



Jnited Kingdom - Ireland

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Installation and user manual High-efficiency wall-hung gas boiler

> **Quinta Ace S** 90 - 110 - 130 - 150

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

A 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.

If you smell flue gases:

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

1.1.2 For the end user

If you smell gas:

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

▲ Danger

If you smell flue gases:

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

Warning

The use of the appliance and the installation by you as the end-user must be limited to the operations described in the chapter for the user. All other actions may only be undertaken by a qualified installer/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

Do not touch the flue gas pipes. Depending on the appliance settings, the temperature of the flue gas pipes can rise to over 60 $^\circ\text{C}.$



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

Caution

Be careful when using the domestic hot water. Depending on the appliance settings, the temperature of domestic hot water can rise to over 65 $^{\circ}$ C.

ar the appliance.

Caution

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

Notice

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Only genuine spare parts may be used.

Important

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

1.2 Recommendations

	This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
	Danger For safety reasons, we recommend fitting smoke alarms at suitable places and a CO detector near the appliance
	Warning Installation and maintenance of the appliance must be carried out by a qualified installer in accordance with local and national regulations.
	Warning The installation and maintenance of the appliance 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 appliance 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 power supply when working on the appliance.

Warning



Warning

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

Caution

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

Notice

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

Important

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Keep all delivered documentation near to the appliance.

Important

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

Important

Modifications to the appliance require the written approval of BAXI.

1.3 Liabilities

1.3.1 Manufacturer's liability

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

delivered with the $\Box A$ and $\zeta \epsilon$ marking and any documents necessary. In the interests of the quality of our products, we strive constantly to improve them. We therefore reserve the right to modify the specifications given in this document.

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

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

1.3.2 Installer's liability

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

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

1.3.3 User's liability

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

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

2 About this manual

2.1 General

This manual is intended for the installer and end user of a Quinta Ace S boiler.

2.2 Additional documentation

The following documentation is available in addition to this manual:

- Cascade description
- Product information
- Service manual

2.3 Symbols used in the manual

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



Reference to other manuals or pages in this manual.

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

3 Description of the product

3.1 General description

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

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

The following boiler types are available:

Tab.1 Boiler types

Name	Rated heat output (Prated)
Quinta Ace S 90	85 kW
Quinta Ace S 110	102 kW
Quinta Ace S 130	122 kW
Quinta Ace S 150	140 kW

3.2 Main components



Fig.2 Internal



- 1 Control panel
- 2 Pressure gauge
- 3 Quick connect
- 4 Data plate
- 5 Safety pressure relief valve outlet
- 6 Return pipe connection
- 7 Flow pipe connection
- 8 Gas pipe connection
- 9 Trap with condensate drain connection
- 10 Trap bottle
- 1 Heat exchanger
- 2 Heat exchanger thermal switch
- 3 Flame inspection glass
- 4 Ignition electrode
- 5 Ignition transformer
- 6 Ionisation electrode
- 7 Condensate trap
- 8 Automatic air valve
- 9 Flow pipe
- 10 Return pipe
- **11** Safety pressure relief valve
- 12 Heat exchanger drain valve

AD-3003210-02



Fig.4 Sensors and boxes



- 1 Fan
- 2 Mixing tube
- 3 Venturi
- 4 Air inlet with silencer
- 5 Air pressure switch (only on boiler types: 130 150)
- 6 Burner
- 7 Gas pipe
- 8 Gas control valve

- 1 Heat exchanger thermal switch
- 2 Control box
- 3 Flue gas temperature sensor
- 4 Flow temperature sensor
- 5 Return temperature sensor
- 6 Expansion box (optional) For the 90 boiler it is located on the left inner side of the casing.
- 7 Water pressure sensor

3.3 Introduction to the BDR controls platform

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

Fig.5 Generic example

AD-3001366-02

С

В

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

Tab.2 Components in the example

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

Name visible in display	Software ver- sion	Description	Function
CU-GH20	1.0	Control unit CU-GH20	The CU-GH20 control unit handles all basic functionality of the Quinta Ace S boiler.
MK3	1.98	Control panel HMI Advanced	The HMI Advanced is the user interface to the Quinta Ace S boiler.

3.4 Standard delivery





Contact us for more information.

4 Before installation

4.1 Installation regulations

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Important

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



Warning

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

i Important Practical of

Practical guidelines - see the latest version.

4.2 Location requirements



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Never store combustible substances within 30 cm of the boiler, either temporarily or permanently.

Warning

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

Notice

The boiler must be installed in a frost-free area.

i Important

- An earthed electrical connection must be available close to the boiler.
- A drain connection must be available close to the boiler.
- Do not locate the boiler in direct or indirect sunlight.

When choosing the best installation location, consider:

- The regulations.
- The required installation space.
- The permitted position of the flue gas outlet and/or air supply opening.
- The evenness of the surface.

When installing in a closed cupboard (or similar):

- Take the minimum distance between the boiler and the walls of the cupboard into account.
- Create ventilation openings with a minimum cross section: S1 + S2 = 150 cm^2

Fig.7 Location requirements



4.3 Requirements for the condensate drain

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

4.4 Requirements for water connections

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

4.4.1 Requirements for the central heating connections

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

4.5 Requirements for the gas connection

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

4.6 Requirements for the flue gas discharge system

4.6.1 Classification

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11	l '

Important

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

Tab.4 Type of flue system: B₂₃

Principle	Description	Recommended manufactur- ers ⁽¹⁾	
AD-3000924-01	 Room-ventilated version. Without down-draught diverter. Flue gas discharge via the roof. Air supply from the installation area. The air inlet connection of the boiler must stay open. The installation area must be vented to ensure sufficient air supply. The vents must not be obstructed or shut off. The IP rating of the boiler is lowered to IP20. 	Connection material and roof terminal: • Centrotherm • Cox Geelen • Muelink & Grol • Natalini	
(1) The material must also satisfy the material property requirements from the relevant chapter.			

Tab.5 Type of flue system: C₁₃

Principle	Description	Recommended manufactur- ers ⁽¹⁾	
	 Room-sealed version. Flue gas discharge in the outside wall. The air inlet is in the same pressure zone as the flue (for example a horizontal flue terminal). Parallel wall terminal not permitted. 	Horizontal flue terminal and connection material: • Cox Geelen • Muelink & Grol	
(1) The material must also satisfy the material property requirements from the relevant chapter.			

Tab.6Type of flue system: C33

Principle	Description	Recommended manufactur- ers ⁽¹⁾		
AD-3000927-01	 Room-sealed version. Flue gas discharge via the roof. The air inlet is in the same pressure zone as the flue (for example a concentric roof terminal). 	Roof terminal and connection material • Centrotherm • Cox Geelen • Muelink & Grol • Natalini		
(1) The material must also satisfy the material property requirements from the relevant chapter.				

Tab.7 Type of flue system: C₄₃

Principle ⁽¹⁾	Description	Recommended manufactur- ers ⁽²⁾
1	Combined air inlet and flue system (common shared flue system) with overpressure.	Connecting material to the common shared flue system:
AD-3000928-01	 Concentric (preferably). Parallel (if concentric is not possible). 	 Centrotherm Cox Geelen Muelink & Grol Natalini
(1) EN 15502-2-1: 0.5 mbar suction due to negative pressure.(2) The material must also satisfy the material property requirements from the relevant chapter.		

Tab.8 Type of flue system: C₅₃

Principle	Description	Recommended manufactur- ers ⁽¹⁾		
AD-3000929-02	 Connection in different pressure zones. Closed unit. Separate air inlet and flue. Discharging into various pressure areas. The air inlet and flue must not be placed on opposite walls. 	Connection material and roof terminal: • Centrotherm • Cox Geelen • Muelink & Grol • Natalini		
(1) The material must also satisfy the material property requirements from the relevant chapter.				

Tab.9 Type of flue system: C₆₃

Principle	Description	Recommended manufactur- ers ⁽¹⁾		
	 This system is supplied by us without an air inlet and flue. When selecting the material, please note the following: Condensed water must flow back to the boiler. The material must be resistant to the flue gas temperature of this boiler. Maximum permissible recirculation of 10%. The air inlet and flue must not be placed on opposite walls. Minimum permitted pressure difference between the air inlet and the flue is -200 Pa (including -100 Pa wind pressure). A common shared flue system with overpressure is not permitted. 	Use is only allowed when all our requirements are met and the description of this flue sys- tem type is respected.		
(1) The material must also satisfy the material property requirements from the relevant chapter.				

Tab.10 Type of flue system: C₈₃

Principle ⁽¹⁾	Description	Recommended manufactur- ers ⁽²⁾	
 ₽	Individual air inlet and shared flue system (common shared flue system).	Connecting material to the common shared flue system:	
AD-3000930-01	 Place a condensation drain, equipped with a trap, at the bottom of the duct. 	 Centrotherm Cox Geelen Muelink & Grol Natalini 	
(1) 4 mbar negative pressure can occur.(2) The material must also satisfy the material property requirements from the relevant chapter.			

Tab.11 Type of flue system: C₉₃

		ers ⁽²⁾	
AD-3000931-02	 Room-sealed version. Air inlet and flue in shaft or duct: Concentric. Air supply from existing shaft or duct. Flue gas discharge via the roof. Air inlet is in the same pressure zone as the flue. 	Connection material and roof terminal: • Centrotherm • Cox Geelen • Muelink & Grol • Natalini	
 (1) See table for shaft or duct requirements. (2) The material must also satisfy the material property requirements from the relevant chapter. 			

Tab.12 Minimum dimensions of shaft or duct C₉₃

Version (D)	Without air supply		With air supply	
Rigid 110 mm	Ø 170 mm	□ 170 x 170 mm	Ø 180 mm	🗆 175 x 175 mm
Concentric 110/160 mm	Ø 200 mm	□ 200 x 200 mm	Ø 200 mm	□ 200 x 200 mm

Fig.8 Minimum dimensions of shaft or



Important

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

i Important

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

4.6.2 Material



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

- 1 EN 14471 or EN 1856–1: The material is UKCA and 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.



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

Tab.13 Overview of material properties

Version	Flue gas outlet		Air supply	
	Material	Material properties	Material	Material properties
Single-wall, rigid	 Plastic⁽¹⁾ Stainless steel⁽²⁾ Thick-walled, aluminium⁽²⁾ 	 With UKCA and/or CE marking Temperature class T120 or higher Condensate class W (wet) Pressure class P1 or H1 Fire resistance class E or better⁽³⁾ 	 Plastic Stainless steel Aluminium 	 With UKCA and/or 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 				

4.6.3 Dimensions of flue gas outlet pipe

Warning

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

Fig.10 Dimensions of open connection



Tab.14 Dimensions of pipe

	d ₁ (min-max)	
110 mm	109.3 - 110.3 mm	

AD-3001094-01

Dimensions of parallel connection Fig.11



d1 External dimensions of flue gas outlet pipe

d1 External dimensions of flue gas outlet pipe

D₁ External dimensions of air supply pipe

Tab.15 Dimensions of pipe

	d ₁ (min-max)	D ₁ (min-max)
110/110 mm	109.3 - 110.3 mm	109.3 - 110.3 mm

AD-3000963-01

Fig.12 Dimensions of concentric connection



- d₁ External dimensions of flue gas outlet pipe
- D₁ External dimensions of air supply pipe
- L1 Length difference between flue gas outlet pipe and air supply pipe

Tab.16 Dimensions of pipe

	d ₁ (min-max)	D ₁ (min-max)	L1 ⁽¹⁾ (min-max)	
110/160 mm	109.3 - 110.3 mm	159 - 161 mm	0 - 15 mm	
(1) Shorten the inner pipe if the length difference is too great.				

AD-3000962-01

AD-300200

AD-3002

4.6.4 Length of the flue and air supply pipes

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

- If a boiler is not compatible with a specific flue system or diameter, it is indicated with "-" in the table.
- When using bends, the maximum flue length (L) must be shortened according to the reduction table.
- Use approved flue reducers for adaptation to another diameter.

Maximum flue lengths for B₂₃

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

Calculation: L = LB

Tab.17 Maximum length (L)

	Diameter ⁽¹⁾	110 mm
	Quinta Ace S 90	38 m
	Quinta Ace S 110	32 m
9-01	Quinta Ace S 130	21 m
	Quinta Ace S 150 24 m	
	(1) While maintaining the maximum length, additional 5 times 90° or 10 times 45° bends can be used (indicated for each boiler type and diameter).	

Maximum flue lengths for C₁₃, C₃₃, C₆₃, C₉₃

L_C Length from the air inlet connection and flue gas connection up to the terminal.

Calculation: L = L_C

Tab.18 Maximum length (L)

	Diameter ⁽¹⁾	110/160 mm	
	Quinta Ace S 90	16 m	
011-01	Quinta Ace S 110	13 m	
	Quinta Ace S 130	3 m	
	Quinta Ace S 150	4 m	
	 (1) While maintaining the maximum length, additional 5 times 90° or 10 times 45° bends can be used (indicated for each boiler type and diameter). 		



Flue system length



Fig.13

Flue system length (Parallel) Fig.15





Flue system length Fig.17



Tab.19 Maximum length (L) AD-3002010-01 Diameter⁽¹⁾

Diameter ⁽¹⁾	110 – 110 mm ⁽²⁾	
Quinta Ace S 90	24 m	
Quinta Ace S 110	18 m	
Quinta Ace S 130	6 m	
Quinta Ace S 150	8 m	
 (1) While maintaining the maximum length, additional 5 times 90° or 10 times 45° bends can be used (indicated for each boiler type and diameter). (2) The maximum length was calculated with a concentric 110/160 mm termina (indicated for each boiler type and diameter). 		

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

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

An 80/80 or 110/110 mm flue gas splitting kit (optional) must be fitted for

Maximum flue lengths for C₄₃

Calculation: $L = L_A + L_B$

this connection.

- LB Maximum of 2 m extra length of the flue can be added up to the common shared flue system.
- Length from the air inlet connection and flue gas connection up to the common shared flue system.
 - Calculation: $L = L_C$
- Tab.20 Maximum chimney length (L)

Diameter ⁽¹⁾	110/160 mm			
Quinta Ace S 90	16 m			
Quinta Ace S 110	14 m			
Quinta Ace S 130	8 m			
Quinta Ace S 150 10 m				
(1) While maintaining the maximum length, additional 5 times 90° or 10 times 45° bends can be used (indicated for each boiler type and diameter).				

Maximum flue lengths for C53

- L_A Length from the terminal up to the air inlet connection.
- L_B Length from the flue gas connection up to the terminal.

Calculation: $L = L_A + L_B$



Important

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

AD-3002013-01

AD-3002012-01

Maximum length (L) Tab.21

Diameter ⁽¹⁾	110 – 110 mm			
Quinta Ace S 90	29 m			
Quinta Ace S 110	26 m			
Quinta Ace S 130	16 m			
Quinta Ace S 150 20 m				
(1) While maintaining the maximum length, additional 5 times 90° or 10 times 45° bends can be used (indicated for each boiler type and diameter).				

Maximum flue lengths for C₈₃

Fig.18 Flue system length



- $\mathbf{L}_{\mathbf{A}}$. Length from the terminal up to the air inlet connection.

Calculation: $L = L_A + L_B$

Tab.22	Maximum	length (L)
--------	---------	------------

	Diameter ⁽¹⁾	110 – 110 mm			
AD-3002015-01	Quinta Ace S 90	32 m			
	Quinta Ace S 110	28 m			
	Quinta Ace S 130	16 m			
	Quinta Ace S 150	22 m			
	(1) While maintaining the maximum length, additional 5 times 90° or 10 tim 45° bends can be used (indicated for each boiler type and diameter).				

