

EVODENS PRO



Installation and User Manual

High-efficiency wall-hung gas boiler

AMC Pro 45 - 65 - 90 - 115

Diematic Evolution

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. Evacuate the property.
5. Contact a qualified installer.



Danger

If you smell flue gases:

1. Switch the boiler off.
2. Open the windows.
3. Evacuate the property.
4. 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 and CO alarms at suitable places in your home.

**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 (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 water pressure in the system regularly. If the water pressure is lower than 0.8 bar, the system must be topped up (recommended water pressure between 1.5 and 2 bar).

**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 **De Dietrich**.

1.3 Liabilities

1.3.1 Manufacturer's liability

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

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

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

1.3.2 Installer's liability

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

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

1.3.3 User's liability

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

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

2 About this manual

2.1 Additional documentation

The following documentation is available in addition to this manual:

- Service manual
- Water quality instructions

2.2 Symbols used in the manual

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

**Danger**

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.

**See**

Reference to other manuals or pages in this manual.

3 Description of the product

3.1 General description

The AMC Pro boiler is a high-efficiency wall-hung gas boiler with the following properties:

- High-efficiency heating.
- Limited emissions of polluting substances.
- Ideal choice for cascade configurations.

All AMC Pro boiler models are supplied without a pump, but with the required pump connection cables.

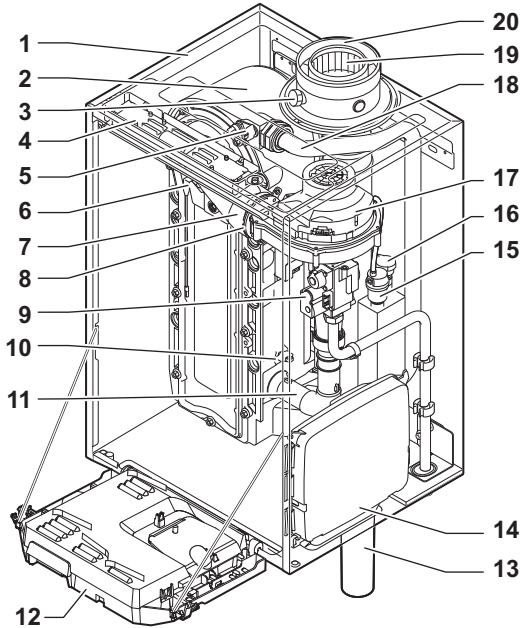
Take the boiler resistance and system resistance into account when selecting a pump.

Caution
 The pump may have a maximum input of 200 W. Use an auxiliary relay for a pump with greater power.

If possible, install the pump directly under the boiler on the return connection.

3.2 Main components

Fig.1 Main components

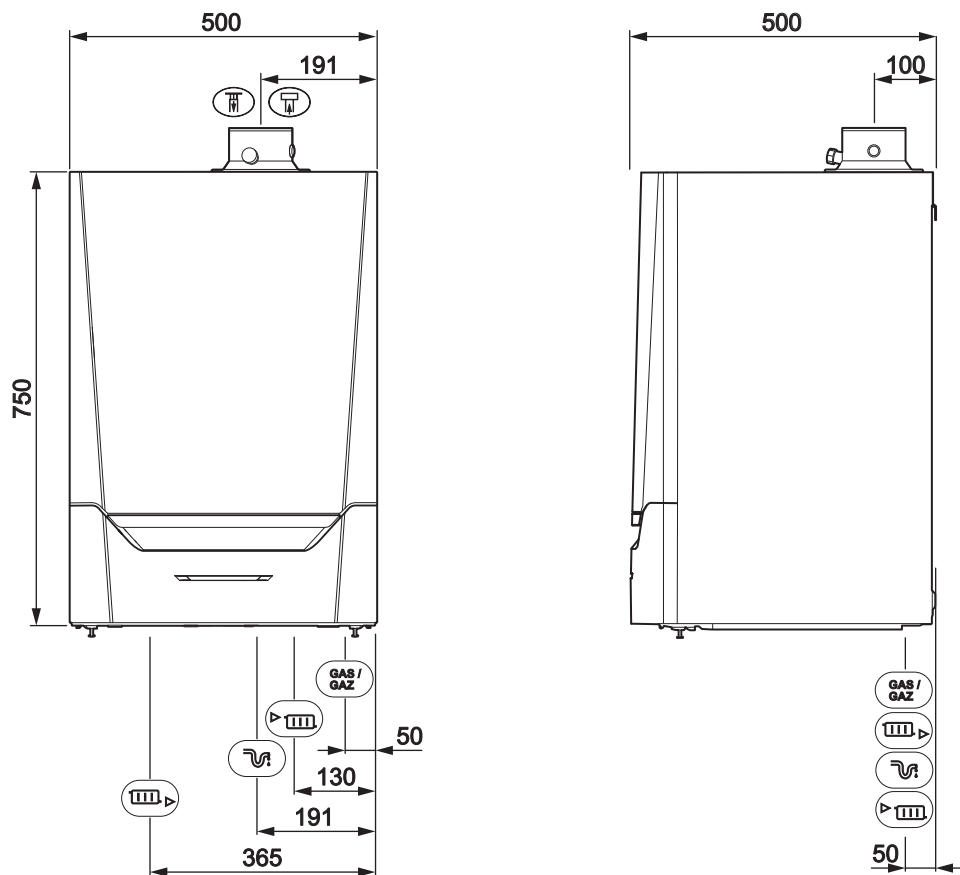


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- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Casing/air box 2 Heat exchanger (CH) 3 Interior light 4 Type plate 5 Flow sensor 6 Ionisation/ignition electrode 7 Mixing tube 8 Non-return valve 9 Combined gas valve unit 10 Return sensor 11 Air intake silencer 12 Instrument box | <ul style="list-style-type: none"> 13 Siphon 14 Expansion box for the control PCBs 15 Automatic air vent 16 Hydraulic pressure sensor 17 Fan 18 Supply line 19 Flue gas measuring point 20 Flue gas discharge pipe 21 Air supply |
|--|---|
- ▶ (□) Heating circuit flow
 (□) ▶ Heating circuit return

3.3 Dimensions and connections

Fig.2 Dimensions



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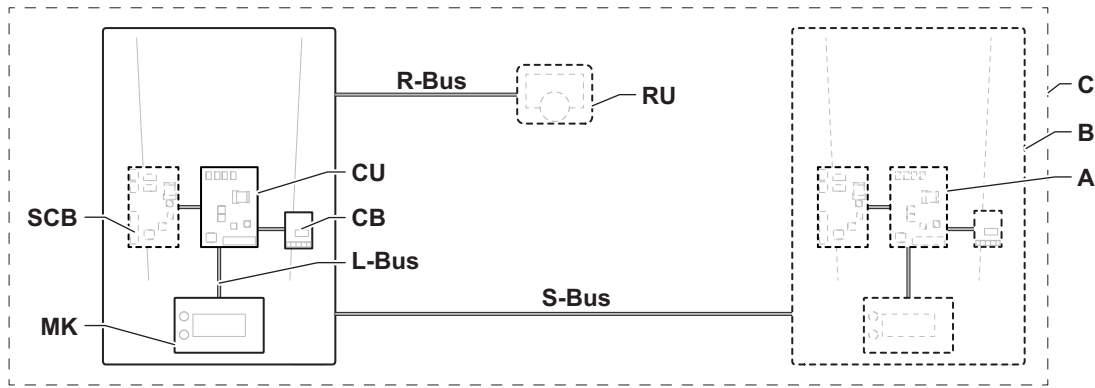
Tab.1 Connections

Symbol	Connection	AMC Pro 45	AMC Pro 65	AMC Pro 90	AMC Pro 115
	Flue gas outlet	Ø 80 mm	Ø 100 mm	Ø 100 mm	Ø 100 mm
	Air supply	Ø 125 mm	Ø 150 mm	Ø 150 mm	Ø 150 mm
	Siphon	25 mm	25 mm	25 mm	25 mm
	CH flow	1 ¼" male thread	1 ¼" male thread	1 ¼" male thread	1 ¼" male thread
	CH return	1 ¼" male thread	1 ¼" male thread	1 ¼" male thread	1 ¼" male thread
	Gas	¾" male thread	¾" male thread	¾" male thread	¾" male thread

3.4 Introduction to the controls platform

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

Fig.3 Generic example



AD-3001366-01

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 is used to provide easy access to all connectors of the control unit.
SCB	Smart Control Board: Expansion PCB (optional)	An expansion PCB can be fitted to an appliance to provide extra functionality, like an internal calorifier or multiple zones.
MK	Control panel: Control panel and display	The control panel is the user interface to the appliance.
RU	Room Unit: Room unit (e.g. a thermostat)	A room unit is used to measure 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, display 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 available in the AMC Pro boiler

Name visible in display	Software version	Description	Function
CU-GH08	1.7	Control unit CU-GH08	The CU-GH08 control unit handles all basic functionality of the AMC Pro boiler.
MK3	1.29	Control panel Diematic Evolution	The Diematic Evolution is the user interface to the AMC Pro boiler.
SCB-10	1.03	Expansion PCB SCB-10	The SCB-10 provides functionality for one DHW and three central heating zones, a 0-10 V connection for a PWM system pump and potential-free contacts for status notification.

4 Preparation of installation

4.1 Installation regulations



Warning

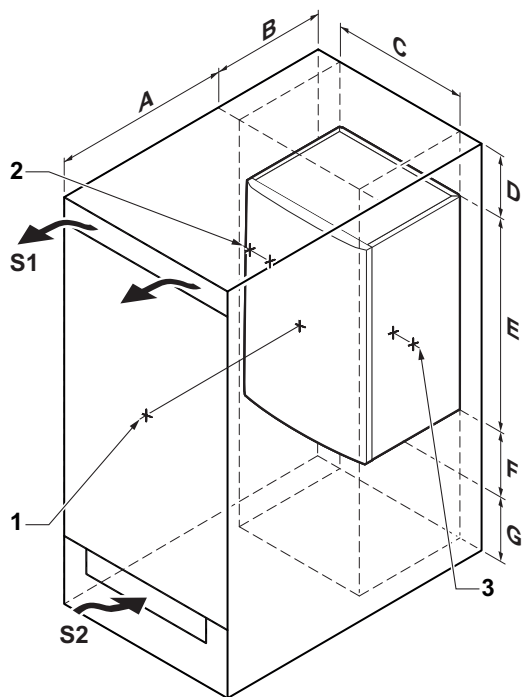
The boiler must be installed by a qualified installer in accordance with local and national regulations.

4.2 Choice of the location

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 required space under the boiler for the installation and removal of the siphon.
- The permitted position of the flue gas outlet and/or air supply opening.
- The evenness of the surface.

Fig.4 Installation area



AD-3001371-01

- A ≥ 1000 mm
- B 500 mm
- C 500 mm
- D ≥ 400 mm
- E 750 mm
- F 350 mm (siphon)
- G ≥ 250 mm

If the boiler is installed in a closed cupboard, the minimum distance between the boiler and the walls of the cupboard must be taken into account.

- 1 ≥ 1000 mm (front)
- 2 ≥ 15 mm (left-hand side)
- 3 ≥ 15 mm (right-hand side)

Also allow for openings to prevent the following hazards:

- Accumulation of gas
- Heating of the casing

Minimum cross section of the openings: $S1 + S2 = 150 \text{ cm}^2$



Danger

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



Warning

- Fix the appliance to a solid wall capable of bearing the weight of the boiler when full of water and fully equipped.
- Do not place the appliance above a heat source or a cooking appliance.
- Do not locate the boiler in direct or indirect sunlight.



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.

4.3 Requirements for CH water connections

- When fitting service shut-off valves, position the filling and drain valve, the expansion vessel and the safety valve between the shut-off valve and the boiler.
- Carry out any welding work required at a safe distance from the boiler or before the boiler is fitted.
- For filling and tapping the boiler, install a filling and drain valve in the system, preferably in the return.
- Install an expansion vessel in the return pipe.

4.4 Requirements for condensate drain line

- The siphon must always be filled with water. This prevents flue gases from entering the room.
- Never seal the condensate drain.
- The drain pipe must slope down at least 30 mm per metre, the maximum horizontal length is 5 metres.
- Condensed water must not be discharged into a gutter.

4.5 Requirements for gas connection

- Before starting work on the gas pipes, turn off the main gas tap.
- 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.
- Remove dirt and dust from the gas pipe.
- Always perform welding work at a sufficient distance from the boiler.
- We recommend installing a gas filter to prevent clogging of the gas valve unit.
- Pipe diameters must be defined in accordance with ATG's (Association Technique de Gaz) B171 specifications.

4.6 Requirements for the electrical connections

- Establish the electrical connections in accordance with all local and national current regulations and standards.
- Electrical connections must always be made with the power supply disconnected and only by qualified installers.
- The boiler is completely pre-wired. Never change the internal connections of the control panel.
- Always connect the boiler to a well-earthed installation.
- The standard NF C 15,100.
- The standard CEI.
- 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
- Outside the boiler: Use 2 cables spaced at least 10 cm apart.

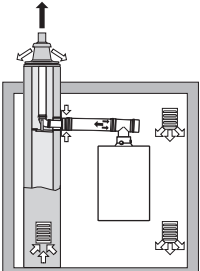
4.7 Requirements for the flue gas outlet system

4.7.1 Classification

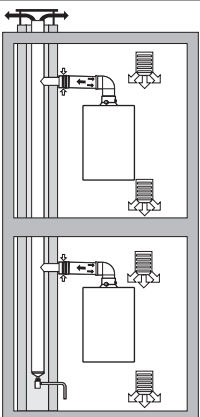
Important

- The installer is responsible ensuring that the right type of flue gas outlet system is used and that the diameter and length are correct.
- Always use connection materials, roof terminal and/or outside wall terminal supplied by the same manufacturer. Consult the manufacturer for compatibility details.

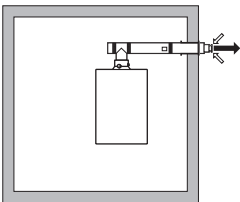
Tab.4 Type of flue gas connection: B₂₃ - B_{23P}

Principle	Description	Permitted manufacturers ⁽¹⁾
 <p>AD-3000924-01</p>	Room-ventilated version <ul style="list-style-type: none"> • Without down-draught diverter. • Flue gas discharge via the roof. • Air from the installation area. • The IP rating of the boiler is lowered to IP20. 	Connection material and roof terminal: <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
(1) The material must also satisfy the material property requirements from the relevant chapter.		

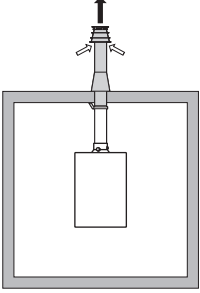
Tab.5 Type of flue gas connection: B₃₃

Principle	Description	Permitted manufacturers ⁽¹⁾
 <p>AD-3000925-01</p>	Room-ventilated version <ul style="list-style-type: none"> • Without down-draught diverter. • Joint flue gas discharge via the roof, with guaranteed natural draft (at all times underpressure in the joint discharge duct). • Flue gas discharge rinsed with air, air from the installation area (special construction). • The IP rating of the boiler is lowered to IP20. 	Connection material: <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
(1) The material must also satisfy the material property requirements from the relevant chapter.		

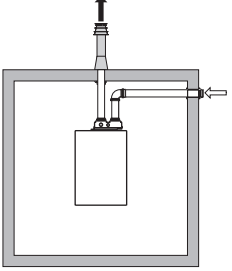
Tab.6 Type of flue gas connection: C_{13(x)}

Principle	Description	Permitted manufacturers ⁽¹⁾
 <p>AD-3000926-01</p>	Room-sealed version <ul style="list-style-type: none"> • Discharge in the outside wall. • Air supply opening is in the same pressure zone as the discharge (e.g. a combined outside wall terminal). • Parallel wall terminal not permitted. 	Outside wall terminal and connection material: <ul style="list-style-type: none"> • Cox Geelen
(1) The material must also satisfy the material property requirements from the relevant chapter.		

Tab.7 Type of flue gas connection: C_{33(X)}

Principle	Description	Permitted manufacturers ⁽¹⁾
 <p>AD-3000927-01</p>	<p>Room-sealed version</p> <ul style="list-style-type: none"> • Flue gas discharge via the roof. • Air supply opening is in the same pressure zone as the discharge (e.g. a concentric roof terminal). 	<p>Roof terminal and connection material</p> <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
<p>(1) The material must also satisfy the material property requirements from the relevant chapter.</p>		

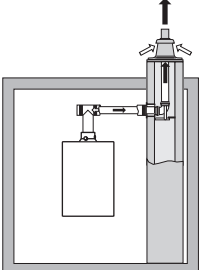
Tab.8 Type of flue gas connection: C₅₃

Principle	Description	Permitted manufacturers ⁽¹⁾
 <p>AD-3000929-02</p>	<p>Connection in different pressure zones</p> <ul style="list-style-type: none"> • Closed unit. • Separate air supply duct. • Separate flue gas discharge duct. • Discharging into various pressure areas. • The air supply and the flue gas outlet must not be placed on opposite walls. 	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
<p>(1) The material must also satisfy the material property requirements from the relevant chapter.</p>		

Tab.9 Type of flue gas connection: C_{63(X)}

Principle	Description	Permitted manufacturers ⁽¹⁾
	<p>This type of unit is supplied by the manufacturer without an air supply system and flue gas system.</p>	<p>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 supply and the flue gas outlet must not be placed on opposite walls. • Minimum permitted pressure difference between the air supply and the flue gas outlet is -200 Pa (including -100 Pa wind pressure).
<p>(1) The material must also satisfy the material property requirements from the relevant chapter.</p>		

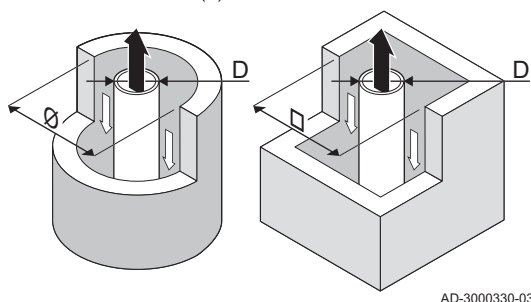
Tab.10 Type of flue gas connection: C_{93(X)}

Principle ⁽¹⁾	Description	Permitted manufacturers ⁽²⁾
 <p>AD-3000931-01</p>	<p>Room-sealed version</p> <ul style="list-style-type: none"> • Air supply and flue gas discharge duct in shaft or ducted: <ul style="list-style-type: none"> - Concentric. - Air supply from existing duct. - Flue gas discharge via the roof. - Inlet opening for the air supply is in the same pressure zone as the discharge. 	<p>Connection material and roof terminal:</p> <ul style="list-style-type: none"> • Cox Geelen • Poujoulat • Ubbink
<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.11 Minimum dimensions of shaft or duct C_{93(X)}

Version (D)	Without air supply		With air supply	
Rigid 80 mm	Ø 130 mm	□ 130 x 130 mm	Ø 140 mm	□ 130 x 130 mm
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
Concentric 80/125 mm	Ø 145 mm	□ 145 x 145 mm	Ø 145 mm	□ 145 x 145 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	-	-

Fig.5 Minimum dimensions of shaft or duct C_{93(X)}



AD-3000330-03

i Important
 The shaft must comply with the air density requirements of the local regulations.

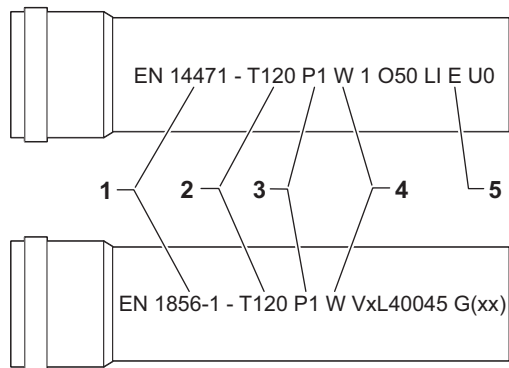
i Important

- Always clean shafts thoroughly when using lining pipes and/or an air supply connection.
- It must be possible to inspect the lining duct.

