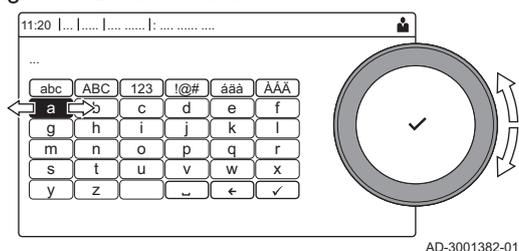
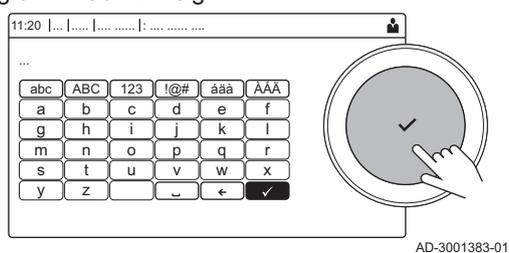


Fig.94 Confirm sign



■ Activating a time program

In order to use a time program, it is necessary to activate the operating mode **Scheduling**. This activation is done separately for each zone.

▶▶ Select zone > **Operating mode** > **Scheduling**



Use the rotary knob to navigate.

Use the ✓ button to confirm your selection.

1. Select the tile of the zone you want to change.
2. Select **Operating mode**.
3. Select **Scheduling**.
4. Select the time program **Schedule 1**, **Schedule 2** or **Schedule 3**.

11.6.5 Changing the heating activity temperatures

You can change the heating temperatures of each activity.

▶▶ Select zone > **Set heating temperatures**



Use the rotary knob to navigate.

Use the ✓ button to confirm your selection.

1. Select the tile of the zone you want to change.
2. Select **Set heating temperatures**.
⇒ A list of 6 activities and their temperatures is shown.
3. Select an activity.
4. Set the heating activity temperature.

11.6.6 Changing the room temperature temporarily

Regardless of the operating mode selected for a zone, it is possible to change the room temperature for a short period. After this period has elapsed, the selected operating mode resumes.

▶▶ Select zone > **Operating mode** > **Short temperature change**

💡 Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

💡 The room temperature can only be adjusted in this way if a room temperature sensor/thermostat is installed.

1. Select the tile of the zone you want to change.
2. Select **Operating mode**
3. Select  **Short temperature change**.
4. Set the duration in hours and minutes.
5. Set the temporary room temperature.

11.7 Changing the domestic hot water temperature

11.7.1 Domestic hot water configuration

Configure the domestic hot water settings by selecting the tile .

Tab.55 Menu to configure domestic hot water

Menu	Function
Domestic Hot Water Setpoints	Set the DHW temperatures for the timer program.
Operating mode	Set the operating mode.
Time programs	Set and configure the time programs used when in operating mode Scheduling .
DHW configuration	Configure the settings of the DHW circuit.

Tab.56 Extended menu to configure the domestic hot water circuit **DHW configuration**

Menu	Function
Hot water boost	Change the DHW temperature temporarily.
Holiday Mode	Set the start and end date of your holiday.
DHW mode	Select the DHW operating mode: Scheduling, Manual.

11.7.2 Changing the domestic hot water operating mode

You can change the operating mode for hot water production. You can choose from 5 operating modes.

▶▶  > **Operating mode**

💡 Use the rotary knob to navigate.
Use the ✓ button to confirm your selection.

1. Select the tile .
2. Select **Operating mode**

💡 This option is not available when installer access is enabled.

3. Select the desired operating mode:

Tab.57 Operating modes

Icon	Mode	Description
	Scheduling	The domestic hot water temperature is controlled by a timer program
	Manual	The domestic hot water temperature is set to a fixed setting
	Hot water boost	The domestic hot water temperature is increased temporarily
	Holiday	The domestic hot water temperature is reduced during your holiday to save energy
	Antifrost	Protect the appliance and installation from freezing.

11.7.3 Time program to control the DHW temperature

■ Creating a timer program

A timer program allows you to vary the domestic hot water temperature per hour and per day. The hot water temperature is linked to the activity of the timer program.

▶▶ > Operating mode

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

 You can create up to three timer programs. For example, you can create a program for a week with normal working hours and a programme for a week when you are at home most of the time.