Reduction table

Tab.23 Pipe reduction for each bend - radius ½D (parallel)



Tab.24 Pipe reduction for each bend - radius ½D (concentric)

Diameter	110/160 mm
$\frac{\mathbf{R}=\frac{1}{2}\mathbf{D}}{\mathbf{D}}$	1.2 m
<u>R=1/2</u> <u>D</u> 90°	2.5 m

4.6.5 Additional guidelines

Installation

Warning

If the flue gas outlet and air supply materials are not installed in accordance with the instructions, this can result in dangerous situations and/or physical injury.

- For installing the flue gas outlet and air supply materials, refer to the instructions of the manufacturer of the material. After installation, check at least all flue gas outlet and air supply parts for tightness.
- Install the flue gas outlet pipe towards the boiler with a sufficient gradient (at least 50 mm per metre).
- Install a sufficient condensate collector and discharge at least 1 m before the outlet of the boiler.
- The bends used must be larger than 90° to guarantee the gradient and a good seal on the lip rings.

Condensation

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

4.7 Requirements for the electrical connections

- Establish the electrical connections in accordance with all current local and national regulations and standards.
- Electrical connections must only be made by qualified installers, and only while the power supply is disconnected.
- The appliance is completely pre-wired. Never change the internal connections of the control panel.
- Always connect the appliance to a well-earthed installation.
- If the power cord is permanently connected, you must always install a main bipolar switch with an opening gap of at least 3 mm (BS EN 60335-1).
- The wiring must comply with the instructions in the electrical diagrams.
- · Follow the recommendations in this manual.
- Separate the sensor cables from the 230 V cables

Make sure the following requirements are met when connecting the cables to the PCB connectors:

Tab.25 PCB connectors

Wire cross section	Stripping length	Tightening torque
solid wire: 0.14 – 4.0 mm² (AWG 26 – 12)	8 mm	0.5 N⋅m
stranded wire: 0.14 – 2.5 mm ² (AWG 26 – 14)		
stranded wire with ferrule: 0.25 – 2.5 mm ² (AWG 24 – 14)		

4.8 Water quality and water treatment

- Notice Water quality Damage to the product. Warranty void.
 - Make sure the water quality requirements are fulfilled.

For this appliance, the quality of the heating water must comply with all requirements as listed in **VDI 2035**. If water quality requirements for other components in the system are stated, the most stringent requirements apply.

If water quality is not met, consult a specialist.

Tab.26 Water quality requirements according to VDI 2035

Heat exchanger material	Unit	Stainless steel
Degree of acidity at 25 °C	рН	8.2 - 10.0
Electrical conductivity at 25 °C (for low saline water)	μS/cm	≤ 100
Electrical conductivity at 25 °C (for saline water)	μS/cm	100 - 1500
Oxygen (for low saline water)	mg/l	≤ 0.1
Oxygen (for saline water)	mg/l	≤ 0.02
Sum of alkaline earth metals	mmol/l	≤ 0.02

5 Installation

5.1 Positioning the boiler



5.2 Mounting the outdoor temperature sensor

Place the outdoor temperature 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.22 Advised positions



- 1 Optimum location
- 2 Possible location



- H Inhabited height controlled by the sensor
- Z Inhabited area controlled by the sensor

Avoid placing the outdoor temperature 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.23 Positions to be avoided



Fig.24 Mount the outdoor temperature sensor







MW-3000014-2

- 1. Drill two holes with a diameter of 6 mm.
- 2. Put the two plugs in place.
- 3. Secure the sensor using two screws.
- 4. Connect the cable to the outdoor temperature sensor.

5.3 Flushing the system

Before a new appliance can be connected to a system, the entire system must be thoroughly cleaned by flushing it. The flushing will remove residue and dirt from the installation process. If applicable:

- Flush the heating system with at least 3 times the volume of the system.
- Flush the domestic hot water pipes with at least 20 times the volume of the pipes.

5.4 Connecting the heating circuit

Fig.25 Connecting the CH flow and CH 1. Remove the dust caps from the flow * IIII and return connections return 2. Fit the installation flow pipe to the flow connection. 3. Fit a pipe to the return connection. 4. Install the central heating pump to this pipe connection. 5. Fit the installation return pipe to the pump. Important i When the pump is managed by the boiler's control unit, make sure 3) that deaeration parameter AP101 has been set to 1. 2 4 ⊳ 1111

5.5 Connecting the condensate drain pipe



- 1. Fit a flexible condensate drain hose Ø 24 mm on the condensate outlet.
- 2. Lead this drain hose to a plastic drain pipe of Ø 32 mm or larger, terminating in the drain.

AD-3002730-01

AD-3002729-01

5.6 Connecting the safety pressure relief valve outlet

Fig.27 Connecting the safety pressure

- 1. Fit a flexible hose with a swivel nut on the safety relief valve outlet.
- 2. Lead this hose to a plastic drain pipe of Ø 32 mm or larger, terminating in the drain.



5.7 Gas connection



- 1. Remove the dust cap from the gas connection GAS/GAZ.
- 2. Fit the gas supply pipe.
- 3. Fit a gas cock in this pipe, directly underneath the boiler (within 1 metre).
- 4. Fit the gas pipe to the gas cock.

AD-3002731-01

5.8 Air inlet/flue gas outlet connections

5.8.1 Connecting the concentric flue gas/air inlet pipes

Fig.29 Connecting the flue gas/air inlet pipe
 S Insertion depth is 55 mm
 Connect the flue gas/air inlet pipe to the boiler.
 Fit the subsequent 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.

5.8.2 Dimensions of the flue gas splitting kit

The boiler has a concentric flue gas/air inlet connection as standard. The flue gas splitting kit comprises a flue gas adaptor and an air inlet adaptor. The kit can be used to have the air inlet and flue gas discharge from different locations or pressure areas. A separate assembly instruction is available for this.

Fig.30 Dimensions of the flue gas splitting



5.9 Electrical connections

5.9.1 Quick connect location

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



N2

A6

83

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- A2 Lag boiler with Quick connect
- A3 Lag boiler with Quick connect
- A4 Lag boiler with Quick connect
- A5 Lag boiler with Quick connect Possible with SCB-10 expansion PCB (optional).
- A6 Lag boiler with Quick connect

Possible with SCB-10 expansion PCB (optional).

A5

l nnnnnr X3

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- A7 Lag boiler with Quick connect
- Possible with SCB-10 expansion PCB (optional). A8 Lag boiler with Quick connect

N2

- Possible with SCB-10 expansion PCB (optional).
- S-Bus terminator N1
- N2 S-Bus connection between appliances

N2

AD-3003417-01

5.9.2 Opening the boiler

Fig.35 Opening the boiler

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

5.9.3 Access to the control box



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

Fig.37 Lift the control box cover

AD-3002739-01

- Gently pull forward the clips on the front side 1↓ and back side ↑2 of the cover simultaneously.
- 4. Lift the cover.
 - ⇒ The connectors on the connection boards are now accessible.
- $\[\] \qquad$ You can also access the control unit. Repeat the steps with the clips on the front side $\[\] \sim$ and back side $\[\] _B$ of the other cover.

Cable routing to the control box

The boiler has seven cable grommets with cable strain reliefs and a power cable gland. You can use the cable grommets to route cables to the control box.



- 1. Select the desired cable grommet and make a hole in it.
- 2. Push the cable through the grommet.
- 3. Route the cable to the control box.

Fig.39 Connecting the cable



- 4. Connect the cable to the connection PCB.
- 5. Secure the cable:
 - 5.1. Close the clip in the control box.
 - 5.2. Place and secure the strain relief from the grommet.

5.9.4 PCB locations

The illustrations show the locations for each PCB. Both factory-fitted and optional PCBs are shown.



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5 Installation



Device	Primary location	Location option
CU-GH20	1	-
CB-25	2	-
SCB-09 (optional)	10	11 / 12
SCB-10 (optional)	7	-
SCB-13 (optional)	10	11 / 12
SCB-17+ (optional)	7	-
SCB-17B (optional)	9	-
GTW-08 Modbus (optional)	3	4
GTW-21 BACNet (optional)	3	4
BLE Smart Antenna (optional)	6 (vertically mounted)	-
GTW-30 (optional)	3	4

5.9.5 Access to the expansion box

If there is no space in the boiler's control box to install expansion PCBs, they can be installed in the optional expansion box.



- 1. Gently unclip the housing cover.
- 2. Remove the cover.

Fig.43 Access to the expansion box in boiler type 90.



Fig.44 Cable routing to the expansion box for boiler types 110 - 130 - 150

Fig.45 Cable routing to the expansion box for boiler type 90

AD-3003221-01



• Cable routing to the expansion box

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

1. Cut the rubber seal in the desired opening.

- A Cable opening for power cables ($\approx 230 \text{ V}$)
- B Cable opening for low voltage cables (≤ 24 V)
- 2. Route the cable to the expansion box.

- Fig.46 box for boiler types 110 - 130 - 150 3 AD-3003223-01
- Cable routing inside the expansion

Fig.47 Cable routing inside the expansion box for boiler type 90



5.9.6 Introduction to the CB-25 connection PCB

The Quinta Ace S boiler is equipped with the new generation connection PCB. The CB-25 offers more connection options and reduces the need for expansion PCBs.

3. Connect the cable to the expansion PCB.

type 90).

4. Secure the cable with the clips in the expansion box (only in boiler

Tab.27	Available	options
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Options	Description
Configurable input and output	This option makes it possible to configure the input and output connectors. Depend- ing on the desired system, you can select and combine the available configurations. You can change the behaviour of the connectors with a parameter setting.
0-10 V input	This option makes it possible to connect an external 0-10 V heat demand control. You can control the boiler based on temperature or power setpoint.
LIN-Bus	This option makes it possible to connect a LIN pump. The LIN-Bus protocol gives you more insight about the performance, diagnostics and failure detection of the pump.
Cascade management	This option makes it possible to link up to four boilers in a cascade system. You can link the boilers without the need for an external cascade manager or expansion boards. The S-Bus connections can be made externally on the Quick connect.
Domestic hot water	This option makes it possible to connect a DHW cylinder. Depending on the desired DHW system, you can connect different types of pumps and sensors.

The combination of the extended connections and software features gives you more options as standard. The tables give an overview of the possible combinations.

- You can apply the desired fixed combination.
- You can extend the fixed combination with optional inputs and outputs.

Tab.28 Configurable inputs and outputs - Fixed combinations

Connector ⁽¹⁾	● AUX	Status			1	2
	± N L	Nc C No	1	2	Tsyst	Tsyst
Cascade management:	F ₁	F ₂			F ₅	
• Cascade system pump (F ₁ or F ₂)						
• System temperature sensor (F ₅)						
DHW circulation:	F ₁					F ₆
• DHW circulation pump (F ₁)						
• DHW circulation temperature sensor (F ₆)						
DHW mixing:	F ₁					F ₆
• DHW mixing pump (F ₁)						
 DHW mixing temperature sensor (F₆) 						
DHW layered:						F ₆
• DHW cylinder top temperature sensor (F ₆)						
Boiler room ventilation:		F ₂		F ₄		
• Extractor fan (F ₂)						
• Extractor fan signal (F ₄)						
(1) The letter F indicates a fixed combination of two connectors for each configuration.						

Tab.29 Configurable inputs and outputs - Extend options

Connector ⁽¹⁾⁽²⁾	● AUX	Status			1	2
	± N L	Nc C No	1	2	Tsyst	Tsyst
Cascade system pump	B ₁	A ₂				
Direct zone pump	B ₁	A ₂				
Secondary pump	B ₁	A ₂				
Hydraulic valve	B ₁	A ₂				
External gas valve	B ₁	A ₂				
Status contact	B ₁	A ₂				
Heat demand signal			A ₃	B ₄		
Boiler relief signal			A ₃	B ₄		
Blocking input			A ₃	B ₄		
Release input			A ₃	B ₄		
Gas pressure switch			A ₃	B ₄		
 (1) The letter A indicates the first option for the connection of each input or output. (2) The letter B indicates the second option for the connection of each input or output. 						

Tab.30 Example of possible combinations

Connector	● AUX	Status		L	1	2
	± N L	Nc C No	1	2	Tsyst	Tsyst
Fixed combination: Boiler room ventilation:		F ₂	A ₃	F ₄		
• Extractor fan (F ₂)						
• Extractor fan signal (F ₄)						
Extended with:						
• Gas pressure switch (A ₃)						
Fixed combination: Cascade management:	F ₁	F ₂	A ₃	F_4	F ₅	
• Cascade system pump (F ₁)						
System temperature sensor (F ₅)						
Fixed combination: Boiler room ventilation:						
• Extractor fan (F ₂)						
• Extractor fan signal (F ₄)						
Extended with:						
• Boiler relief signal (A ₃)						

To connect and configure the desired installation, please refer to:

• The following chapter for the available connectors.

• The connecting diagrams in the manual or online.

5.9.7 The CB-25 connection PCB

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



- Boiler relief signal, page 39
- Blocking input, page 40
- Release input, page 40
- Gas pressure switch, page 40
- 7 Pump PWM connector, page 40 Connect a PWM signal for the boiler pump.
- 0-10 V connector, page 41 8
- Connect a 0-10 V signal.
- Tout connector, page 41 9
- Connect an outdoor temperature sensor. 10 R-Bus connector, page 42
- Connect a room thermostat. 11 Tsyst connectors, page 42
- Connect a:

Pump connector

DHW pump connector

- System temperature sensor, page 42
- DHW circulation temperature sensor, page 42

- DHW mixing temperature sensor, page 42
- DHW cylinder top temperature sensor, page 42
- 12 Tdhw connector, page 43 Connect a DHW cylinder bottom temperature sensor.
- 13 DHW pump PWM connector, page 43 Connect a PWM signal for the DHW pump.
- Service port connector, page 43 14 Connect a service tool.
- 15 L-Bus connector, page 43 Connect the expansion box (L-Bus).
- 16 S-Bus connectors, page 43 Do not use.
- 17 Fuse F1 Protects all connected components (for example, pumps, valves and PCBs).

Pump connector

You can connect a boiler pump to the connector.

Connect the pump as follows:

- 🗕 Earth
- Neutral Ν
- 1 Phase



Important

The maximum power consumption is 300 VA.

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



Pump PWM connector, page 40

DHW pump connector

You can connect a DHW charge pump to the connector.

The maximum power consumption is 300 VA.

You can change the post run time, maximum speed and minimum speed

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

One connector is available on the connection PCB. For more

Connect the pump as follows:

Earth ᆂ

Т

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Neutral Ν Phase

Important

AUX connector

AD-4000123-02

AD-3002666-01

AD-3001306-02

Fig.51 AUX connector



()) connections, you will need to use an expansion PCB.

Connect the pump, valve or contact as follows:

with parameters DP020, DP037 and DP038.

Earth 느

specific setting.

- Neutral Ν
- Phase L

i

Important

The maximum power consumption is 300 VA.