4.7.2 Material

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

Fig.6 Sample string



AD-3001120-01

- 1 EN 14471 of EN 1856-1:** The material is CE 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 feed-throughs and common channels.
- The materials used must comply with the prevailing regulations and standards.

Tab.12 Overview of material properties

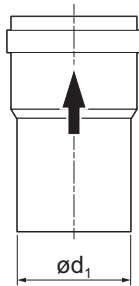
Version	Flue gas outlet		Air supply	
	Material	Material properties	Material	Material properties
Single-wall, rigid	<ul style="list-style-type: none"> • Plastic⁽¹⁾ • Stainless steel⁽²⁾ • Thick-walled, aluminium⁽²⁾ 	<ul style="list-style-type: none"> • With CE marking • Temperature class T120 or higher • 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 CE 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				

4.7.3 Dimensions of flue gas outlet pipe

Warning

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

Fig.7 Dimensions of open connection



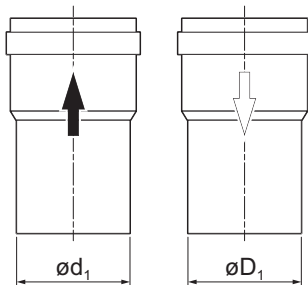
AD-3001094-01

d_1 External dimensions of flue gas outlet pipe

Tab.13 Dimensions of pipe

	d_1 (min-max)
150 mm	149 - 151 mm

Fig.8 Dimensions of parallel connection



AD-3000963-01

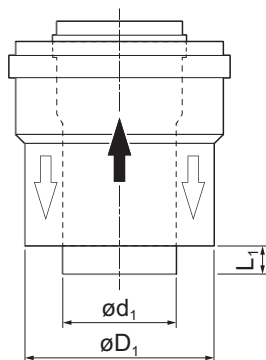
d_1 External dimensions of flue gas outlet pipe

D_1 External dimensions of air supply pipe

Tab.14 Dimensions of pipe

	d_1 (min-max)	D_1 (min-max)
80/80 mm	79.3 - 80.3 mm	79.3 - 80.3 mm
100/100 mm	99.3 - 100.3 mm	99.3 - 100.3 mm
150/150 mm	149 - 151 mm	149 - 151 mm

Fig.9 Dimensions of concentric connection



AD-3000962-01

- d_1 External dimensions of flue gas outlet pipe
- D_1 External dimensions of air supply pipe
- L_1 Length difference between flue gas outlet pipe and air supply pipe

Tab.15 Dimensions of pipe

	d_1 (min-max)	D_1 (min-max)	$L_1^{(1)}$ (min-max)
80/125 mm	79.3 - 80.3 mm	124 - 125.5 mm	0 - 15 mm
100/150 mm	99.3 - 100.3 mm	149 - 151 mm	0 - 15 mm

(1) Shorten the inner pipe if the length difference is too great.



4.7.4 Length of the air and flue gas pipes

The maximum length of the flue gas outlet and air supply channel vary depending on the appliance type; consult the relevant chapter for the correct lengths.

i Important

- When using bends, the maximum chimney length (L) must be shortened according to the reduction table.
- For adaptation to another diameter use approved transitions

■ Room-ventilated model (B_{23} , B_{23P} , B_{33})

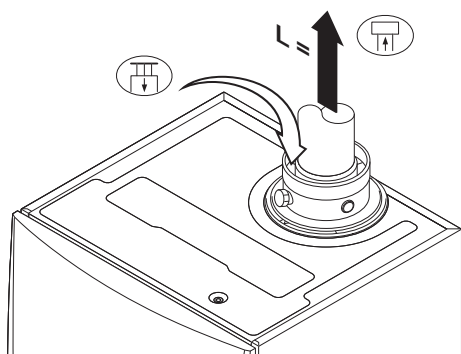
- L Length of the flue gas outlet channel to roof feed-through
-  Connecting the flue gas outlet
-  Connecting the air supply

With a room-ventilated version, the air supply opening stays open; only the flue gas outlet opening is connected. This will ensure that the boiler obtains the necessary combustion air directly from the installation area.

! Caution

- The air supply opening must stay open.
- The installation area must be equipped with the necessary air supply openings. These openings must not be obstructed or shut off.

Fig.10 Room-ventilated version



AD-0000028-02

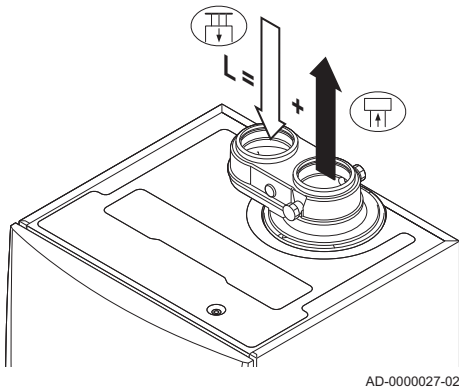
Tab.16 Maximum length (L)



Diameter ⁽¹⁾	80 mm	90 mm	100 mm	110 mm	130 mm
AMC Pro 45	39 m	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾
AMC Pro 65	11 m	17 m	26 m	40 m	40 m ⁽¹⁾
AMC Pro 90	10 m	16 m	24 m	40 m	40 m ⁽¹⁾
AMC Pro 115	8 m	13 m	19 m	38 m	40 m ⁽¹⁾

(1) Retaining the maximum chimney length it is possible to use an extra 5 x 90° or 10 x 45° elbows.

■ Room-sealed model (C_{13(X)}, C_{33(X)}, C_{63(X)}, C_{93(X)})

Fig.11 Room-sealed version (parallel)



-  Connecting the flue gas outlet
-  Connecting the air supply

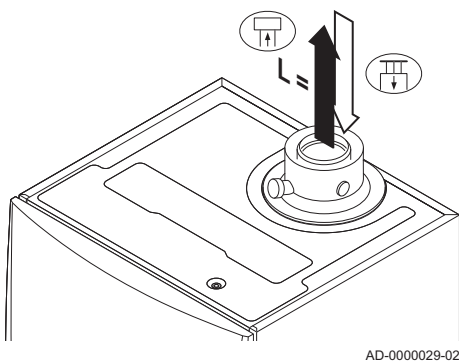
With a room-sealed version, both the flue gas outlet and the air supply openings are connected (in parallel).



Tab.17 Maximum length (L)

Pipe diameter ⁽¹⁾	80 mm	90 mm	100 mm	110 mm	110 mm	130 mm
Diameter of concentric roof terminal	80/125 mm	80/125 mm	100/150 mm	100/150 mm	130/180 mm	130/180 mm
AMC Pro 45	34 m	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾
AMC Pro 65	2 m	14 m	20 m	34 m	40 m	40 m ⁽¹⁾
AMC Pro 90	-	12 m	16 m	30 m	40 m	40 m ⁽¹⁾
AMC Pro 115	-	4 m	12 m	20 m	40 m	40 m ⁽¹⁾

(1) Retaining the maximum chimney length it is possible to use an extra 5 x 90° or 10 x 45° elbows.

Fig.12 Room-sealed version (concentric)



-  Connecting the flue gas outlet
-  Connecting the air supply

With a room-sealed version, both the flue gas outlet and the air supply openings are connected (concentrically).

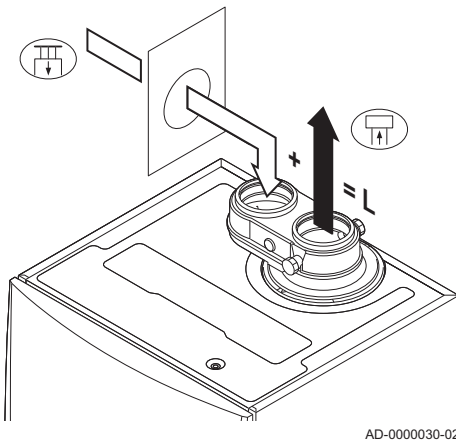
Tab.18 Maximum chimney length (L)

Diameter ⁽¹⁾	80/125 mm	100/150 mm
AMC Pro 45	20 m	20 m ⁽¹⁾
AMC Pro 65	4 m	18 m
AMC Pro 90	4 m	17 m
AMC Pro 115	-	13 m


(1) Retaining the maximum chimney length it is possible to use an extra 5 x 90° or 10 x 45° elbows.


■ Connection in different pressure areas (C₅₃)

Fig.13 Different pressure areas



L Total length of the flue gas outlet and air supply duct

 Connecting the flue gas outlet

 Connecting the air supply

An 80/80 or 100/100 mm flue gas adapter (accessory) must be fitted for this connection.

Combustion air supply and flue gas discharge are possible in different pressure areas and semi-CLV systems, with the exception of the coastal area. The maximum permitted height difference between the combustion air supply and the flue gas outlet is 36 m.

Tab.19 Maximum length (L)

Diameter ⁽¹⁾	80 mm	90 mm	100 mm	110 mm	130 mm
AMC Pro 45	29 m	40 m	40 m ⁽¹⁾	40 m ⁽¹⁾	40 m ⁽¹⁾
AMC Pro 65	5 m	10 m	16 m	34 m	40 m ⁽¹⁾
AMC Pro 90	-	-	17 m	37 m	40 m ⁽¹⁾
AMC Pro 115	-	-	14 m	31 m	40 m ⁽¹⁾

(1) Retaining the maximum chimney length it is possible to use an extra 5 x 90° or 10 x 45° elbows.

■ Reduction table

Tab.20 Pipe reduction for each element used (parallel)

Diameter	80 mm	100 mm
45° bend	1.2 m	1.4 m
90° bend	4.0 m	4.9 m

Tab.21 Pipe reduction for each element used (concentric)

Diameter	80/125 mm	100/150 mm
45° bend	1.0 m	1.0 m
90° bend	2.0 m	2.0 m

4.7.5 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 collector before it reaches the aluminium.
- Newly installed aluminium flue gas pipes with longer lengths can produce relatively larger quantities of corrosion products. Check and clean the siphon more often in this case.



Important

Contact us for more information.

4.8 Water quality and water treatment

The quality of the CH water must comply with certain limit values, which can be found 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.

4.9 Process heat application

In process heat applications (for example pasteurisation and drying and washing processes), the boiler is being used for industrial purposes and not for central heating. With process heat, the nominal flow (at ΔT 20°C) in the primary CH circuit must be guaranteed. The flow in the secondary circuit may vary.

To ensure that this is the case, a flow rate sensor can be fitted, which locks out the boiler if the flow falls below a specified level (due to a defective pump or valve, for example).



Important

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



For more information, see

Setting for process heat application, page 60

4.10 Increase default ΔT setting

In some cases, the default ΔT setting of the boiler will need to be increased, for example in systems with:

- underfloor heating
- air heating
- district heating
- a heat pump.



Important

Prevent the boiler from locking out and ensure a minimal water circulation by using a bypass or low-loss header.













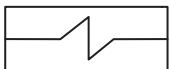
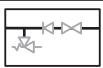
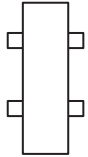
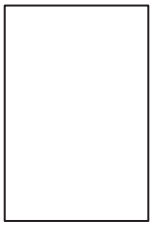

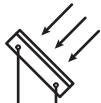



For more information, see

Changing the default ΔT setting, page 61




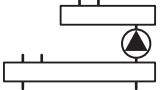


4.11 Installation examples

4.11.1 Symbols used

Tab.22 Explanation of symbols in the hydraulics flow diagram

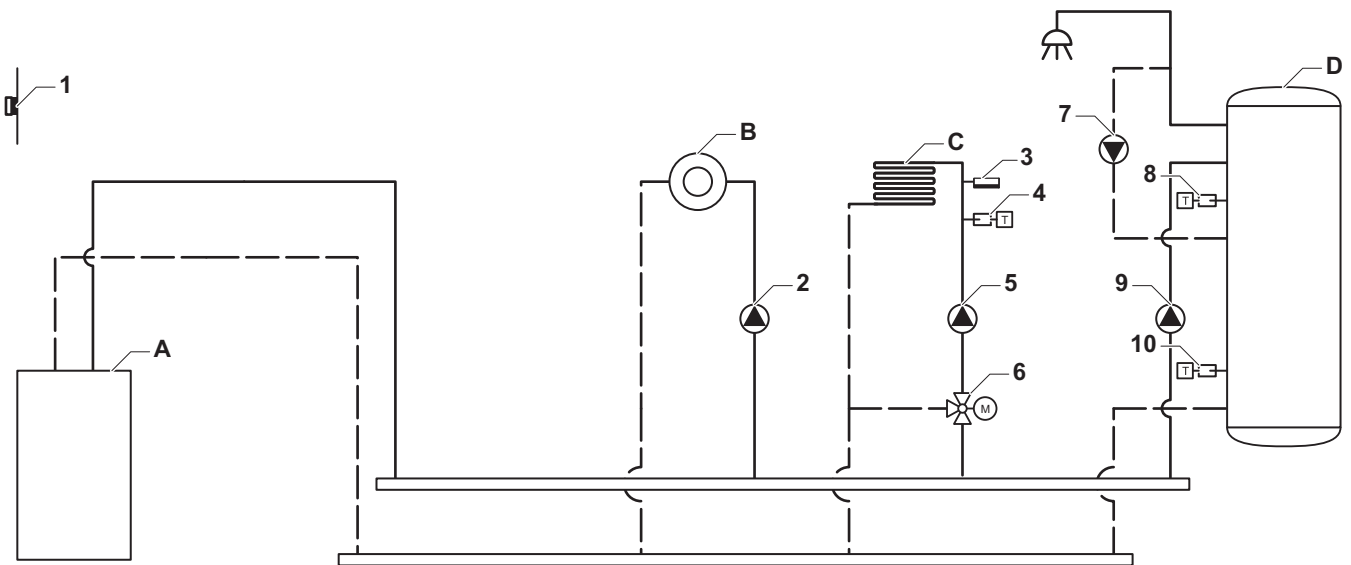
Symbol	Explanation
	Return pipe
	Flow pipe
	Mixing valve
	Pump
	Domestic hot water
	Make contact
	Outdoor temperature sensor
	Sensor
	Safety thermostat
	Room thermostat
	Plate heat exchanger
	Safety group
	Low-loss header
	Instant boiler
	Primary heating circuit connection
	Solar collector
	Domestic hot water storage tank
	Titanium anode ⁽¹⁾
	Electrical heating element

4 Preparation of installation

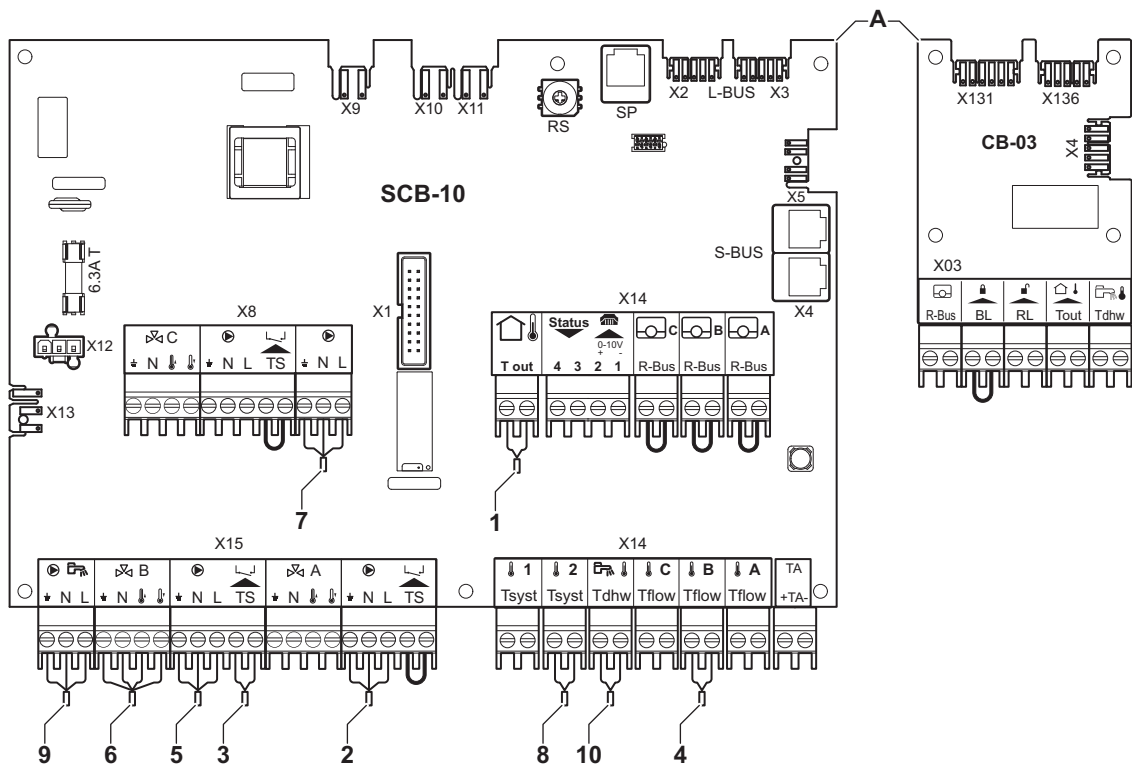
Symbol	Explanation
	Shower
	Heating zone
	Underfloor heating
	Underfloor heating manifold
	Hot-air heater
	Swimming pool
(1) Fitted in domestic hot water storage tank.	

4.11.2 Connection example 4

Fig.14 1 boiler + 1 direct zone + 1 mixing zone + domestic hot water (DHW) zone



AD-4100037-01



AD-4100139-01

- A Boiler
- B Direct zone - CircA1
- C Mixing zone - CircB1 (underfloor heating)
- D DHW zone - DHWA (layered calorifier - 2 sensors)

i Important
For this configuration an additional PCB (accessory AD249) is placed on connector X8 of the SCB-10 PCB.

