Innovens

EN

Wall-hung gas condensing boilers

MCA 35

Installation and Service Manual

300022160-001-01

De Dietrich

EG declaration of conformity

The device complies with the standard type described in the EG declaration of conformity. It was manufactured and commissioned in accordance with European directives.

The original of the declaration of compliance is available from the manufacturer.

EG - VERKLARING VAN OVEREENSTEMMING
EC - DECLARATION OF CONFORMITY
EG - KONFORMITÄTSERKLÄRUNG
DÉCLARATION DE CONFORMITÉ CE

Fabrikant/Manufacturer/Hersteller/Fabricant	**: Remeha B.V.**
Adres/Address/Adresse	**: Kanaal Zuid 110**
Stad,Land/City,Country/Land,Ort/Ville, pays	**: Postbus 32, NL-7300 AA Apeldoorn**
verklaart hiermede dat de toestel(len)	**: MCA ../.. (MI) (BIC)**
this is to declare that the following product(s)	**:**
erklärt hiermit das die Produk(te)	**:**
déclare ici que les produit(s) suivant(s)	**:**

op de markt gebracht door	**: De Dietrich Thermique**
distributor	**: 57, rue de la Gare, F-67580**
Vertreiber	**:**
Commercialisé (s) par	**:**

voldoet/voldoen aan de bepalingen van de onderstaande EEG-richtlijnen:
is/are in conformity with the following EEC-directives:
den Bestimmungen der nachfolgenden EG-Richtlinien entspricht/entsprechen:
répond/répondent aux directives CEE suivantes:

EEG-Richtlijn:	**2009/142/EC**	**toegepaste normen:**
EEC-Directive:	**2009/142/EC**	**tested and examined tothe following norms:**
EG-Richtlinie:	**2009/142/EG**	**verwendete Normen, normes appliquées:**
CEE-Directive:	**2009/142/CE**	**EN 297(1994*), 483(1999*), 677(1998*)**
	92/42/EEG	
	92/42/EEC	
	92/42/EWG	
	92/42/CEE	
	2006/95/EEG	**EN 50165(1997*), EN 60335-1(1994*)**
	2006/95/EEC	**EN 60335-2-102(2004*)**
	2006/95/EWG	
	2006/95/CEE	
	2004/108/EEG	**EN 50165(1997*)**
	2004/108/EEC	**EN 55014-2(1997*), EN 55014-1(2000*),**
	2004/108/EWG	**EN 61000-3-2(2000*), 61000-3-3(1995*)**
	2004/108/CEE	
	97/23/EEG	**(art. 3, lid 3)**
	97/23/EEC	**(article 3, sub 3)**
	97/23/EWG	**(Art. 3, Abzats 3)**
	97/23/CEE	**(art.3 section 3)**

CE
08

*) inclusief (eventuele) aanvulling, including (if any) completion
einschließlich (falls vorhanden) Vervollständigung, y compris (le cas échéant) complément

Apeldoorn, february 2010

W.F. Tijhuis
Approval manager
703/2012/02/232

R000300-A

Contents

1 Introduction

1.1 Symbols used

In these instructions, various danger levels are employed to draw the user's attention to particular information. In so doing, we wish to safeguard the user's safety, obviate hazards and guarantee correct operation of the appliance.

DANGER

Risk of a dangerous situation causing serious physical injury.

WARNING

Risk of a dangerous situation causing slight physical injury.

CAUTION

Risk of material damage.

Signals important information.

Signals a referral to other instructions or other pages in the instructions.

1.2 Abbreviations

- **3CE**: Collective conduit for sealed boiler
- **DHW**: Domestic hot water
- **Hi**: Lower heating value LHV (Nett)
- **Hs**: Higher heating value HHV (Gross)
- **PPS**: Polypropylene hardly inflammable
- **PCU**: Primary Control Unit - PCB for managing burner operation
- **PSU**: Parameter Storage Unit - Parameter storage for PCBs PCU and SU
- **SCU**: Secondary Control Unit - control panel PCB
- **SU**: Safety Unit - Safety PCB
- **3WV**: 3-way valve

1.3 General

1.3.1. Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various applicable European Directives. They are therefore delivered with CE marking and all relevant documentation.

In the interest of customers, we are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

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

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

1.3.2. Installer's liability

The installer is responsible for the installation and inital start up of the appliance. The installer must respect the following instructions:

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

1.4 Homologations

1.4.1. Certifications

CE identification no	**PIN 0063BT3444**
NOx classification	**5 (EN 297 pr A3, EN 656)**
Type of connection	Chimney: B_{23} (1), B_{23P} (1), B_{33}
	Flue gas outlet: $C_{13(x)}$, $C_{33(x)}$, $C_{43(x)}$, C_{53} , $C_{63(x)}$, $C_{83(x)}$, $C_{93(x)}$
(1) IP20	

1.4.2. Equipment categories

Gas category	Gas type	Connection pressure (mbar)
II_{2ESi3P}	Natural gas H (G20)	20
	Natural gas L (G25)	25
	Propane (G31)	37

The boiler is preset in the factory to operate on natural gas H (G20).

☞ For operation on another type of gas, see chapter: "Adapting to another gas type", page 65.

1.4.3. Additional Directives

Apart from the legal provisions and Directives, the additional Directives described in these instructions must also be observed.

For all provisions and Directives referred to in these instructions, it is agreed that all addenda or subsequent provisions will apply at the time of installation.

WARNING

Installation of the appliance must be done by a qualified engineer in accordance with prevailing local and national regulations.

1.4.4. Factory test

Before leaving the factory, each boiler is set for optimum performance and tested to check the following items:

- Electrical safety
- Adjustment (CO_2)
- Water tightness
- Gas tightness
- Parameter settings

2 Safety instructions and recommendations

2.1 Safety instructions

DANGER

If you smell gas:

1. Do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, light, motor, lift, etc..).
2. Shut off the gas supply.
3. Open the windows.
4. Trace possible leaks and seal them immediately.
5. If the gas leak is before the gas meter, contact the gas supplier.

DANGER

If you smell flue gases:

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

2.2 Recommendations

WARNING

- Installation and maintenance of the boiler must be carried out by a qualified professional in compliance with prevailing local and national regulations.
- When working on the boiler, always disconnect the boiler from the mains and close the main gas inlet valve.
- After maintenance or repair work, check all installations to ensure that there are no leaks.

CAUTION

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

Keep this document close to the place where the boiler is installed.

Casing components

Only remove the casing for maintenance and repair operations. Put the casing back in place after maintenance and repair operations.

Instructions stickers

The instructions and warnings affixed to the appliance must never be removed or covered and must remain legible during the entire lifespan of the appliance. Immediately replace damaged or illegible instructions and warning stickers.

Modifications

Modifications may only be made to the boiler after the written permission of **De Dietrich Thermique** to do so.

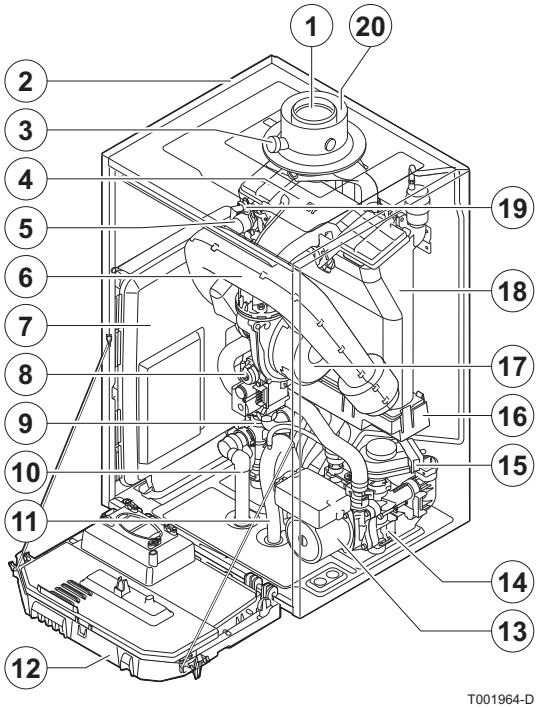
3 Technical description

3.1 General description

Wall-hung gas condensing boilers

- High efficiency heating.
- Low pollutant emissions.
- Top of the range electronic **DIEMATIC iSystem** control panel
- Installation and connection facilitated by the mounting frame delivered with the appliance.
- Flue gas discharge via a forced flue, chimney, bi-flow or 3CE type connection.
- **MCA 35**: Heating only (Production of domestic hot water can be ensured by a separate hot water calorifier).