NL 놑

Fig.49

Fig.50

Fil

÷ Ν L
	 Cascade system pump
Fig.52 Cascade system pump ● AUX ÷ N L AD-3002666-	You can connect a cascade system pump to the connector. If the appliance is part of a cascade system and does not have an internal pump, connect this pump. When you apply a low loss header or plate-heat exchanger, this pump creates flow on the primary side of the system.
	Always connect this pump to the lead appliance.
	See also Activating cascade management, page 55
	 DHW circulation pump
Fig.53 DHW circulation pump	You can connect a DHW circulation pump to the connector. This pump will circulate the domestic hot water through the system.
± N L	Activating DHW circulation, page 55
	 DHW mixing pump
Fig.54 DHW mixing pump	You can connect a DHW mixing pump to the connector. This pump mixes the water in the DHW cylinder to distribute the temperature evenly.
≟ N L AD-3002666-	See also Activating DHW mixing, page 56
	 Direct zone pump
Fig.55 Direct zone pump Image: AUX Image: AUX	You can connect a direct zone pump to the connector. This pump will create flow to the zone. The pump is active when there is a heat demand on the direct zone.
ŧ N L	
AD-3002666-	Always connect this pump to the lead appliance.
	Setting the output, page 58
	 Secondary pump
Fig.56 Secondary pump	You can connect a secondary pump to the connector. When you apply a low loss header or plate-heat exchanger, this pump creates flow on the secondary side of the system.
<u>∔ N L</u> AD-3002666-	See also Setting the output, page 58
	- Hydraulic valve
Fig.57 Hydraulic valve	You can connect a hydraulic valve to the connector. This valve isolates the appliance from the system.
± N L	^{on} See also Setting the output, page 58
	 External das valve
Fig.58 External gas valve	You can connect an external gas valve to the connector. This valve will follow the behaviour of the gas control valve in the appliance.
± N L	See also Setting the output, page 58
	 Status contact
Fig.59 Status contact	You can connect a status contact to the connector. This contact will report the current status of the appliance to an external device or building management system.
<u> </u>	-



	 External gas valve
Fig.66 External gas valve	You can connect an external gas valve to the connector. This valve will follow the behaviour of the gas control valve in the appliance.
NC C No AD-3002781-01	Setting the output, page 58
	 Status contact
Fig.67 Status contact	You can connect a status contact to the connector. This contact will report the current status of the appliance to an external device or building management system.
AD-3002781-01	See also Setting the output, page 58
	LIN-Bus connector
	You can connect a LIN-Bus pump to the connector. The LIN-Bus controls the pump and receives data from the pump.
	The LIN-Bus pumps from Grundfos have been tested and approved to work with the appliance. Pumps from other brands may also work, but have not been tested.
Fig.68 LIN-Bus connector	Connect the LIN-Bus wires as follows:
LIN-Bus	+ Plus
+ - D	- Minus
AD-3002779-01	D Signal
	Programmable input connectors
	You can connect a range of input signals to each connector. The programmable input connectors function as a potential free contact.
	Two programmable connectors are available on the connection PCB. For more connections, you will need to use an expansion PCB.
	You can configure it as required. Depending on the setting, a type of input signal can be connected.
Fig.69 Programmable input connectors	The wires are interchangeable. It does not matter which wire is connected to which clamp.
L Z AD-3002780-01	
	 Extractor fan signal
Fig.70 Extractor fan signal	You can connect an extractor fan feedback signal for boiler room ventilation to the connector. When the extractor fan is on, the contact will close.
AD-3002780-01	Activating boiler room ventilation, page 56
	 Heat demand signal
Fig.71 Heat demand signal	You can connect an on/off contact for central heating to the connector.
	This will generate a heat demand for central heating to the system.
1 2 AD-3002780-01	See also Setting the input, page 57
	 Boiler relief signal
Fig.72 Boiler relief signal	You can connect a BMS to the connector. This will connect the appliance to a building management system that controls several heating appliances. Use this on/off contact to relieve the appliance for heat demands. The other appliances in the system can still take on heat production. For example:



Fig.74	Release	input

7	L~1	
1	2	

Fig.75	Gas pressure swi	tch

- When the input is active, the appliance will not produce heat for central heating.
- When the input is active, the appliance will not produce heat for domestic hot water.
- When the input is active, the appliance will not produce heat for central heating and domestic hot water.

The input can be set to opened or closed for the relief of the heat demand.



Setting the input, page 57

Blocking input

You can use the connector as a blocking input. This will block the appliance on request for specific types of heat demands. You can configure it as required. For example:

AD-3002780-01 • The appliance will block heat demands for central heating.

- The appliance will block heat demands for domestic hot water.
- The appliance will block heat demands for central heating and domestic hot water.

The input can be set to opened or closed for the blocking of the heat demand. It is also possible to have the appliance show an error code.



AD-3002780-01

See also Setting the input, page 57

Release input

You can use the connector as a release input. This will release the appliance on request for specific types of heat demands. You can configure it as required. For example:

- The appliance will activate for domestic hot water and must be released for central heating demands.
- The appliance will not activate for central heating or domestic hot water and must be released for both heat demands.

The input can be set to opened or closed for the release of the heat demand.

m,	See also						
	Setting the input, page 5	7					

ſ

- Gas pressure switch

You can connect a gas pressure switch to the connector.

- When the gas pressure is too low, the switch will activate. This will block the appliance for 10 minutes and show the error code **H.01.09**.
- When the gas pressure is too high, the switch will activate. This will block the appliance for 10 minutes and show the error code **H.01.26**.

The input can be set to opened or closed for the switch activation.

See also

Setting the input, page 57

Pump PWM connector

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



Pump PWM connector

Connect the PWM signal wires as follows:

- 0 Zero
- + Plus

AD-3002782-01

AD-3002780-01

0-10 V connector

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

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

Connect the 0-10 V signal as follows:

- Minus
- + Plus

AD-3001304-03

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

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

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

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

The measured values can be read with signals:

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

Tout connector

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

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

AF60 NTC 470 Ω/25 °C



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

AD-4000006-04

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

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

When you only connect an outdoor temperature sensor, place a bridge on the R-Bus connector. Also change the control strategy parameter **CP780** to **Outdoor temp based** (2).

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



+

0-10 V connector

Fig.78 0-10 V control





Tout

Tout connector



R-Bus connector

R-Bus

Fig	.81		Τs	syst connectors
l	1	l	2	

Tsyst Tsyst

Fig.82

Tsyst

Tsyst

l 1 l AD-4000008-03

You can change the influence of the room temperature with parameter CP240. Also change the control strategy parameter CP780 to Outdoor & room based (3).

R-Bus connector

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

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

Connect the room thermostat as follows:



AD-3001314-03

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

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

Tsyst connectors

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

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

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

Connect the sensor as follows:

See also

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

System temperature sensor

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



Activating cascade management, page 55

DHW circulation temperature sensor

Fig.83 DI				DI	HW circulation temperature
				se	ensor
	l	1	J	2	
	Ts	yst	Ts	yst	

System temperature sensor

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

You can connect a DHW mixing temperature sensor to the Tsyst 2



connector.

connector.

AD-3003349-01

AD-3003349-01

See also Activating DHW circulation, page 55

DHW mixing temperature sensor

Fig.84 DHW mixing temperature sensor 1

l	2		
Ts	yst		

AD-3003349-01

See also

Activating DHW mixing, page 56

Fig.85 DHW cylinder top temperature

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

sensor



2

See also Activating DHW layered, page 56

Tdhw connector

;	Imp
1	For

ortant

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

You can connect a DHW cylinder bottom temperature sensor (NTC 10k $\Omega/$ 25 °C) to the connector.

Fig.86	Tdhw connector		Ŷ	The wires are interchangeable. It does not matter which wire is connected to which clamp.
Tdhw		AD-3000971-03		
			• C	OHW pump PWM connector
			You o PWM	an connect a DHW pump PWM signal wire to the connector. The signal modulates and controls the DHW pump.
Fig.87	DHW pump PWM connector		Conn	ect the PWM signal as follows:
PWM			-+	Minus Plus
- +		AD-3002783-01	-	
			■ S	Service port connector
Fig.88	Service port connector (RJ12)		You o to the	an connect a service tool to the connector. The service tool connects following devices:
		AD-3003112-01	• Lap • Sm • Tab	top art phone let
			You o variou	an use the Recom Smart Service app to enter, change and read out us settings.
			• L	-Bus connector
Fig.89	L-Bus connector		You o exten	an connect the cable for the expansion box to the connector. This ds the local bus to the expansion box.
		AD-3003113-01		
			■ S	B-Bus connectors
Fig.90	S-Bus connectors (RJ12)		Do no conne	ot use these internal S-Bus connectors. You can use the Quick ect for the S-Bus connections.
		AD-3003114-01		
6 Be	efore commissioning	l		
6.1	Checklist before commiss	sioning		

6.1.1 Filling the condensate trap



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

Before filling the trap you must first fill the trap sump.

Fig.92



- 1. Remove the protection cap with the washer and compression nut from the trap bottom.
- 2. Fit the trap sump by reusing the washer and compression nut on the trap bottom.

3. Fill the trap with water via the flue gas outlet by use of a funnel. ⇒ The trap is fully filled when water is leaving the condensation outlet.

6.1.2 Filling the system

Filling the trap



AD-3002732-01

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 1.0 bar and 1.5 bar.

2. Check the water-side connections for tightness.

Preparing the gas circuit 6.1.3



Warning

Make sure that the boiler is disconnected from the power supply.

- 1. Open the main gas cock.
- 2. Open the boiler gas cock.
- 3. Check the tightness of the gas circuit with a gas detector.

Fig.93 Gas control valve 90 - 110



Fig.94 Gas control valve 130 - 150



AD-3003049-01

4. Vent the gas supply pipe by either unscrewing or removing the screw of the measuring point nipple.

The screw position differs per boiler type. Refer to the illustration of the boiler type for the screw position.

- ⇒ The gas supply pipe is properly vented when a gas smell can be noticed.
- 5. Slide the tube of the gas pressure meter over the measuring point nipple.
- Measure the gas inlet pressure. The recommended inlet pressure is shown on the data plate.



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

7. Replace or retighten the screw plug on the measuring point nipple.

6.2 Control panel description

6.2.1 Control panel components



6.2.2 Description of the home screen

- 1 Rotary knob to select a tile, menu or setting
- 2 Confirm button \checkmark to confirm the selection
 - Back button ᠫ:
 - 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

3

6 Status LED

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

You can navigate from any menu to the home screen by pressing the back button **5** for several seconds.

The tiles on the home screen provide quick access to the corresponding menus. Use the rotary knob to navigate to the desired item and press the button \checkmark 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 Icons indicating navigation level, operating mode, errors and other information.



6.2.3 Description of the main menu

Fig.97 Items in 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.31 Available menus for the user

Description	Icon
Enable installer access	• ।त
System Settings	0
Version Information	1

Tab.32 Available menus for the installer 🕷

Description	Icon
Disable installer access	چ.
Installation Setup	•ेत
Commissioning Menu	พื
Advanced Service Menu	*
Error History	*
System Settings	0
Version Information	(j)

6.2.4 Description of the icons in the display

Tab.33 Icons

lcon	Description
Å	User menu: user-level parameters can be configured.
1	Installer menu: installer-level parameters can be configured.
(j)	Information menu: read out various current values.
Ø	System settings: system parameters can be configured.
×	Error indicator.
Å	Gas boiler indicator.
	Domestic hot water tank is connected.
â (j	The outdoor temperature sensor is connected.
đ	Boiler number in cascade system.
Ì.	The solar calorifier is on and its heat level is displayed.
7	Burner output level (1 to 5 bars, with each bar representing 20% output).
	The pump is running.
	Three-way valve indicator.
bar	Display of the system water pressure.
	Chimney sweep mode is enabled (forced full load or low load for O ₂ measurement).
Ø Ø	Energy saving mode is enabled.
R	DHW boost is enabled.
	Time program is enabled: The room temperature is controlled by a time program.
ĥ	Manual mode is enabled: The room temperature is set to a fixed setting.
1 0	Temporary overwrite of the time program is enabled: The room temperature is changed temporarily.

Icon	Description
(Î)	The holiday program (including frost protection) is active: The room temperature is reduced during your holiday to
	save energy.
A	Frost protection is enabled: Protect the boiler and installation from freezing during winter.
1 Je	Service notification: service needed.
	Installer contact details are displayed or can be filled in.

Tab.34 Icons - On/off

Icon	Description	lcon	Description
1111	CH operation is enabled.	JHHI	CH operation is disabled.
	DHW operation is enabled.	x	DHW operation is disabled.
•	The burner is on.	×	The burner is off.
*	Bluetooth enabled and connected (icon is non-transparent).	*	Bluetooth enabled and disconnected (icon is transparent).
^	Heating enabled.		
	Cooling enabled.		
	Heating/cooling enabled.	OFF	Heating/cooling disabled.

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

7 Commissioning

7.1 Commissioning procedure



Warning

- Commissioning must be done by a qualified installer.
 - If adapting to another gas type, the gas control valve must be adjusted before switching on the boiler.
- 1. Open the main gas valve.
- 2. Open the appliance gas valve.
- 3. Switch on the power with the boiler's on/off switch.
- 4. Configure the settings shown on the display.
 - ⇒ The start-up program will start and cannot be interrupted.
- 5. Set the components (thermostats, controller) 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.

Gas settings 7.2

7.2.1 Gas factory setting

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

Tab.36 Factory settings G20 (H gas)

Code	Display text	Description	Adjustment range	90	110	130	150
DP003	Abs max fan DHW	Maximum fan speed on Domestic Hot Water	1000 - 6900 Rpm	-	-	-	-
GP007	Fan RPM Max CH	Maximum fan speed during Cen- tral Heating mode	1400 - 7000 Rpm	6500	6800	5800	6900
GP008	Fan RPM Min	Minimum fan speed during Cen- tral Heating + Domestic Hot Wa- ter mode	1250 - 4000 Rpm	1250	2050	1700	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 - 4000 Rpm	2400	2500	2500	2500

7.2.2 Adapting to another gas

Fig.98 Position of the venturi A

- Before operating with a different type of gas, carry out the following steps.
 - 1. For boiler types 90 110: Replace the venturi (A) to adapt the boiler to another gas type.

The required venturi is listed in the table. Replace the venturi according to the instructions supplied with the gas conversion set.

AD-AD-3003346-01

Quinta Ace S	90	110
Venturi for G20 (H gas) ⁽¹⁾	34/5.6	38/6.4
Venturi for G31 (propane)	34/4.5	34/4.5
(1) Factory fitted.		•





2. For boiler types 130: Replace the restrictor (B) to adapt the boiler to G31 (propane).

The required restrictor is listed in the table. Replace the restrictor according to the instructions supplied with the gas conversion set.

Tab.38 Conversion restrictor types

Quinta Ace S	130
Restrictor diameter in mm for G31 (propane)	10

3. For boiler type 150: Adapt the boiler to a different gas type without replacing the restrictor.

4. Write the boiler operating gas type down on the sticker supplied.



This sticker must be affixed next to the data plate.

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.

\blacktriangleright **\Box** > Parameters, counters, signals > Parameters



Use the rotary knob to navigate.

Use the \checkmark button to confirm your selection.

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

Fan speed for different gas types

1. Adjust the fan speed parameters for the gas type used according to the table.

If a boiler is not suitable for a certain gas type, it is indicated with "-" in the table.