Tab.23 On > ≡ > Installation Setup > SCB-10 > DHWA > Parameters, counters, signals > Parameters

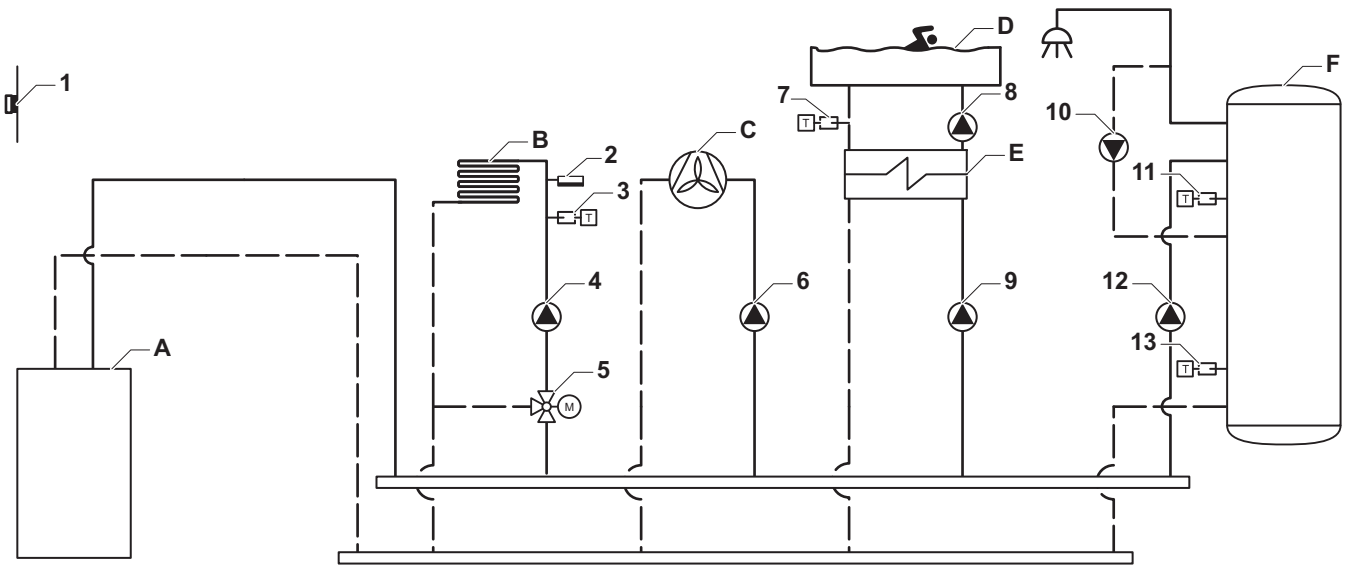
Code	Display text	Description	Range	Setting
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	10

Tab.24 On > ≡ > Installation Setup > SCB-10 > AUX > Parameters, counters, signals > Parameters

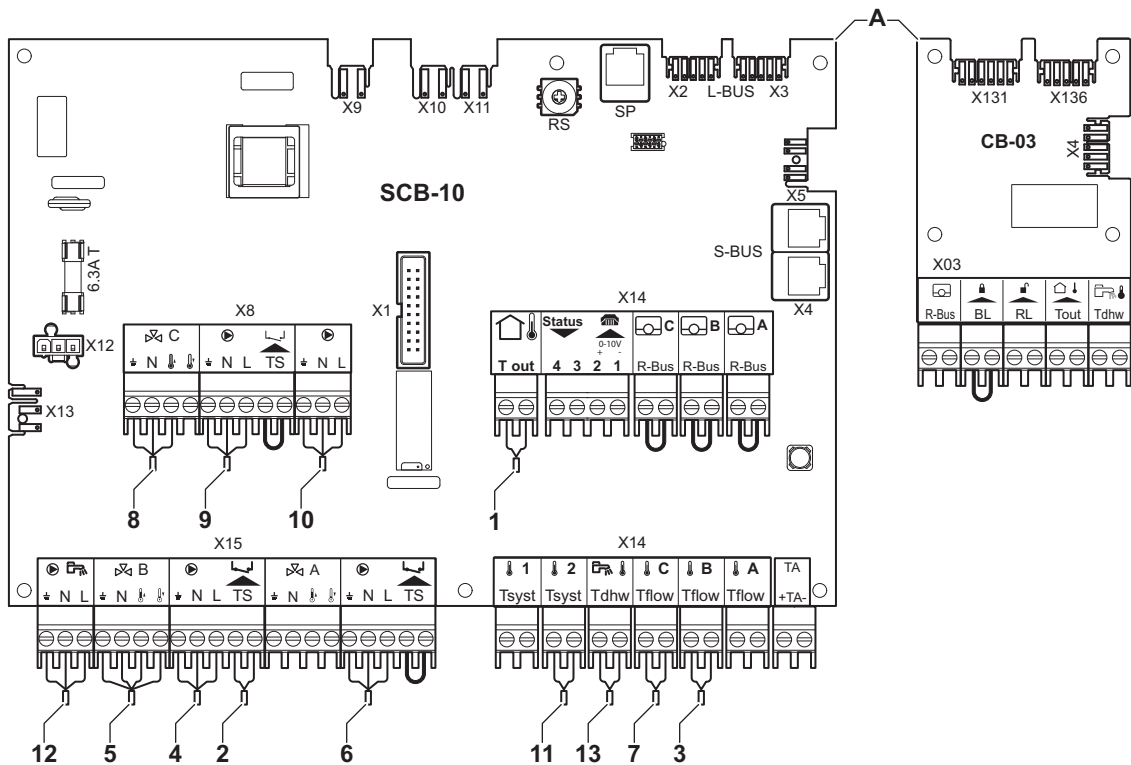
Code	Display text	Description	Range	Setting
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	8

4.11.3 Connection example 6

Fig.15 1 boiler + 1 mixing zone + 1 direct zone + swimming pool zone + domestic hot water (DHW) zone



AD-4100039-01



AD-4100141-01

- A Boiler
- B Mixing zone - CircB1 (underfloor heating)
- C Direct zone - CircA1 (fan convector)
- D Direct zone - CircC1 (swimming pool)
- E Plate heat exchanger
- F DHW zone - DHWA (layered calorifier - 2 sensors)

i Important

For this configuration an additional PCB (accessory AD249) is placed on connector X8 of the SCB-10 PCB.

Tab.25 On > ≡ > Installation Setup > SCB-10 > CIRCA1 > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Setting
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	5

Tab.26 On > ≡ > Installation Setup > SCB-10 > CIRCC1 > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Setting
CP023	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	3

Tab.27 On > ≡ > Installation Setup > SCB-10 > DHWA > Parameters, counters, signals > Parameters

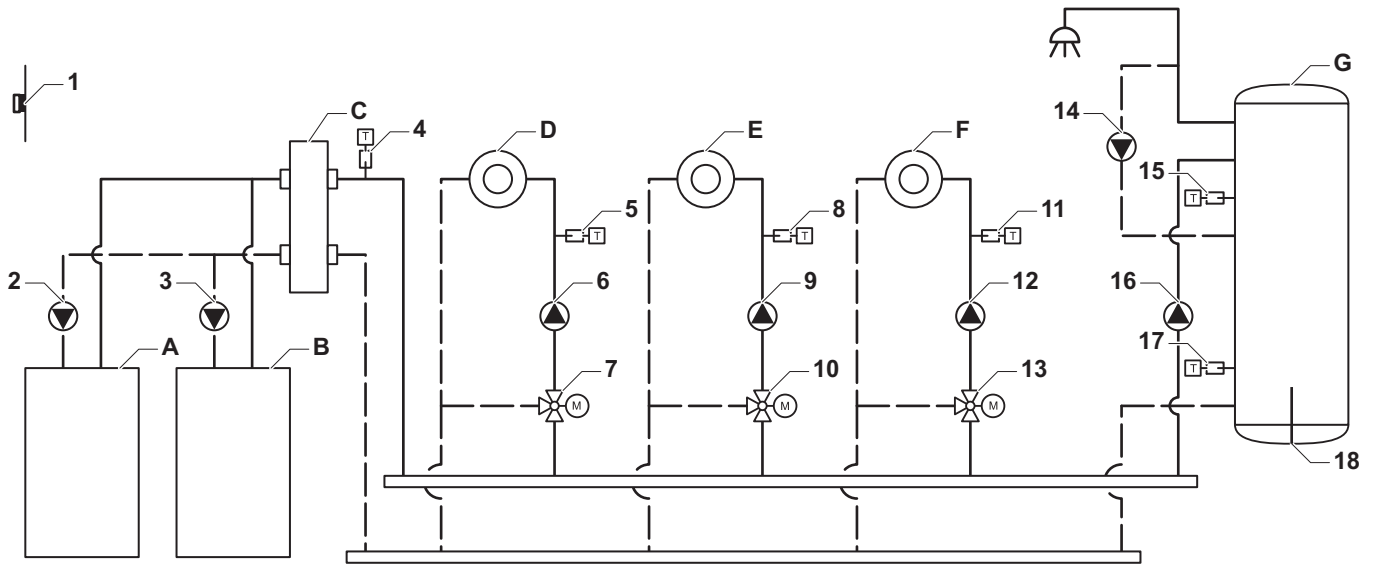
Code	Display text	Description	Range	Setting
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	10

Tab.28 On > ≡ > Installation Setup > SCB-10 > AUX > Parameters, counters, signals > Parameters

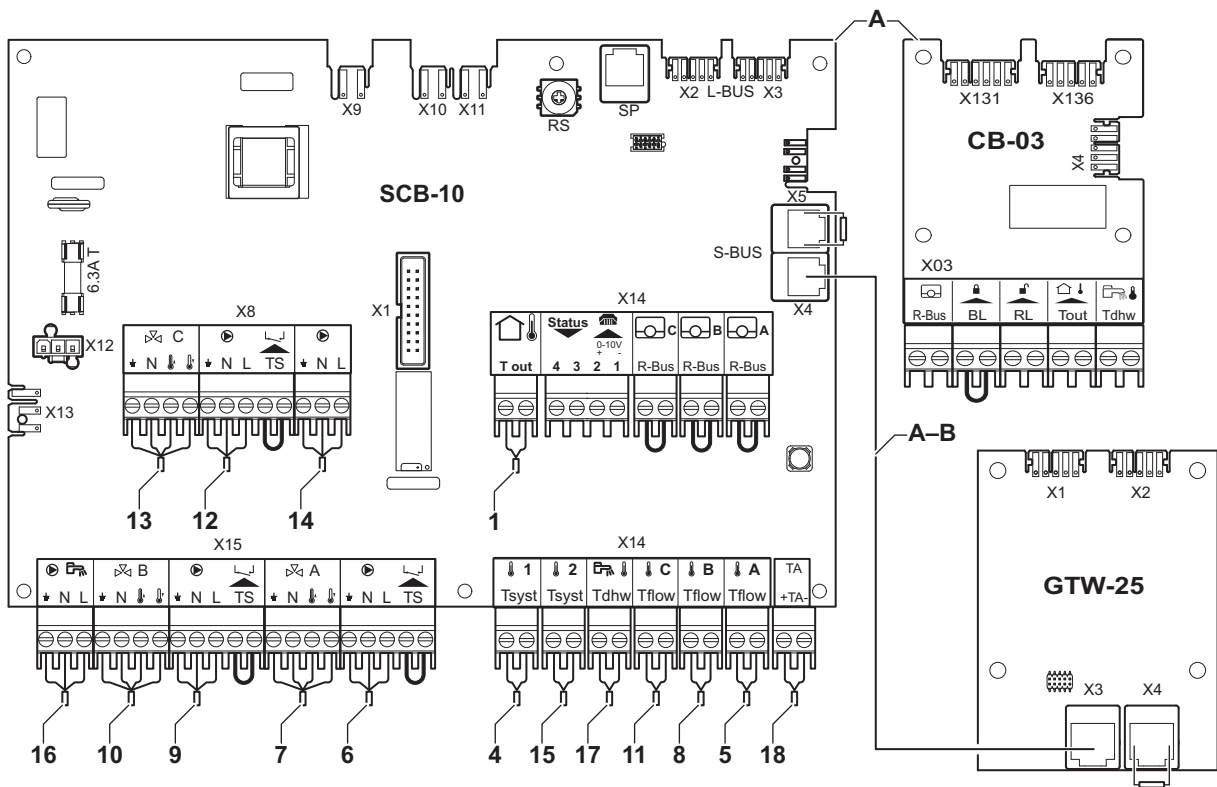
Code	Display text	Description	Range	Setting
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convectore 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	8

4.11.4 Connection example 16

Fig.16 2 boiler cascade + low-loss header + 3 mixing zones + domestic hot water (DHW) zone



AD-4100044-01



AD-4100146-01

- A Boiler (master)
- B Boiler (slave)
- C Low-loss header
- D Mixing zone - CircA1
- E Mixing zone - CircB1
- F Mixing zone - CircC1
- G DHW zone - DHWA (layered calorifier - 2 sensors)

- A-B S-BUS cable (comes with 2 resistors; one on connector X5 on the SCB-10 and one on connector X4 on the GTW-25 PCB from boiler B)
- 2 Pump connection via cables X81 and X112, which can be found in boiler A's instrument box
- 3 Pump connection via cables X81 and X112, which can be found in boiler B's instrument box



Important

For this configuration an additional PCB (accessory AD249) is placed on connector X8 of the SCB-10.

Tab.29 Installation Setup > SCB-10 > **CIRCA1** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Setting
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	7 °C – 100 °C	50
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	7 °C – 100 °C	40
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	2
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 – 4	0.7

Tab.30 Installation Setup > SCB-10 > **DHWA** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Setting
CP022	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	10

Tab.31 Installation Setup > SCB-10 > **AUX** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Setting
CP024	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	8

Tab.32 Installation Setup > SCB-10 > **Cascade management B** > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Setting
AP083	Enable master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	1

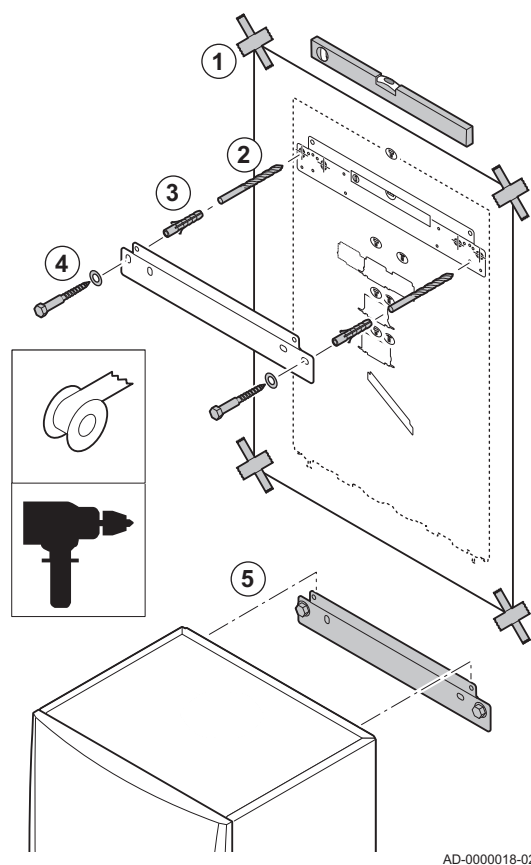
Tab.33 Installation Setup > SCB-10 > **Analogue input** > Parameters, counters, signals > Adv. Parameters

Code	Display text	Description	Range	Setting
EP036	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = DHW tank 2 = DHW tank top 3 = Buffer tank sensor 4 = Buffer Tank top 5 = System (cascade)	2
EP037	Sensor input config	Sets the general configuration of the sensor input	0 = Disabled 1 = DHW tank 2 = DHW tank top 3 = Buffer tank sensor 4 = Buffer Tank top 5 = System (cascade)	3

5 Installation

5.1 Positioning the boiler

Fig.17 Mounting the boiler



The fitting bracket on the back of the casing can be used to mount the boiler directly on the suspension bracket.

The boiler is supplied with a mounting template.

1. Attach the mounting template of the boiler to the wall using adhesive tape.



Warning

- Use a level to check whether the mounting template is hanging perfectly horizontally.
- Protect the boiler against building dust and cover the connection points for the flue gas outlet and air supply. Only remove this cover to assemble the relevant connections.

2. Drill 2 holes of \varnothing 10 mm.



Important

The extra fixing holes in the suspension bracket are intended for use in the event that one of the two holes is not suitable for the correct fastening of the plug.

3. Fit the \varnothing 10 mm plugs.
4. Remove the mounting template.
5. Attach the suspension bracket to the wall with the \varnothing 10 mm bolts supplied.
6. Mount the boiler on the suspension bracket.

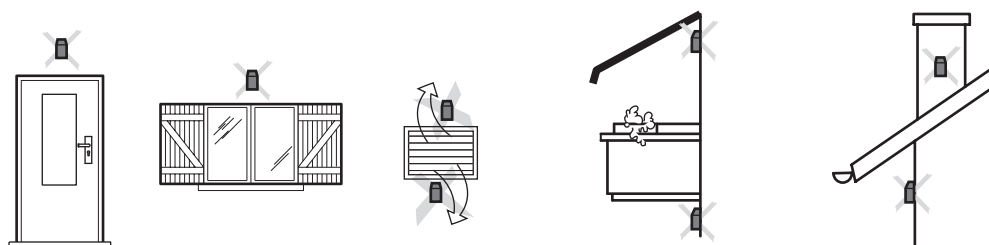
5.2 Mounting an outdoor sensor

5.2.1 Positions to be avoided

Avoid placing the outside sensor in a position with the following characteristics:

- Masked by part of the building (balcony, roof, etc.).
- Close to a disruptive heat source (sun, chimney, ventilation grid, etc.).

Fig.18

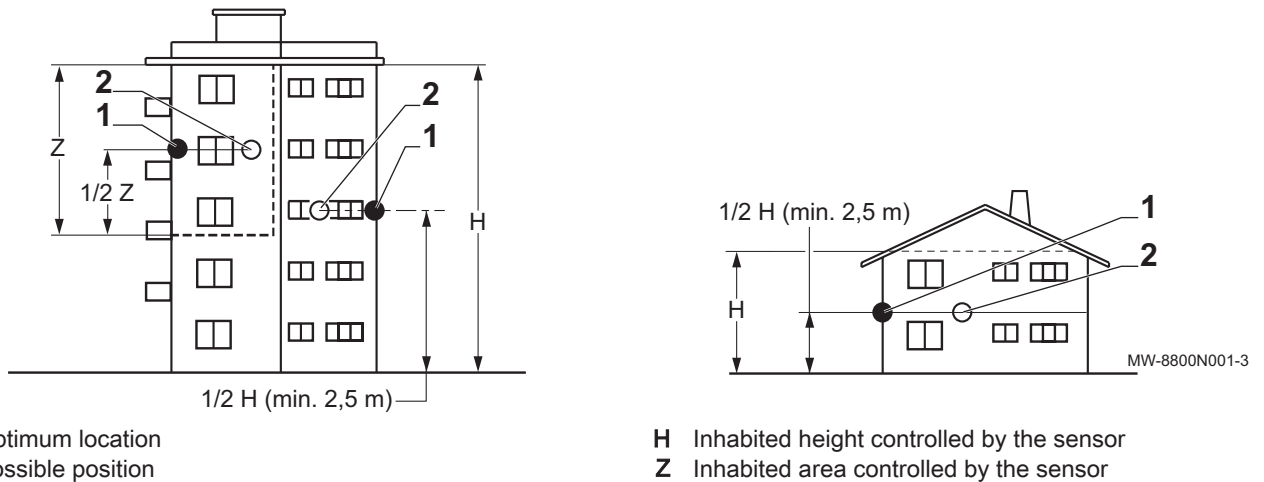


5.2.2 Recommended positions

Place the outside sensor in a position that covers the following characteristics:

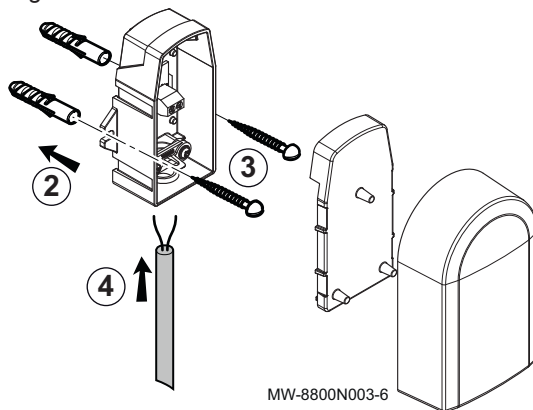
- On a façade of the area to be heated, on the north if possible.
- Half way up the wall of the area to be heated.
- Under the influence of changes in the weather.
- Protected from direct sunlight.
- Easy to access.

Fig.19



5.2.3 Fitting the outdoor sensor

Fig.20



1. Choose a recommended location for the outdoor sensor.
2. Put the 2 plugs in place, delivered with the sensor.
Plugs diameter 4 mm/drill diameter 6 mm
3. Secure the sensor using the screws provided (diameter 4 mm).
4. Connect the cable to the outdoor temperature sensor.

5.3 Rinsing the system

Installation must be carried out in accordance with the prevailing regulations, codes of practice and the recommendations in this manual.