1. Select the tile .
2. Select **Time programs**.
3. Select the timer program you want to modify: **Schedule 1**, **Schedule 2** or **Schedule 3**.

⇒ Activities scheduled for Monday are displayed. The last scheduled activity of a day is active until the first activity of the next day. The scheduled activities are shown. At initial start-up, all weekdays have two standard activities; **Comfort** starting at 6:00 and **Reduced** starting at 22:00.

4. Select the weekday you want to modify.

- A Weekday
- B Overview of scheduled activities
- C List of actions

5. You can perform the following actions:
 - 5.1. **Select scheduled activity** to edit the time this activity will start, change the temperature or to delete the selected activity.
 - 5.2. **Add time and Activity** to add a new activity to the scheduled activities.
 - 5.3. **Copy to other day** to copy the scheduled activities of the weekday to other days.
 - 5.4. **Set activity temperatures** to change the temperature.

■ Activating a DHW timer program

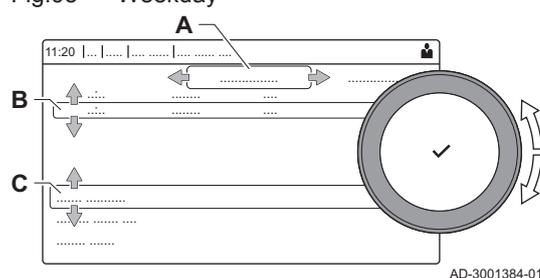
In order to use a DHW timer program, it is necessary to activate the operating mode **Scheduling**. This activation is done separately for each zone.

▶▶ > Operating mode > Scheduling

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

1. Select the tile .
2. Select **Operating mode**.
3. Select **Scheduling**.

Fig.95 Weekday



4. Select the DHW timer program **Schedule 1**, **Schedule 2** or **Schedule 3**.

11.7.4 Changing the comfort and reduced hot water temperature

You can change the comfort and reduced hot water temperature for the timer program.

▶▶  > **Domestic Hot Water Setpoints**



Use the rotary knob to navigate.

Use the  button to confirm your selection.

1. Select the tile [].
2. Select **Domestic Hot Water Setpoints**.
3. Select the setpoint you want to change:
 - **DHW comfort setpoint**: The temperature when the hot water production is switched on.
 - **DHW reduced setpoint**: The temperature when the hot water production is switched off.
4. Set the desired temperature.

11.7.5 Increasing the domestic hot water temperature temporarily

Regardless of the operating mode selected for domestic hot water production, it is possible to increase the domestic hot water temperature for a short period. After this period the hot water temperature decreases to the **Reduced** setpoint. This is called a hot water boost.

▶▶  > **Operating mode > Hot water boost**



Use the rotary knob to navigate.

Use the  button to confirm your selection.



Important

The domestic hot water temperature can only be adjusted in this way if a domestic hot water sensor is installed.

1. Select the tile [].
2. Select **Operating mode**.
3. Select  **Hot water boost**.
4. Set the duration in hours and minutes.
 - ⇒ The temperature is increased to the **DHW comfort setpoint** for the duration of the boost.

11.8 Changing the operating mode

You can set the operating mode of your appliance. The modes available may vary per appliance.



Use the rotary knob to navigate.

Use the  button to confirm your selection.

1. Select the tile [].
2. You can choose between the following operating modes:
 -  **Off** Disable the appliance, does not affect hot water production.
 -  **Heating (auto)** Enable heating.
 - ⇒ The operating mode tile will update to reflect the selected operating mode.

11.9 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.58 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 timer 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

11.10 Reading the installer's name and phone number

The installer can set his name and phone number in the control panel for your reference. You can find this information by following the steps below:.

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

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

1. Press the  button.
2. Select **System Settings** .
3. Select **Installer Details**.
⇒ The installer's name and phone number is shown.

11.11 Switching Bluetooth on or off

It is possible to turn Bluetooth on or off.

▶▶  > **Bluetooth**

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

1. Press the  button.
2. Select **Bluetooth**.
3. Select **Bluetooth**.
4. Choose between:
 - **On**.
 - **Off**.
 ⇒ Bluetooth will be turned on or off, the changes will take approximately 20 seconds to load.

11.12 Shut-down

Shut-down the boiler as follows:

1. Turn off the boiler using the on/off switch.
2. Shut off the gas supply.
3. Keep the installation frost-free.
Do not shut-down the boiler if the installation can't be kept frost-free.