Tab.39 Adjustment for gas type G31 (propane)

Code	Display text	Description	Adjustment range	90	110	130	150
DP003	Abs max fan DHW	Maximum fan speed on Domestic Hot Water	1000 - 6900 Rpm	-	-	-	-
GP007	Fan RPM Max CH	Maximum fan speed during Cen- tral Heating mode	1400 - 7000 Rpm	5900	6800	5500	6400
GP008	Fan RPM Min	Minimum fan speed during Cen- tral Heating + Domestic Hot Wa- ter mode	1250 - 4000 Rpm	1500	2050	1950	2250
GP009	Fan RPM Start	Fan speed at appliance start	1000 - 4000 Rpm	3000	2500	4000	4000

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

Fan speeds for BREEAM compliance

1. Adjust the fan speed parameters according to the table.

Tab.40 Adjustment for BREEAM with gas type G20 (H gas)

Code	Display text	Description	Adjustment range	90	110	130	150
DP003	Abs max fan DHW	Maximum fan speed on Domestic Hot Water	1000 - 6900 Rpm	-	-	-	-
GP007	Fan RPM Max CH	Maximum fan speed during Cen- tral Heating mode	1400 - 7000 Rpm	6500	6800	5800	6900
GP008	Fan RPM Min	Minimum fan speed during Cen- tral Heating + Domestic Hot Wa- ter mode	1250 - 4000 Rpm	1250	2050	1700	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 - 4000 Rpm	2400	2500	2500	2500

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



Important

Make sure to apply the O₂ values specified for BREEAM.

7.2.3 Combustion control and setting

Fig.100 Flue gas measuring point and air inlet measuring point



A Flue gas measuring point

B Air inlet measuring point

Use the air inlet measuring point to check any recycling of the combustion products.

Use the flue gas measuring point to measure the quality of the combustion and the temperature of the flue gasses. For combustion control proceed as follows:

- 1. Remove the cap from the flue gas measuring point.
- 2. Insert the probe for the flue gas analyser into the measurement opening by about 8.5 cm.



 Δ During measurement, seal the opening around the sensor fully.

Caution

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

Important

- The flue gas analyser must have a minimum accuracy of $\pm 0.25\%$ O₂.
- The flue gas analyser must meet the requirements of BS 7927 or BS-EN 503793 and be calibrated according to the manufacturer's requirements.
- Measure the percentage of O₂ in the flue gases. Take measurements at full load and at part load.



i

Important

Measurements must be taken with the front panel removed.

Performing the full load test

- 1. Select the tile [4].
- ⇒ The Change load test mode menu appears.
- 2. Select the test Medium power.
 - A Change load test mode
 - **B** Medium power
 - ⇒ The full load test starts. The selected load test mode is shown in the menu and the icon appears in the top right of the screen.
- 3. Check the load test settings and adjust if necessary.
 - ⇒ Only the parameters shown in bold can be changed.

Performing the low load test

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





Fig.102 Low load test



2. If the full load test was finished, select the tile [4] to restart the chimney sweep menu.

A Change load test mode

B Low power

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

Checking/setting values O₂ at full load and low load

- 1. Set the boiler to full load.
- 2. Measure the percentage of O₂ in the flue gases.
- 3. Compare the measured value with the target values in the table. The nominal full load value is shown in bold.

Tab.41 Target O₂ values for full load - (low load range) for G20 (H gas)

Quinta Ace S 90	Quinta Ace S 110	Quinta Ace S 130	Quinta Ace S 150
3.9 - (4.6 - 5.2)	3.6 - (3.9 - 4.5)	3.6 - (4.5 – 5.1)	3.6 - (4.5 – 5.1)
4.1 - (4.8 - 5.4)	3.8 - (4.1 – 4.7)	3.8 - (4.7 – 5.3)	3.8 - (4.7 – 5.3)
4.3 - (5.0 - 5.6)	4.0 - (4.3 - 4.9)	4.0 - (4.9 - 5.5)	4.0 - (4.9 - 5.5)
4.5 - (5.2 - 5.8)	4.2 - (4.5 – 5.1)	4.2 - (5.1 – 5.7)	4.2 - (5.1 – 5.7)
4.7 - (5.4 - 6.0)	4.4 - (4.7 – 5.3)	4.4 - (5.3 - 5.9)	4.4 - (5.3 - 5.9)
4.8 - (5.5 - 6.1)	4.5 - (4.8 - 5.4)	4.5 - (5.4 - 6.0)	4.5 - (5.4 - 6.0)
4.9 - (5.6 - 6.2)	4.6 - (4.9 - 5.5)	4.6 - (5.5 - 6.1)	4.6 - (5.5 - 6.1)
5.1 - (5.8 - 6.4)	4.8 - (5.1 – 5.7)	4.8 - (5.7 - 6.3)	4.8 - (5.7 - 6.3)
5.3 - (6.0 - 6.6)	5.0 - (5.3 – 5.9)	5.0 - (5.9 - 6.5)	5.0 - (5.9 - 6.5)
5.5 - (6.2 - 6.8)	5.2 - (5.5 – 6.1)	5.2 - (6.1 - 6.7)	5.2 - (6.1 - 6.7)
5.7 - (6.3 - 7.0)	5.4 - (5.7 - 6.3)	5.4 - (6.3 - 6.9)	5.4 - (6.3 - 6.9)

Tab.42 Target O₂ values for full load - (low load range) for BREEAM with G20 (H gas)

Quinta Ace S 90	Quinta Ace S 110	Quinta Ace S 130	Quinta Ace S 150
(-)	(-)	(-)	(-)
(-)	(-)	(-)	(-)
5.4 - (6.1 - 6.7)	4.2 - (4.1 - 4.7)	5.1 - (6.4 - 7.0)	6.2 - (6.1 - 6.7)
5.5 - (6.2 - 6.8)	4.3 - (4.2 - 4.8)	5.2 - (6.5 - 7.1)	6.3 - (6.2 - 6.8)
5.6 - (6.3 - 6.9)	4.4 - (4.3 - 4.9)	5.3 - (6.6 - 7.2)	6.4 - (6.3 - 6.9)
5.7 - (6.4 - 7.0)	4.5 - (4.4 - 5.0)	5.4 - (6.7 - 7.3)	6.5 - (6.4 - 7.0)
5.8 - (6.5 - 7.1)	4.6 - (4.5 - 5.1)	5.5 - (6.8 - 7.4)	6.6 - (6.5 - 7.1)
5.9 - (6.6 - 7.2)	4.7 - (4.6 - 5.2)	5.6 - (6.9 - 7.5)	6.7 - (6.6 - 7.2)
6.0 - (6.7 - 7.3)	4.8 - (4.7 – 5.3)	5.7 - (7.0 - 7.6)	6.8 - (6.7 - 7.3)
(-)	(-)	(-)	(-)
(-)	(-)	(-)	(-)

4. If the measured value is outside of the values given in the table, correct the O₂ percentage.

Fig.103 Gas control valve in boiler types: 90 - 110



Fig.104 Gas control valve in boiler types: 130 - 150



- 4.1. Use the full load adjusting screw **A** to set the percentage of O₂ for the gas type being used within the range given in the table.
- Turning the full load screw A clockwise (+) increases O₂.
- Turning the full load screw **A** anti-clockwise (-) decreases O₂.
- 5. Use the full load adjusting screw **A** to set the percentage of O₂ for the gas type being used within the range given in the table.
- 6. Set the boiler to low load.
- 7. Measure the percentage of O_2 in the flue gases.
- 8. Find the low load value range in the table that matches the measured full load value.

The low load range is shown in brackets directly next to the full load value.

- 9. Compare the measured value with the low load range in the table.
- 10. If the measured value is outside of the range given in the table, correct the O₂ percentage.
 - 10.1. Use the low load adjusting screw **B** to set the percentage of O₂ for the gas type being used within the range given in the table.
 - Turning the low load screw **B** clockwise (+) decreases O₂.
 - Turning the low load screw **B** anti-clockwise (-) increases O₂.
- 11. Check the flame through the inspection glass. The flame must not blow off.
- 12. Measure the CO value in the flue gases. If the CO level is above 400 ppm perform the following actions:

i Important

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

- 12.1. Make sure that the flue gas discharge system is installed correctly.
- 12.2. Make sure that boiler settings match with the gas type used.
- 12.3. Check the burner for damage and clean the burner.
- 12.4. Recheck the gas/air ratio setting.
- 12.5. Contact your supplier if the CO level is still above 400 ppm.

Danger

If the CO level is above 1000 ppm, switch off the boiler and contact your supplier.

7.3 Final instructions

- 1. Remove the measuring equipment.
- 2. Screw the cap on to the flue gas measuring point.
- 3. Seal the gas control valve.
- 4. Put the front panel back.
- 5. Heat up the central heating system 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.

Fig.105 Example filled-in sticker



- 10. Fill in the following data on the sticker included, and attach it next to the data plate on the appliance.
 - The gas type, if adapted to another gas;
 - The gas supply pressure;
 - The flue type, if set to overpressure application;
 - The parameters modified for the changes mentioned above;
 - Any fan speed parameters modified for other purposes.
- 11. Complete the commissioning form, which can be found in annex.
- 12. Optimise the settings as required for the system and user preferences.

See

- For more information; Settings, page 53 and User instructions, page 81.
- 13. Save the commissioning settings on the control panel, so they can be restored after a reset.
- 14. Instruct the user in the operation of the system, boiler and controller.
- 15. Inform the user of the maintenance to be performed.

The first letter is the category the code relates to.

Appliance: Appliance

Buffer: Hot water tank

- 16. Hand over all manuals to the user.
- 17. Confirm the commissioning with a signature and a company stamp. ⇒ The boiler is now ready for operation.

8 Settings

8.1 Introduction to parameter codes

Fig.106 Code on a HMI Advanced



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.107 First letter

CP010 AD-3001375-01

Α

R

0:.....

			 D Domestic hot water: Domestic hot water E External: External options G Gas fired: Gas-fired heat engine N Network: Cascade P Producer: Central heating Z Zone: Zone
			Category D codes are appliance controlled only. When the domestic hot water is controlled by an SCB, it is handled like a circuit, with C-category codes.
Fig.108	Second letter	CP010 AD-3001376-01	The second letter is the type. P Parameter: Parameters C Counter: Counters M Measurement: Signals
Fig.109	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 Accessing the installer level

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

Installer level Fig.110



Fig.111 Installer level



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

1. Access the installer level via the tile:

- 1.1. Select the tile [N].
- 1.2. Use code: 0012.
 - \Rightarrow The tile [*****] shows that the installer access is **On**, and the icon in the top right of the display changes into R.
- 2. Access the installer level via the menu:
 - 2.1. Select Enable installer access from the Main Menu.
 - 2.2. Use code: 0012.
 - ⇒ When the installer level is enabled or disabled, the status of the tile [#] changes into On or Off.

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

8.3 Searching the parameters, counters and signals

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

>> = > Installation Setup > Search datapoints

- Use the rotary knob to navigate. \odot Use the ✓ button to confirm your selection.
- 1. Press the ≔ button.
- 2. Select Installation Setup.
- 3. Select Search datapoints.
- 4. Select the search criteria (code):
 - 4.1. Select the first letter (datapoint category).
 - 4.2. Select the second letter (datapoint type).
 - 4.3. Select the first number.
 - 4.4. Select the second number.
 - 4.5. Select the third number.
- The * symbol can be used to indicate any character within the \odot search field.
- ⇒ The list of datapoints appears in the display. Only the first 30 results are shown when searching.
- 5. Select the desired datapoint.





8.4 Setting the fixed combinations

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

Fig.112 Search



Fig.113 List of datapoints

AM001 AM002



i

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

Fig.114 Setting the fixed combinations



A Enable or disable the function

- В List of relevant settings
- С Quick access to relevant parameters and signals

8.4.1 Activating cascade management

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

- = > Installation Setup > Cascade management B > Enabled > Enable master func > Yes
- Use the rotary knob to navigate. 6 Use the ✓ button to confirm your selection.



This function uses Multifunctional out 1.

1. Press the ≔ button.

Important

- 2. Select Installation Setup.
- 3. Select Cascade management B.
- 4. Select Toggle function.
- 5. Select Enabled.
- 6. Enable cascade manager functionality:
 - 6.1. Select Enable master func.
 - 6.2. Select Yes.

Only enable this functionality on the lead appliance. Verify the configuration for each appliance in the cascade system.

8.4.2 Activating DHW circulation

Activate DHW circulation by enabling the DHW circulation function.

► => Installation Setup > DHW Mix/Circulation > Enabled > DHW circulation > On



Use the rotary knob to navigate.

Use the ✓ button to confirm your selection.



This function uses Multifunctional out 1.

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

8.4.3 Activating DHW mixing

Activate DHW mixing by enabling the DHW tank mixing function.

► := > Installation Setup > DHW Mix/Circulation > Enabled > DHW tank mixing > On

Use the rotary knob to navigate. 6 Use the ✓ button to confirm your selection.



Important This function uses Multifunctional out 1.

- 1. Press the ≔ button.
- 2. Select Installation Setup.
- Select DHW Mix/Circulation.
- Select Toggle function.
- 5. Select Enabled.
- 6. Select DHW tank mixing.
- 7. Select On.

8.4.4 Activating DHW layered

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

Parameters > DHW load type > Layered cylinder



- Use the rotary knob to navigate. Use the ✓ button to confirm your selection.
- 1. Press the ≔ button.
- 2. Select Installation Setup.
- 3. Select 🕌.
- 4. Select Parameters, counters, signals.
- 5. Select Parameters.
- 6. Select DHW load type.
- 7. Select Layered cylinder.

8.4.5 Activating boiler room ventilation

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

≔ > Installation Setup > Boiler room ventilation > Enabled Use the rotary knob to navigate. 6 Use the ✓ button to confirm your selection. Important i This function uses Digital input 2 and Multifunctional out 2.

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

8.5 Setting the inputs and outputs

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



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

Fig.115 Setting the inputs and outputs

Setting the input

AD-300337-01

A Configure the function

B List of relevant settings

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

► := > Installation Setup > Digital input

- Use the rotary knob to navigate.
 - Use the \checkmark button to confirm your selection.
- 1. Press the ≔ button.
- 2. Select Installation Setup.
- 3. Select **Digital input 1** or **Digital input 2**. This menu lists all parameters for configuring the input.
- Input settings

Tab.43	Input settir	igs
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8.5.1

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

Setting	Description	Use
Release CH+DHW	Release CH+DHW	Release input: On/off contact to release the central heating and domestic hot water function. The release of the contact will activate the ap- pliance to produce heat for central heating and domestic hot water.
Relieve from CH	Relieve from CH demand.	Boiler relief signal: On/off contact to relieve the appliance for central heating. Use this when other appliances can also produce heat for central heating. When the appliance is relieved for a heat demand, the pump activates only the appliance will not produce heat.
Relieve from DHW	Relieve from DHW demand.	Boiler relief signal: On/off contact to relieve the appliance for domestic hot water. Use this when other appliances can also produce heat for do- mestic hot water. When the appliance is relieved for a heat demand, the pump activates only the appliance will not pro- duce heat.
Relieve CH+DHW	Relieve from CH+DHW demand.	Boiler relief signal: On/off contact to relieve the appliance for central heating and domestic hot water. Use this when other appliances can also produce heat for central heating and domestic hot water. When the appliance is relieved for a heat demand, the pump activates only the appliance will not produce heat.
Extern heat request	External heat request.	Heat demand signal: On/off contact to generate a heat demand from the appliance.

8.5.2 Setting the output

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

► := > Installation Setup > Multifunctional out



Use the rotary knob to navigate.

Use the \checkmark button to confirm your selection.