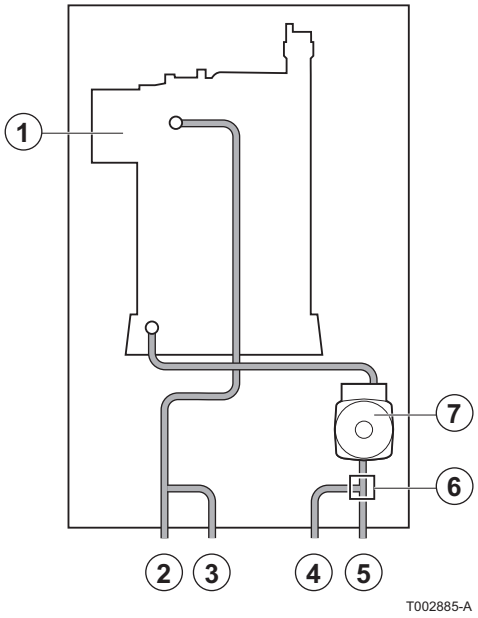
3.2 Main parts



1	Flue gas discharge pipe
2	Casing/air box
3	Flue gas measuring point
4	Mixer pipe
5	Heating flow hose
6	Air intake silencer
7	Box for the control PCBs
8	Combined venturi and gas valve unit
9	Flow end hydroblock
10	Safety valve outlet pipe
11	Siphon
12	Control panel
13	Shunt pump
14	Return end hydroblock
15	3-way valve
16	Condensate receiver tank
17	Fan
18	Heat exchanger (Heating circuit)
19	Ignition/ionization electrode
20	Air intake

3.3 Operating principle

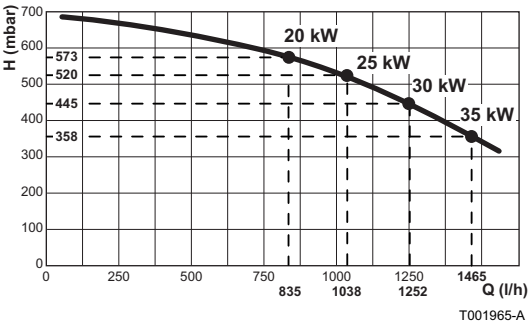
3.3.1. Skeleton Diagrams



1	Heat exchanger (Heating circuit)
2	Heating flow
3	Heating flow (Secondary circuit)
4	Heating return (Secondary circuit)
5	Heating return
6	3-way valve
7	Shunt pump (Heating circuit)

3.3.2. Shunt pump

The boiler is equipped with a circulating pump. This energy-efficient, modulating circulating pump is controlled by the control unit based on ΔT. The graph shows the manometric height at various outputs.



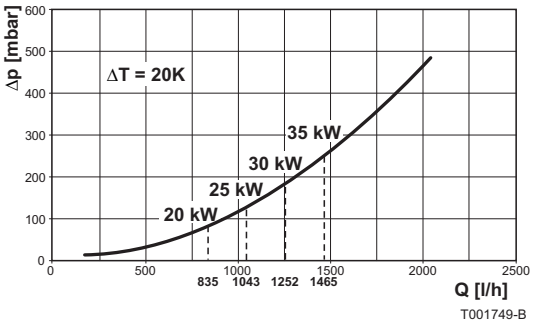
H	Manometric height central heating circuit
Q	Water flow

The parameters **MIN.PUMP SPEED** and **MAX.PUMP SPEED** are used to modify the pump settings. If flow noise can be heard in the system, it is possible to reduce the maximum pump speed with the parameter **MAX.PUMP SPEED** (First of all, vent the heating system). If circulation in the radiators is too low or the radiators do not fully heat up, increase the minimum pump speed with the parameter **MIN.PUMP SPEED**.

☞ See chapter: "Professional settings", page 81.

3.3.3. Water flow rate

The boiler's modulating control system limits the maximum difference in temperature between the heating flow and return and the maximum speed at which the flow temperature increases. In this way, the boiler does not require a minimum water flow rate.



Δp Pressure drop

Q Water flow (max = 2460 l/h)

3.4 Technical specifications

Boiler type			MCA 35
General			
Flow rate setting	Adjustable		Modulating, Start/Stop, 0 - 10 V
Nominal output (Pn) Heating System (80/60 °C)	minimum-maximum	kW	6,3 - 33,7
	Factory setting	kW	33,7
Nominal output (Pn) Heating System (50/30 °C)	minimum-maximum	kW	7,0 - 35,6
	Factory setting	kW	35,6
Nominal input (Qn) Heating System (Hi)	minimum-maximum	kW	6,5 - 34,8
	Factory setting	kW	34,8
Nominal input(Qn) Heating System (Hs)	minimum-maximum	kW	7,2 - 38,7
	Factory setting	kW	38,7
Heating efficiency under full load (Hi) (80/60 °C)	-	%	96,9
Heating efficiency under full load (Hi) (50/30 °C)	-	%	102,2
Heating efficiency under partial load (Hi) (Return temperature 60°C)	-	%	96,3
Heating efficiency under partial load (EN 92/42) (Return temperature 30°C)	-	%	108,2
Data on the gases and combustion gases			
Gas consumption - Natural gas H (G20)	minimum-maximum	m^3/h	0,69 - 3,71
Gas consumption - Natural gas L (G25)	minimum-maximum	m^3/h	0,80 - 4,32
Gas consumption - Propane G31	minimum-maximum	m^3/h	0,27 - 1,44
NOx-Emission per year (n =1)		mg/kWh	42
Mass flue gas flow rate	minimum-maximum	kg/h	11,1 - 57,3
Flue gas temperature	minimum-maximum	°C	30 - 75
Maximum counter pressure		Pa	140
Characteristics of the heating circuit			
Water content		l	2,3
Water operating pressure	minimum	kPa (bar)	80 (0,8)
Water operating pressure (PMS)	maximum	kPa (bar)	300 (3,0)
Water temperature	maximum	°C	110
Operating temperature	maximum	°C	90

(1) Front panel removed

Boiler type			MCA 35
Manometric height central heating circuit (ΔT = 20K)		mbar	358
Electrical characteristics			
Power supply voltage		VAC	230
Power consumption - Full load	maximum	W	173
	Factory setting	W	151
Power consumption - Part load	maximum	W	68
Power consumption - Standby	maximum	W	4
Electrical protection index			IPX4D
Other characteristics			
Weight (empty)	Total	kg	39
	Mounting(1)	kg	32
Acoustic level at 1 metre at full load		dB(A)	45
(1) Front panel removed			

3.4.1. Sensor characteristics

Outside sensor												
Temperature in °C	-20	-16	-12	-8	-4	0	4	8	12	16	20	24
Resistance in Ω	2392	2088	1811	1562	1342	1149	984	842	720	616	528	454

Outlet sensor circuit B+C Domestic hot water sensor System sensor Flow sensor - Return sensor NTC											
Temperature in °C	0	10	20	25	30	40	50	60	70	80	90
Resistance in Ω	32014	19691	12474	10000	8080	5372	3661	2535	1794	1290	941

4 Installation

4.1 Regulations governing installation

WARNING

Installation of the appliance must be done by a qualified engineer in accordance with prevailing local and national regulations.