11.13 Frost protection



Caution

- Drain the boiler and central heating system if you are not going to use your home or the building for a long time and there is a chance of frost.
- The frost protection does not work if the boiler is out of operation.
- The built-in boiler protection is only activated for the boiler and not for the system and radiators.
- Open the valves of all the radiators connected to the system.

Set the temperature control low, for example to 10°C.

If the temperature of the central heating water in the boiler drops too low, the built-in boiler protection system is activated. This system works as follows:

- If the water temperature is lower than 7°C, the pump switches on.
- If the water temperature is lower than 4°C, the boiler switches on.
- If the water temperature is higher than 10°C, the burner shuts down and the pump continues to run for a short time.

To prevent the system and radiators freezing in frost-sensitive areas (e.g. a garage), a frost thermostat or, if feasible, an outdoor sensor can be connected to the boiler.

11.14 Cleaning the casing

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

12 Technical specifications

12.1 Homologations

12.1.1 Certifications

Tab.59 Certifications

CE identification number	PIN 0063DO3332
Class NOx ⁽¹⁾	6
Type of flue gas connection	B _{23P} ⁽²⁾ C ₁₃ , C ₃₃ , C ₅₃ , C ₆₃ , C ₉₃
(1) EN 15502-1 (2) When installing a boiler with connection type B _{23P} , the IP rating of the boiler is lowered to IP20.	

■ Unit categories

Tab.60 Unit categories

Country	Category ⁽¹⁾	Gas type	Connection pressure (mbar)
United Kingdom	I _{2H3P}	G20 (H gas) G31 (Propane)	20 37-50
(1) This appliance is suitable for category I _{2H} containing up to 20% Hydrogen gas (H ₂).			

12.1.2 Directives

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

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

12.1.3 Bluetooth® wireless technology

Fig.96 Logo



AD-3001854-01

This product is equipped with Bluetooth wireless technology.