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

Tab.44 Output settings

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

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

8.6 List of parameters

8.6.1 CU-GH20 control unit parameters

All tables show the factory setting for the parameters.

i Important

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

Tab.45 Navigation for basic installer level

Level	Menu path
Basic installer	= > Installation Setup > CU-GH20 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General ⁽²⁾
(1) See the column "Se	ubmenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.
(2) The parameters ca	n also be accessed directly via the Search datapoints function: ≔ > Installation Setup > Search datapoints

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
AP016	CH function on	Enable central heating de- mand 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 Win- ter	Outdoor temperature; Upper limit for heating	10 – 30 °C	Outdoor tempera- ture	22	22	22	22
AP074	Force sum- mer mode	The heating is stopped, Hot water is maintained, Force summer mode	0 = Off 1 = On	Outdoor tempera- ture	0	0	0	0
AP083	Enable mas- ter func	Enable the master functionali- ty of this device on the S-Bus for system control	0 = No 1 = Yes	Mandato- ry bus master Producer Manager Cascade manage- ment B Cascade manage- ment B	0	0	0	0
AP089	Installer name	Name of the installer		Mandato- ry bus master	None	None	None	None

Tab.46Factory settings at basic installer level

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
AP090	Installer phone	Telephone number of the in- staller		Mandato- ry bus master	0	0	0	0
AP107	Color display Mk2	Color display Mk2	0 = White 1 = Red 2 = Blue 3 = Green 4 = Orange 5 = Yellow	Mandato- ry bus master	2	2	2	2
CP010	Tflow setpoint zone	Zone flow temperature set- point, used when the zone is set to a fixed flow setpoint.	0 – 90 °C	CIRCA	80	80	80	80
CP080 CP081 CP082 CP083 CP084 CP085	User T.Room Activity	Room setpoint temperature of the user zone activity	5 – 30 °C	CIRCA	16 20 6 21 22 20	16 20 6 21 22 20	16 20 6 21 22 20	16 20 6 21 22 20
CP200	Manu ZoneR- oomTempSet	Manually setting the room temperature setpoint of the zone	5 – 30 °C	CIRCA	20	20	20	20
CP320	OperatingZo- neMode	Operating mode of the zone	0 = Scheduling 1 = Manual 2 = Off	CIRCA	1	1	1	1
CP510	Temporary Room Setp	Temporary room setpoint per zone	5 – 30 °C	CIRCA	20	20	20	20
CP550	Zone, fire place	Fire Place mode is active	0 = Off 1 = On	CIRCA	0	0	0	0
CP660	Icon display zone	Choice icon to display this zone	0 = None 1 = All 2 = Bedroom 3 = Livingroom 4 = Study 5 = Outdoor 6 = Kitchen 7 = Basement	CIRCA	0	0	0	0
DP060	DHW time- prog select	Time program selected for DHW.	0 = Schedule 1 1 = Schedule 2 2 = Schedule 3	Internal DHW	0	0	0	0
DP070	DHW comfort setpoint	Comfort temperature setpoint for the Domestic Hot Water tank	40 – 65 °C	Internal DHW	60	60	60	60
DP080	DHW eco set- point	Eco friendly temperature set- point from the Domestic Hot Water tank	10 – 60 °C	Internal DHW	10	10	10	10
DP200	DHW mode	DHW primary mode current working setting	0 = Scheduling 1 = Manual 2 = Off	Internal DHW	1	1	1	1
DP337	DHW holiday setpoint	Holiday temperature setpoint from the Domestic Hot Water tank	10 – 60 °C	Internal DHW	10	10	10	10
DP410	DHW anti-leg runtime	Duration of the DHW anti-le- gionella program	5 – 60 Min	Internal DHW Tank DHW	10	10	10	10
DP455	DHW charge pump post	The post operating time of the DHW charge pump	0 – 99 Sec	Tank DHW	15	15	15	15

Tab.47 Navigation for installer level

Level	Menu path		
Installer	≔ > Installation Setup > CU-GH20 > Submenu ⁽¹⁾ > Parameters, counters, signals > Parameters > General ⁽²⁾		
(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.			

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
AP006	Min water pressure	The appliance will report low water pressure below this value	0.8 – 6 bar	Gas fired appliance	1	1	1	1
AP009	Service hours	Number of heat generator op- erating hours before raising a service notification	0 – 51000 Hours	Gas fired appliance	6000	6000	6000	6000
AP010	Service notifi- cation	Select the type of service noti- fication	0 = None 1 = Custom notifica- tion 2 = ABC notification	Gas fired appliance	2	2	2	2
AP011	Service hours mains	Hours powered to raise a service notification	0 – 51000 Hours	Gas fired appliance	35000	35000	35000	35000
AP063	Max CH flow setpoint	Maximum central heating flow temperature setpoint	20 – 90 °C	Producer Generic Gas fired appliance	90	90	90	90
AP079	Building Iner- tia	Inertia of the building used for heat up speed	0 – 15	Outdoor tempera- ture	3	3	3	3
AP080	Frost min out temp	Outdoor temperature below which the antifreeze protec- tion is activated	-60 – 25 °C	Outdoor tempera- ture	-10	-10	-10	-10
AP082	Enable day- light save	Enable daylight saving for the system to save energy during winter	0 = Off 1 = On	Mandato- ry bus master	0	0	0	0
AP091	Outdoor sens source	Type of outdoor sensor con- nection to be used	0 = Auto 1 = Wired sensor 2 = Wireless sensor 3 = Internet measured 4 = None	Outdoor tempera- ture	0	0	0	0
AP178	Pump output profile	Output profile of the 0-10V/PWM pump	0 = 0-10V 1 (Wilo) $1 = 0-10V 2 (Gr$ $GENI)$ $2 = PWM signal (So-lar)$ $3 = 0-10V 1 limited$ $4 = 0-10V 2 limited$ $5 = PWM signal limi-ted$ $6 = PWM signal$ $(UPMXL)$	Pump Configu- ration	0	0	0	0
CP000	MaxZoneT- FlowSetpoint	Maximum Flow Temperature setpoint zone	0 – 90 °C	CIRCA	80	80	80	80
CP020	Zone Function	Functionality of the zone	0 = Disable 1 = Direct	CIRCA	1	1	1	1
CP060	Room T holi- day	Wished room zone tempera- ture on holiday period	5 – 20 °C	CIRCA	6	6	6	6

Tab.48 Factory settings at installer level

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
CP070	MaxReduce- dRoomT.Lim	Max Room Temperature limit of the circuit in reduced mode, that allows switching to com- fort mode	5 – 30 °C	CIRCA	16	16	16	16
CP210	Zone HCZP Comfort	Comfort footpoint of the tem- perature of heat curve of the circuit	15 – 90 °C	CIRCA	15	15	15	15
CP220	Zone HCZP Reduced	Reduced footpoint of the tem- perature of heat curve of the circuit	15 – 90 °C	CIRCA	15	15	15	15
CP230	Zone Heating Curve	Heating curve temperature gradient of the zone	ating curve temperature 0 – 4 C adient of the zone		1.5	1.5	1.5	1.5
CP340	TypeRedu- cedNight- Mode	Type of reduced night mode, stop or maintain heating of cir- cuit	0 = Stop heat demand 1 = Continue heat de- mand	CIRCA	1	1	1	1
CP570	ZoneTime- Prog Select	Time Program of the zone se- lected by the user	1e Program of the zone se- ted by the user0 = Schedule 1 1 = Schedule 2 2 = Schedule 3CIRC		0	0	0	0
CP730	Zone Heat up speed	Selection of heat up speed of the zone	0 = Extra Slow 1 = Slowest 2 = Slower 3 = Normal 4 = Faster 5 = Fastest	CIRCA	3	3	3	3
CP740	Zone cool down speed	Selection of cool down speed of the zone	0 = Slowest 1 = Slower 2 = Normal 3 = Faster 4 = Fastest	CIRCA	2	2	2	2
CP750	MaxZone Pre- heat time	Maximum zone preheat time	0 – 240 Min	CIRCA	0	0	0	0
CP780	Control strat- egy	Selection of the control strat- egy for the zone	0 = Automatic 1 = Room temp based 2 = Outdoor temp based 3 = Outdoor & room based	CIRCA	0	0	0	0
DP004	Anti-legionella	Anti-legionella protection of the calorifier	0 = Disabled 1 = Weekly 2 = Daily	Internal DHW Tank DHW	0	0	0	0
DP024	Mix anti-leg mode	DHW mixing pump anti- le- gionella mode	0 = Off 1 = During charging 2 = Charging + disin- fect	DHW mix- ing DHW Mix/ Circula- tion	0	0	0	0
DP025	DHW mixing pump	DHW mixing pump enable	0 = Off 1 = On	DHW mix- ing DHW Mix/ Circula- tion	0	0	0	0
DP026	Delta DHW tank temp	Maximum temperature differ- ence between the top and bottom of the DHW tank	0 – 100 °C	DHW mix- ing DHW Mix/ Circula- tion	6	6	6	6
DP034	DhwCalorifier- Offset	Offset for calorifier sensor	0 – 10 °C	Tank DHW	0	0	0	0

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
DP044	Min DHW tank temp	Minimum bottom temperature DHW tank	0 – 120 °C	DHW mix- ing DHW Mix/ Circula- tion	70	70	70	70
DP045	Mix pump hysteresis	DHW mixing pump hysteresis temperature	0 – 20 °C	DHW mix- ing DHW Mix/ Circula- tion	2	2	2	2
DP049	DHW tank mixing	Enable/disable domestical hot water tank mixing	0 = Off 1 = On	DHW mix- ing DHW Mix/ Circula- tion	0	0	0	0
DP050	Circulation mode	DHW circulation pump mode selection	0 = Pump is off 1 = Pump on time pro- gram 2 = Pump for DHW comfort	DHW cir- culation DHW Mix/ Circula- tion	0	0	0	0
DP052	Circ pump on time	DHW circulation pump cyclic ON time	0 – 20 Min	DHW cir- culation DHW Mix/ Circula- tion	0	0	0	0
DP053	Circ pump off time	DHW circulation pump cyclic OFF time	0 – 20 Min	DHW cir- culation DHW Mix/ Circula- tion	0	0	0	0
DP054	Circ pump an- ti leg	DHW circulation pump anti le- gionella	0 = Off 1 = On	DHW cir- culation DHW Mix/ Circula- tion	0	0	0	0
DP055	DHW TAS protection	Enable/disable the TAS pro- tection of the DHW tank	0 = No 1 = Yes	Tank DHW	1	1	1	1
DP057	Circulation Toffset	DHW circulation offset tem- perature	0 – 20 °C	DHW cir- culation DHW Mix/ Circula- tion	0	0	0	0
DP150	DHW Ther- mostat	Enable DHW Thermostat function	0 = Off 1 = On	Tank DHW	1	1	1	1
DP160	DHW AntiLeg Setpoint	Setpoint for DHW anti legion- ella	60 – 80 °C	Internal DHW Tank DHW	65	65	65	65
DP336	DHW pump hysteresis	DHW circulation pump hyste- resis temperature	1 – 60 °C	DHW cir- culation DHW Mix/ Circula- tion	6	6	6	6
DP430	Start day anti- leg	Day to start the DHW anti-le- gionella program	1 = Monday 2 = Tuesday 3 = Wednesday 4 = Thursday 5 = Friday 6 = Saturday 7 = Sunday	Internal DHW Tank DHW	6	6	6	6

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
DP440	Start time an- ti-leg	Starting time for the DHW an- ti-legionella program	0 – 143 HoursMinutes	Internal DHW Tank DHW	18	18	18	18
DP450	DHW circula- tion	DHW circulation zone enabled	0 = Off 1 = On	DHW cir- culation DHW Mix/ Circula- tion	0	0	0	0
DP452	DHW priority	Selects the DHW priority	0 = Total 1 = Relative 2 = None	Tank DHW	0	0	0	0
DP473	Circulation Tsensor	DHW circulation temperature sensor connected	0 = No 1 = Yes	DHW cir- culation DHW Mix/ Circula- tion	1	1	1	1
EP014	SCB func 10V PWMin	Smart Control Board function 10 Volt PWM input	0 = Off 1 = Temperature con- trol 2 = Power control	0-10 volt input	0	0	0	0
EP030	Min Setp Temp 0-10V	Sets the minimum set point temperature for 0 - 10 volts for the Smart Control Board	0 – 100 °C	0-10 volt input	0	0	0	0
EP031	Max Setp Temp 0-10V	Sets the maximum set point temperature for 0 - 10 volts for the Smart Control Board	0.5 – 100 °C	0-10 volt input	100	100	100	100
EP032	Min Setp Power 0-10V	Sets the minimum set point power for 0 - 10 volts for the Smart Control Board	0 – 100 %	0-10 volt input	0	0	0	0
EP033	Max Setp Power 0-10V	Sets the maximum set point power for 0 - 10 volts	5 – 100 %	0-10 volt input	100	100	100	100
EP034	Min Setp Volt 0-10V	Sets the minimum set point voltage for 0 - 10 volts for the Smart Control Board	0.5 – 10 V	0-10 volt input	0.5	0.5	0.5	0.5
EP035	Max Setp Volt 0-10V	Sets the maximum set point voltage for 0 - 10 volts	0 – 10 V	0-10 volt input	10	10	10	10
GP094	Chimney sweep power	Custom power setpoint for the chimney sweep mode	0 – 100 %	Gas fired appliance	50	50	50	50
NP005	Cascade Per- mutation	Choice of the leading genera- tor, Default = Switching of or- der every 7 days	0 – 127	Cascade manage- ment B Cascade manage- ment B	0	0	0	0
NP006	Cascade Type	Cascading boilers by adding successively or in parallel, the boilers function simultaneous- ly	0 = Traditional 1 = Parallel	Cascade manage- ment B Cascade manage- ment B	0	0	0	0
NP007	CascTOut- doorHeatParl	Outdoor start temperature heating of all stages in parallel mode	-10 – 20 °C	Cascade manage- ment B Cascade manage- ment B	10	10	10	10

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
NP008	CascPrim- PumpPos- tRun	Duration of post operation of the cascade primary circula- tion pump	0 – 30 Min	Cascade manage- ment B Cascade manage- ment B	4	4	4	4
NP009	CascInterSta- geTime	Switch on and switch off tim- ing for the producer of the cascade	1 – 60 Min	Cascade manage- ment B Cascade manage- ment B	10	10	10	10
NP010	CascTOut- doorCoolPara	Outdoor start temperature cooling of all stages in parallel mode	10 – 40 °C	Cascade manage- ment B Cascade manage- ment B	30	30	30	30
NP011	Cascade al- gorithm	Type of cascade management which is requested.	0 = Temperature 1 = Power	Cascade manage- ment B Cascade manage- ment B	0	0	0	0
NP012	CascPowerRi- seTime	Cascade, Time to reach Temperature Septoint	1 – 10	Cascade manage- ment B Cascade manage- ment B	1	1	1	1
NP013	CascForce- Stop Pprim	Force Primary Pump to Stop on cascade	0 = No 1 = Yes	Cascade manage- ment B Cascade manage- ment B	0	0	0	0
NP014	Cascade Mode	Functionnement mode of cas- cade; Automatic, heating or cooling	0 = Automatic 1 = Heating 2 = Cooling	Cascade manage- ment B Cascade manage- ment B	0	0	0	0
PP015	CH Pump postrun time	Central heating pump postrun time	0 – 99 Min	Gas fired appliance	2	2	2	2

Tab.49 Navigation for advanced installer level

Level	Menu path					
Advanced installer	= > Installation Setup > CU-GH20 > Submenu (1) > Parameters, counters, signals > Parameters > Advanced (2)					
(1) See the column "Se	(1) See the column "Submenu" in the following table for the correct navigation. The parameters are grouped in specific functionalities.					
(2) The parameters ca	(2) The parameters can also be accessed directly via the Search datapoints function: == > Installation Setup > Search datapoints					