4.2 Package list

4.2.1. Standard delivery

The delivery includes:

- The boiler, fitted with a connection cable
- Mounting frame
- Mounting template
- Connection kit
- Run-off collector for siphon and safety valve
- Outside sensor
- Installation and Service Manual
- User Guide

4.2.2. Accessories

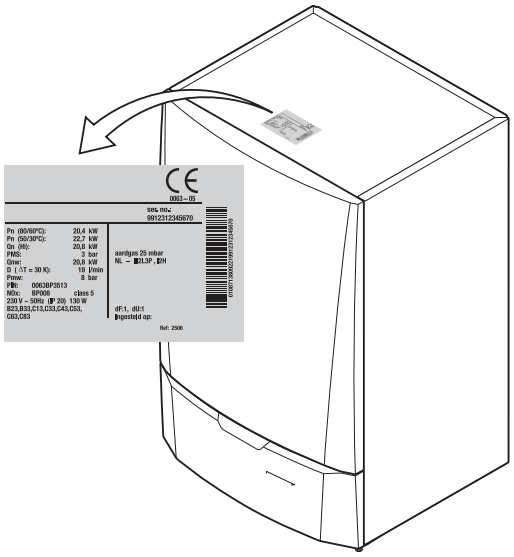
Various options are available depending on the configuration of the installation:

Boiler options		Control system options	
Description	**package**	**Description**	**package**
Stand-off frame	HR39	RX12 cable	AD134
Pipework kit for stand-off frame	HR40	TELCOM 2 voice remote monitoring module	AD152
Pipe cover	HR42	Flow sensor	AD199
Flue gas thermostat	HR43	DHW sensor	AD212
adapter 80/125	HR38	Optional PCB for 3-way valve	AD249
adapter 80-80	HR46	Hot water storage tank sensor	AD250
Exchanger cleaning kit	HR44	Outside radio-controlled temperature sensor	AD251
Boiler body cleaning kit	HR45	Boiler radio module	AD252
DHW tank BS60	EE54	Radio remote control	AD253
Kit for connection between MCA and BS60	EA138	Interactive remote control	AD254

Boiler options		Control system options	
Description	**package**	**Description**	**package**
DHW tank SR130	EE22	Room sensor	FM52
Kit for connection between MCA and SR130	EA137		

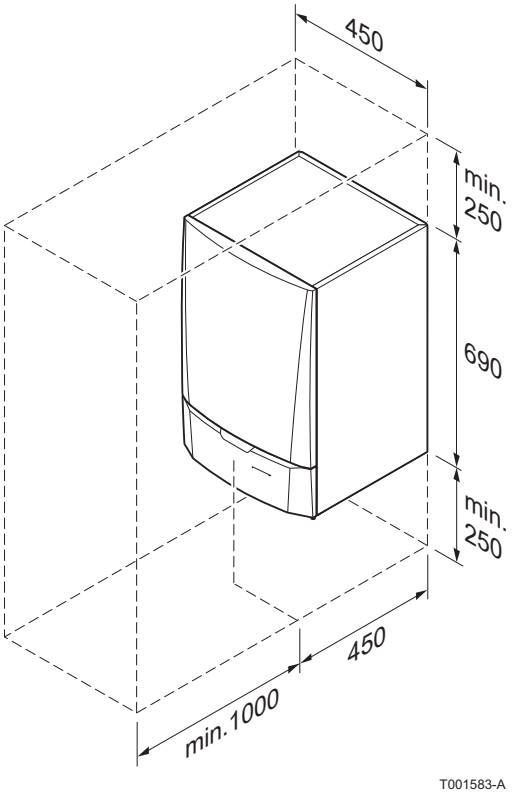
4.3 Choice of the location

4.3.1. Data plate



The data plate located on top of the boiler provides important information on the appliance: serial number, model, gas category, etc.

4.3.2. Location of the boiler



- Before mounting the boiler, decide on the ideal position for mounting, bearing the Directives and the dimensions of the appliance in mind.
- When choosing the position for mounting the boiler, bear in mind the authorised position of the combustion gas discharge outlets and the air intake opening.
- To ensure adequate accessibility to the appliance and facilitate maintenance, leave enough space around the boiler.

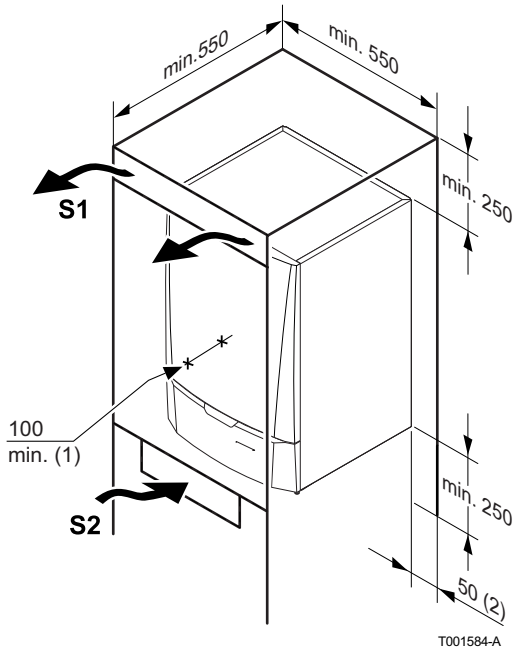
WARNING

- Fix the appliance to a solid wall capable of bearing the weight of the appliance when full of water and fully equipped.
- It is forbidden to store inflammable products and materials in the boiler room or close to the boiler, even temporarily.

CAUTION

- The boiler must be installed in a frost-free environment.
- A connection to the mains drainage system for the discharge of condensate must be available close to the boiler.

4.3.3. Ventilation



(1) Distance between the front of the boiler and the internal wall of the casing box.

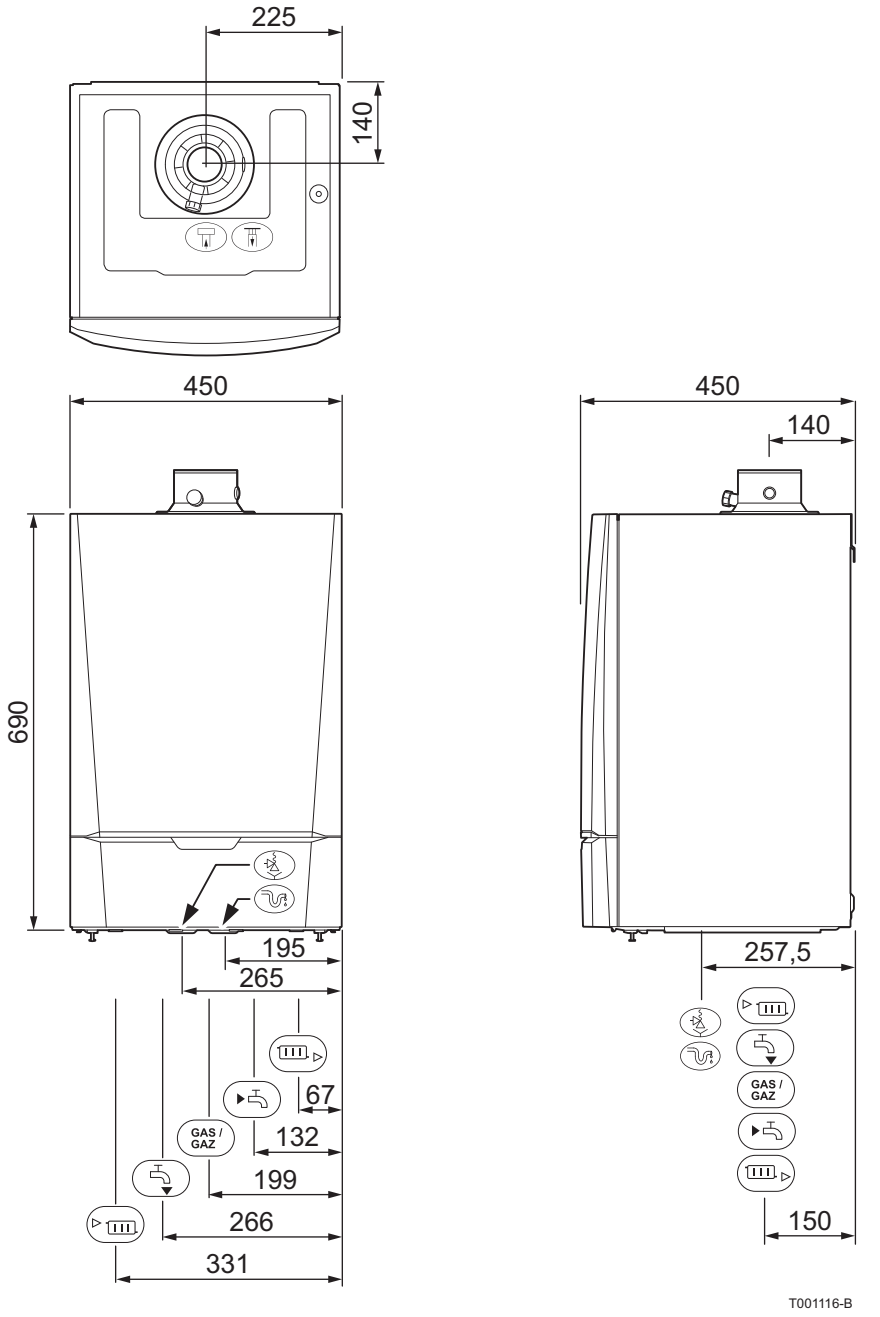
(2) Distance to allow on either side of the boiler.