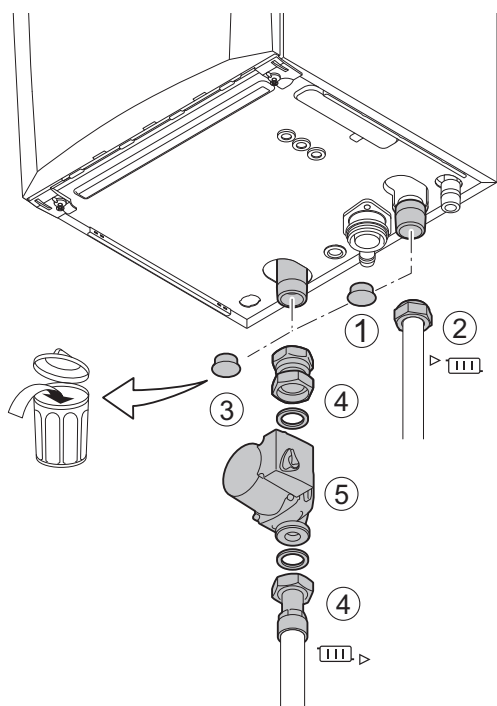
Before a new boiler can be connected to an existing or new system, the entire system must be thoroughly cleaned and flushed. This step is absolutely crucial. The flushing helps to remove residue from the installation process (weld slag, fixing products etc.) and accumulations of dirt (silt, mud etc.)

i Important



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

5.4 Connecting the heating circuit

Fig.21 Connecting the CH flow and CH return



AD-4100110-01

1. Remove the dust cap from the CH flow connection  at the bottom of the boiler.
2. Fit the outlet pipe for CH water to the CH flow connection.
3. Remove the dust cap from the CH return connection  at the bottom of the boiler.
4. Fit the inlet pipe for CH water to the CH return connection.
5. Install the pump in the CH return pipe.



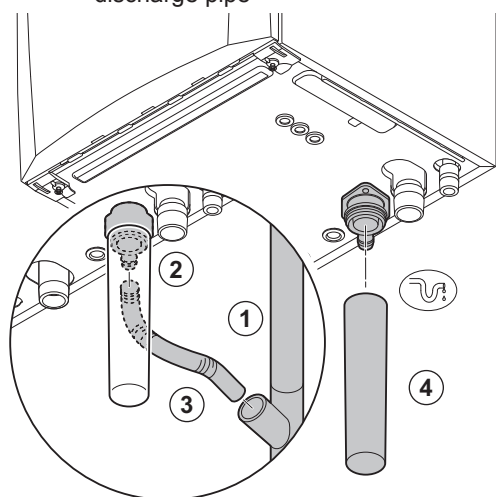
For more information, see

Connecting the PWM pump, page 47

Connecting the standard pump, page 46

5.5 Connecting the condensate discharge pipe

Fig.22 Connecting the condensate discharge pipe

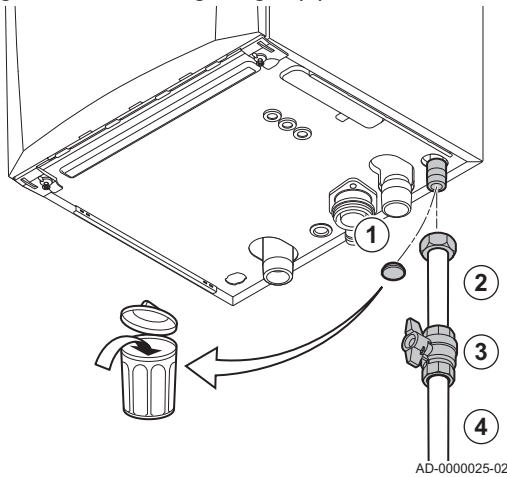


AD-0000024-02

1. Fit a plastic drain pipe of \varnothing 32 mm or larger, terminating in the drain.
2. Insert the flexible condensate drain hose into the pipe.
3. Fit a stench-trap or siphon in the drain pipe.
4. Fit the siphon.

5.6 Gas connection

Fig.23 Connecting the gas pipe



1. Remove the dust cap from the gas supply pipe ^{GAS/}GAZ at the bottom of the boiler.
2. Fit the gas supply pipe.
3. Fit a gas tap in this pipe, directly underneath the boiler (within 1 metre).
4. Fit the gas pipe to the gas tap.



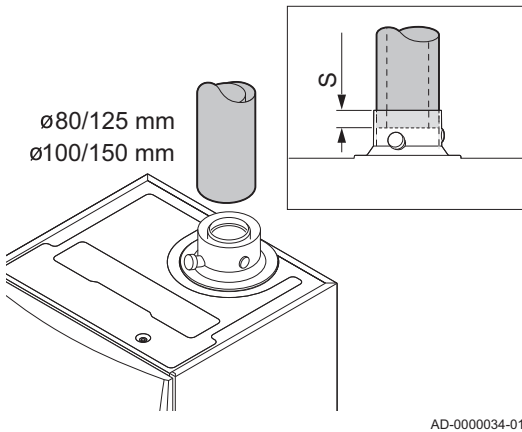
Important

The gas tap must always be accessible

5.7 Air supply/flue gas outlet connections

5.7.1 Connecting the flue gas outlet and air supply

Fig.24 Connecting the flue gas outlet and air supply



S Insertion depth 25 mm

1. Connect the flue gas outlet pipe and the air supply pipe to the boiler.
2. Fit the subsequent flue gas outlet pipes and air supply pipes in accordance with the manufacturer's instructions.



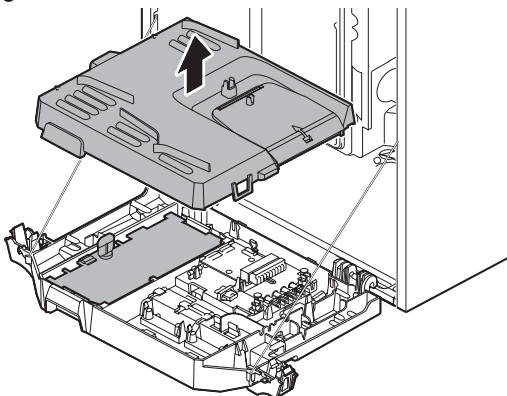
Caution

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

5.8 Electrical connections

5.8.1 Control unit

Fig.25 CU-GH08



The table gives important connection values for the control unit.

Tab.34 Connection values for control unit

Supply voltage	230 VAC/50 Hz
Main fuse value F1 (230 VAC)	2.5 AT
Fan	230 VAC

**Danger of electric shock**

The following components of the boiler are connected to a 230 V power supply:

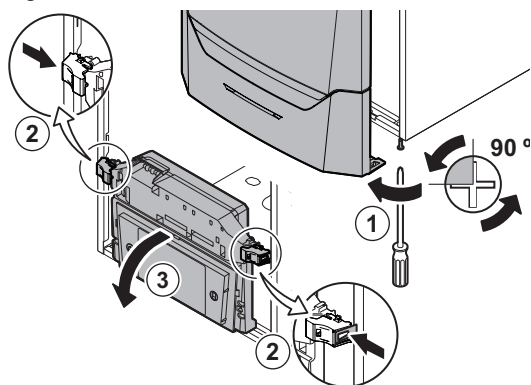
- Electrical connection to circulating pump.
- Electrical connection to gas combination block.
- Electrical connection to fan.
- Control unit.
- Ignition transformer.
- Power supply cable connection.

The boiler has a three-wire mains lead (lead length 1.5 m) and is suitable for a 230 VAC/50 Hz power supply with a phase/neutral/earth system. The boiler is not phase sensitive. The power supply cable is connected to the **X1** connector. A spare fuse can be found in the housing of the control unit.

The boiler has several control, protection and regulation connection options. The standard PCB can be extended with optional PCBs.

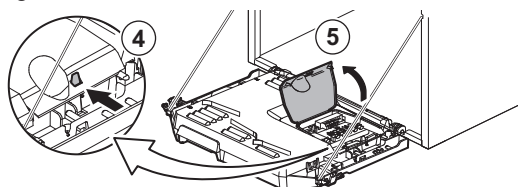
5.8.2 Access to the instrument box

Fig.26 Access to the instrument box



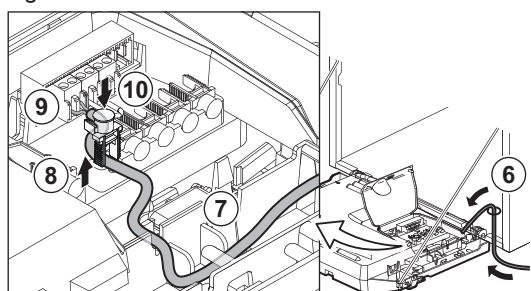
AD-3001411-01

Fig.27



AD-3001412-01

Fig.28



AD-3001414-01

The following is installed in the instrument box:

- the standard PCB **CB-03** with connector **X3**.

1. Unscrew the two screws located under the front housing by a quarter turn and remove the front housing.
2. Press the clips on the sides of the instrument box inwards slightly.
3. Tilt the instrument box forwards.

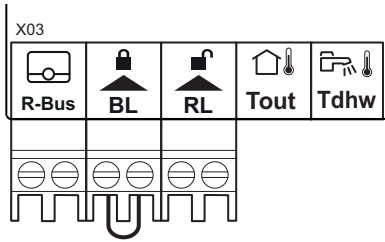
4. Press the clip on the side of the instrument box flap inwards slightly.
5. Open the instrument box flap.
⇒ The connector **X3** on the **CB-03** PCB is now accessible.

6. Guide the relevant connection cable(s) through the round grommet(s) on the boiler's bottom plate.
7. Guide the relevant connection cable(s) through the instrument box via the cable ducts provided.
8. Undo the strain relief clip(s) and feed the cable(s) underneath.
9. Connect the cables to the appropriate terminals on the connector.
10. Press the strain relief clip(s) firmly into place.
11. Close the instrument box.

5.8.3 Connection options for the standard PCB - CB-03

The boiler is fitted with a connection PCB, to which various thermostats and regulators can be connected.

Fig.29 Connectors on the connection PCB



AD-3001367-01

- R-Bus** Room unit (thermostat) connector
- BL** Blocking input
- RL** Release input
- Tout** Outdoor sensor connector
- Tdhw** DHW sensor connector

When the boiler is fitted with the **SCB-10** then the outdoor sensor (**Tout**) and the calorifier sensor (**Tdhw**) must be connected on the **SCB-10**.

■ **Connecting a modulating room thermostat**

The boiler is fitted with a **R-Bus** connection as standard instead of an **OT**-connector. The **R-Bus** connector supports the following types:

- **R-Bus** thermostat (for example, the **Smart TC°**)
- **OpenTherm** thermostat (for example, the **Modulating clock thermostat**)
- **OpenTherm Smart Power** thermostat
- **On/off** thermostat

The software recognizes which type of thermostat is connected.

Tm Modulating thermostat

1. In the case of a room thermostat: install the thermostat in a reference room.
2. Connect the two-wire cable of the modulating thermostat (**Tm**) to the terminals **R-Bus** of the connector. It does not matter which wire is connected to which cable clamp.

Fig.30 Connecting the modulating thermostat



AD-3000968-02

■ **Connecting the on/off thermostat**

The boiler is suitable for connection to a 2-wire on/off ambient thermostat.

Tk On/off thermostat

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

Fig.31 Connecting the on/off thermostat



AD-3000969-02

■ **Frost protection combined with on/off thermostat**

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

Tk On/off thermostat
Tv Frost thermostat

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

Fig.32 Connection of frost thermostat



AD-3000970-02

Fig.33 Blocking input



AD-3000972-02

**Warning**

If an **OpenTherm** thermostat (for example, the **Smart TC°**) is used, a frost thermostat cannot be connected in parallel to the **R-Bus** terminals. In such cases, install frost protection in the central heating system in combination with an outdoor sensor.

■ Blocking input

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 $< 6^{\circ}\text{C}$ and the burner starts when the temperature of the heat exchanger is $< 3^{\circ}\text{C}$)
- Lock out: no frost protection with outdoor sensor and partial boiler frost protection (pump starts when the temperature of the heat exchanger is $< 6^{\circ}\text{C}$, the burner does not start when the temperature of the heat exchanger is $< 3^{\circ}\text{C}$).

**Caution**

Only suitable for potential-free contacts.

**Important**

First remove the bridge if this input is used.

■ Release input

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 boiler will be blocked after a waiting time.

Change the waiting time of the input using parameter **AP008**.

**Caution**

Only suitable for potential-free contacts.

■ Connecting an outdoor sensor

An outdoor sensor can be connected to the **Tout** connector. In the case of an on/off thermostat, the boiler will control the temperature with the set point from the internal heating curve. An **OpenTherm** controller can also use this outdoor sensor. In that case, the desired internal heating curve must be set on the controller.

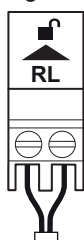
**Important**

For boilers with an SCB-10 PCB, the outdoor sensor must be connected to the SCB-10 PCB.

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

- AF60 = NTC $470 \Omega/25^{\circ}\text{C}$

Fig.34 Release input



AD-3001303-01

Fig.35 Connecting an outdoor sensor



AD-3000973-02

1. Connect the plug from the outdoor sensor to the **Tout** connector.



For more information, see
Setting the heating curve, page 0

■ **Frost protection combined with outdoor sensor**

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



Important
For boilers with an SCB-10 PCB, the outdoor sensor must be connected to the SCB-10 PCB.

1. Connect the plug from the outdoor sensor to the **Tout** connector.

The frost protection works as follows with an outdoor sensor:

- If the outdoor temperature is lower than -10°C: heat demand from the boiler and the pump starts working.
- If the outdoor temperature is higher than -10°C: no heat demand from the boiler.



Important
The outdoor temperature threshold for frost protection can be changed with parameter **AP080**.

■ **Connecting the calorifier sensor/thermostat**

A calorifier 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 boilers with an SCB-10 PCB, the calorifier sensor/thermostat must be connected to the SCB-10 PCB.

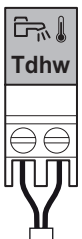
1. Connect the two-wire cable to the **Tdhw** terminals of the connector.

Fig.36 Connecting an outdoor sensor



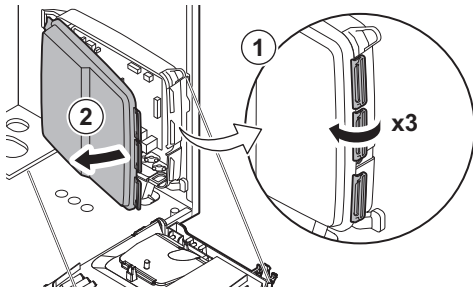
AD-3000973-02

Fig.37 Connecting the calorifier sensor/ thermostat



AD-3000971-02

Fig.38 Access to the expansion box



AD-4000062-01

5.8.4 Access to the expansion box

If there is no space in the boiler's instrument box to install an (optional) expansion PCB, install the PCB in the electronics expansion box. This is available as an accessory.

1. Unclip the housing cover.
2. Remove the cover.
3. Install the expansion PCB in accordance with the instructions supplied.

The following is installed in the expansion box:

- the **SCB-10** PCB.

5.8.5 Connection options for the expansion PCB - SCB-10

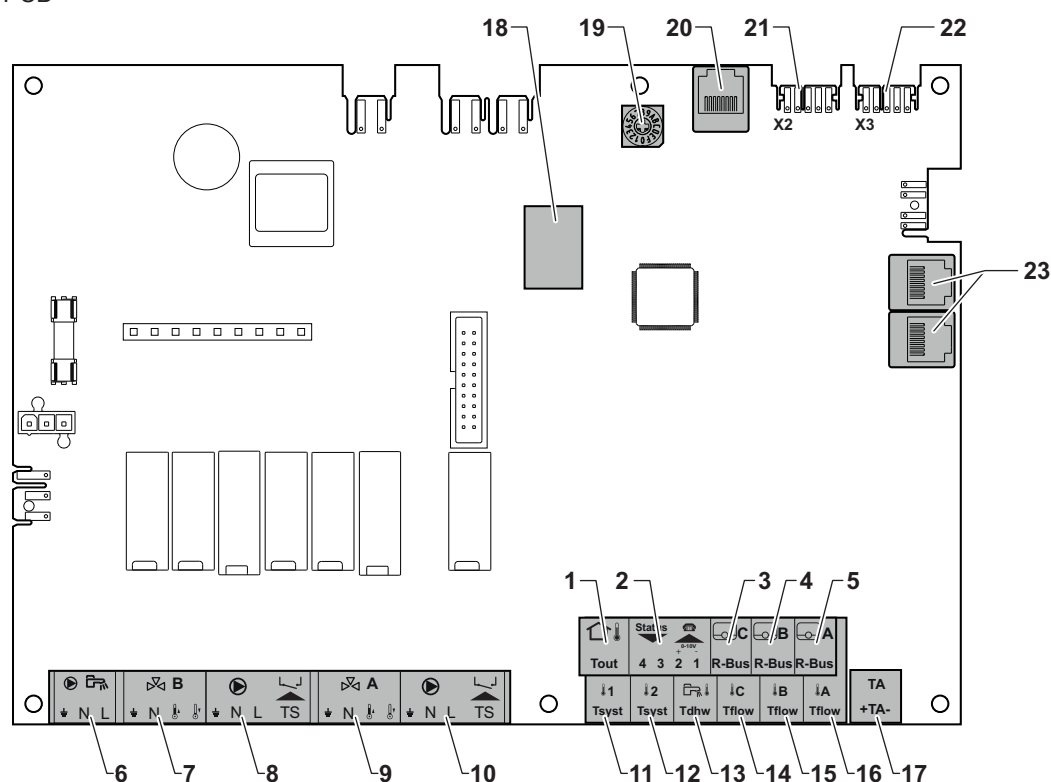
Different heating zones can be connected to the SCB-10 PCB.

- control of 2 (mixing) zones fitted on connector **X15**
- control of a third (mixing) zone via an PCB (= accessory) fitted on connector **X8**
- control of one domestic hot water (DHW) zone
- cascade layout (add sensor on sensor system 1 or 2)

i Important

- If the boiler is fitted with the SCB-10 PCB, then this is automatically recognised by the automatic control unit of the boiler.
- On removing this control board, the boiler will show an error code. To prevent this error, carry out an auto-detect immediately after removing this board.

Fig.39 SCB-10 PCB



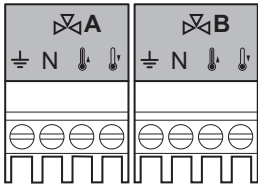
AD-3001210-01

- | | |
|---|---|
| 1 Outdoor temperature sensor | 13 Domestic hot water sensor |
| 2 Programmable and 0-10 V input | 14 Flow sensor - circuit C |
| 3 Room temperature sensor - circuit C | 15 Flow sensor - circuit B |
| 4 Room temperature sensor - circuit B | 16 Flow sensor - circuit A |
| 5 Room temperature sensor - circuit A | 17 Impressed current anode |
| 6 Domestic hot water tank pump | 18 Connectors Mod-BUS |
| 7 Mixing valve - circuit B | 19 Coding wheel, selects the generator number in the cascade in Mod-Bus |
| 8 Pump and safety thermostat - circuit B | 20 S-BUS connector |
| 9 Mixing valve - circuit A | 21 END connector for L-BUS connection |
| 10 Pump and safety thermostat - circuit A | 22 L-BUS connection to control unit (CU-GH08) |
| 11 System sensor 1 | 23 S-BUS cable connector |
| 12 System sensor 2 | |

■ Connecting a mixing valve

Connecting a mixing valve (230 VAC) per zone (group).