Tab.50 Factory settings at advanced installer level

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
AP002	Manual Heat Demand	Enable manual heat demand function	0 = Off 1 = With setpoint	Gas fired appliance	0	0	0	0
AP004	Hydr valve wait time	Heat generator wait time to open the hydraulic valve	0 – 255 Sec	Gas fired appliance	1	1	1	1

Code	Display text	Description Adjustment range Subn		Submenu	90	110	130	150
AP026	Setpoint man- ual HD	Flow temperature setpoint for manual heat demand	10 – 90 °C	Gas fired appliance	40	40	40	40
AP056	Outdoor sen- sor	Enable outdoor sensor	0 = No outdoor sensor 1 = AF60 2 = QAC34	Outdoor tempera- ture	0	0	0	0
AP101	Deaeration program	Deaeration program settings	0 = No deair at power up 1 = Always deair at pwr 2 = Deair only at 1 pwr	Deaera- tion con- trol	2	2	2	2
AP102	Appliance pump funct	Configuration of the appliance pump as zone pump or sys- tem pump (feed lowloss head- er)	0 = No 1 = Yes	Gas fired appliance	0	0	0	0
AP173	Pump control	Pump control signal/comms types	0 = LIN pump 1 = PWM pump 2 = PWM/0-10V pro- files 3 = On/Off pump con- trol	Pump Configu- ration	1	1	1	1
AP200	Temperature setpoint	Temperature setpoint reques- ted when the input is active	7 – 100 °C	Multifunc- tional in	90	90	90	90
AP201	Temperature setpoint	Temperature setpoint reques- ted when the input is active	7 – 100 °C	Multifunc- tional in	90	90	90	90
CP240	ZoneRoomU- nitInfl	Adjustment of the influence of the zone room unit	0 – 10	CIRCA	3	3	3	3
CP250	Calibration sensor	Adjust the measured room temperature	-5 – 5 °C	CIRCA	0	0	0	0
CP450	Pump type	The connected pump type	0 = On/Off 1 = Modulating PWM 2 = Modulating LIN	CIRCA	1	1	1	1
CP770	Zone Buffered	The zone is after a Buffer tank	0 = No 1 = Yes	CIRCA	0	0	0	0
CP850	Hydronic bal- ancing	Hydronic balancing operation possible	0 = No 1 = Yes	CIRCA	0	0	0	0
DP003	Abs max fan DHW	Maximum fan speed on Do- mestic Hot Water	1000 – 6900 Rpm	Gas fired appliance GVC Ge- neric	6500	6800	5800	6900
DP005	Calorifier Tf offset	Flow setpoint offset for load- ing calorifier	0 – 30 °C	Tank DHW	15	15	15	15
DP006	Hyst calorifier	Hysteresis to start heating cal- orifier	2 – 15 °C	Tank DHW	6	6	6	6
DP007	Dhw 3wv Standby	Position of three way valve during standby	0 = CH position 1 = DHW position	Tank DHW	0	0	0	0
DP020	Postrun DHW pump/3wv	Post run time of the DHW pump/3 way valve after DHW production	0 – 99 Sec	Gas fired appliance	15	15	15	15
DP035	Start pump DHW calo	Start pump for Domestic Hot Water calorifier	-20 – 20 °C	Tank DHW	-3	-3	-3	-3
DP046	DhwMax- Temp	Maximum Domestic Hot Wa- ter temperature	0 – 95 °C	Tank DHW	90	90	90	90
DP140	DHW load type	DHW load type (0 = Combi, 1 = Solo)	1 = Solo	Internal DHW Tank DHW Gas fired appliance	1	1	1	1

Code	Display text	olay text Description Adjustm		Submenu	90	110	130	150
DP474	DHW cylinder as zone	Domestic hot water cylinder connected as zone	0 = No 1 = Yes	Tank DHW	0	0	0	0
DP480	Pump on when DHW	Turn the pump on immediate- ly for DHW heat demand	0 = No 1 = Yes	Tank DHW	1	1	1	1
GP007	Fan RPM Max CH	Maximum fan speed during Central Heating mode	1400 – 7000 Rpm	Gas fired appliance GVC Ge- neric	6500	6900	5800	6900
GP008	Fan RPM Min	Minimum fan speed during Central Heating + Domestic Hot Water mode	1250 – 4000 Rpm	Gas fired appliance GVC Ge- neric	2050	2050	1700	1800
GP009	Fan RPM Start	Fan speed at appliance start	1000 – 4000 Rpm	Gas fired appliance GVC Ge- neric	2400	2500	2500	2500
GP010	GPS Check	Gas Pressure Switch check on/off	0 = No 1 = Yes	Gas fired appliance	0	0	0	0
GP017	Max power	Maximum power percentage in kilo Watt	0 – 260 kW	Gas fired appliance	94.8	106.6	152.8	145.2
GP021	Temp diff Modulating	Modulate back when delta temperature is larger than this threshold	10 – 40 °C	Gas fired appliance	35	35	35	30
GP022	Tfa Filter Tau	Tau factor for average flow temperature calculation	0 – 255	Gas fired appliance	0	0	0	0
GP038	Flow test gra- dient	Gradient used for circulation test	0 – 30 °C	Circula- tion test	1	1	1	1
GP039	Flow test du- ration	Duration of the circulation test	0 – 25 Sec	Circula- tion test	15	15	12	12
GP040	Deair grad check en	Enable deaeration gradient	0 – 240 Sec	Circula- tion test	120	120	120	120
GP042	Fan RPM Max	Maximum fan speed	0 – 65535 Rpm	GVC Ge- neric	7000	7000	7000	7000
GP050	Power min	Minimum power in kilo Watt for RT2012 calculation	0 – 80 kW	Gas fired appliance	9.7	10.9	13.9	16.3
GP082	Chimney over DHW	Enable the DHW circuit during chimney sweep	0 = Off 1 = On	Gas fired appliance	0	0	0	0
NP001	CascProdMan Hys.High	Hysterese high for Producer Manager	0.5 – 10 °C	Cascade manage- ment B Cascade manage- ment B	3	3	3	3
NP002	CascProdMan Hys.Low	Hysterese low for Producer Manager	0.5 – 10 °C	Cascade manage- ment B Cascade manage- ment B	3	3	3	3
NP003	CascProdMa- nErrRange	Maximum error gain for Pro- ducer Manager	0 – 10 °C	Cascade manage- ment B Cascade manage- ment B	10	10	10	10

Code	Display text	Description	Adjustment range	Submenu	90	110	130	150
NP004	CascPFactor- AlgoTemp	Proportional Factor for cas- cade with Temperature algo- rithm	0 – 10	Cascade manage- ment B Cascade manage- ment B	1	1	1	1
PP014	ChPumpD- TReduction	Reduction of temperature del- ta modulating for pump modu- lation	0 – 40 °C	Gas fired appliance	7	7	7	7
PP016	Max CH pump speed	Maximum central heating pump speed (%)	55 – 100 %	Gas fired appliance	100	100	100	100
PP017	ChPump- SpeedMax- Factor	Maximum central heating at minimum load as percentage of max pump speed	0 – 100 %	Gas fired appliance	55	55	55	55
PP018	Min CH pump speed	Minimum central heating pump speed (%)	45 – 100 %	Gas fired appliance	55	55	45	55
PP023	CH Hysteresis	Temperature hysteresis for the generator to start on cen- tral heating	1 – 10 °C	Gas fired appliance	10	10	10	10

9 Maintenance

9.1 Maintenance regulations

Danger of electric shock

Make sure that the boiler is switched off before starting any maintenance work.

Caution

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

Notice

During inspection and maintenance work:

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

i Important

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

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

9.2 Maintenance message

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



| Important

Maintenance messages must be followed up within 2 months.



9.3 Opening the boiler



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

9.4 Access to the boiler components



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

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

9.5 Standard inspection and maintenance operations

9.5.1 Preparation

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

- 1. Set the boiler to full load until the return temperature is around 65 °C, to dry the heat exchanger on the flue gas side.
- Check the water pressure. The minimum water pressure is 0.8 bar. The recommended water pressure is between 1.0 bar and 1.5 bar.
 If necessary, top up the central heating system.
- Check the ionisation current at full load and at low load.
- The value is stable after 1 minute.
 - 3.1. If the value is lower than 4 $\mu A,$ clean or replace the ionisation and ignition electrode.
- Check the condition and tightness of the flue gas outlet and air supply system.

Fig.118

 Check the combustion by measuring the O₂ percentage in the flue gasses.

9.5.2 Checking the air pressure differential switch

Positive (+) side of the air pressure

(5)

differential switch

- 1. Switch off the boiler.
- 2. Remove any dirt from all the connection points for hoses and the air pressure differential switch.
- Check the condition and tightness of the hoses of the air pressure differential switch.
 - ⇒ Replace the hoses if necessary.
- 4. Disconnect the silicon hose from the + side of the air pressure differential switch.
- 5. Connect a syringe hose to the + side of the air pressure differential switch.
- 6. Take a T piece and connect it as follows:
 - 6.1. Connect one end of the T piece to the hose from the + side of the air pressure differential switch.
 - 6.2. Connect one end of the T piece to a large plastic syringe.
 - 6.3. Connect the other end of the T piece to a pressure gauge.
- 7. Switch on the boiler.
- 8. Push the syringe in very slowly until error code **E.04.08** appears on the display.
- 9. Check the pressure indicated by the pressure gauge at that point. This is the switch pressure.
 - A switch pressure between 5.0 and 6.0 mbar is good. A lower or higher switch pressure indicates a problem with the air pressure differential switch.
- 10. Remove the syringe hose from the + side of the air pressure differential switch and reconnect the original hose.

9.5.3 Checking the water quality

 $\mathbf{6}$

(9)

Caution

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

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



Open heat exchanger drain valve

710-0000170-02

8

AD-3003162-02



Fig.119

9.5.4 Cleaning the trap sump



Fig.120 Cleaning the trap sump



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

- 1. Unscrew the compression nut and remove the trap sump.
- 2. Clean the trap sump with water.
- 3. Fill the trap sump to the top with water.
- 4. Fit the trap sump.
- 5. Check for leaks.

10 Troubleshooting

10.1 **Error codes**

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

Tab.51 Error codes are displayed at three different levels

>(5)

AD-3003165-01

Code	Туре	Description					
A .00.00 ⁽¹⁾	Warning	The controls continue to operate, but the cause of the warning must be investigated. A warning can change into a blocking or lock-out.					
H .00.00 ⁽¹⁾	Blocking	The controls will stop normal operation, and will check with set intervals if the cause of the blocking still exists. ⁽²⁾ Normal operation will resume when the cause of the blocking has been rectified. A blocking can become a lock-out.					
E .00.00 ⁽¹⁾	Lock out	The controls will stop normal operation. The cause of the lock-out must be rectified and the controls must be reset manually.					
(1) The firs(2) For sorWait te	 (1) The first letter indicates the type of error. (2) For some blocking errors, this checking interval is ten minutes. In those cases, it may seem that the controls do not start automatically. Wait ten minutes before resetting. 						

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



Important

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

10.1.1 Display of error codes

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

Fig.121 Error code display on HMI Advanced



- 1 The display will show a corresponding code and message.
- 2 The status LED of the control panel will show:
 - Continuous green = Normal operation
 - Flashing green = Warning
 - Continuous red = Blocking
 - Flashing red = Lock out

When an error occurs, proceed as follows:

1. Press and hold the \checkmark button to reset the appliance.

i Important

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

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



Important

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

- ⇒ The error code remains visible until the problem is solved.
- 3. Note the error code when the problem cannot be resolved.
- 4. Contact your installer or BAXI for support.

10.1.2 Warning

Tab.52 Warning codes

Code	Display text	Description	Solution
A.00.34	TOutdoor Missing	Outdoor temperature sensor was expected but not detected	 Outdoor sensor not detected: Outdoor sensor is not connected: Connect the sensor Outdoor sensor is not connected correctly: Connect the sensor correctly
A.00.40	WaterPressureOpen	Water pressure sensor is either re- moved or measures a temperature below range	-
A.01.23	Poor Combustion	Poor combustion	Configuration error: No flame during operation:
			 No ionisation current: Purge the gas supply to remove air. Check whether the gas tap is properly open. Checking the gas supply pressure. Check the operation and setting of the gas valve unit. Check that the air inlet and flue gas discharge flues are not blocked. Check that there is no recirculation of flue gases.
A.02.06	Water Press Warning	Water Pressure Warning active	Water pressure warning:
			 Water pressure too low; check the water pres- sure
A.02.18	OBD Error	Object Dictionary Error	Configuration error:
			Reset CN1 and CN2 See The data plate for the CN1 and CN2 values.
Code	Display text	Description	Solution
---------	----------------------	-------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------
A.02.36	Funct device lost	Functional device has been discon- nected	 SCB not found: Bad connection: check the wiring and connectors Faulty SCB: Replace SCB
A.02.37	Uncritic device lost	Uncritical device has been discon- nected	 SCB not found: Bad connection: check the wiring and connectors Faulty SCB: Replace SCB
A.02.45	Full Can Conn Matrix	Full Can Connection Matrix	SCB not found: • Carry out an auto-detect
A.02.46	Full Can Device Adm	Full Can Device Administration	SCB not found: • Carry out an auto-detect
A.02.49	Failed Init Node	Failed Initialising Node	SCB not found: • Carry out an auto-detect
A.02.55	Inval or miss SerNR	Invalid or missing device serial num- ber	Contact your supplier.
A.02.69	Fair mode active	Fair mode active	Contact your supplier.
A.02.76	Memory full	The reserved space in memory for	Configuration error:
		custom parameters value is full. No more user changed possible	 Reset CN1 and CN2 Faulty CSU: Replace CSU Replace the CU-GH
A.02.80	Missing Cascade Ctrl	Missing Cascade controller	Cascade controller not found: • Reconnect the cascade master • Carry out an auto-detect
A.08.06	LIN pump 1 warning	LIN pump 1 warning operating on limited conditions	-

10.1.3 Blocking

Tab.53 Blocking codes

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

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

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

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

10.1.4 Locking

Tab.54 Locking codes

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

Code	Display text	Description	Solution
E.00.09	THeat Ex Closed	Heat exchanger temperature sensor is either shorted or measures a tem-	Heat exchanger temperature sensor short-circuit- ed:
		perature above range	Bad connection: check the wiring and connec-
			tors.
			 Incorrectly fitted
			 Faulty sensor: replace the sensor.
E.00.16	DHW sensor Open	Domestic Hot Water tank tempera-	Calorifier sensor open:
	•	ture sensor is either removed or	Bad connection: check the wiring and connect
		measures a temperature below	tors
		range	 Faulty sensor: replace the sensor
E.00.17	DHW sensor Closed	Domestic Hot Water tank tempera-	Calorifier sensor short-circuited:
		ture sensor is either shorted or	Bad connection: check the wiring and connec-
		rance	tors
			Faulty sensor: replace the sensor
E.00.18	DHW sensor Missing	Domestic Hot Water tank tempera- ture sensor was expected but not detected	-
E.00.20	TFlue Gas Open	Flue gas temperature sensor is ei-	Open circuit in flue gas sensor:
		ther removed or measures a temper-	Bad connection: check the wiring and connec-
		ature below range	tors.
			 Incorrectly fitted sensor: check that the sensor
			Faulty sensor: replace the sensor
E.00.21	TFlue Gas Closed	Flue gas temperature sensor is ei-	Flue gas sensor short-circuited:
		ther shorted or measures a tempera-	Bad connection: check the wiring and connec-
		ture above range	tors.
			Incorrectly fitted sensor: check that the sensor
			has been correctly fitted.
E 01 04	Ex Elama Laga Error	Ex Error of unintended Eleme Less	Faulty sensor. replace the sensor.
E.01.04		occurance	Vent the area complete assesses air
			 Vent the gas supply to remove air Check that the gas valve is fully opened
			Check the gas supply pressure
			Check the operation and setting of the gas
			valve unit
			Check that the air supply inlet and flue gas out- let are not blocked
			Check that there is no recirculation of flue
			gases
E.01.11	Fan Out Of Range	Fan speed has exceeded normal op-	Fan fault:
		erating range	Bad connection: check the wiring and connec-
			tors.
			 Faulty fan: replace the fan Fan operates when it should not be operating:
			check for excessive chimney draught
E.01.12	Return Higher Flow	Return temperature has a higher	Flow and return reversed:
		temperature value than the flow tem-	Bad connection: check the wiring and connec-
			tors
			• Water circulation in wrong direction: check the
			Incorrectly fitted sensor: check that the sensor
			has been correctly fitted
			Malfunctioning sensor: check the Ohmic value
			of the sensor • Faulty sensor: replace the sensor
			- I auity school. Icplace the selisur