If the boiler is installed in a closed casing, respect the minimum dimensions given in the diagram opposite. Also allow openings to obviate the following hazards:

- Accumulation of gas
- Heating of the box

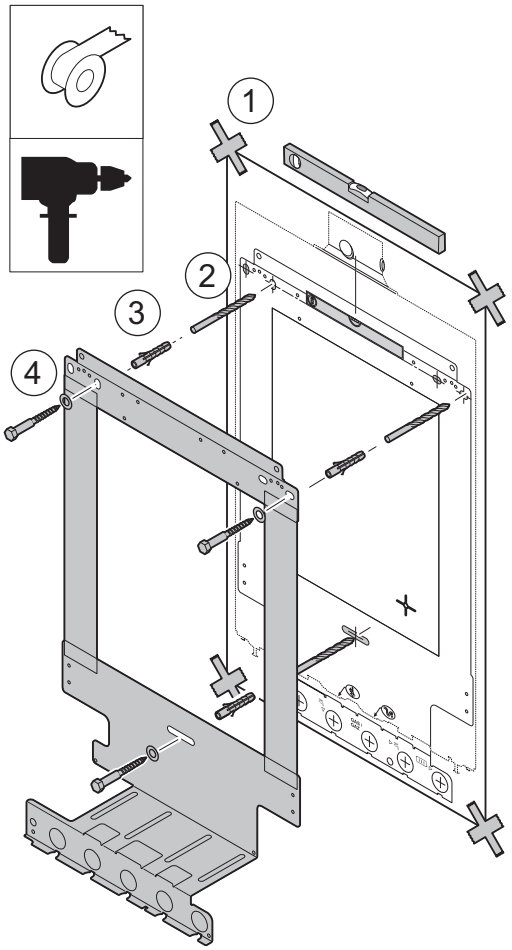
Minimum cross section of the openings: **S1** + **S2** = 150 cm^2

4.3.4. Main dimensions



	Connection of the combustion gas exhaust pipe Ø 60 mm
	Connection of the air intake pipe Ø 100 mm
	Safety valve outlet pipe Ø 25 mm
	Condensates discharge Ø 25 mm
	Heating circuit return (Primary circuit) G¾"
	Heating circuit return (Secondary circuit) G½"
Gas / Gaz	Gas connection G½"
	Heating circuit flow (Secondary circuit) G½"
	Heating circuit flow (Primary circuit) G¾"

4.4 Installing the mounting frame



T001869-A

The boiler is delivered with a mounting template.

1. Position the mounting template to the wall with adhesive tape.

CAUTION

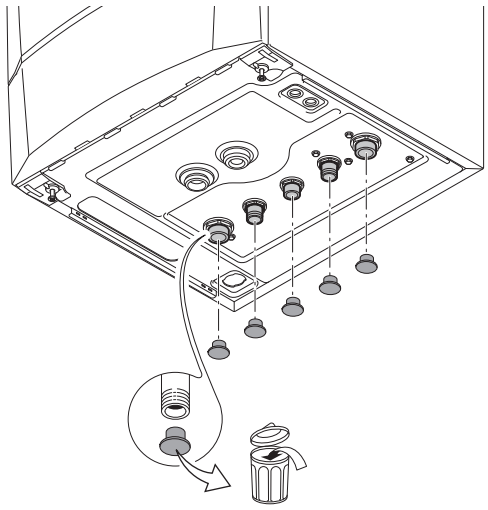
Using a spirit level, check that the mounting axis is perfectly horizontal.

2. Drill 3 holes with a Ø of 10 mm.

Additional holes are provided in case one or other of the standard locating holes prevents the correct location of the plugs.

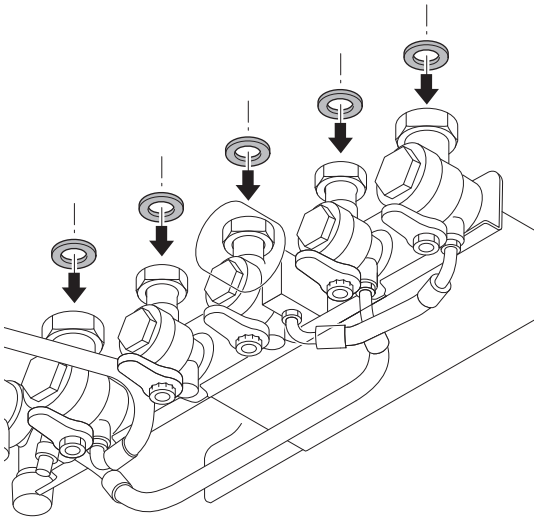
3. Put the plugs in place.
4. Secure the mounting frame to the wall using the 3 hexagonal headed screws provided for this purpose.

4.5 Positioning the boiler



T001870-A

1. Remove the protective caps from all of the hydraulic inlets and outlets on the boiler.



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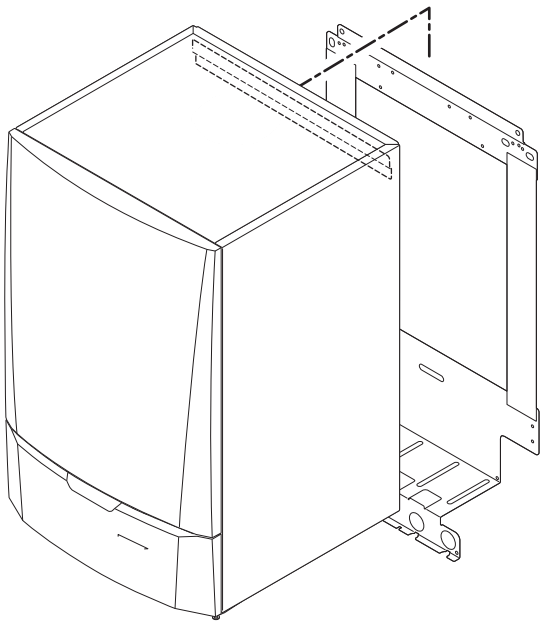
2. Fit a fibre gasket to each joint on the valve plate.



T001872-A

3. Position the boiler above the plumbing fixtures plate and locate it against the mounting frame. Gently lower the boiler.
4. Tighten the valve nuts on the boiler.

4.6 Hydraulic connections

4.6.1. Flushing the system

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

Installing the boiler in new installations (installations less than 6 months old)

- Clean the installation with a universal cleaner to eliminate debris from the appliance (copper, hemp, flux).
- Thoroughly flush the installation until the water runs clear and shows no impurities.

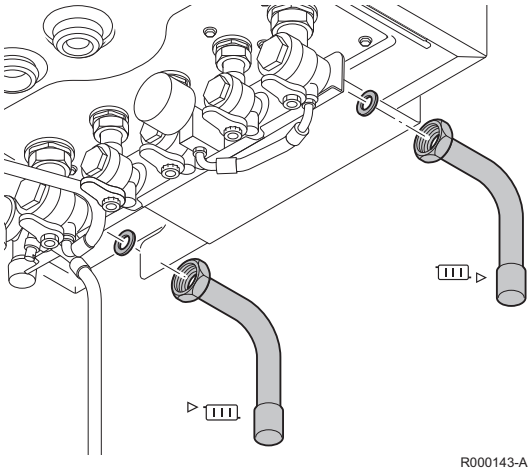
Installing the boiler in existing installations

- Remove sludge from the installation.

- Flush the installation.
- Clean the installation with a universal cleaner to eliminate debris from the appliance (copper, hemp, flux).
- Thoroughly flush the installation until the water runs clear and shows no impurities.