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

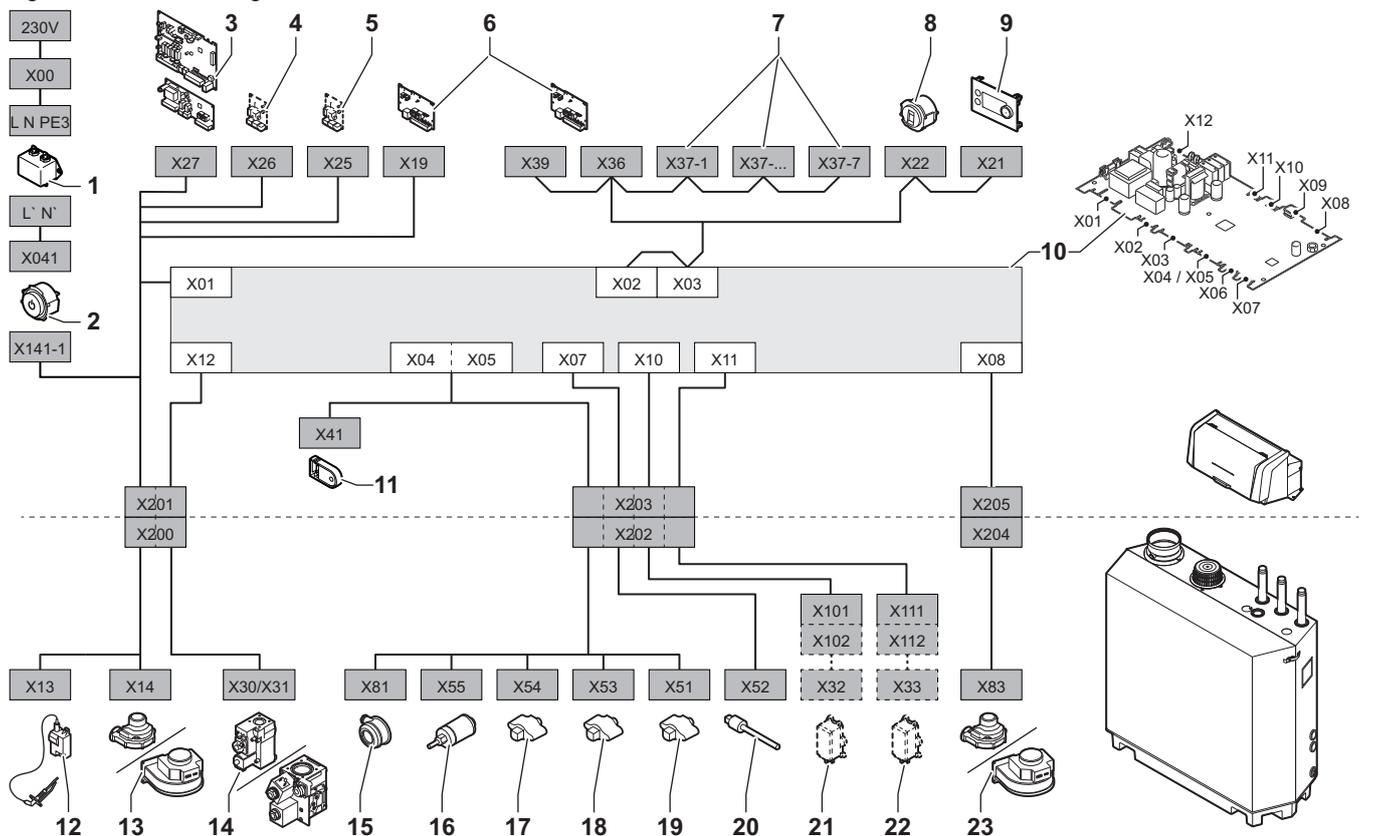
12.1.4 Factory test

Before leaving the factory, each boiler is optimally set and tested for:

- Electrical safety.
- Adjustment of O₂/CO₂.
- Water tightness.
- Gas tightness.
- Parameter setting.