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

Code	Display text	Description	Solution
E.04.06	Max Flue temp	Measured flue temperature above limit	-
E.04.07	TFlow Sensor	Deviation in flow sensor 1 and flow sensor 2 detected	Flow temperature sensor deviation: • Bad connection: check the connection
F 04 08	Safety input	Safety input is open	Faulty sensor, replace the sensor Air pressure differential switch activated:
			 Bad connection: check the wiring and connectors Pressure in flue gas duct is or was too high: Non-return valve does not open Trap blocked or empty Check that the air supply inlet and flue gas outlet are not blocked Check the cleanliness of the heat exchanger
E.04.09	TFlue Sensor	Deviation in flue sensor 1 and flue sensor 2 detected	Flue gas temperature sensor deviation:Bad connection: check the connection
F.04.10	Unsuccessful start	5 Unsuccessful burners starts detec-	Faulty sensor: replace the sensor Five failed burner starts:
		ted	 No ignition spark: Check the wiring between the CU-GH and the ignition transformer Check the ionisation/ignition electrode Check the condition of the burner cover Check the earthing Replace the CU-GH Ignition spark but no flame: Vent the gas pipes to remove air Check that the air supply inlet and flue gas outlet are not blocked Check the operation and setting of the gas valve unit Check the wiring on the gas valve unit Replace the CU-GH Flame present, but ionisation has failed or is inadequate: Check that the gas valve is fully opened Check the the gas valve is fully opened Check the the gas valve is fully opened
E.04.12	False flame	False flame detected before burner start	 False flame signal: The burner remains very hot: Set the O₂ Ionisation current measured but no flame should be present: check the ionisation/ignition electrode Faulty gas valve: replace the gas valve Faulty ignition transformer: replace the ignition transformer
E.04.13	Fan	Fan speed has exceeded normal op- erating range	 Fan fault: Bad connection: check the wiring and connectors. Fan operates when it should not be operating: check for excessive chimney draught Faulty fan: replace the fan

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

10.2 Error history

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

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

These details and others can contribute to the error solution.

10.2.1 Reading out and clearing the error history

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

► := > Error History



Use the rotary knob to navigate.

Use the \checkmark button to confirm your selection.

- 1. Press the ≔ button.
- 2. Select Error History.

Enable installer access if Error History is not available.

- 2.1. Select Enable installer access.
- 2.2. Use code 0012.
- ⇒ A list up to 32 most recent errors is displayed with:
 - The error code.
 - A short description.
 - The date.
- 3. Select the error code you want to investigate.
 - ⇒ The display shows an explanation of the error code and several details of the appliance when the error occurred.
- 4. To clear the error memory, press and hold the \checkmark button.

Fig.122	Error details
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11 User instructions

11.1 Start-up

Start up the boiler as follows:

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

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

11.2 Accessing the user level menus

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

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





Fig.124 Confirm menu selection



- 2. Press the ✓ button to confirm the selection.
 - ⇒ The available settings of this selected menu appear in the display.
- 3. Use the rotary knob to select the desired setting.
- 4. Press the \checkmark 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 \checkmark button to confirm the selection.
- 7. Use the rotary knob to select the next setting or press the **b** button to return to the home screen.

11.3 Home screen

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

Tile	Menu	Function
1	Information menu	Read out various current values.
\mathbf{X}	Error indicator	Read out details about the current error.
		With some errors the $\P_{\mathcal{E}}^{\mathcal{L}}$ 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.
企 , 餘, 兪,	Operating mode	Change whether your appliance is set to heating, or both, or is turned off.
	Gas boiler indicator	Read out burning details of the boiler and switch the heating function of the boiler on or off.
F bar	Water pressure indicator	Shows the water pressure. Top-up the installation when the water pressure is too low.

Tab.55 Selectable tiles for the user

Tile	Menu	Function	
16 , 1 ,	Zone setup	Configure the settings per heating circuit.	
⊨ , ¥π,			
6 , 1111,			
۲			
-	DHW setup	Configure the settings for domestic hot water.	
क [₿]	Outdoor sensor setup	Configure the temperature regulation using the outdoor temperature sensor.	
đ	Cascade settings	Configure the settings for the cascade.	

11.4 Activating holiday programs for all zones

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

Use the rotary knob to navigate.

Use the ✓ button to confirm your selection.

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

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

11.5 Heating circuit configuration

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

Tab.56	Menu to configure heating circuit	

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

Tab.57 Extended menu to configure a heating circuit Zone configuration

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

. - -

. .

11.6 Changing the heating temperature of a zone

11.6.1 Definition of zone



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

Multiple zones are only possible with an expansion PCB.

Tab.58 Example of two zones

	Zone	Factory name
1	Zone 1	CIRCA
2	Zone 2	CIRCB

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11.6.2 Changing the name and symbol of a zone

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

Select zone > Zone configuration > Zone friendly Name or Icon display zone

Installer access enabled: Select zone > Zone friendly Name or Icon display zone

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

1. Select the tile of the zone you want to change.

2. Select Zone configuration



- 3. Select Zone friendly Name
 - ⇒ A keyboard with letters, numbers and symbols (characters) is shown.
- 4. Change the name of the zone (20 characters maximum):
 - 4.1. Use the top row to change between capitalisation, numbers, symbols or special characters.
 - 4.2. Select a character or action.
 - 4.3. Select \leftarrow to delete a character.
 - 4.4. Select **u** to add a space.

Fig.126 Letter selection



Fig.127 Finish changing the zone name



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

11.6.3 Changing the operating mode of a zone

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

- Select zone > **Operating mode**
- We the rotary knob to navigate.
 Use the ✓ button to confirm your selection.
- 1. Select the tile of the zone you want to change.
- 2. Select Operating mode.
- 3. Select the desired operating mode:

Tab.59	Operating	modes
--------	-----------	-------

lcon	Mode	Description
tr ès	Scheduling	The room temperature is controlled by a time program
6	Manual	The room temperature is set to a fixed setting
1 0	Short temperature change	The room temperature is changed temporarily
	Holiday	The room temperature is reduced during your holiday to save energy
A	Off	Protect the boiler and installation from freezing in winter

11.6.4 Time program to control the zone temperature

Creating a time program

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

Select zone > **Time programs heating**

- Use the rotary knob to navigate.
 - Use the 🗸 button to confirm your selection.
- 1. Select the tile of the zone you want to change.
- 2. Select Time programs heating.
- 3. Select the time program you want to modify: Schedule 1, Schedule 2 or Schedule 3.
 - ⇒ Activities scheduled for Monday are displayed. The last scheduled activity of a day is active until the first activity of the next day. At initial start-up, all weekdays have two standard activities; Home starting at 6:00 and Sleep starting at 22:00.



- 4. Select the weekday you want to modify.
 - A Weekday
 - B Overview of scheduled activities
 - C List of actions
- 5. Choose one of the following actions:
 - 5.1. Select scheduled activity to edit the time this activity will start, change the temperature or delete the selected activity.
 - 5.2. Add time and Activity to add a new activity to the scheduled activities. Deleting times or activities can be done here.
 - 5.3. **Copy to other day** to copy the scheduled activities of the weekday to other days. The activities including the configured time and temperature will be copied to the selected days.
 - 5.4. **Set activity temperatures** to change the temperature.

Definition of activity

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



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Tab.60 Example of activities

Activity	Start of the activity	Standard name	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
6	-	Custom	-

Changing the name of an activity

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

► => System Settings > Set Heating Activity Names

- We the rotary knob to navigate.
 Use the ✓ button to confirm your selection.
- 1. Press the ≔ button.
- 2. Select System Settings Q.
- 3. Select Set Heating Activity Names.
- ⇒ A list of 6 activities and their standard names is shown.
 4. Select an activity.
 - ⇒ A keyboard with letters, numbers and symbols is shown.

Fig.130 Letter selection



Fig.131 Confirm sign



- 5. Change the name of the activity (20 characters maximum):
 - 5.1. Use the top row to change between capitalization, numbers, symbols or special characters.
 - 5.2. Select a letter, number or action.
 - 5.3. Select **←** to delete a letter, number or symbol.
 - 5.4. Select 🛏 to add a space.
 - 5.5. Select \checkmark to finish changing the activity name.

Activating a time program

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

Select zone > Operating mode > Scheduling

- We the rotary knob to navigate.
 Use the ✓ button to confirm your selection.
- 1. Select the tile of the zone you want to change.
- 2. Select OperatingZoneMode.
- 3. Select Scheduling.
- 4. Select the time program Schedule 1, Schedule 2 or Schedule 3.

11.6.5 Changing the heating activity temperatures

You can change the heating temperatures of each activity.

- Select zone > Set heating temperatures
- Use the rotary knob to navigate.
 Use the ✓ button to confirm your selection.
- 1. Select the tile of the zone you want to change.
- 2. Select Set heating temperatures.
- ⇒ A list of 6 activities and their temperatures is shown.
- 3. Select an activity.
- 4. Set the heating activity temperature.

11.6.6 Changing the room temperature temporarily

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

Select zone > Operating mode > Short temperature change



- Use the \checkmark button to confirm your selection.
- The room temperature can only be adjusted in this way if a room temperature sensor/thermostat is installed.
- 1. Select the tile of the zone you want to change.
- 2. Select Operating mode
- 3. Select 🍟 Short temperature change

- 4. Set the duration in hours and minutes.
- 5. Set the temporary room temperature.

11.7 Changing the domestic hot water temperature

11.7.1 Domestic hot water configuration

Configure the domestic hot water settings by selecting the tile [



This menu is only available when a domestic hot water system is installed.

Tab.61 Menu to configure domestic hot water

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

Tab.62 Extended menu to configure the domestic hot water circuit DHW configuration

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

11.7.2 Changing the domestic hot water operating mode

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

- > Operating mode
- Use the rotary knob to navigate.
 - Use the \checkmark button to confirm your selection.
- 1. Select the tile [💾].
- 2. Select Operating mode

This option is not available when installer access is enabled.

3. Select the desired operating mode:

	1 0	
lcon	Mode	Description
	Scheduling	The domestic hot water temperature is controlled by a time program
6	Comfort	The domestic hot water temperature is set to a fixed setting
ř	Hot water boost	The domestic hot water temperature is increased temporarily
(Î)	Holiday	The domestic hot water temperature is reduced during your holiday to save energy
	Eco	Protect the appliance and installation from freezing.

Tab.63 Operating modes

11.7.3 Time program to control the DHW temperature



Creating a time program

A time 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 time program.

> Operating mode

Use the rotary knob to navigate.

Use the button to confirm your selection.

- You can create up to three time programs. For example, you can create a program for a week with normal working hours and a programme for a week when you are at home most of the time.
- 1. Select the tile [#].
- 2. Select Time programs.
- 3. Select the time program you want to modify: Schedule 1, Schedule 2 or Schedule 3.
 - ⇒ Activities scheduled for Monday are displayed. The last scheduled activity of a day is active until the first activity of the next day. The scheduled activities are shown. At initial start-up, all weekdays have two standard activities; **Comfort** starting at 6:00 and **Eco** 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:
 - 5.1. **Select scheduled activity** to edit the time this activity will start, change the temperature or to delete the selected activity.
 - 5.2. Add time and Activity to add a new activity to the scheduled activities.
 - 5.3. **Copy to other day** to copy the scheduled activities of the weekday to other days.
 - 5.4. Set activity temperatures to change the temperature.

Activating a DHW time program

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

Operating mode > Scheduling

Use the rotary knob to navigate.

Use the 🗸 button to confirm your selection.

- 1. Select the tile [
- 2. Select DHW mode.
- 3. Select Scheduling.
- 4. Select Time programs Schedule 1, Schedule 2 or Schedule 3.

11.7.4 Changing the comfort and reduced hot water temperature

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

Domestic Hot Water Setpoints



Use the rotary knob to navigate.

- Use the \checkmark button to confirm your selection.
- 1. Select the tile [
- 2. Select Domestic Hot Water Setpoints.

- 3. Select the setpoint you want to change:
 - · DHW comfort setpoint: The temperature when the hot water production is switched on.
 - DHW eco setpoint: The temperature when the hot water production is switched off.
- 4. Set the desired temperature.

11.7.5 Increasing the domestic hot water temperature temporarily

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



Use the rotary knob to navigate. (₁) Use the ✓ button to confirm your selection.



Important

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

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

11.8 Switching the central heating on or off

You can switch off the central heating function to save energy.

When an outdoor sensor is connected to the installation, it's also \odot possible to use the summer mode function for switching the central heating on or off.



- Use the rotary knob to navigate. ())
 - Use the ✓ button to confirm your selection.
- 1. Select the tile [
- 2. Select CH function on.
- 3. Select the following setting:
 - · Off to switch off the central heating function.
 - On to switch on the central heating function.



Caution

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

11.9 Switching the summer mode on or off

You can use summer mode to switch off the central heating function. While summer mode is active central heating will be turned off but hot water remains available.



The summer mode function is only available when an outdoor temperature sensor is connected to the installation.

- We the rotary knob to navigate.Use the ✓ button to confirm your selection.
- 1. Select the tile [⋒[[]].
- Select Force summer mode.
- 3. Select the following setting:
 - **On** to switch on summer mode.
 - Off to switch off summer mode.

11.10 Changing the operating mode

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

- Use the rotary knob to navigate.
 Use the ✓ button to confirm your selection.
- 1. Select the tile [1].
- 2. Select an operating mode:
 - for Off Disable the appliance, does not affect hot water production.
 - Teating (auto) Enable heating.
 - ⇒ The operating mode tile will update to reflect the selected operating mode.

11.11 Changing the control panel settings

You can change the control panel settings within system settings.

► := > System Settings



Use the 🗸 button to confirm your selection.

- 1. Press the ≔ button.
- 2. Select System Settings ().
- 3. Perform one of the operations described in the table below:

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

Tab.64 Control panel settings

11.12 Reading the installer's name and phone number

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

System Settings > Installer Details



Use the rotary knob to navigate.

Use the \checkmark button to confirm your selection.

- 1. Press the \equiv button.
- 2. Select System Settings 😳

3. Select Installer Details.

⇒ The installer's name and phone number is shown.