4.6.2. Connection of the heating circuit

■ Primary circuit



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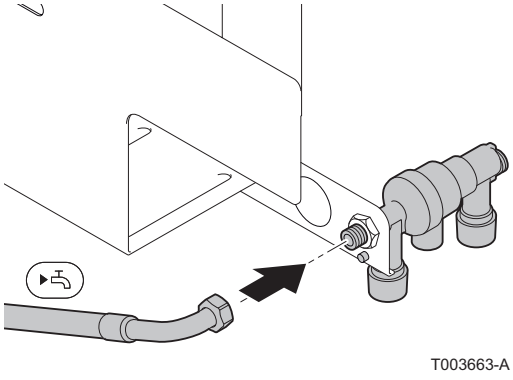
Connection by internal brazing ∅ 22 mm

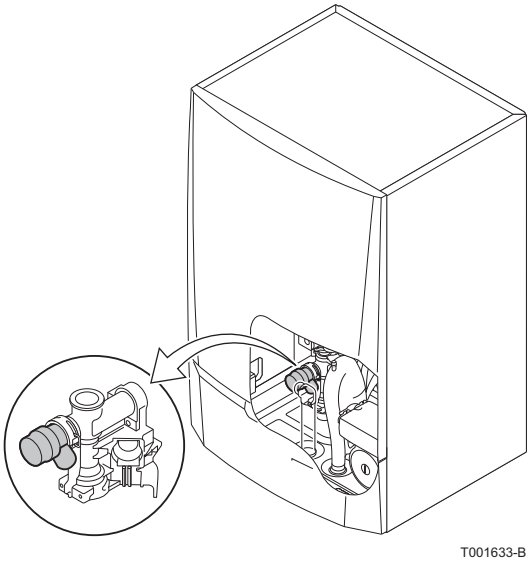
Connection by internal brazing ∅ 22 mm

1. Connect the heating water outlet pipe to the heating flow connection.
2. Connect the heating water return pipe to the heating return connection.



T003663-A

Connect the cold water supply to the decoupler using the connection hose supplied.



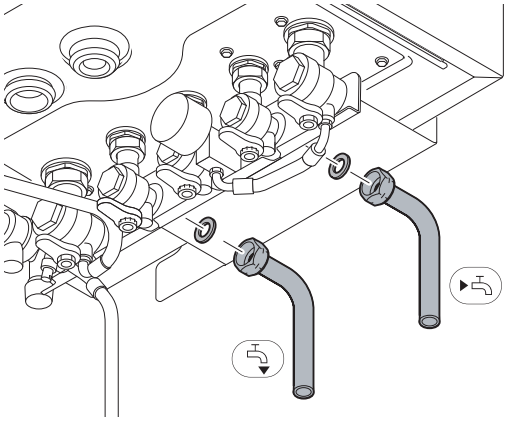
T001633-B

- The boiler is factory fitted with a safety valve mounted on the left hydroblock.

CAUTION

- The heating pipe must be mounted in accordance with prevailing provisions.

■ Secondary circuit


R000142-B

Connection by internal brazing ∅ 16mm

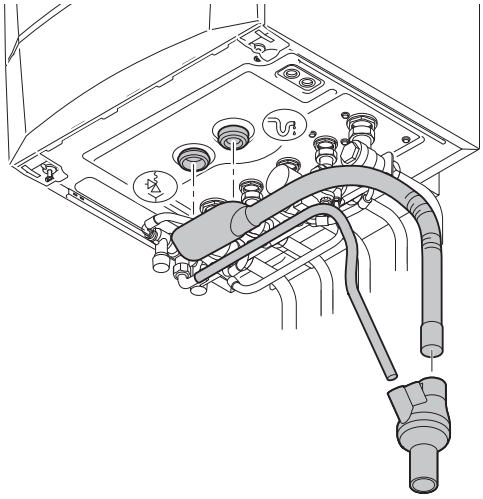
Connection by internal brazing ∅ 16mm

1. Connect the heating water outlet pipe to the heating flow connection.
2. Connect the heating water return pipe to the heating return connection.

4.6.3. Connecting the expansion vessel

Install the expansion vessel on the heating return pipe .

4.6.4. Connecting the condensate discharge pipe


T001873-C

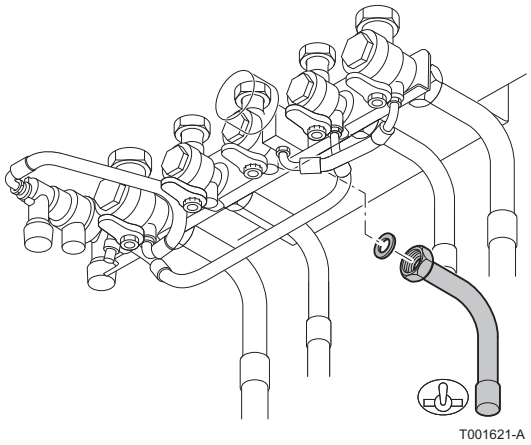
1. Mount a standard drainage pipe, Ø 32 mm or more, leading to the mains drainage system.
2. Mount the flow collector.
3. Into this, insert the condensate collector hose coming from the siphon and the safety valve .
4. Into this, insert the discharge hose from the disconnector.
5. Mount a trap or a siphon in the discharge pipe.

CAUTION

Do not make a fixed connection owing to maintenance work on the siphon.

- Do not plug the condensate discharge pipe.
- Set the discharge pipe at a gradient of at least 30 mm per metre, maximum horizontal length 5 metres.
- Do not drain condensation water into a roof gutter at any time.
- Connect the condensate discharge pipe in accordance with prevailing standards.

4.7 Gas connection



The diameters of the pipes must be defined in accordance with the standards in force in your country.

Connection by internal brazing ∅ 18 mm

1. Connect the gas inlet pipe.

WARNING

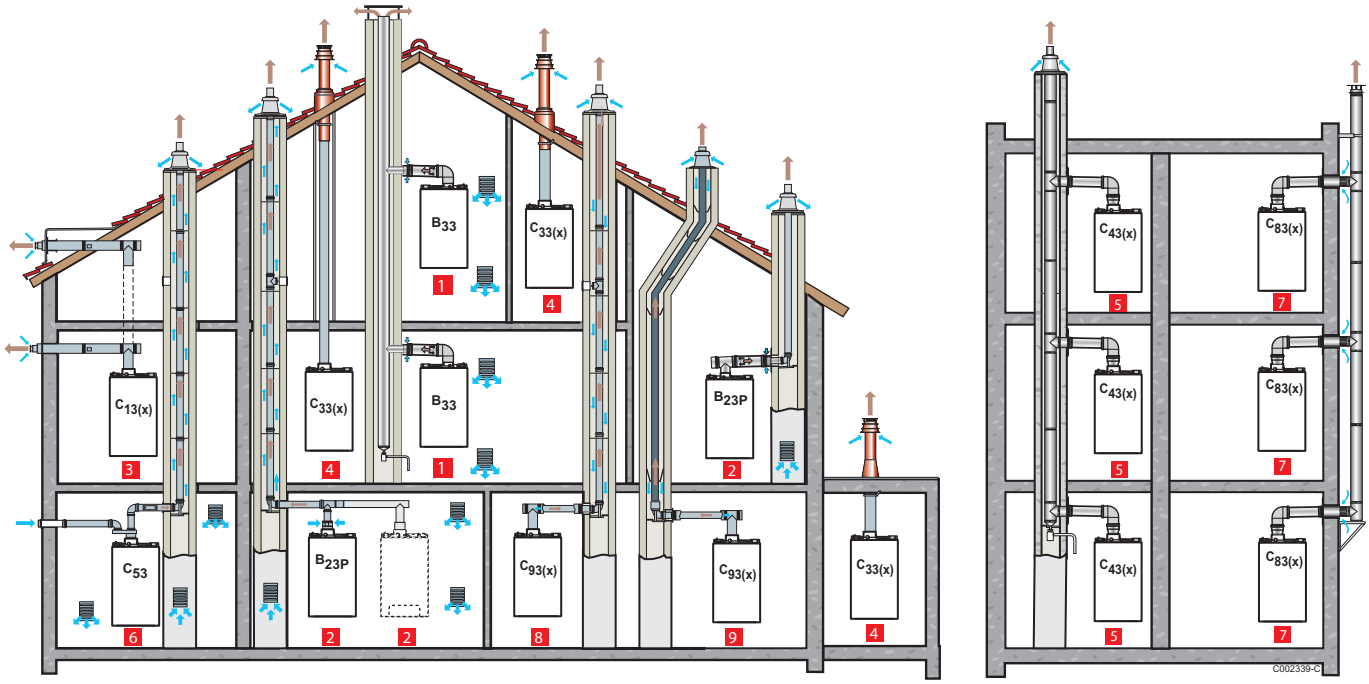
- Close the main gas valve before starting work on the gas pipes.
- Before mounting, check that the gas meter has sufficient capacity. To do this, you should keep in mind the consumption of all domestic appliances.
- If the gas meter has too low a capacity, inform the energy supply company.