Fig.40 Mixing valve connectors

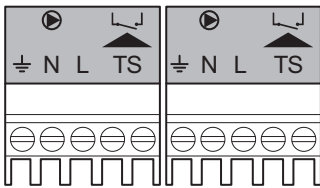


AD-4000002-01

Connect the mixing-way valve as follows:

- Earth
- N** Neutral
- Open
- Close

Fig.41 Pump with protection thermostat connector



AD-4000001-02

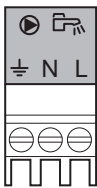
■ **Connecting the pump with a protection thermostat**

Connecting a pump with a protection thermostat, e.g. for underfloor heating. The maximum pump power consumption is 300 VA.

Connect the pump and the protection thermostat as follows:

- Earth
- N** Neutral
- L** Phase
- TS** protection thermostat (remove bridge)

Fig.42 DHW pump connector



AD-4000123-01

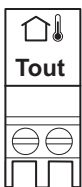
■ **Connecting a domestic hot water (DHW) pump**

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.43 Outdoor sensor

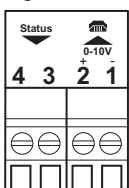


AD-4000006-02

■ **Connecting an outdoor sensor**

An outdoor sensor can be connected to the **Tout** terminal of the connector. In the case of an on/off thermostat, the boiler will control the temperature with the set point from the internal heating curve.

Fig.44 Telephone connector



AD-4000004-02

■ **Connecting a telephone connector**

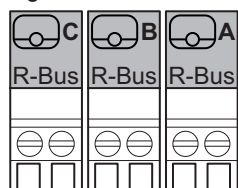
The telephone connector can be used to connect a remote control, a 0–10 V analogue input or as a status output.

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

Connect the telephone connector as follows:

- 1 + 2** 0–10 V / status input
- 3 + 4** status output

Fig.45 R-bus connectors



AD-4000003-01

■ Connecting room thermostats per zone

The SCB-10 is fitted with three **R-Bus** connectors. They can be used to connect room thermostats per zone. The **R-bus** connectors are related to the other zone-specific connectors on the SCB-10. The **R-Bus** connector supports the following types:

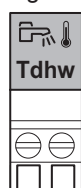
- **R-Bus** thermostat (for example, the **Smart TC°**)
- **OpenTherm** thermostat (for example, the **Modulating clock thermostat**)
- **OpenTherm Smart Power** thermostat
- **On/off** thermostat

The software recognizes which type of thermostat is connected.

■ Connecting the domestic hot water (DHW) sensor

Connecting the domestic hot water (DHW) sensor (NTC 10k Ohm/25°C).

Fig.46 DHW sensor

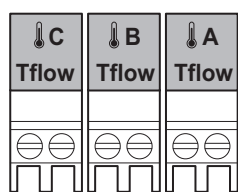


AD-4000009-02

■ Connecting contact temperature sensors

Connecting contact temperature sensors (NTC 10k Ohm/25°C) for system flow, DHW temperatures or zones (groups).

Fig.47 Contact temperature sensor connectors



AD-4000007-02

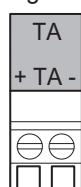
■ Connecting the calorifier tank anode

Connecting a TAS anode (Titan Active System) for a calorifier tank.

Connect the anode as follows:

- + Connection on the calorifier tank
- Connection on the anode

Fig.48 Anode connector



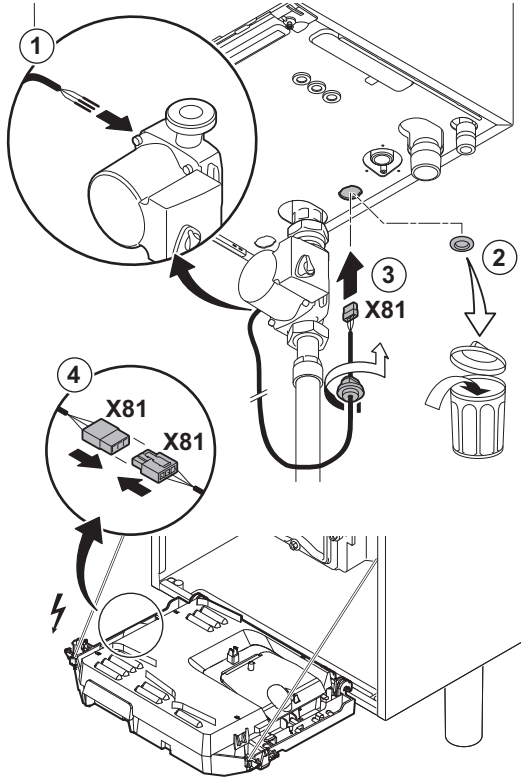
AD-4000005-02

**Caution**

If the calorifier tank does not have a TAS anode, connect the simulation anode (= accessory)

5.8.6 Connecting the standard pump

Fig.49 Connecting the power supply cable



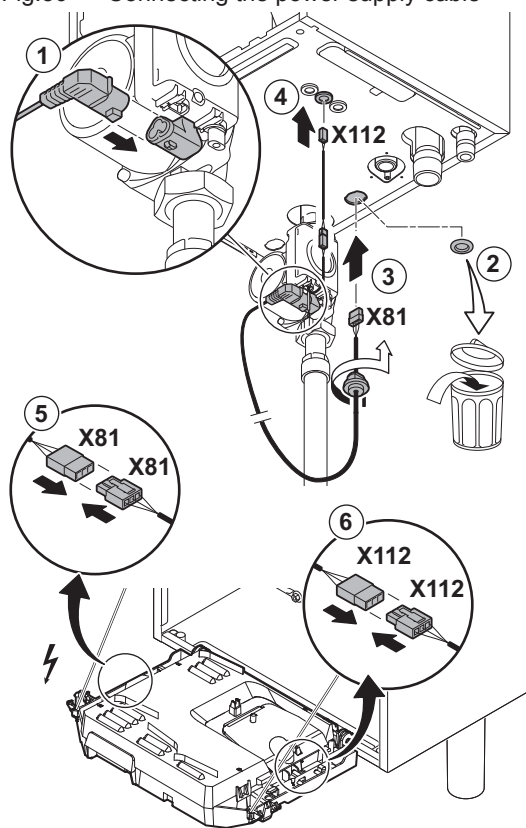
AD-4000093-01

The pump must be connected to the standard control PCB. To do this, proceed as follows:

1. Connect the X81 power cable supplied with the boiler to the pump.
2. Remove the grommet from the opening in the middle of the base of the boiler.
3. Pass the pump X81 cable through the base of the boiler and seal the opening by tightening the bayonet fitting to the cable.
4. Connect the X81 pump cable to the X81 cable that runs along the cable duct to the left of the instrument box

5.8.7 Connecting the PWM pump

Fig.50 Connecting the power supply cable



AD-4000094-01

The energy-efficient modulating pump must be connected to the standard control PCB. To do this, proceed as follows:

1. Connect the power supply cable and the cable for the PWM signal to the pump.
2. Remove the grommet from the opening in the middle of the base of the boiler.
3. Pass the pump power supply cable through the base of the boiler and seal the opening by tightening the bayonet fitting to the cable.
4. Pass the PWM cable from the pump through one of the grommets on the right in the base of the boiler.
5. Connect the X81 pump power supply cable to the X81 cable that runs along the cable duct to the left of the instrument box.
6. Connect the X112 pump PWM cable to the X112 cable that runs along the cable duct to the right of the instrument box.



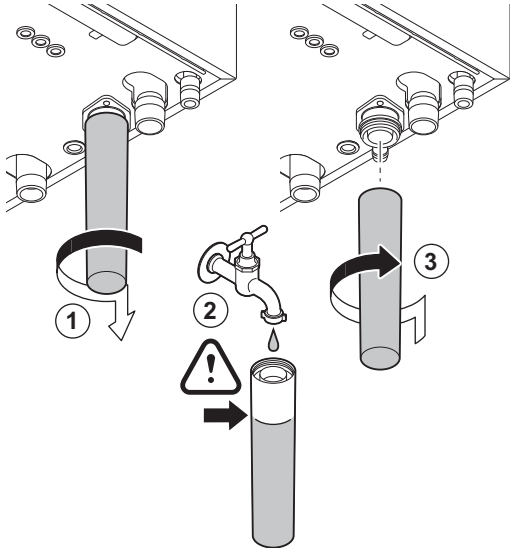
Important

The pump's various settings can be adjusted using the parameters **PP014**, **PP016**, **PP017** and **PP018**.

6 Preparation of commissioning

6.1 Checklist before commissioning

Fig.51 Filling the siphon



AD-0000086-01

6.1.1 Filling the siphon



Danger

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

1. Remove the siphon.
2. Fill the siphon up with water.
3. Fit the siphon.
 - ⇒ Check that the siphon is securely fitted and that there are no leaks.

6.1.2 Filling the system



Caution

Before filling, open the valves on every radiator in the installation.



Important

In order to be able to read off the water pressure from the boiler display, the boiler must be switched on.

1. Fill the central heating system with clean tap water.



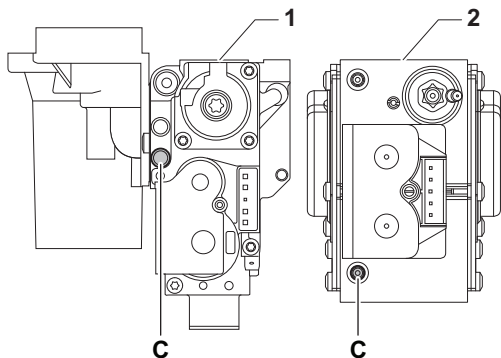
Important

The recommended water pressure is between 1.5 bar and 2 bar.

2. Check the water-side connections for tightness.

6.1.3 Gas circuit

Fig.52 Gas valve unit measuring points C



AD-0000066-02

- 1 AMC Pro 45 - 65 - 90
- 2 AMC Pro 115



Warning

- Ensure that the boiler is switched off.
- Do not put the boiler into operation if the type of gas supplied does not conform to the approved gas types.

1. Open the main gas tap.
2. Open the boiler gas tap.
3. Unscrew the two screws located under the front housing by a quarter turn and remove the front housing.

4. Check the gas inlet pressure at the measuring point **C** on the gas valve unit.

**Warning**

- The gas pressure that was measured at the measuring point **C** must fall within the stated gas inlet pressure limits. See Technical data, page 77
- For authorised gas pressures, see: Unit categories, page 76

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

6.1.4 Hydraulic circuit

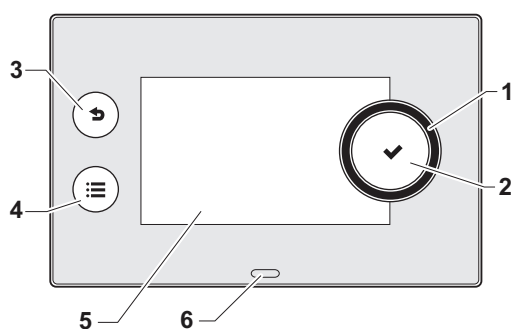
1. Check the siphon; it should be fully filled with clean water.
2. Check the water-side connections for tightness.

6.1.5 Electrical connections

1. Check the electrical connections.

6.2 Control panel description

Fig.53 Control panel components



AD-3000932-01

6.2.1 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



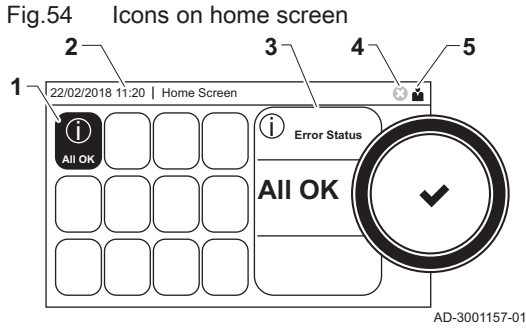
For more information, see
Additional documentation, page 11

6.2.2 Description of the home screen

This screen is shown automatically after start-up of the appliance. The control panel goes automatically in standby mode (black screen) if the screen is not touched 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 menu of your choice and press the button ✓ to confirm the selection.

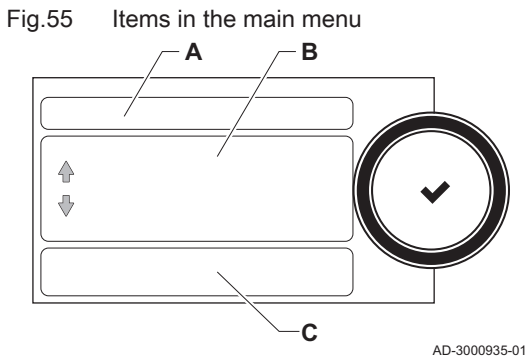


- 1 Tiles: the selected tile is highlighted
- 2 Date and time | Name of the screen (actual position in the menu)
- 3 Information about the selected tile
- 4 Error indicator (only visible if an error has been found)
- 5 Icon showing the navigation level:

- : Chimney sweeper level
 - : User level
 - : Installer level
- The installer level is protected by an access code. When this level is active, the status of the tile [] changes from **Off** into **On**.

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).



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

Tab.35 Available menus for the user

Description	Icon
System Settings	
Version Information	i

Tab.36 Available menus for the installer

Description	Icon
Installation Setup	
Commissioning Menu	
Advanced Service Menu	
Error History	
System Settings	
Version Information	i

7 Commissioning

7.1 Commissioning procedure



Warning

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



See

Fan speed for different gas types, page 52

1. Open the main gas tap.
2. Open the boiler gas tap.
3. Switch the power on with the boiler's on/off switch.
 - ⇒ The start-up program will start and cannot be interrupted. During the program, all segments of the display are shown briefly.
4. 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.37 Factory settings G20 (H-gas)

Code	Display text	Description	Adjustment range	45	65	90	115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	5400	5600	6300	6800
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5400	5600	6300	6800
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1550	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	2500	2500	2500	2500

7.2.2 Adjusting to a different gas type



Warning

Only a qualified installer may carry out the following operations.

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

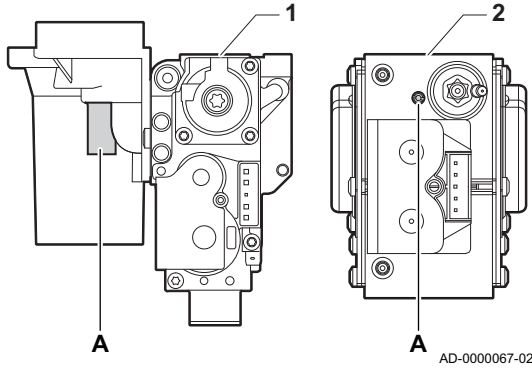
■ **Adjusting the gas valve unit for propane**



Important

For the AMC Pro 90 boiler; replace the current gas valve unit with the propane gas valve unit according to the instructions supplied with the propane conversion kit.

Fig.56 Position of adjusting screw A



- 1 Gas valve unit on the AMC Pro 45 - 65 - 90
- 2 Gas valve unit on the AMC Pro 115

1. Using adjusting screw **A**, adjust the factory setting to the setting for propane. The rotations for each boiler type are described in the table.

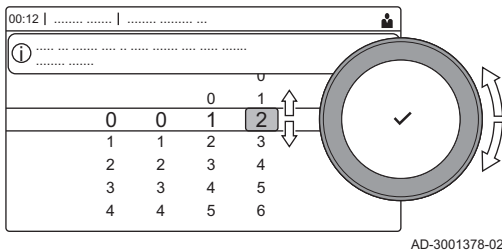
Tab.38 Settings for propane

Boiler type	Action
AMC Pro 45	Rotate the adjusting screw A on the venturi 4¾ turns in a clockwise direction
AMC Pro 65	Rotate the adjusting screw A on the venturi 6½ turns in a clockwise direction
AMC Pro 115	Rotate the adjusting screw A in a clockwise direction until it is closed, then: Rotate the adjusting screw A on the gas valve unit 3½–4 turns in an anticlockwise direction

■ **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.

Fig.57 Installer level



1. Select the tile [].
2. Press the button to confirm the selection.
3. Use the rotary knob to select code: **0012**.
4. Press the button to confirm the selection.
 - ⇒ When the installer level is enabled, the status of the tile [] changes from **Off** into **On**.
5. Select the tile [].
6. Press the button to confirm the selection.
7. Use the rotary knob to select **Parameters, counters, signals**.
8. Press the button to confirm the selection.
9. Use the rotary knob to select **Adv. Parameters**.
10. Press the button to confirm the selection.
 - ⇒ A list of available parameters appears.
11. Use the rotary knob to select the required parameter.
12. Press the button to confirm the selection.
 - ⇒ The current value appears.
13. Use the rotary knob to change the setting.
14. Press the button to confirm the selection.

■ **Fan speed for different gas types**

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

Tab.39 Adjustment for gas type G20 (H gas) (Switzerland)

Code	Display text	Description	Adjustment range	45	65	90	115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	5400	5600	6300	6800
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5400	5600	6300	6800
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1550	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	2500	2500	2500	2500

Tab.40 Adjustment for gas type G30/G31 (butane/propane)

Code	Display text	Description	Adjustment range	45	65	90	115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	5100	5300	5800	6500
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5100	5300	5800	6500
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1550	1600	2250	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	2500	2500	2500	2500

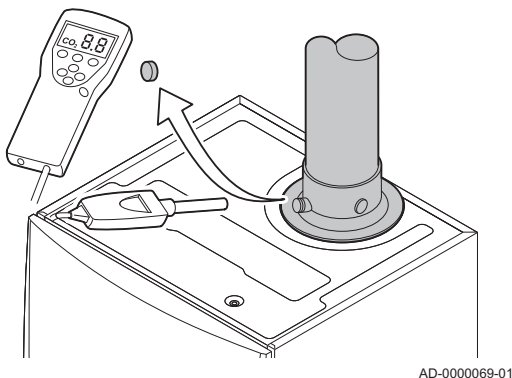
Tab.41 Adjustment for gas type G31 (propane)

Code	Display text	Description	Adjustment range	45	65	90	115
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	5100	5400	6000	6700
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	5100	5400	6000	6700
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	1550	1600	2000	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	3000	2500	2500	3500

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

7.2.3 Checking and setting the gas/air ratio

Fig.58 Flue gas measuring point



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



Warning

During measurement, seal the opening around the sensor fully.



Caution

The flue gas analyser must have a minimum accuracy of $\pm 0.25\%$ O₂.

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



Important

Measurements must be taken with the front casing off.

■ Performing the full load test

1. Select the tile [🔧].
⇒ The **Change load test mode** menu appears.
2. Select the test **MaximumPowerCH**.
A Change load test mode
B MaximumPowerCH
⇒ The full load test starts. The selected load test mode is shown in the menu and the icon 🧑‍🔧 appears in the top right of the screen.
3. Check the load test settings and adjust if necessary.
⇒ Only the parameters shown in bold can be changed.

Fig.59 Full load test

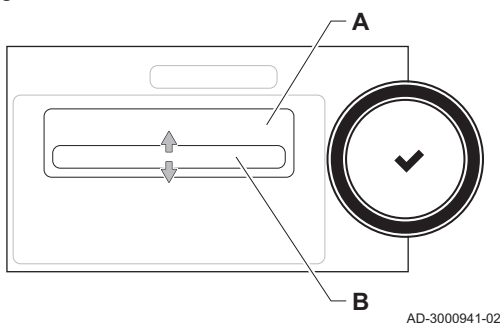
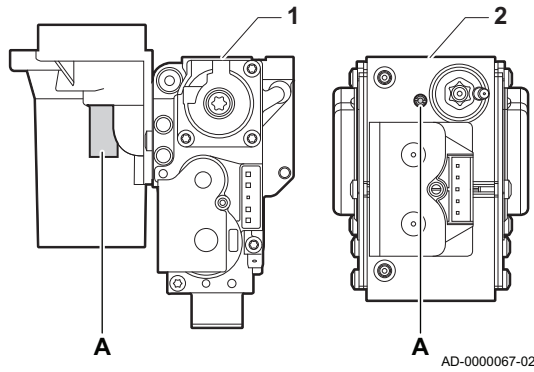


Fig.60 Position of adjusting screw A



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

- 1 AMC Pro 45 - 65 - 90
- 2 AMC Pro 115

1. Measure the percentage of O₂ in the flue gases.
2. Compare the measured value with the checking values in the table.
3. If the measured value is outside of the values given in the table, correct the gas/air ratio.