12.2 Electrical diagram

Fig.97 Electrical diagram



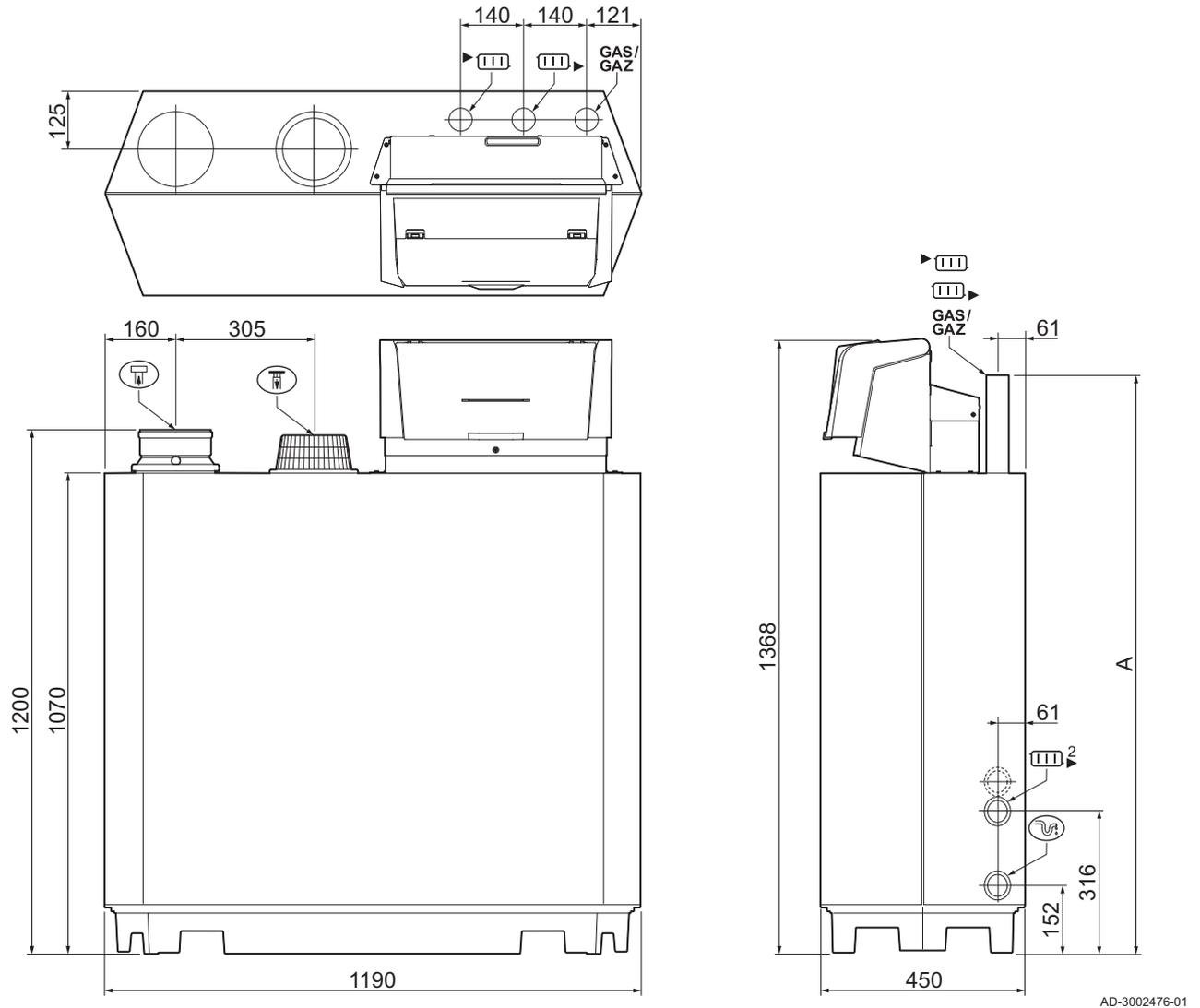
AD-3002475-01

- | | |
|---|---|
| 1 Line filter | 7 SCB expansion board CAN connections (X37-1 - X37-7) |
| 2 On / off switch | 8 Service connector |
| 3 SCB zone expansion board power supply | 9 Control panel (HMI) |
| 4 SCB expansion board power supply | 10 Control unit (CU-GH13) |
| 5 SCB expansion board power supply | 11 Configuration storage unit (CSU) |
| 6 CB-01 connection board power supply (X19) and CAN connections (X36 and X39) | 12 Ignition transformer power supply |
| | 13 Fan power supply |

- 14 Gas control valve
- 15 Air pressure differential switch
- 16 Water pressure sensor
- 17 Return temperature sensor
- 18 Heat exchanger temperature sensor
- 19 Flow temperature sensor
- 20 Flue gas temperature sensor
- 21 Valve proving system (VPS)
- 22 Gas pressure switch (GPS)
- 23 Fan PWM signal

12.3 Dimensions and connections

Fig.98 Dimensions



AD-3002476-01

Tab.61 Dimensions and connections

	Gas 210 Ace	80 120 160	200
▶ (III)	Central heating circuit flow	1¼" male thread	1½" male thread ⁽¹⁾
(III) ▶	Central heating circuit return	1¼" male thread	1½" male thread ⁽¹⁾
GAS/ GAZ	Gas connection	1¼" male thread	1¼" male thread
⌋	Condensation outlet	Ø 32 mm external	Ø 32 mm external
⌋	Air supply	Ø 150 mm	Ø 150 mm
⌋	Flue gas outlet	Ø 150 mm	Ø 150 mm
A	Height - central heating connection	1309 mm	1324 mm ⁽²⁾

	Gas 210 Ace	80 120 160	200
A	Height - gas connection	1309 mm	1309 mm
	Second return (optional)	1¼" male thread	1¼" male thread
(1) Attach supplied 1¼" > 1½" reducer bushing.			
(2) With supplied 1¼" > 1½" reducer bushings.			