CAUTION

- Ensure that there is no dust in the gas pipe. Blow into the pipe or shake it before mounting.
- We recommend installing a gas filter on the gas pipe to prevent clogging of the gas valve unit.
- Connect the gas pipe in accordance with prevailing standards and regulations.

4.8 Flue gas system connections

4.8.1. Classification



1 **Configuration B_{33}**
Connection to a collective pipe via a concentric pipe (combustive air taken from the boiler room)
All of the pressurised parts of the appliance are surrounded by air.

2 **Configuration B_{23} - B_{23P}**
Connection to a chimney using a connection kit (combustive air taken from the boiler room)

3 **Configuration $C_{13(x)}$**
Air/flue gas connection by means of concentric pipes to a horizontal terminal (so-called forced flue)

4 **Configuration $C_{33(x)}$**
Air/flue gas connection by means of concentric pipes to a vertical terminal (roof outlet)

5 **Configuration $C_{43(x)}$**
Air/flue gas connection to a collective conduit for watertight boilers (3CE P system)

6 **Configuration C_{53}**
Air and flue gas connection separated by means of a bi-flow adapter and single pipes (combustive air taken from outside)

7 **Configuration $C_{83(x)}$**
Flue gas connection to a collective conduit for sealed boilers. The air supply is individual via a terminal coming from outside the building.

8 **Configuration $C_{93(x)}$**
Air/flue gas connection by concentric pipes in the boiler room and single pipes in the chimney (combustive air in counter current in the chimney)

9 **Configuration $C_{93(x)}$**
Air/flue gas connection by concentric pipes in the boiler room and single flex in the chimney (combustive air in counter current in the chimney)

WARNING

- Only factory components are authorised for connecting the boiler and the terminal.
- The clear section must comply with the standard.
- The chimney must be swept before the installation of the evacuation conduit.

4.8.2. Lengths of the air/flue gas pipes

For configurations B23 and C93, the lengths given in the table are valid for horizontal conduits with a maximum length of 1 metre. For each additional metre of horizontal conduit, subtract 1.2 m from the vertical length Lmax

Type of air/flue gas connection			Diameter	Maximum length in metres
				MCA 35
B_{33}	Collective conduit	To determine the dimensions of such a system, refer to the supplier of the collective conduit.		
B_{23} B_{23P}	Chimney (rigid or flexible duct in chimney, combustive air taken from the premises)	PPS	80 mm (Rigid duct)	40.0
			80 mm (Flexible duct)	28.0
$C_{13(x)}$	Concentric pipes connected to a horizontal terminal	Alu or PPS	60/100 mm	3.5
			80/125 mm	17.6
$C_{33(x)}$	Concentric pipes connected to a vertical terminal	Alu or PPS	60/100 mm	-
			80/125 mm	19.0
$C_{43(x)}$	Collective conduit for sealed boiler (3 CEP)	To determine the size of such a system, consult the supplier of the 3 CEP conduit.		
C_{53}	Bi-flow adapter and separate single air/ flue gas ducts (combustive air taken from outside)	Alu	60/100 mm 2 x 80 mm	21.0
$C_{83(x)}$	Collective conduit for sealed boiler	To determine the dimensions of such a system, refer to the supplier of the collective conduit.		
$C_{93(x)}$	Concentric pipes in the boiler room Single conduits in the chimney (combustive air in counter-current)	Alu or PPS	60/100 mm 60 mm (Rigid duct)	2.8
	Concentric pipes in the boiler room Flexible single conduit in the chimney	PPS	60/100 mm 80 mm (Flexible duct)	9.0

WARNING

Maximum length = lengths of the straight air/flue gas ducts + equivalent lengths of other components

The max length in the flue gas pipe (configurations C_{93}, B_{23P}) of the elbow bracket at the outlet must not exceed:

- 30 m for rigid PPS
- 25 m for flexible PPS

If longer lengths are used, holding clamps must be added per sections of 25 or 30 metres.

For the list of flue gas system accessories and the equivalent lengths, refer to the current price list.

4.8.3. Additional Directives

- Please refer to the manufacturer's instructions for the material in question when installing the flue gas discharge and air supply materials. If the flue gas discharge and air supply materials are not installed according to the instructions (e.g. they are not leakproof, not clamped in place etc.), this may cause hazardous situations and/or result in bodily injury. After assembly, check at least all flue gas and air–carrying parts for tightness.
- Connection of the combustion gas exhaust directly to the buildings brick chimneys or flues is forbidden for condensation reasons.
- Always clean the ducts thoroughly in cases where lining pipes are used and/or a connection of the air-supply.
- It must be possible to inspect the flue or chimney.
- .
- For long, aluminium, combustion-gas exhaust pipes it is initially necessary to consider the relatively high quantity of corrosive products which are brought together with the condensate from the exhaust pipe. The siphon on the equipment requires regular cleaning or, preferably, an additional condensate collector can be installed above the equipment.
- The combusted gas discharge pipe must be sufficiently inclined towards the boiler (at least 50 mm per metre) and an adequate condensate collection tank and discharge system constructed (at least 1 m before the boiler opening). The elbows fitted must be at more than 90° to guarantee the provision of an adequate gradient and tightness on the lip rings.

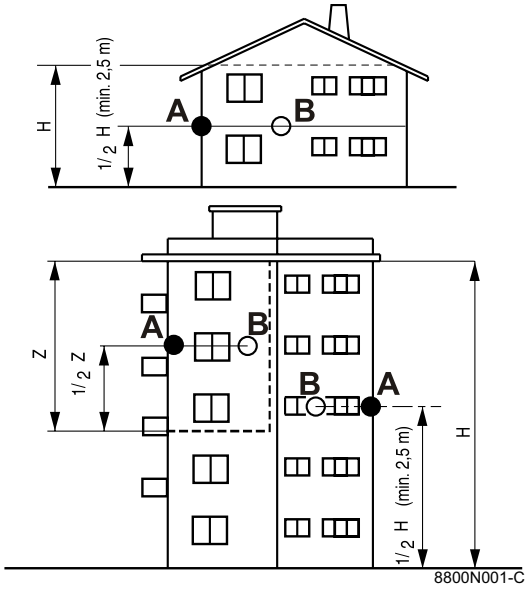
4.9 Installing the outside sensor

4.9.1. Choice of the location

It is important to select a place that allows the sensor to measure the outside conditions correctly and effectively.

Advised positions:

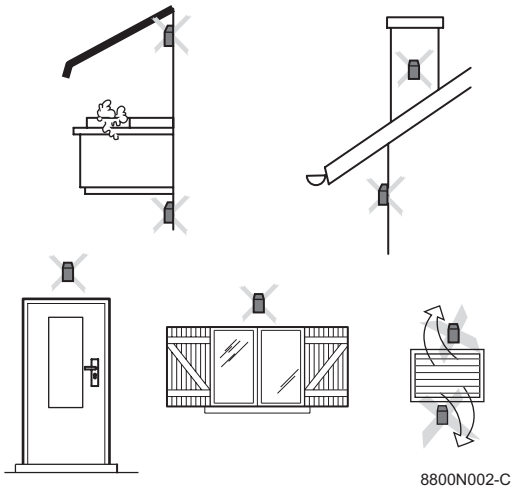
- on one face of the area to be heated, on the north if possible
- half way up the wall in the room to be heated
- under the influence of meteorological variations
- protected from direct sunlight
- easy to access



A	Recommended position
B	Possible position
H	Inhabited height controlled by the sensor
Z	Inhabited area controlled by the sensor

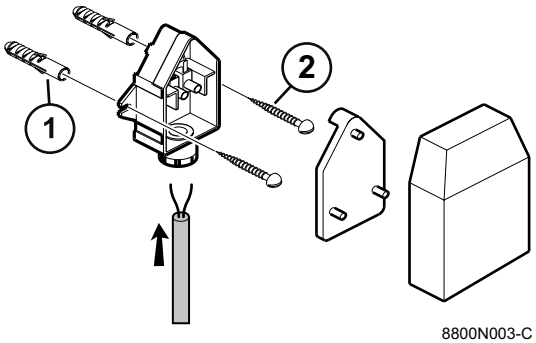
Positions to be avoided:

- masked by a building element (balcony, roof, etc.)
- close to a disruptive heat source (sun, chimney, ventilation grid, etc.)