Warning
Only a qualified installer may carry out the following operations.

4. Using adjusting screw **A**, adjust the percentage of O₂ for the gas type being used to the nominal value. This should always be inside the highest and lowest setting limit.

Tab.42 Checking/setting values for O₂ at full load for G20 (H gas)

Values at full load for G20 (H gas)	O ₂ (%) ⁽¹⁾
AMC Pro 45	4,3 - 4,8 ⁽¹⁾
AMC Pro 65	4,3 - 4,8 ⁽¹⁾
AMC Pro 90	4,3 - 4,7 ⁽¹⁾
AMC Pro 115	4,2 - 4,7 ⁽¹⁾
(1) Nominal value	

Tab.43 Checking/setting values for O₂ at full load for G20 (H gas) (Switzerland)

Values at full load for G20 (H gas)	O ₂ (%) ⁽¹⁾
AMC Pro 45	4,3 - 4,8 ⁽¹⁾
AMC Pro 65	4,3 - 4,8 ⁽¹⁾
AMC Pro 90	4,3 - 4,7 ⁽¹⁾
AMC Pro 115	4,2 - 4,7 ⁽¹⁾
(1) Nominal value	

Tab.44 Checking/setting values for O₂ at full load for G31 (propane)

Values at full load for G31 (propane)	O ₂ (%) ⁽¹⁾
AMC Pro 45	4,4 - 4,9 ⁽¹⁾
AMC Pro 65	4,6 - 4,9 ⁽¹⁾
AMC Pro 90	5,1 - 5,2 ⁽¹⁾
AMC Pro 115	4,9 - 5,4 ⁽¹⁾
(1) Nominal value	

Tab.45 Checking/setting values for O₂ at full load for G30/G31 (butane/propane)

Values at full load for G30/G31 (butane/propane)	O ₂ (%) ⁽¹⁾
AMC Pro 45	4,7 - 5,2 ⁽¹⁾
AMC Pro 65	4,9 - 5,4 ⁽¹⁾
AMC Pro 90	4,9 - 5,4 ⁽¹⁾
AMC Pro 115	4,9 - 5,4 ⁽¹⁾
(1) Nominal value	

Caution
The O₂ values at full load must be lower than the O₂ values at part load.

■ Performing the part 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 MinimumPower

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

Fig.61 Part load test

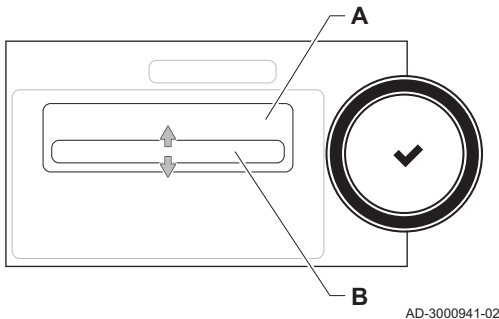
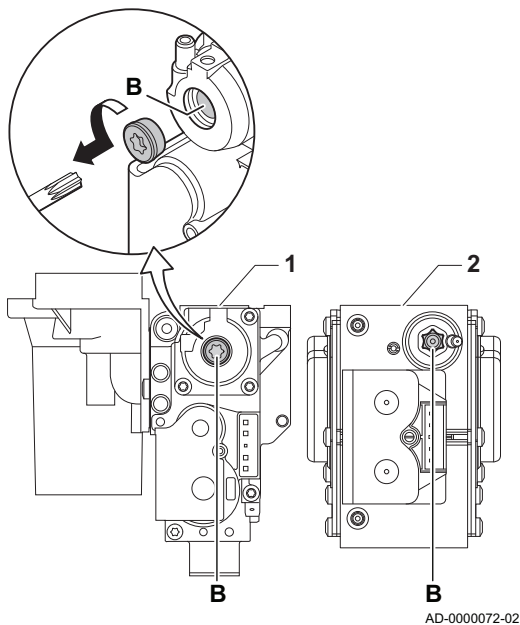


Fig.62 Position of adjusting screw B



■ Checking/setting values for O₂ at part load

- 1 AMC Pro 45 - 65 - 90
- 2 AMC Pro 115

1. Measure the percentage of O₂ in the flue gases.
2. Compare the measured value with the checking values in the table.
3. If the measured value is outside of the values given in the table, correct the gas/air ratio.



Warning

Only a qualified installer may carry out the following operations.

4. Using adjusting screw B, adjust the percentage of O₂ for the gas type being used to the nominal value. This should always be inside the highest and lowest setting limit.
5. Set the boiler back to the normal operating status.

Tab.46 Checking/setting values for O₂ at part load for G20 (H gas)

Values at part load for G20 (H gas)	O ₂ (%) ⁽¹⁾
AMC Pro 45	5,7 ⁽¹⁾ - 6,2
AMC Pro 65	4,8 ⁽¹⁾ - 5,3
AMC Pro 90	5,2 ⁽¹⁾ - 4,8
AMC Pro 115	5,6 ⁽¹⁾ - 6,1
(1) Nominal value	

Tab.47 Checking/setting values for O₂ at part load for G20 (H gas) (Switzerland)

Values at part load for G20 (H gas)	O ₂ (%) ⁽¹⁾
AMC Pro 45	5,7 ⁽¹⁾ - 6,2
AMC Pro 65	4,8 ⁽¹⁾ - 5,3
AMC Pro 90	5,2 ⁽¹⁾ - 4,8
AMC Pro 115	5,6 ⁽¹⁾ - 6,1
(1) Nominal value	


Tab.48 Checking/setting values for O₂ at part load for G31 (propane)

Values at part load for G31 (propane)	O ₂ (%) ⁽¹⁾
AMC Pro 45	5,7 ⁽¹⁾ - 6,2
AMC Pro 65	5,4 ⁽¹⁾ - 5,7

Values at part load for G31 (propane)	O ₂ (%) ⁽¹⁾
AMC Pro 90	5,5 ⁽¹⁾ - 5,8
AMC Pro 115	5,8 ⁽¹⁾ - 6,3
(1) Nominal value	

Tab.49 Checking/setting values for O₂ at part load for G30/G31 (butane/propane)

Values at part load for G30/G31 (butane/propane)	O ₂ (%) ⁽¹⁾
AMC Pro 45	5,7 ⁽¹⁾ - 6,2
AMC Pro 65	5,7 ⁽¹⁾ - 6,2
AMC Pro 90	5,7 ⁽¹⁾ - 6,2
AMC Pro 115	5,7 ⁽¹⁾ - 6,2
(1) Nominal value	

 **Caution**
The O₂ values at part load must be higher than the O₂ values at full load.


7.3 Final instructions

1. Remove the measuring equipment.
2. Screw the cap on to the flue gas measuring point.
3. Seal the gas valve unit.
4. Put the front casing back.
5. Heat the central heating system up to approximately 70°C.
6. Switch the boiler off.
7. Vent the central heating system after approx. 10 minutes.
8. Turn on the boiler.
9. Check the water pressure. If necessary, top up the central heating system.
10. Fill in the following data on the sticker included, and attach it next to the data plate on the appliance.
 - The gas supply pressure;
 - If set to overpressure application, fill in the type;
 - The parameters modified for the changes mentioned above.
11. Optimise the settings as required for the system and user preferences.
12. Instruct the user in the operation of the system, boiler and controller.
13. Inform the user of the maintenance to be performed.
14. Hand over all manuals to the user.

Fig.63 Example filled-in sticker

<p>Adjusted for / Réglée pour / Ingesteld op / Eingestellt auf / Regolato per / Ajustado para / Ρυθμιζόμενο για / Nastawiony na / настроен для / Reglat pentru / настроен за / ayarlanmıştır / Nastavljen za / beállítva / Nastaveno pro / Asetettu kaasulle / Justert for / indstillet til/ ل ضبط :</p> <p><input checked="" type="checkbox"/> Gas <u>G20</u></p> <p><u>20</u> mbar</p> <p><input checked="" type="checkbox"/> C_{(10)3(X)}</p> <p><input type="checkbox"/> C_{(12)3(X)}</p> <p><input type="checkbox"/></p>	<p>Parameters / Paramètres / Parameter / Parametri / Parámetros / Παράμετροι / Parametry / Параметри / Parametrii / Параметри / Parametreler / Paraméterek / Parametrit / Parametere / Parametre / تامل عمل :</p> <p><u>DP003 - 3300</u></p> <p><u>GP007 - 3300</u></p> <p><u>GP008 - 2150</u></p> <p><u>GP009 -</u></p>
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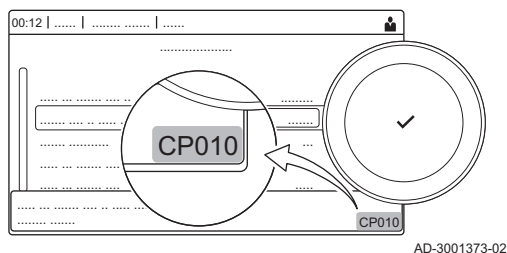
AD-3001124-01

 **See**
For more information; Settings, page 57 and User instructions, page 68.

8 Settings

8.1 Introduction to parameter codes

Fig.64 Code on a Diematic Evolution



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.65 First letter

CP010
AD-3001375-01

The first letter is the category the code relates to.

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

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

Fig.66 Second letter

CP010
AD-3001376-01

The second letter is the type.

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

Fig.67 Number

CP010
AD-3001377-01

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

8.2 Changing the parameters

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



Caution

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



For more information, see

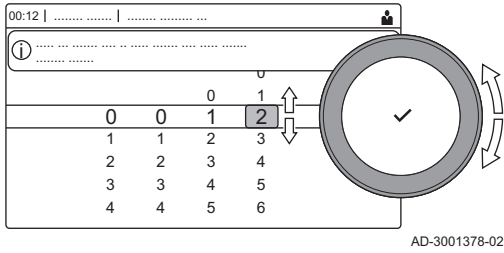
Additional documentation, page 11

8.2.1 Accessing the installer level

Some parameters that may affect the operation of the boiler are protected by an access code. Only the installer is allowed to modify these parameters.

1. Select the tile [].
2. Press the button to confirm the selection.

Fig.68 Installer level



3. Use the rotary knob to select code: **0012**.
4. Press the ✓ button to confirm the selection.
 - ⇒ When the installer level is enabled, the status of the tile [🔧] changes from **Off** into **On**.
5. To leave the installer level, select the tile [🔧].
6. Use the rotary knob to select **Confirm** or **Cancel**.
7. Press the ✓ button to confirm the selection.
 - ⇒ When the installer level is disabled, the status of the tile [🔧] changes from **On** into **Off**.

When the control panel is not used for 30 minutes, the installer level is left automatically.

■ **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.50 CU-GH08

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

Tab.51 SCB-10

Icon	Zone or function	Description
🔧	CIRCA	Central heating circuit A
🔧	CIRCB	Central heating circuit B
🔧	DHW	Domestic hot water external circuit
🔧	CIRCC	Central heating circuit C
	0-10 volt input	0–10 volt input signal
	Digital Input	Digital input signal
	Analogue input	Analogue input signal
🔧	Cascade management B	Management of a cascade of multiple boilers
🔧	Buffer Tank Schedule	Enable a buffer tank with one or two sensors
	Outdoor temperature	Outdoor sensor
	Status information	PCB SCB-10 status information

Tab.52 Configuring a zone or function of CU-GH08 or SCB-10

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
Adv. Parameters	Set the parameters at advanced installer level
Adv. Counters	Read the counters at advanced installer level
Adv. Signals	Read the signals at advanced installer level

8.2.2 Changing boiler parameters when SCB-10 is fitted

When the boiler is fitted with the SCB-10 the following boiler CU-GH08 parameter(s) at installer level must be checked and adjusted, if necessary:

Tab.53 Installation Setup > CU-GH08 > CIRCA > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Adjustment
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct 2 = Mixing Circuit 3 = Swimming pool 4 = High Temperature 5 = Fan Convector 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 31 = DHW FWS EXT	0

Tab.54 Installation Setup > CU-GH08 > Gas fired appliance > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Adjustment
AP102	Boiler Pump function	Configuration of the boiler pump as zone pump or system pump (feed lowloss header)	0 = No 1 = Yes	0

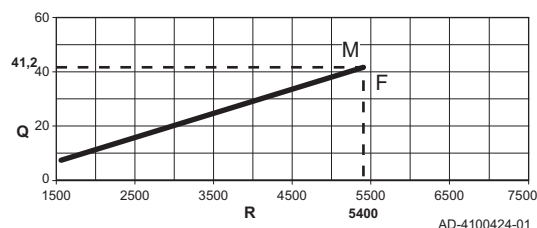
Tab.55 Installation Setup > CU-GH08 > Tank DHW > Parameters, counters, signals > Parameters

Code	Display text	Description	Range	Adjustment
DP007	Dhw 3wv Standby	Position of three way valve during standby	0 = CH position 1 = DHW position	0

8.2.3 Setting the maximum load for CH operation

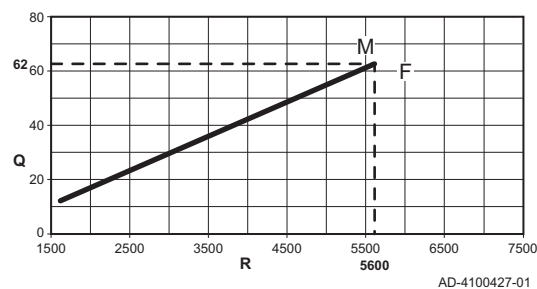
See the graphs for the relationship between load and speed for natural gas. The speed can be changed using parameter **GP007**.

Fig.69 Load AMC Pro 45



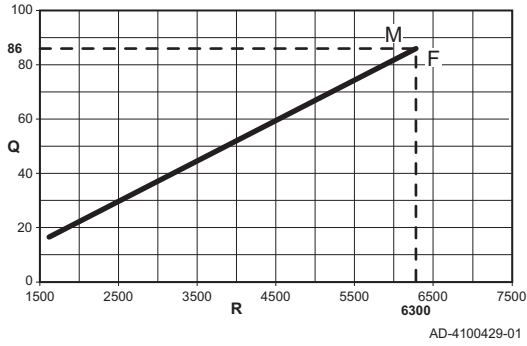
- M** Maximum heat input
- F** Factory setting
- Q** Input (Hi) (kW)
- R** Fan speed (rpm)

Fig.70 Load AMC Pro 65



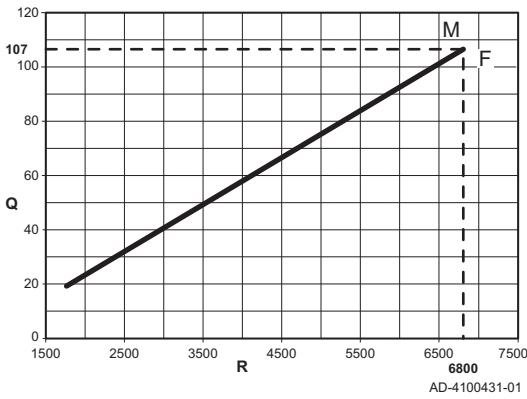
- M** Maximum heat input
- F** Factory setting
- Q** Input (Hi) (kW)
- R** Fan speed (rpm)

Fig.71 Load AMC Pro 90



- M Maximum heat input
- F Factory setting
- Q Input (Hi) (kW)
- R Fan speed (rpm)

Fig.72 Load AMC Pro 115



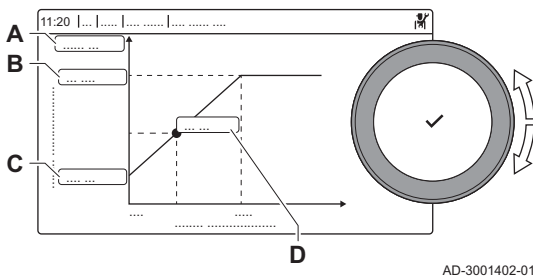
- M Maximum heat input
- F Factory setting
- Q Input (Hi) (kW)
- R Fan speed (rpm)

8.2.4 Setting the heating curve

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

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

Fig.73 The heating curve



Tab.56 Settings

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

8.2.5 Setting for process heat application



Important

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

For this application, adjust the following parameters:

1. Set parameter **DP140** to **Process heat**.

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

8.2.6 Changing the default ΔT setting

The ΔT can be increased with a parameter setting. When increasing the ΔT , the control unit limits the flow temperature to a maximum of 80 °C.

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

Tab.57 Increasing default ΔT setting

Boiler type	Default ΔT setting	Maximum ΔT setting
AMC Pro 45 AMC Pro 65 AMC Pro 90	25 °C	40 °C
AMC Pro 115	20 °C	35 °C

2. If a PWM-controlled central heating-pump is controlled by the boiler control unit; set parameter **PP014** to 2 °C.

8.3 List of parameters

8.3.1 Control unit settings

Important

- All tables show the factory setting for the parameters.
- All possible options are indicated in the adjustment range. The display of the boiler only shows the relevant settings for the appliance.