12.4 Technical data Gas 210 Ace

Tab.62 General

Gas 210 Ace				80	120	160	200
Number of sections				3	4	5	6
Nominal output	P_n 80/60 °C	kW	min max ⁽¹⁾	18.0 87.0	22.0 120.0	29.0 166.0	39.0 200.0
Nominal output	P_{nc} 50/30 °C	kW	min max ⁽¹⁾	20.0 93.0	24.0 129.0	33.0 179.0	44.0 217.0
Nominal input	Q_{nh} (H_f)	kW	min max ⁽¹⁾	19.0 89.0	23.0 123.0	31.0 170.0	41.0 205.0
Nominal input	Q_{nh} (H_s)	kW	min max ⁽¹⁾	21.0 99.0	26.0 137.0	34.0 189.0	46.0 228.0
Reduced input	Q_{Y20h} (H_f)	kW	min max ⁽¹⁾	17.7 82.8	21.4 114.4	28.8 158.1	38.1 190.7
Reduced input	Q_{Y20h} (H_s)	kW	min max ⁽¹⁾	19.5 92.0	24.2 127.4	31.6 175.8	42.8 212.0
Full load central heating efficiency	P_n (H_f) 80/60 °C	%		97.4	97.5	97.5	97.6
Full load central heating efficiency	H_f 50/30 °C	%		104.3	104.7	105.2	105.7
Min load central heating efficiency	H_f RT=60 °C ⁽²⁾	%		92.7	94.0	95.1	95.5
Part load central heating efficiency	P_n (H_f) RT=30 °C ⁽²⁾	%		108.6	108.1	108.3	108.4
Full load central heating efficiency	P_n (H_s) 80/60 °C	%		87.8	87.8	87.9	87.9
Full load central heating efficiency	H_s 50/30 °C	%		94.0	94.3	94.8	95.2
Min load central heating efficiency	H_s RT=60 °C ⁽²⁾	%		83.5	84.7	85.7	86.0
Part load central heating efficiency	P_n (H_s) RT=30 °C ⁽²⁾	%		97.8	97.4	97.6	97.7
(1)  Factory setting.							
(2) Return temperature.							

Tab.63 Gas and flue gas data

Gas 210 Ace				80	120	160	200
Gas test pressure	G20	mbar	min max	17 25	17 25	17 25	17 25
Gas test pressure	G31	mbar	min max	37 50	37 50	37 50	37 50
Gas inlet pressure	G20	mbar	max	-	-	-	-
Gas inlet pressure	G31	mbar	max	-	-	-	-
Gas consumption	G20	m ³ /h	min max	1.8 9.4	2.4 13.0	3.3 18.0	4.3 21.7
Gas consumption	G31	m ³ /h	min max	1.0 3.6	1.0 4.8	1.6 7.0	1.8 8.4

Gas 210 Ace				80	120	160	200
NOx annual emissions	G20 O ₂ = 0% (EN15502)	ppm		-	-	-	-
NOx annual emissions	G20 H _i (EN15502)	mg/kWh		62	54	49	58
NOx annual emissions	G20 H _s (EN15502)	mg/kWh		56	49	44	52
CO annual emissions	G20 O ₂ = 0% (EN15502)	ppm		-	-	-	-
CO annual emissions	G20 H _i (EN15502)	mg/kWh		-	-	-	-
CO annual emissions	G20 H _s (EN15502)	mg/kWh		-	-	-	-
Flue gas amount		kg/h	min max	27 150	37 197	39 287	65 345
Flue gas temperature		°C	min max	30 63	30 64	30 62	30 64
Maximum counter pressure for flue gas outlet		Pa		130	130	130	130
Flue efficiency	(H _i) 80/60 °C AT=20 °C ⁽¹⁾	%		-	-	-	-
(1) Ambient temperature.							

Tab.64 Central heating circuit data

Gas 210 Ace				80	120	160	200
Water content		l		12	16	20	24
Water operating pressure		bar	min	0.8	0.8	0.8	0.8
Water operating pressure	PMS	bar	max	6.0	6.0	6.0	6.0
Water temperature		°C	max	110	110	110	110
Operating temperature		°C	max	90	90	90	90
Water flow	ΔT=11 K	m ³ /h	max	6.8	9.4	13.0	15.6
Water flow at full load central heating	80/60 °C	m ³ /h	nom	3.7	5.2	7.1	8.6
Water flow at full load central heating	50/30 °C	m ³ /h	nom	4.0	5.5	7.7	9.3
Water flow at minimum load central heating	80/60 °C	m ³ /h	nom	0.7	0.9	1.2	1.7
Water flow at minimum load central heating	50/30 °C	m ³ /h	nom	0.8	1.0	1.4	1.9
Water side pressure drop	ΔT=20 K	mbar		165	135	170	180

Tab.65 Electrical data

Gas 210 Ace				80	120	160	200
Supply voltage		V~/Hz		230/50	230/50	230/50	230/50
Power consumption ⁽¹⁾	Max input CH	W	max	103	167	196	306
Power consumption ⁽¹⁾	Max input CH <i>elmax</i>	W	max	103	167	196	306
Power consumption ⁽¹⁾	Min input CH	W	min	26	28	46	48
Power consumption ⁽¹⁾	Min input CH <i>elmin</i>	W	min	28	31	50	53
Power consumption ⁽¹⁾	Standby	W	min	6	6	6	6
Electrical protection index ⁽²⁾		IP		X1	X1	X1	X1
Fuse – main (power connector)		(AT)		10	10	10	10

Gas 210 Ace				80	120	160	200
Fuse – CU-GH13		(AT)		1.6	1.6	1.6	1.6
Fuse – CB-01		(AT)		6.3	6.3	6.3	6.3
(1) Without pump. (2) For a room-sealed system.							