11.13 Frost protection

	 Caution Drain the boiler and central heating system if you are not going to use your home or the building for a long time and there is a chance of frost. The frost protection does not work if the boiler is out of operation. The built-in boiler protection is only activated for the boiler and not for the system and radiators. Open the valves of all the radiators connected to the system.
	Set the temperature control low, for example to 10°C.
	If the temperature of the central heating water in the boiler drops too low, the built-in boiler protection system is activated. This system works as follows:
	 If the water temperature is lower than 7°C, the pump switches on. If the water temperature is lower than 4°C, the boiler switches on. If the water temperature is higher than 10°C, the burner shuts down and the pump continues to run for a short time.
	To prevent the system and radiators freezing in frost-sensitive areas (e.g. a garage), a frost thermostat or, if feasible, an outdoor sensor can be connected to the boiler.
11.14 Cleaning the casing	
	1. Clean the outside of the appliance using a damp cloth and a mild detergent.
11.15 Shut-down	
	Shut-down the boiler as follows:
	 Switch off the boiler's electrical connection. Shut off the gas supply. Keep the installation frost-free. Do not shut-down the boiler if the installation can't be kept frost-free.
12 Technical specifications	

12.1 Homologations

12.1.1 Certifications

Tab.65 Certifications

CE identification number	CE-0085DP0589
Class NOx ⁽¹⁾	6
Type of flue gas connection	$\begin{array}{c} B_{23} \ ^{(2)} \\ C_{13}, \ C_{33}, \ C_{43}, \ C_{53}, \ C_{63}, \ C_{83}, \ C_{93} \end{array}$
(1) EN 15502–1(2) When installing a boiler with connection t	ype B ₂₃ , the IP rating of the boiler is lowered to IP20.

12.1.2 Gas categories

Tab.66 Unit categories

Country	Category	Gas type	Connection pressure Pn (mbar)	Connection pressure Pn (kPa)
Great Britain	II _{2H3P}	G20 (H gas) G31 (propane)	20 37/50	2.0 3.7/5.0
Ireland	II _{2H3P}	G20 (H gas) G31 (propane)	20 37	2.0 3.7

12.1.3 BREEAM compliance

The Quinta Ace S complies with the BREEAM emission requirements. In order to meet these requirements, some boiler parameter values need to be changed.



Important Refer to the chapter for the boiler's BREEAM settings.

12.1.4 Directives

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

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

12.1.5 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.

12.2 Electrical diagram

2 5 3 230 V PE-5 CU-GH20 X01 X01 Ś X1 ION X62-B X62-A X51 X41 Α 8 6 10 X101-4 X32 C P X101-3 X101-2 X114 X104 X101-1 X102 X13 X14 X105 X115 8X 80 X 12 11 13 14 15 18 16 17 X12 X111 × 5 X10 X15 1 14 13 X28 BUS1 BUS2 BUS3 BUS4 19 XC01 X21 В X25 X23 X24 X22 그리지 S R X21 X22 X24 XC1 X25 X23 С PUMP PWM PUMP SUPPLY XQ01 X11 J3 J1 J2 d hhh hinh 0-10 PWM PWM ۲ • h n. X2 CB-25 H X4 X1 Х3 ΝI ŧΝ L

Fig.133 Electrical diagram for boiler types 90 - 110.

- A Control unit CU-GH20
- B Connection board CB-25
- C Quick connection board Quick connect
- 1 Ionisation electrode
- 2 Gas control valve
- 3 Fan power supply
- 4 Ignition electrode
- 5 Ignition transformer
- 6 Water pressure sensor
- 7 Flow temperature sensor
- 8 Thermal switch

- 9 Thermal fuse
- **10** Return temperature sensor
- 11 Configuration storage unit (CSU)
- 12 PWM signal fan
- 13 Flue gas temperature sensor
- 14 Control panel (HMI)
- 15 CAN connection for expansion PCB
- 16 CAN connection for expansion PCB
- 17 CAN connection for expansion PCB
- 18 CAN connection for expansion PCB
- 19 Boiler pump

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- A Control unit CU-GH20
- B Connection board CB-25
- C Quick connection board Quick connect
- 1 Ionisation electrode
- 2 Gas control valve
- 3 Fan power supply
- 4 Ignition electrode
- 5 Ignition transformer
- 6 Water pressure sensor
- 7 Air pressure differential switch
- 8 Thermal switch
- 9 Thermal fuse

- **10** Return temperature sensor
- 11 Configuration storage unit (CSU)
- 12 PWM signal fan
- 13 Flow temperature sensor
- **14** Flue gas temperature sensor
- 15 Control panel (HMI)
- 16 CAN connection for expansion PCB
- 17 CAN connection for expansion PCB
- 18 CAN connection for expansion PCB
- 19 CAN connection for expansion PCB
- 20 Boiler pump



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Tab.67 Dimensions and connections

Symbol	Description	Dimension
► III.	Flow connection	1 ¹ / ₂ " male thread
	Return connection	1 ¹ / ₂ " male thread
GAS/ GAZ	Gas connection	1" male thread
Ń	Condensation outlet	Ø 24 mm external
→2 ▼	Safety pressure relief valve outlet	³ ⁄ ₄ " male thread
<u>म</u>	Flue gas outlet ⁽¹⁾	Ø 110 mm
帀	Air inlet ⁽²⁾	Ø 160 mm
(1) This is the inner pipe(2) This is the outer pipe	of the concentric flue gas adapter. of the concentric flue gas adapter.	

12.4 Technical data

Tab.68 General

Quinta Ace S				90	110	130	150
Nominal output	<i>P_n</i> 80/60 °C	kW	min	9.4	20.5	28.4	28.1
			max ⁽¹⁾	85.0	102.0	121.5	140.3
Nominal output	<i>P_{nc}</i> 50/30 °C	kW	min	10.2	22.1	30.6	30.2
			max ⁽¹⁾	91.8	110.2	130.6	150.9
Nominal input	$Q_{nh}(H_i)$	kW	min	9.7	21.0	29.0	28.6
			max ⁽¹⁾	87.4	104.9	123.8	143.0
Nominal input	$Q_{nh}(H_s)$	kW	min	10.8	23.3	32.2	31.7
			max ⁽¹⁾	97.0	116.4	137.4	158.7
Nominal input G31	$Q_{nh}(H_i)$	kW	min	9.7	21.0	29.0	28.6
			max ⁽¹⁾	87.4	104.9	123.8	143.0
Nominal input G31	$Q_{nh}(H_s)$	kW	min	10.8	23.3	32.2	31.7
			max ⁽¹⁾	97.0	116.4	137.4	158.7
Full load central heating efficiency	<i>P_n</i> (<i>H_i</i>) 80/60 °C	%		97.3	97.2	98.1	98.1
Full load central heating efficiency	<i>H_i</i> 50/30 °C	%		105.5	105.1	105.5	105.5
Part load central heating efficiency	<i>P_n</i> (<i>H_i</i>) RT=30 °C ⁽²⁾	%		107.5	107.4	108.6	108.6
Full load central heating efficiency	<i>P_n</i> (<i>H_s</i>) 80/60 °C	%		87.6	87.5	88.3	88.3
Full load central heating efficiency	<i>H_s</i> 50/30 °C	%		95.0	94.6	95.0	95.0
Part load central heating efficiency	$P_n(H_s) \text{ RT}=30 ^{\circ}\text{C}^{(2)}$	%		96.8	96.7	97.8	97.8
 (1) Factory setting. (2) Patura temperature 					*	•	

Tab.69 Details of gas and flue gas

Quinta Ace S				90	110	130	150
Gas test pressure	G20	mbar	min	17	17	17	17
			max	25	25	25	25
Gas test pressure	G31	mbar	min	30	30	30	30
			max	50	50	50	50
Gas consumption	G20	m ³ /h	min	1.03	2.22	3.07	3.03
			max	9.25	11.10	13.10	15.13
Gas consumption	G31	m ³ /h	min	0.51	0.86	1.45	1.67
			max	3.57	4.28	5.06	5.84
Gas consumption	G31	kg/h	min	0.97	1.63	2.75	3.17
			max	6.78	8.13	9.61	11.09
NOx annual emissions	G20	mg/kWh	H_i	44	25	35	52
	(EN15502)		Hs	40	23	32	47
			Class	6	6	6	6
CO annual emissions	G20	mg/kWh	Hi	11	8	16	18
	(EN15502)						
NOx annual emission (BREEAM)	G20	mg/kWh	Hs	22	23	19	23
	(EN15502)		Credits	2	2	2	2
Flue gas amount		kg/s	min	0.005	0.005	0.012	0.014
			max	0.040	0.047	0.056	0.064
Flue gas temperature		°C	max	70	70	70	70
Maximum counter pressure for flue gas outlet		Pa		153	190	180	270

Tab.70 Central heating circuit data

Quinta Ace S			90	110	130	150
Water content	I		9	10	10	11
Water operating pressure	bar	min	1.0	1.0	1.0	1.0

Quinta Ace S				90	110	130	150
Water operating pressure (PMS)	PMS	bar	max	4	4	6	6
Water temperature		°C	max	110	110	110	110
Operating water temperature		°C	max	90	90	90	90
Hydraulic resistance	ΔΤ=20 Κ	mbar		375	399	433	520
Water flow	ΔT=11 K	m ³ /h		6.65	7.97	9.50	10.97
Water flow at maximum CH input	80/60 °C	m ³ /h	nom	3.66	4.39	5.22	6.03
Water flow at minimum CH input	80/60 °C	m ³ /h	nom	0.40	0.49	1.04	1.21
Water flow at maximum CH input	50/30 °C	m ³ /h	nom	3.95	4.74	5.62	6.49
Water flow at minimum CH input	50/30 °C	m ³ /h	nom	0.44	0.53	1.13	1.30
Casing-related losses (without insulation)	ΔT=30 °C	W		50	73	97	121
Casing-related losses (without insulation)	ΔT=50 °C	W		131	158	184	211

Tab.71 Electrical data

Quinta Ace S				90	110	130	150	
Supply voltage		V~/Hz		230/50	230/50	230/50	230/50	
Power consumption – full load ⁽¹⁾		W	max (1)	140	178	159	238	
			min	17	21	20	22	
Power consumption – standby ⁽¹⁾	P _{SB}	W		3	3	3	3	
Electrical protection index		IP ⁽²⁾		X5D	X5D	X5D	X5D	
Fuse – main (power connector)		(AT)		1.6	1.6	1.6	1.6	
Fuse – CU-GH20		(AT)		2.5	2.5	2.5	2.5	
Fuse – CB		(AT)		6.3	6.3	6.3	6.3	
 (1) Without pump. (2) When installing a boiler with connection type B₂₃, the IP rating of the boiler is lowered to IP20. 								

Tab.72 Other data

Quinta Ace S			90	110	130	150
Total weight (including packaging)		kg	97.5	110.6	110.6	113.0
Total weight (netto)		kg	85.1	98.2	98.2	100.6
Minimum mounting weight ⁽¹⁾		kg	83.1	96.2	96.2	98.6
Average acoustic level ⁽²⁾ at a distance of 1 metre from the boiler (LpA)	(3)	dB(A)	56.4	56.8	52.6	56.7
Average sound power level (LwA)	11111 (3)	dB(A)	67.6	67.9	63.8	67.8
(1) Without front panel.(2) Maximum.(3) Central heating operation.						

Tab.73 Technical parameters

Quinta Ace S			90	110	130	150
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	Prated	kW	85	102	122	140
Useful heat output at nominal heat output and high temperature operation ⁽²⁾	<i>P</i> ₄	kW	85.0	102.0	121.5	140.3
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	<i>P</i> ₁	kW	28.2	33.8	40.4	46.6
Seasonal space heating energy efficiency	η_s	%	-	-	-	-

Quinta Ace S			90	110	130	150
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	η_4	%	87.7	87.6	88.4	88.4
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	η_1	%	96.9	96.8	97.8	97.8
Auxiliary electricity consumption						
Full load	elmax	kW	0.140	0.178	0.159	0.238
Part load	elmin	kW	0.017	0.021	0.020	0.022
Standby mode	P _{SB}	kW	0.003	0.003	0.003	0.003
Other items						
Standby heat loss	P _{stby}	kW	0.050	0.073	0.097	0.121
Ignition burner power consumption	P _{ign}	kW	-	-	-	-
Annual energy consumption	Q _{HE}	GJ	-	-	-	-
Sound power level, indoors	L _{WA}	dB	68	68	64	68
Emissions of nitrogen oxides	NO _X	mg/kWh	31	22	17	23
 Low temperature means 30 °C for condensing boil appliances. 	ers, 37 °C for lo	w temperature boil	ers and 50 °C	c (at heater ir	nlet) for other	heating

(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.

12.5 Hydraulic resistance

Take the boiler resistance and system resistance into account when selecting a pump. The graphs show the resistance curves for the entire boiler range. The models shown in the graph's legend apply to your market. The table shows nominal flow data and the corresponding hydraulic resistance.



Fig.135 Hydraulic resistance

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Tab.74 Water flow rate data

	Unit	90	110	130	150
Minimum flow rate	m ³ /h	2.00	2.25	2.25	3.15
Maximum flow rate	m ³ /h	4.60	4.80	5.90	6.70
H at ΔT = 15 °C	mbar	500	390	700	700
Q at ΔT = 15 °C	m ³ /h	5.0	6.0	7.5	8.6
H at ΔT = 20 °C	mbar	357	230	400	410
Q at ΔT = 20 °C	m ³ /h	4.20	4.60	5.40	5.60
H at ΔT = 30 °C	mbar	209	110	180	210
Q at ΔT = 30 °C	m ³ /h	2.5	3.0	3.7	4.3

13 Appendix

13.1 ErP information

13.1.1 Product fiche

Tab.75 Product fiche

BAXI – Quinta Ace S		90	110	130	150
Seasonal space heating energy efficiency class		-	-	-	-
Rated heat output (Prated)	kW	85	102	122	140
Annual energy consumption(Q _{HE})	GJ	-	-	-	-
Seasonal space heating energy efficiency (η_s)	%	-	-	-	-
Sound power level L _{WA} indoors		63	63	60	64

13.1.2 Package sheet

Fig.136 Package sheet for boilers indicating the space heating energy efficiency of the package

Seasonal space heating energy efficiency of boiler		(1)			
		ʻl' %			
Temperature control 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%	2			
Supplementary boiler	Seasonal space heating energy efficiency (in %)				
from fiche of boiler	(
Solar contribution	(Tank rating				
from fiche of solar device Collector size (in m²) Tank volume (in m³) ('III' x +	Collector efficiency (in %) $A^* = 0.95, A = 0.91, B = 0.86, C = 0.83, D - G = 0.81$ (/100) x = +	4			
(1) If tank rating is above A, use 0.95		,,,			
Supplementary heat pump	Seasonal space heating energy efficiency (in %)				
from fiche of heat pump	('l') x 'll' = +	(5) %			
Solar contribution AND Supplementary heat pump					
select smaller value 0.	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	<u>6</u> %			
Seasonal space heating energy efficiency of package	ge	(7)			
Seasonal space heating energy efficiency class of p	package				
G F E D ≤30% ≥34% ≥36% ≥	CBAA ⁺ A ⁺⁺⁺ A ⁺⁺⁺ $\times 75\%$ $\geq 82\%$ $\geq 90\%$ $\geq 98\%$ $\geq 125\%$ $\geq 150\%$				
Boiler and supplementary heat pump installed with low temperature heat emitters at 35°C ?					
from fiche of heat pump	(7) + (50 x 'll') =	%			

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.

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- 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 · Prated), whereby 'Prated' is related to the preferential space heater.
- IV The value of the mathematical expression 115/(11 · Prated), whereby 'Prated' is related to the preferential space heater.

Tab.76 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.				

13.2 EC Declaration of conformity

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

() You can go to the website for the declaration of conformity: https://declaration-of-conformity.bdrthermeagroup.com



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13 Appendix

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