Tab.58 Navigation for basic installer level

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

Tab.59 Factory settings at basic installer level

Code	Display text	Description	Range	Submenu	45	65	90	115
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
AP073	Summer Winter	Outdoor temperature: upper limit for heating	10 °C - 30 °C	Outdoor temperature	22	22	22	22
AP074	Force summer mode	The heating is stopped. Hot water is maintained. Force Summer Mode	0 = Off 1 = On	Outdoor temperature	0	0	0	0
AP083	Enable master func	Enable the master functionality of this device on the S-Bus for system control	0 = No 1 = Yes	Mandatory bus master	0	0	0	0
AP089	Installer name	Name of the installer		Mandatory bus master	None	None	None	None
AP090	Installer phone	Telephone number of the installer		Mandatory bus master	0	0	0	0

Code	Display text	Description	Range	Submenu	45	65	90	115
AP107	Color display Mk2	Color display Mk2	0 = White 1 = Red 2 = Blue 3 = Green 4 = Orange 5 = Yellow 6 = Violet	Mandatory bus master	2	2	2	2
CP010	Tflow setpoint zone	Zone flow temperature setpoint, used when the zone is set to a fixed flow setpoint.	0 °C - 90 °C	Direct zone	80	80	80	80
CP080	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	Direct zone	16	16	16	16
CP081	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	Direct zone	20	20	20	20
CP082	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	Direct zone	6	6	6	6
CP083	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	Direct zone	21	21	21	21
CP084	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	Direct zone	22	22	22	22
CP085	User T.Room Activity	Room setpoint temperature of the user zone activity	5 °C - 30 °C	Direct zone	20	20	20	20
CP200	Manu ZoneRoomTempSet	Manually setting the room temperature setpoint of the zone	5 °C - 30 °C	Direct zone	20	20	20	20
CP320	OperatingZoneMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Antifrost 3 = Temporary	Direct zone	1	1	1	1
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 °C - 30 °C	Direct zone	20	20	20	20
CP550	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	Direct zone	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 8 = Swimming Pool 9 = DHW Tank 10 = DHW Electrical Tank 11 = DHW Layered Tank 12 = Internal Boiler Tank 13 = Time Program	Direct zone	3	3	3	3
DP060	DHW timeprog. select	Time program selected for DHW.	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3 3 = Cooling	Internal DHW	0	0	0	0
DP070	DHW comfort setpoint	Comfort temperature setpoint from the Domestic Hot Water tank	40 °C - 65 °C	Internal DHW	60	60	60	60
DP080	DHW reduced setpoint	Reduced temperature setpoint from the Domestic Hot Water tank	7 °C - 50 °C	Internal DHW	15	15	15	15

Code	Display text	Description	Range	Submenu	45	65	90	115
DP200	DHW mode	DHW primary mode current working setting	0 = Scheduling 1 = Manual 2 = Antifrost 3 = Temporary	Internal DHW	1	1	1	1
DP337	DHW holiday setpoint	Holiday temperature setpoint from the Domestic Hot Water tank	10 °C - 60 °C	Internal DHW	10	10	10	10

Tab.60 Navigation for installer level

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

Tab.61 Factory settings at installer level

Code	Display text	Description	Range	Submenu	45	65	90	115
AP001	BL input setting	Blocking input setting (1: Full blocking, 2: Partial blocking, 3: User reset locking)	1 = Full blocking 2 = Partial blocking 3 = User reset locking 4 = Backup relieved 5 = Generator relieved 6 = Gen.&Backup relieved 7 = High, Low Tariff 8 = Photovoltaic HP Only 9 = PV HP And backup 10 = Smart Grid ready 11 = Heating Cooling	Gas fired appliance	1	1	1	1
AP003	Flue Valve Wait Time	Wait time after burner command to open flue gas valve	0 Sec - 255 Sec	Gas fired appliance	0	0	0	0
AP006	Min. water pressure	Appliance will report low water pressure below this value	0 bar - 6 bar	Gas fired appliance	0,8	0,8	0,8	0,8
AP008	Time release signal	The appliance will wait x sec (0=off) for the release contact to close in order to start the burner	0 Sec - 255 Sec	Gas fired appliance	0	0	0	0
AP009	Service hours burner	Burning hours before raising a service notification	0 Hours - 51000 Hours	Gas fired appliance	6000	6000	6000	6000
AP010	Service notification	The type of service needed based on burn and powered hours	0 = None 1 = Custom notification 2 = ABC notification	Gas fired appliance	0	0	0	0
AP011	Service hours mains	Hours powered to raise a service notification	0 Hours - 51000 Hours	Gas fired appliance	35000	35000	35000	35000
AP063	CH Set Max System	Maximum flow temperature setpoint for burning at central heating	20 °C - 90 °C	Gas fired appliance	90	90	90	90
AP079	Building Inertia	Inertia of the building used for heat up speed	0 - 15	Outdoor temperature	3	3	3	3
AP080	Frost min out temp	Outside temperature below which the antifreeze protection is activated	-60 °C - 25 °C	Outdoor temperature	-10	-10	-10	-10
AP082	Enable daylight save	Enable daylight saving for the system to save energy during winter	0 = Off 1 = On	Mandatory bus master	1	1	1	1

Code	Display text	Description	Range	Submenu	45	65	90	115
AP091	Outside Sens. 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
AP108	OutsideSensorEnabled	Enable the function Outside Sensor	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	Outdoor temperature	0	0	0	0
CP000	MaxZoneTFlowSetpoint	Maximum Flow Temperature setpoint zone	0 °C - 90 °C	Direct zone	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 Convectore 6 = DHW tank 7 = Electrical DHW 8 = Time Program 9 = ProcessHeat 10 = DHW Layered 11 = DHW Internal tank 12 = DHW Commercial Tank 31 = DHW FWS EXT	Direct zone	1	1	1	1
CP060	RoomT. Holiday	Wished room zone temperature on holiday period	5 °C - 20 °C	Direct zone	6	6	6	6
CP070	MaxReducedRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to comfort mode	5 °C - 30 °C	Direct zone	16	16	16	16
CP210	Zone HCZP Comfort	Comfort footpoint of the temperature of heat curve of the circuit	15 °C - 90 °C	Direct zone	15	15	15	15
CP220	Zone HCZP Reduced	Reduced footpoint of the temperature of heat curve of the circuit	15 °C - 90 °C	Direct zone	15	15	15	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	0 - 4	Direct zone	1,5	1,5	1,5	1,5
CP340	TypeReducedNightMode	Type of reduced night mode, stop or maintain heating of circuit	0 = Stop heat demand 1 = Continue heat demand	Direct zone	1	1	1	1
CP470	Zone screed drying	Setting of the screed drying program of the zone	0 Days - 30 Days	Direct zone	0	0	0	0
CP480	ScreedStartTemp	Setting of the start temperature of the screed drying program of the zone	20 °C - 50 °C	Direct zone	20	20	20	20
CP490	ScreedStopTemp	Setting of the stop temperature of the screed drying program of the zone	20 °C - 50 °C	Direct zone	20	20	20	20
CP570	ZoneTimeProg Select	Time Program of the zone selected by the user	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3 3 = Cooling	Direct zone	0	0	0	0

Code	Display text	Description	Range	Submenu	45	65	90	115
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	Direct zone	3	3	3	3
CP740	Zone cool down speed	Selection of cool down speed of the zone	0 = Slowest 1 = Slower 2 = Normal 3 = Faster 4 = Fastest	Direct zone	2	2	2	2
CP750	MaxZone Preheat time	Maximum zone preheat time	0 Min - 240 Min	Direct zone	90	90	90	90
CP780	Control strategy	Selection of the control strategy for the zone	0 = Automatic 1 = Room Temp. based 2 = Outdoor Temp. based 3 = Outdoor & room based	Direct zone	0	0	0	0
DP004	Legionella calor.	Legionella mode protection calorifier	0 = Disabled 1 = Weekly 2 = Daily	Tank DHW	1	1	1	1
DP007	Dhw 3wv Standby	Position of three way valve during standby	0 = CH position 1 = DHW position	Tank DHW	0	0	0	0
DP035	Start pump DHW calo	Start pump for Domestic Hot Water calorifier	-20 °C - 20 °C	Tank DHW	-3	-3	-3	-3
DP150	DHW Thermostat	Set DHW Thermostat function On or Off	0 = Off 1 = On	Tank DHW	1	1	1	1
DP160	DHW AntiLeg Setpoint	Setpoint for DHW anti legionella	50 °C - 90 °C	Internal DHW	70	70	70	70
DP170	Start time holiday	Start time of holiday Time stamp		Internal DHW	-	-	-	-
DP180	End time holiday	End time of holiday Timestamp		Internal DHW	-	-	-	-
GP017	Max power	Maximum power percentage in kilo Watt	0 kW - 80 kW	Gas fired appliance	71,5	103,6	124,5	140,9
GP050	Power Min	Minimum power in kilo Watt for RT2012 calculation	0 kW - 80 kW	Gas fired appliance	4,7	6,7	10,8	11,4
PP015	CH Pump postrun time	Central heating pump post run time	0 Min - 99 Min	Gas fired appliance	1	1	1	1

Tab.62 Navigation for advanced installer level

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

Tab.63 Factory settings at advanced installer level

Code	Display text	Description	Range	Submenu	45	65	90	115
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint 2 = TOutdoor Control	Gas fired appliance	0	0	0	0
AP026	Setpoint manual HD	Flow temperature setpoint for manual heat demand	10 °C - 90 °C	Gas fired appliance	40	40	40	40
AP056	Outdoor sensor	Enable outdoor sensor	0 = No outside sensor 1 = AF60 2 = QAC34	Outdoor temperature	1	1	1	1

Code	Display text	Description	Range	Submenu	45	65	90	115
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
AP111	Can line length	Can line length	0 = < 3m 1 = < 80m 2 = < 500m	Mandatory bus master	0	0	0	0
CP130	T.OutdoorToZone	Assigning the outdoor sensor to zone ...	0 - 4	Direct zone	0	0	0	0
CP240	ZoneRoomUnitInfl	Adjustment of the influence of the zone room unit	0 - 10	Direct zone	3	3	3	3
CP250	CalSondeAmbZone	Calibration of Zone Room Unit	-5 °C - 5 °C	Direct zone	0	0	0	0
CP770	Zone Buffered	The zone is after a Buffer tank	0 = No 1 = Yes	Direct zone	0	0	0	0
DP003	Abs. max fan DHW	Maximum fan speed on Domestic Hot Water	1000 Rpm - 7000 Rpm	Gas fired appliance	5400	5600	6300	6700
DP005	Calorifier Tf offset	Flow setpoint offset for loading calorifier	0 °C - 50 °C	Tank DHW	20	20	20	20
DP006	Hyst calorifier	Hysteresis to start heating calorifier	2 °C - 15 °C	Tank DHW	5	5	5	5
DP020	Postrun DHW pump/3ww	Post run time of the DHW pump/3 way valve after DHW production	0 Sec - 99 Sec	Gas fired appliance	10	10	10	10
DP034	DhwCalorifier Offset	Offset for calorifier sensor	0 °C - 10 °C	Tank DHW	2	2	2	2
DP140	DHW load type	DHW load type (0 : Combi, 1 : Solo)	0 = Combi 1 = Solo 2 = Layered cylinder 3 = Process heat 4 = External	Internal DHW Tank DHW Gas fired appliance	1	1	1	1
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 Rpm - 7000 Rpm	Gas fired appliance	5400	5600	6300	6800
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1400 Rpm - 4000 Rpm	Gas fired appliance	1550	1600	1600	1750
GP009	Fan RPM Start	Fan speed at appliance start	1000 Rpm - 4000 Rpm	Gas fired appliance	2500	2500	2500	2500
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	Gas fired appliance	0	0	0	0
GP021	Temp diff Modulating	Modulate back when delta temperature is large then this threshold	10 °C - 40 °C	Gas fired appliance	25	25	25	20
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	1 - 255	Gas fired appliance	1	1	1	1
PP014	ChPumpDTReduction	Reduction of temperature delta modulating for pump modulation	0 °C - 40 °C	Gas fired appliance	18	18	18	18
PP016	Max. CH pump speed	Maximum central heating pump speed (%)	20 % - 100 %	Gas fired appliance	100	100	100	100
PP017	ChPumpSpeedMaxFactor	Maximum central heating at minimum load as percentage of max pump speed	0 % - 100 %	Gas fired appliance	100	100	100	100
PP018	Min CH pump speed	Minimum central heating pump speed (%)	20 % - 100 %	Gas fired appliance	30	30	30	30
PP023	Start hysteresis CH	Hysteresis to start burner in heating mode	1 °C - 10 °C	Gas fired appliance	10	10	10	10

8.3.2 SCB-10 expansion PCB settings

**See**

The boiler service manual for the SCB-10 expansion PCB settings. This manual can be found on the website.

9 User instructions

9.1 Accessing the user level menus

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

Fig.74 Menu selection

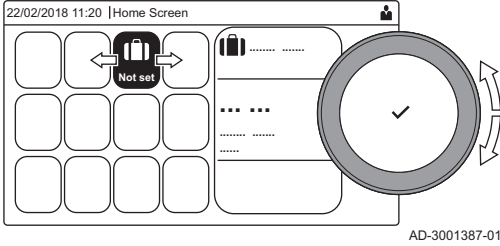
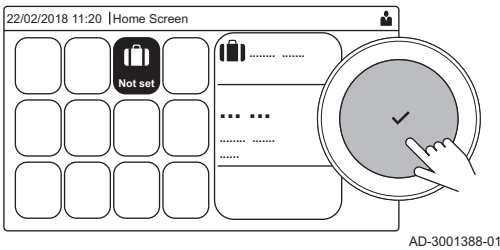


Fig.75 Confirm menu selection



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

9.2 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.64 Selectable tiles for the user

Tile	Menu	Function
i	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.
🔥	Gas boiler indicator.	Read out burning details of the boiler and switch the heating function of the boiler on or off.
📊 bar	Water pressure indicator.	Shows the water pressure. Top up the installation when the water pressure is too low.
🔧 📊 🔧 📊 🔧 📊 🔧 📊 🔧 📊 🔧 📊	Heating circuit set-up.	Configure the settings per heating circuit.
🚿	DHW setup.	Configure the domestic hot water temperatures.
🌡️	Outdoor sensor setup.	Configure the temperature regulation using the outdoor sensor.

9.3 Activating holiday programs for all zones







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

1. Select the tile .
2. Set the following parameters:








Tab.65 Holiday program settings


Parameter	Description
Start date holiday	Set the start time and date of your holiday
End date holiday	Set the end time and date of your holiday
Wished room zone temperature on holiday period	Set the room temperature for the holiday period
Reset	Reset or cancel the holiday program

9.4 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.66 Menu to configure a heating circuit

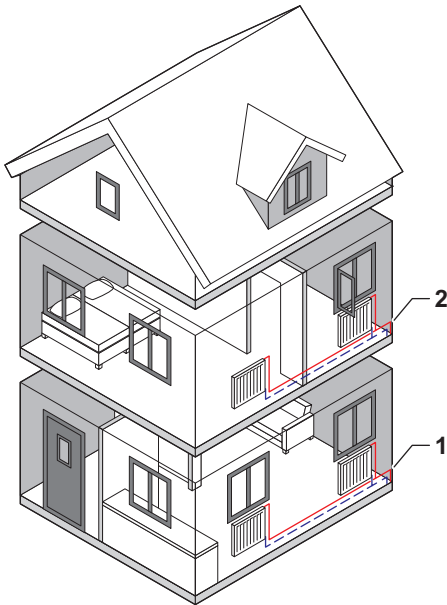
Icon	Menu	Function
	Scheduling	Set the scheduling mode and choose a timer program already created
	Manual	Set the manual mode; the room temperature setpoint is set to a fixed setting
	Short temperature change	Set the temporary mode; the room temperature setpoint is changed temporarily
	Holiday	Set the start and end date of your holiday to lower the room temperature setpoint.
	Antifrost	Set the frost protection mode; the minimum room temperature protects your system from freezing
	Set Heating Activity Temperatures	Set the room temperature setpoint for each activity of the timer program. See: Timer program to control the room temperature, page 71
	Zone configuration	Access the settings for the configuration of the heating circuit.

Tab.67 Extended menu to configure a heating circuit  Zone configuration

Menu	Function
Short temperature change	Change the room temperature temporarily, if required
OperatingZoneMode	Select the heating operating mode: Scheduling, Manual or Antifrost
Manu ZoneRoomTempSet	Set the room temperature manually to a fixed setting
Heating Schedule	Create a timer program (up to 3 programs allowed). See: Creating a timer program, page 71
Set Heating Activity Temperatures	Set the room temperature for each activity of the timer program
ZoneTimeProg Select	Select a timer program (3 options)
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
OperatingZoneMode	Read the current operating mode of the heating circuit

9.5 Changing the room temperature of a zone

Fig.76 Two zones



AD-3001404-01

9.5.1 Definition of zone

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

Tab.68 Example of two zones

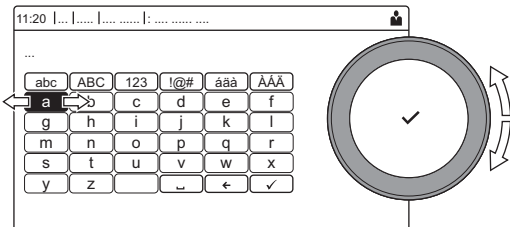
	Zone	Factory name
1	Zone 1	CIRCA
2	Zone 2	CIRCB

9.5.2 Changing the name and symbol of a zone

The zones have a factory symbol and factory name. You can change the name and symbol of a zone.

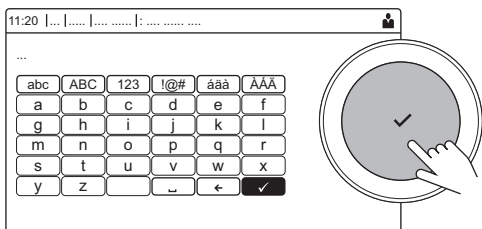
1. Select the tile of the zone you want to change.
2. Select **Zone configuration** ⚙️
3. Select **Zone friendly Name**
⇒ A keyboard with letters, numbers and symbols is shown.
4. Change the name of the zone (20 characters maximum):
 - 4.1. Use the rotary button to select a letter, number or action.
 - 4.2. Select ← to delete a letter, number or symbol.
 - 4.3. Press the rotary knob ✓ to confirm or to repeat a letter, number or symbol.
 - 4.4. Select ␣ to add a space.

Fig.77 Letter selection



AD-3001382-01

Fig.78 Confirm sign



AD-3001383-01

5. Select the ✓ sign on the screen when the name is complete.
6. Press the rotary knob ✓ to confirm the selection.
7. Use the rotary button to select **Icon display zone**.
8. Press the ✓ knob to confirm the selection.
⇒ All available icons appear in the display.
9. Use the rotary knob to select the desired symbol of the zone.
10. Press the rotary knob ✓ to confirm the selection.

9.5.3 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:

1. Select the tile of the zone you want to change.
⇒ The **Zone QuickSelect** menu opens.

2. Select the desired operating mode:

Tab.69 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

9.5.4 Timer program to control the room temperature

■ Creating a timer program

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

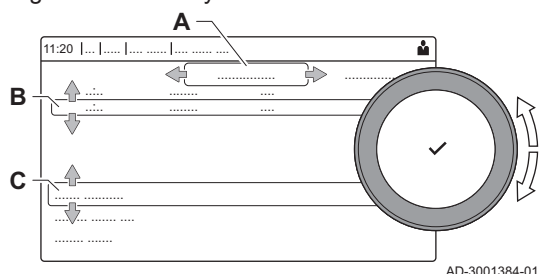
i Important You can create up to three timer programs per zone. For example, you can create a program for a week with normal working hours and a programme for a week when you are at home most of the time.

1. Select the tile of the zone you want to change.
2. Select **Zone configuration > Heating Schedule**.
3. Select the timer program you want to modify: **Schedule 1, Schedule 2 or Schedule 3**.
⇒ Activities scheduled for Sunday 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. Perform the following actions, if necessary:
 - 5.1. **Edit** the start time and/or activity of a scheduled activity.
 - 5.2. **Add** a new activity.
 - 5.3. **Delete** a scheduled activity (select the activity **Delete**).
 - 5.4. **Copy** the scheduled activities of the weekday to other days.
 - 5.5. **Change the temperature** linked to an activity.

Fig.79 Weekday

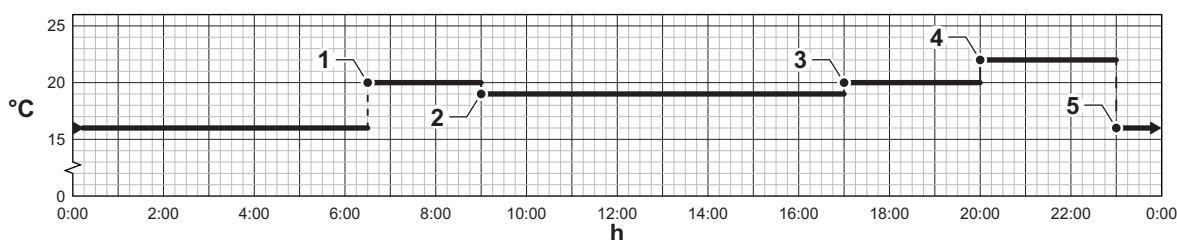


AD-3001384-01

■ Definition of activity

Activity is the term used when programming time slots in a timer program. The timer 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.80 Activities of a timer program



AD-3001403-01

Tab.70 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 timer program.


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:
 - 5.1. Press the rotary knob  to repeat a letter, number or symbol.
 - 5.2. Select  to delete a letter, number or symbol.
 - 5.3. Select  to add a space.
6. Select the  sign on the screen when the name is complete.
7. Press the rotary knob  to confirm the selection.


■ Activating a timer program

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

1. Select the tile of the zone you want to change.
2. Select  **Scheduling**.
3. Select timer program **Schedule 1**, **Schedule 2** or **Schedule 3**.

9.5.5 Changing the heating activity temperatures

You can change the heating temperatures of each activity.

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


9.5.6 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.



Important

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  **Short temperature change**.
3. Set the duration in hours and minutes.

4. Set the temporary room temperature.
 - ⇒ The **Short temperature change** menu shows the duration and the temporary temperature.