Tab.66 Other data

Gas 210 Ace				80	120	160	200
Total weight with packaging	Including control box	kg		134	154	184	207
Total weight without packaging	Including control box	kg		115	135	165	188
Average acoustic level at a distance of 1 metre from the boiler ⁽¹⁾	LpA	dB(A)		59	59	59	59
Average acoustic level ⁽¹⁾	LwA	dB(A)		67	67	67	67
Ambient temperature		°C	max	40	40	40	40
(1) For a sealed installation.							

Tab.67 Technical parameters

Gas 210 Ace				80	120	160	200
Condensing boiler				Yes	Yes	Yes	Yes
Low-temperature boiler ⁽¹⁾				Yes	Yes	Yes	Yes
B1 boiler				No	No	No	No
Cogeneration space heater				No	No	No	No
Combination heater				No	No	No	No
Rated heat output	<i>P_{rated}</i>	kW		87	115	166	200
Useful heat output at nominal heat output and high temperature operation ⁽²⁾	<i>P₄</i>	kW		87.0	115.0	166.0	200.0
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	<i>P₁</i>	kW		29.1	37.7	55.2	66.6
Seasonal space heating energy efficiency	η_s	%		-	-	-	-
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	η_4	%		87.7	87.8	87.8	87.8
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	η_1	%		97.7	97.5	97.3	97.6
Auxiliary electricity consumption							
Full load	<i>el_{max}</i>	kW		0.103	0.167	0.196	0.306
Part load	<i>el_{min}</i>	kW		0.026	0.028	0.046	0.048
Standby mode	<i>P_{SB}</i>	kW		0.006	0.006	0.006	0.006
Other items							
Standby heat loss	<i>P_{stby}</i>	kW		-	-	-	-
Ignition burner power consumption	<i>P_{ign}</i>	kW		-	-	-	-
Annual energy consumption	<i>Q_{HE}</i>	kWh GJ		-	-	-	-
Sound power level, indoors	<i>L_{WA}</i>	dB		67	67	67	67
Emissions of nitrogen oxides	NO _x	mg/kWh		56	49	44	52
(1) Low temperature means 30 °C for condensing boilers, 37 °C for low temperature boilers and 50 °C (at heater inlet) for other heating appliances. (2) High temperature operation means 60 °C return temperature at heater inlet and 80 °C feed temperature at heater outlet.							



See
Refer to the back cover for contact details.

12.5 Technical data BLE Smart Antenna

Tab.68 General

BLE Smart Antenna		
Bluetooth frequency band	MHz	2400 – 2483.5
Bluetooth power	dBm	+5

13 Appendix

13.1 ErP information

13.1.1 Product fiche

Tab.69 Product fiche

Remeha - Gas 210 Ace		80	120	160	200
Seasonal space heating energy efficiency class		-	-	-	-
Rated heat output (<i>Prated or Psup</i>)	kW	87	115	166	200
Seasonal space heating energy efficiency	%	-	-	-	-
Annual energy consumption	GJ	-	-	-	-
Sound power level L_{WA} indoors	dB	67	67	67	67



See

For specific precautions in relation to assembly, installation and maintenance: Safety, page 6

13.2 Declaration of conformity

This appliance complies with the standard type described in the declaration of conformity. It has been manufactured and commissioned in accordance with British directives.

The original declaration of conformity is available from the manufacturer.

13.2.1 Declaration of conformity for wireless devices

Fig.99 QR code



All wireless communication devices comply with the standard type described in the declaration of conformity. They have been manufactured and commissioned in accordance with British directives.



See

The website for the full declaration of conformity: <https://declaration-of-conformity.bdrthermeagroup.com>

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