4.9.2. Connecting the outside sensor

Mount the sensor using the screws and dowels provided.



8800N003-C

① Inserts

② Ø4 wood screw

For the connection of the outside temperature sensor, refer to the chapter "Electrical Connections".

4.10 Electrical connections

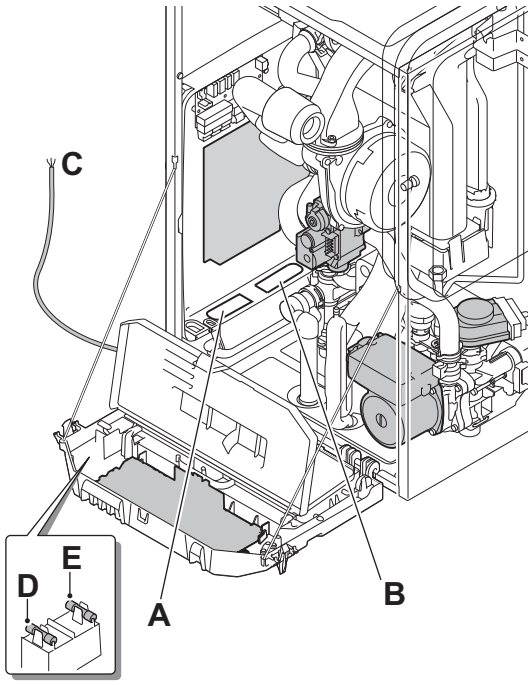
4.10.1. Control unit

The boiler is fully pre-wired. The mains supply is made via the cable **C** connected to the mains. All other external connections can be made to the connection connectors (low voltage). The main characteristics of the control unit are described in the table below.

Power supply voltage	230 VAC/50Hz
Rating of the main fuse F1 (230 VAC)	6.3 AT
Fuse rating F2 (230 VAC)	2 AT
Fan-DC	27 VDC

CAUTION

Keep to the polarity shown on the terminals: phase (L), neutral (N) and earth ⏚.



C002336-E

A Routing of the 230 V cables

B Routing of the sensor cables

C Power supply cable

D 6,3 AT fuse

E 2 AT fuse

CAUTION

The following components of the appliance are at a voltage of 230 V:

- Boiler pump.
- Combined venturi and gas valve unit.
- 3-way valve.
- The majority of components in the control panel and the terminal box.
- Power supply cable.

4.10.2. Recommendations

WARNING

- Only qualified professionnals may carry out electrical connections, always with the power off.
- The boiler is entirely pre-wired. Do not modify the connections inside the control panel.
- Earth the appliance before making any electrical connections.

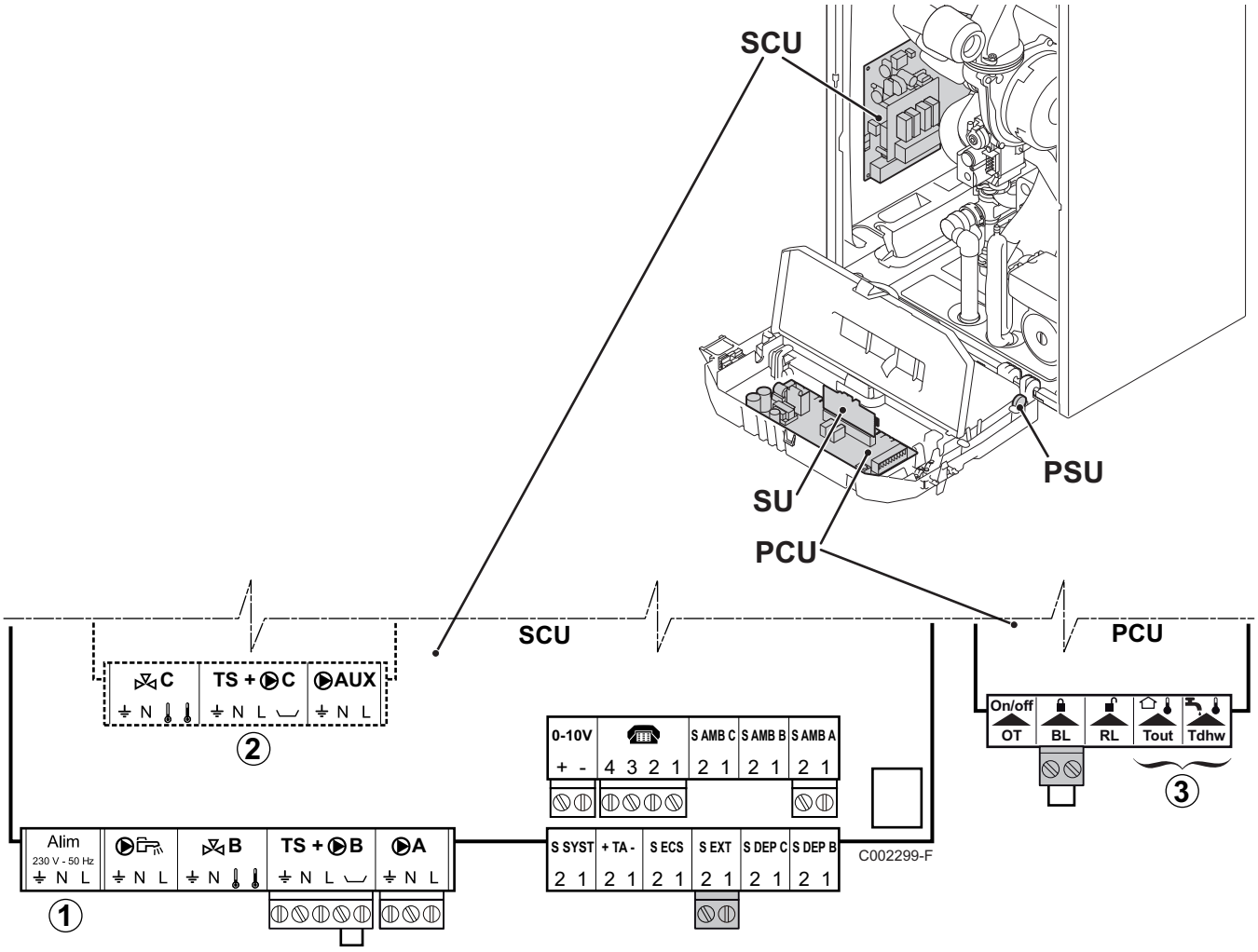
Make the electrical connections of the boiler according to:

- The instructions of the prevailing standards.
- The instructions on the electrical diagrams provided with the boiler.
- The recommendations in the instructions.

CAUTION

- Separate the sensor cables from the 230 V cables.
- Outside the boiler: Use 2 pipes or cable guides at least 10 cm apart.

4.10.3. Position of the PCBs



① Do not connect anything to the terminal block.

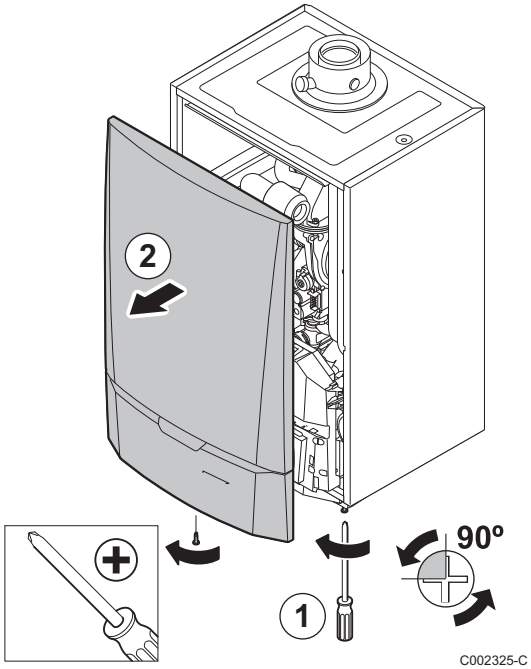
② Optional PCB (Package AD249)

③ Do not connect anything to the terminal block.