9.6 Changing the domestic hot water temperature

9.6.1 Changing the domestic hot water operating mode

For hot water production, you can choose from 5 operating modes:

1. Select the tile [🏠].
 - ⇒ The **DHW QuickSelect** menu opens.
2. Select the desired operating mode:

Tab.71 DHW 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 boiler and installation from freezing in winter

9.6.2 Timer 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.

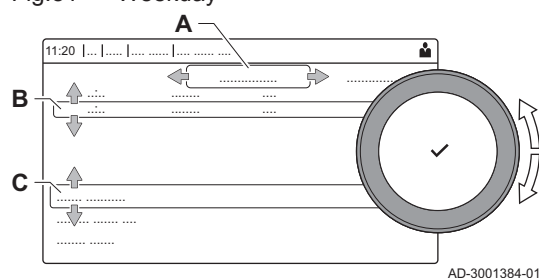


Important

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 **Zone configuration > DHW Schedule**.
3. Select the timer program you want to modify: **Schedule 1**, **Schedule 2** or **Schedule 3**.
 - ⇒ Activities scheduled for Sunday 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. Perform the following actions, if necessary:
 - 5.1. **Edit** the start time and/or activity of a scheduled activity.
 - 5.2. **Add** a new activity.
 - 5.3. **Delete** a scheduled activity (select the activity **Delete**).
 - 5.4. **Copy** the scheduled activities of the weekday to other days.
 - 5.5. **Change the temperature** linked to an activity.

Fig.81 Weekday



■ 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.

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



9.6.3 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.





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  **Hot water boost**.
3. Set the duration in hours and minutes.
⇒ The temperature is increased to the **DHW comfort setpoint**.

9.6.4 Changing the comfort hot water temperature


You can change the comfort hot water temperature in the timer program.

1. Select the tile .
2. Select  **DHW comfort setpoint**: The DHW temperature when the hot water production is switched on.
3. Set the comfort hot water temperature.

You can also change the reduced hot water temperature via:  **Zone configuration > Domestic Hot Water Setpoints > DHW reduced setpoint**: The DHW temperature when the hot water production is switched off.

9.7 Switching the central heating on or off

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

1. Select the tile .
2. Select **CH function on**.
3. Select the following setting:
 - 3.1. **Off** to switch off the central heating function.
 - 3.2. **On** to switch the central heating function on again.



Important

Frost protection is not available when the central heating function is switched off.

9.8 Changing the display settings

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



Tab.72 Display 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
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

System Settings menu	Settings
Set click sound	Enable or disable the click sound of the rotary knob
License Information	Read out detailed license information from the device platform application

9.9 Reading the installer's name and phone number

The installer can set his name and phone number in the control panel. You can read this information when you want to contact the installer.

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

9.10 Start-up

Start the boiler up as follows:

1. Open the boiler gas tap.
2. Power up the boiler.
3. The boiler runs through an automatic venting program lasting approx. 3 minutes.
4. Check the water pressure of the central heating system shown on the control panel display. If necessary, top up the central heating system.

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

9.11 Shutdown

If the central heating is not due to be used for a long period of time, it is recommended that the boiler be disconnected from the power supply.

1. Shut off the gas supply.
2. Keep the area frost-free.

9.12 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.

9.13 Cleaning the casing

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

10 Technical specifications

10.1 Homologations

10.1.1 Certifications

Tab.73 Certifications

CE identification number	PIN 0063CS3928
Class NOx ⁽¹⁾	6
Type of flue gas connection	B ₂₃ , B _{23P} , B ₃₃ ⁽²⁾ C _{13(X)} , C _{33(X)} , C ₅₃ , C _{63(X)} , C _{93(X)}
(1) EN 15502-1 (2) When installing a boiler with connection type B ₂₃ , B _{23P} , B ₃₃ , the IP rating of the boiler is lowered to IP20.	

10.1.2 Unit categories

Tab.74 Unit categories

Country	Category	Gas type	Connection pressure (mbar)
Austria	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 50 50
Bulgaria	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30 50
Switzerland	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30-50 37-50
Cyprus	I _{3B/P}	G30/G31 (butane/propane)	30-50
Czech Republic	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30-50 37-50
Estonia	II _{2H3P}	G20 (H gas) G31 (propane)	20 30
Spain	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30-50 37-50
Finland	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30 30
France	II _{2Esi3B/P} II _{2Esi3P}	G20 (H gas) G25 (L gas) G30/G31 (butane/propane) G31 (propane)	20 25 30-50 37-50
Greece	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30-50 30-37
Ireland	II _{2H3B/P}	G20 (H gas) G30/G31 (butane/propane)	20 30
Italy	II _{2HM3B/P} II _{2HM3P}	G20 (H gas) G230 (M gas) G30/G31 (butane/propane) G31 (propane)	20 20 30 30-37
Lithuania	II _{2H3B/P} II _{2H3P}	G20 (H gas) G30/G31 (butane/propane) G31 (propane)	20 30 30

Country	Category	Gas type	Connection pressure (mbar)
Luxembourg	II _{2H3P}	G20 (H gas)	20
	II _{2H3P}	G31 (propane)	50
Latvia	I _{2H}	G20 (H gas)	20
Norway	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	30
		G31 (propane)	30
Portugal	II _{2H3B/P}	G20 (H gas)	20
		G30/G31 (butane/propane)	30-50
Romania	II _{2H3P}	G20 (H gas)	20
		G31 (propane)	50
Russia	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	30-50
		G31 (propane)	30-50
Slovenia	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	30
		G31 (propane)	30
Slovakia	II _{2H3B/P}	G20 (H gas)	20
	II _{2H3P}	G30/G31 (butane/propane)	30-50
		G31 (propane)	30-37
Ukraine	I _{2H}	G20 (H gas)	20

10.1.3 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.





10.1.4 Factory test

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

- Electrical safety.
- Adjustment of (O₂).
- Water tightness.
- Gas tightness.
- Parameter setting.

10.2 Technical data

Tab.75 General

AMC Pro			45	65	90	115
Nominal output (Pn) Central heating operation (80/60°C)	min-max  ⁽¹⁾	kW	8.0 - 40.8 40.8	12.0 - 61.5 61.5	14.1 - 84.2 84.2	18.9 - 103.9 103.9
Nominal output (Pn) Central heating operation (50/30°C)	min-max  ⁽¹⁾	kW	9.1 - 42.4 42.4	13.5 - 65.0 65.0	15.8 - 89.5 89.5	21.2 - 109.7 109.7
Nominal load (Qnh) Central heating operation (Hi)	min-max  ⁽¹⁾	kW	8.2 - 41.2 41.2	12.2 - 62.0 62.0	14.6 - 86.0 86.0	19.6 - 107.0 107.0
Nominal load (Qnh) Central heating operation (Hs)	min-max  ⁽¹⁾	kW	9.1 - 45.7 45.7	13.6 - 68.8 68.8	16.2 - 95.5 95.5	21.9 - 118.8 118.8
Full load central heating efficiency (Pn) (Hi) (80°C/60°C)		%	99.1	99.2	97.9	97.1
Full load central heating efficiency (Pa) (Hi) (80°C/60°C)		%	97.2	98.3	97.9	97.1
Full load central heating efficiency (Hi) (50°C/30°C)		%	102.9	104.6	104.1	102.5

AMC Pro			45	65	90	115
Central heating efficiency under part load (Hi) (Return temperature 60 °C)		%	97.2	98.3	96.6	96.5
Part load central heating efficiency (Pn) (Hi) (Return temperature 30 °C)		%	110.6	110.4	108.1	108.0
Part load central heating efficiency (Pn) (Hi) (Return temperature 30 °C)		%	108.4	108.9	108.1	108.0
Full load central heating efficiency (Pn) (Hs) (80/60°C)		%	89.2	89.3	88.2	87.4
Full load central heating efficiency (Pa) (Hs) (80/60°C)		%	87.5	88.5	88.2	87.4
Full load central heating efficiency (Hs) (50/30°C)		%	92.7	94.2	93.7	92.3
Heating efficiency under part load (Hs) (Return temperature 60 °C)		%	87.5	88.5	88.2	87.4
Central heating efficiency under partial load (Pn) (Hs) (Return temperature 30 °C)		%	99.6	99.4	97.3	97.3
Central heating efficiency under partial load (Pa) (Hs) (Return temperature 30 °C)		%	97.6	98.1	97.3	97.3
(1) Factory setting						

Tab.76 Gas and flue gas data

AMC Pro			45	65	90	115
Gas inlet pressure G20 (H gas)	min-max	mbar	17 - 25	17 - 25	17 - 25	17 - 25
Gas inlet pressure G31 (propane)	min-max	mbar	37 - 50	37 - 50	37 - 50	37 - 50
Gas consumption G20 (H gas) ⁽¹⁾	min-max	m ³ /h	0.9 - 4.4	1.3 - 6.6	1.5 - 9.1	2.1 - 11.3
Gas consumption G31 (propane) ⁽¹⁾	min-max	m ³ /h	0.4 - 1.7	0.5 - 2.5	0.9 - 3.5	0.9 - 4.4
Gas resistance between boiler connec- tion point and measurement point on the gas valve unit (measured with G20)	max	mbar	1.0	2.0	2.5	3.0
NOx annual emissions G20 (H gas) EN15502 O2 = 0%	Hs	mg/kWh	42	48	53	41
NOx annual emissions G20 (H gas) O2 = 0%	Hs	mg/kWh	42	48	53	41
CO annual emissions G20 (H gas) O2 = 0%	Hs	mg/kWh	62	71	78	84
NOx annual emission G31 (propane) O2 = 0%	Hs	mg/kWh	62	68	56	51
CO annual emission G31 (propane) O2 = 0%	Hs	mg/kWh	104	119	90	90
Flue gas quantity	min-max	kg/h	14 - 69	21 - 104	28 - 138	36 - 178
Flue gas temperature	min-max	°C	30 - 67	30 - 68	30 - 68	30 - 72
Maximum counter pressure		Pa	150	100	160	220
Central heating chimney efficiency (Hi) (80/60°C) at 20°C amb.		%	99.1	99.2	97.9	97.1
Central heating chimney losses (Hi) (80/60°C) at 20°C amb.		%	0.9	0.8	2.1	2.9
(1) Gas consumption based on lower heating value under standard conditions: T=288.15 K, p=1013.25 mbar. Gag 30.33; G25 29.25; G31 88.00 MJ/m ³						

Tab.77 Central heating circuit data

AMC Pro			45	65	90	115
Water content		l	4.3	6.4	9.4	9.4
Water operating pressure	min	bar	0.8	0.8	0.8	0.8
Water operating pressure (PMS)	max	bar	4.0	4.0	4.0	4.0
Water temperature	max	°C	110.0	110.0	110.0	110.0
Operating temperature	max	°C	90.0	90.0	90.0	90.0
Hydraulic resistance ($\Delta T=20K$)		mbar	114	163	153	250
Casing-related losses	ΔT 30°C	W	101	110	123	123
	ΔT 50°C		201	232	254	254

Tab.78 Electrical data

AMC Pro			45	65	90	115
Supply voltage		VAC	230	230	230	230
Power consumption - Full load central heating ⁽¹⁾	max	W	75	89	114	182
Power consumption - Part load central heating (30%) ⁽¹⁾	min	W	22	29	30	36
Power consumption - Minimal load central heating ⁽¹⁾	min	W	20	26	26	32
Power consumption - Stand-by (Psb) ⁽¹⁾	max	W	6	7	7	6
Electrical protection index		IP	X4D	X4D	X4D	X4D
Fuses (slow)	Main CU-GH08	A	2.5	2.5	2.5	2.5

(1) without pump

Tab.79 Other data

AMC Pro			45	65	90	115
Total weight including packaging		kg	60.5	66.5	76.5	76.5
Minimum mounting weight ⁽¹⁾		kg	50	56	65.2	65.2
Average acoustic level at a distance of one metre from the boiler		dB(A)	45.1	46.7	51.6	51.1

(1) Without front panel.

Tab.80 Technical parameters

AMC Pro			45	65	90	115
Condensing boiler			Yes	Yes	Yes	Yes
Low-temperature boiler ⁽¹⁾			No	No	No	No
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	41	62	84	104
Useful heat output at nominal heat output and high temperature operation ⁽²⁾	<i>P₄</i>	kW	40.8	61.5	84.2	103.9
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	<i>P₁</i>	kW	13.7	20.5	27.9	34.7
Seasonal space heating energy efficiency	η_s	%	94	94	-	-
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	η_4	%	89.3	89.4	88.2	87.5
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	η_1	%	99.6	99.5	97.4	97.3
Auxiliary electricity consumption						

AMC Pro			45	65	90	115
Full load	el_{max}	kW	0.075	0.100	0.124	0.184
Part load	el_{min}	kW	0.020	0.029	0.030	0.036
Standby mode	P_{SB}	kW	0.006	0.007	0.007	0.006
Other items						
Standby heat loss	P_{stby}	kW	0.101	0.110	0.123	0.123
Ignition burner power consumption	P_{ign}	kW	-	-	-	-
Annual energy consumption	Q_{HE}	GJ	125	188	-	-
Sound power level, indoors	L_{WA}	dB	53	55	60	59
Emissions of nitrogen oxides	NO_x	mg/kWh	42	48	53	41
(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
The back cover for contact details.

10.3 Circulating pump

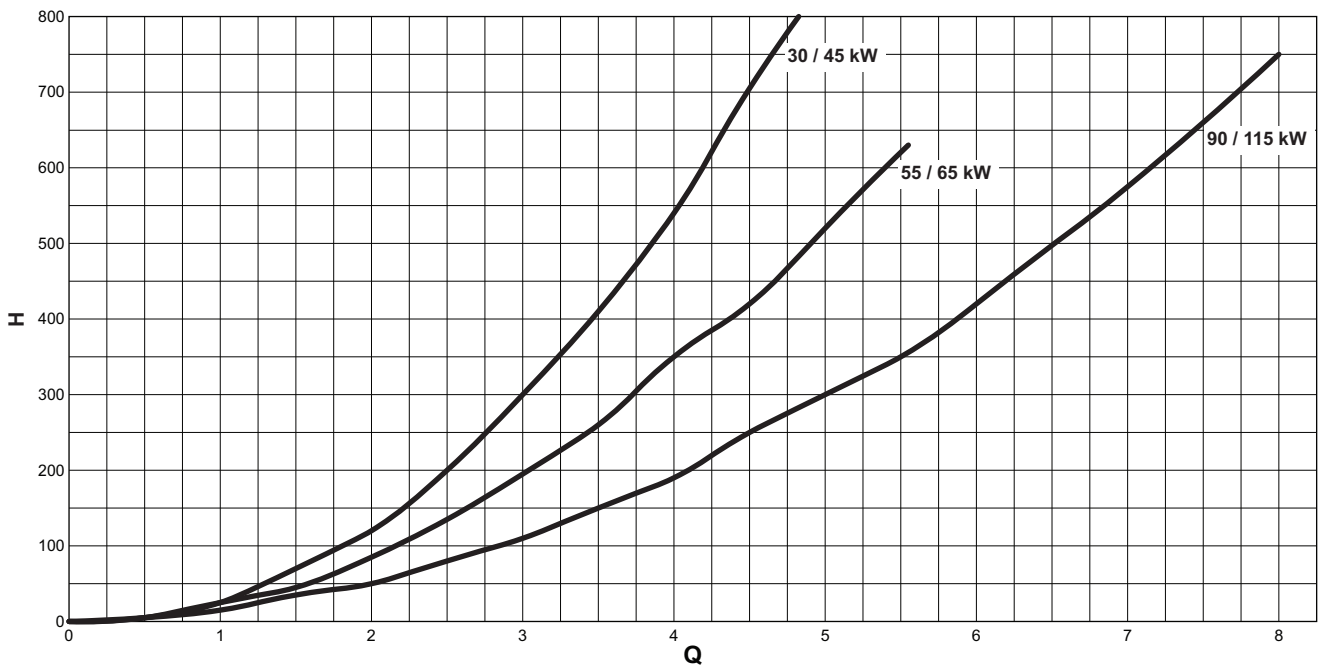
A circulation pump is not supplied with this boiler. Take the boiler resistance and system resistance into account when selecting a pump. The graphs show the hydraulic resistance at various water flow rates. The table shows some significant nominal flow data and the corresponding hydraulic resistance.

If possible, install the pump directly under the boiler on the return connection.



Important
When the circulating pump is managed by the boiler control unit, the de-airation program must be turned ON via parameter **AP101**.

Fig.82 Hydraulic resistance



AD-3001405-01

Q Water flow (m³/h)

H Hydraulic resistance (mbar)

Tab.81 Nominal flow data

	Unit	45	65	90	115
Q at $\Delta T = 10^{\circ}\text{C}$	m ³ /h	3,50	5,28	7,20	9,0
H at $\Delta T = 10^{\circ}\text{C}$	mbar	456	652	612	1000
Q at $\Delta T = 20^{\circ}\text{C}$	m ³ /h	1,75	2,64	3,60	4,50
H at $\Delta T = 20^{\circ}\text{C}$	mbar	114	163	153	250
Q at $\Delta T = 35^{\circ}\text{C}$	m ³ /h	-	-	-	2,55
H at $\Delta T = 35^{\circ}\text{C}$	mbar	-	-	-	72
Q at $\Delta T = 40^{\circ}\text{C}$	m ³ /h	0,90	1,32	1,80	not permitted
H at $\Delta T = 40^{\circ}\text{C}$	mbar	30	45	40	not permitted

11 Appendix

11.1 ErP information

11.1.1 Product fiche

Tab.82 Product fiche

De Dietrich – AMC Pro		45	65	90	115
Seasonal space heating energy efficiency class		A	A	_(1)	_(1)
Rated heat output (<i>Prated or Psup</i>)	kW	41	62	84	104
Seasonal space heating energy efficiency	%	94	94	-	-
Annual energy consumption	GJ	125	188	-	-
Sound power level L_{WA} indoors	dB	53	55	60	59
(1) For CH boilers and boilers over 70 kW, no ErP information needs to be provided.					



See

For specific precautions about assembling, installing and maintaining: Safety, page 6

11.1.2 Package sheet

Fig.83 Package sheet for boilers indicating the space heating energy efficiency of the package

Seasonal space heating energy efficiency of boiler ①
'I' %

Temperature control ②
 from fiche of temperature control + %

Class I = 1%, Class II = 2%, Class III = 1.5%,
 Class IV = 2%, Class V = 3%, Class VI = 4%,
 Class VII = 3.5%, Class VIII = 5%

Supplementary boiler ③
 from fiche of boiler (- 'I') x 0.1 = ± %

Seasonal space heating energy efficiency (in %)

Solar contribution ④
 from fiche of solar device + %

Collector size (in m²)

Tank volume (in m³)

Collector efficiency (in %)

Tank rating ⁽¹⁾

A* = 0.95, A = 0.91,
 B = 0.86, C = 0.83,
 D - G = 0.81

('III' x + 'IV' x) x 0.9 x (/ 100) x = + %

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

Supplementary heat pump ⑤
 from fiche of heat pump (- 'I') x 'II' = + %

Seasonal space heating energy efficiency (in %)

Solar contribution AND Supplementary heat pump ⑥
 select smaller value 0.5 x OR 0.5 x = - %

④

⑤

⑥

Seasonal space heating energy efficiency of package ⑦
 %

Seasonal space heating energy efficiency class of package

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

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

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

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

Tab.83 Weighting of boilers

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

(1) The intermediate values are calculated by linear interpolation between the two adjacent values.

(2) Prated is related to the preferential space heater or combination heater.

11.2 EC declaration of conformity

The unit complies with the standard type described in the EC declaration of conformity. It has been manufactured and commissioned in accordance with European directives.

The original declaration of conformity is available from the manufacturer.

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