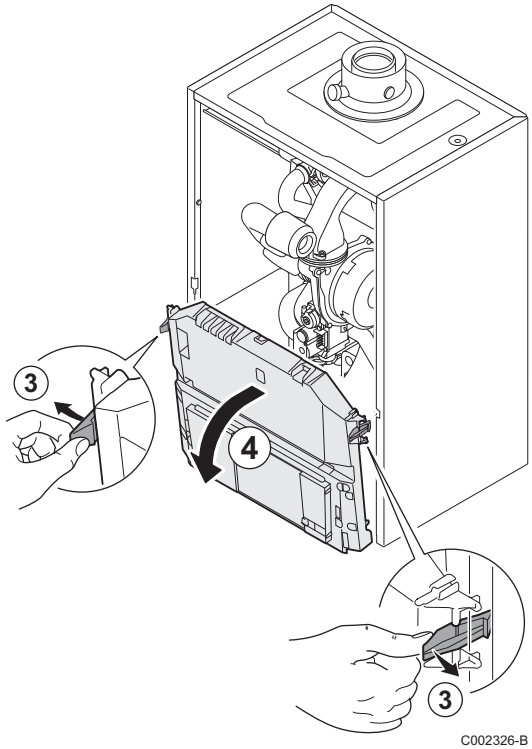
4.10.4. Accessing the connection terminal blocks

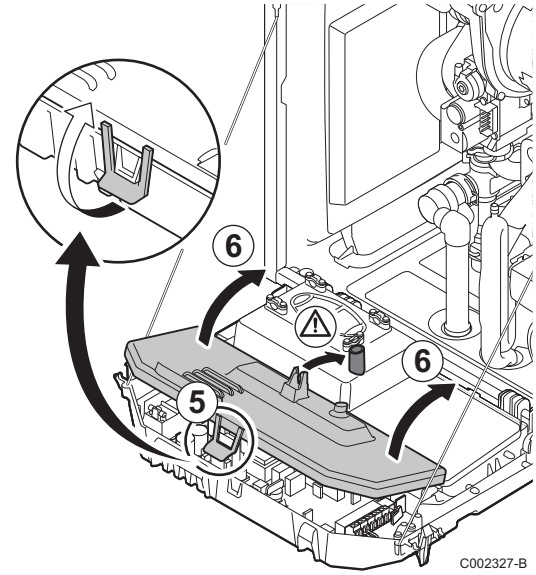
To access the connection terminal blocks, proceed as follows:

1. Unscrew the 2 screws under the front panel by a quarter turn.
2. Remove the front panel.

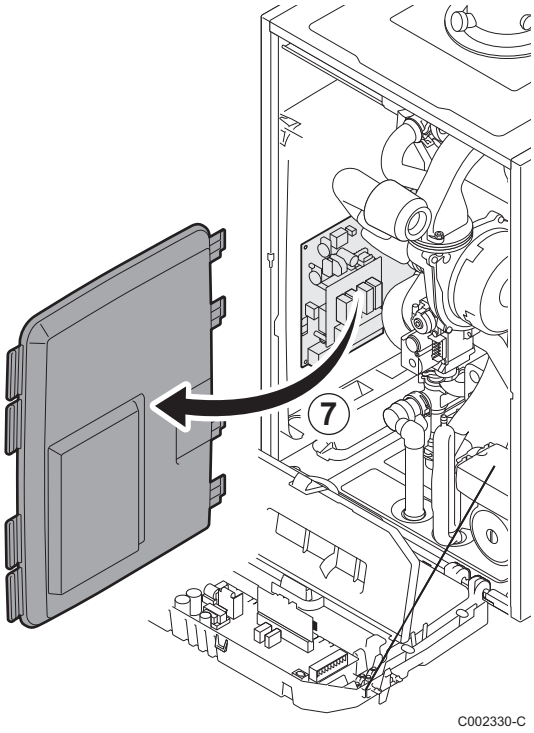


3. Open the holding clips located on the sides.
4. Tilt the control panel forward.



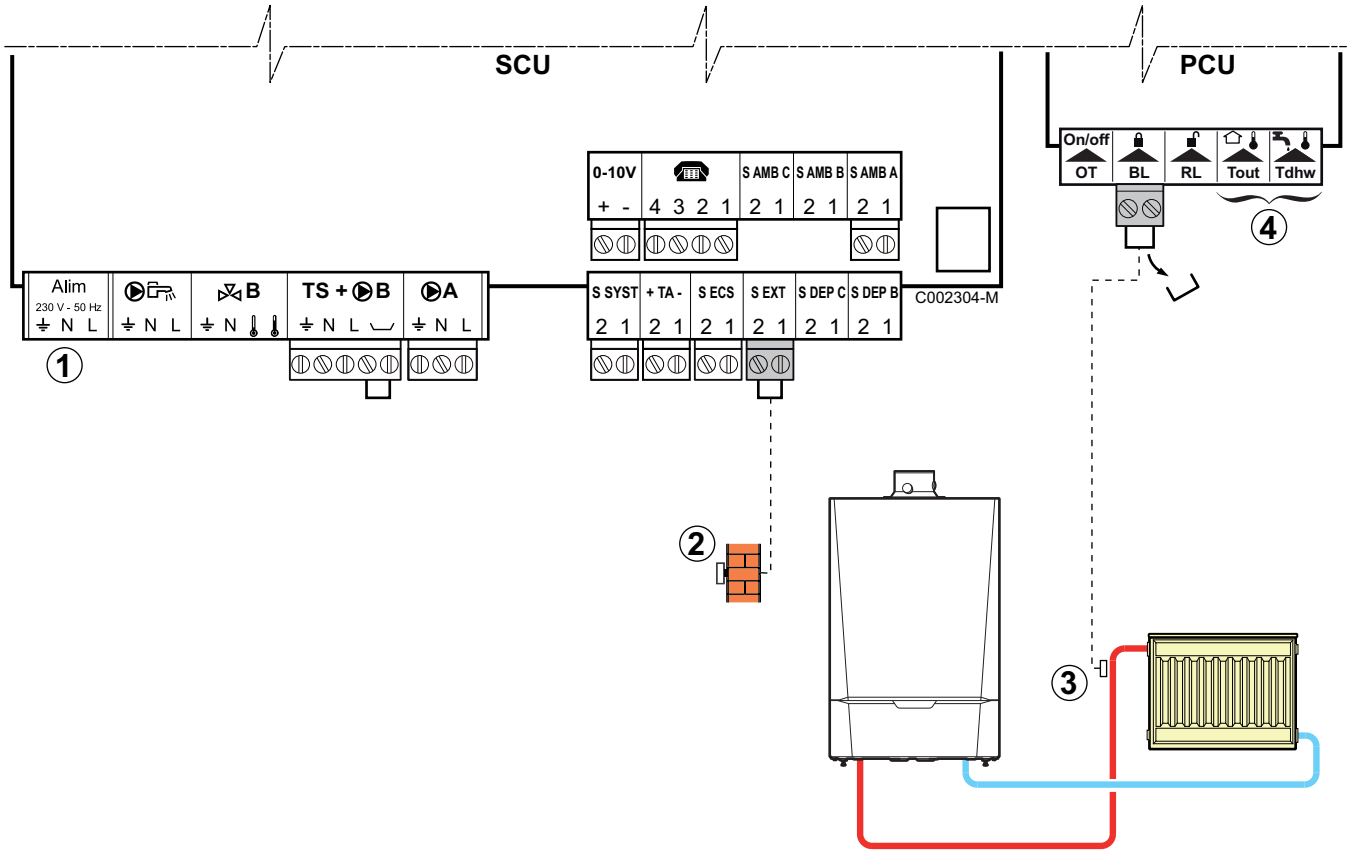


5. Lift the clip located in front of the control panel.
6. Lift the control panel cover.



7. Unclip the PCB cover.

4.10.5. Connecting a direct heating circuit



① Do not connect anything to the terminal block.

② Connect the outside temperature sensor.

③ Connect a safety thermostat if the heating circuit is for underfloor heating.

- Remove the bridge.
- Connect the wires from the safety thermostat to the connector.

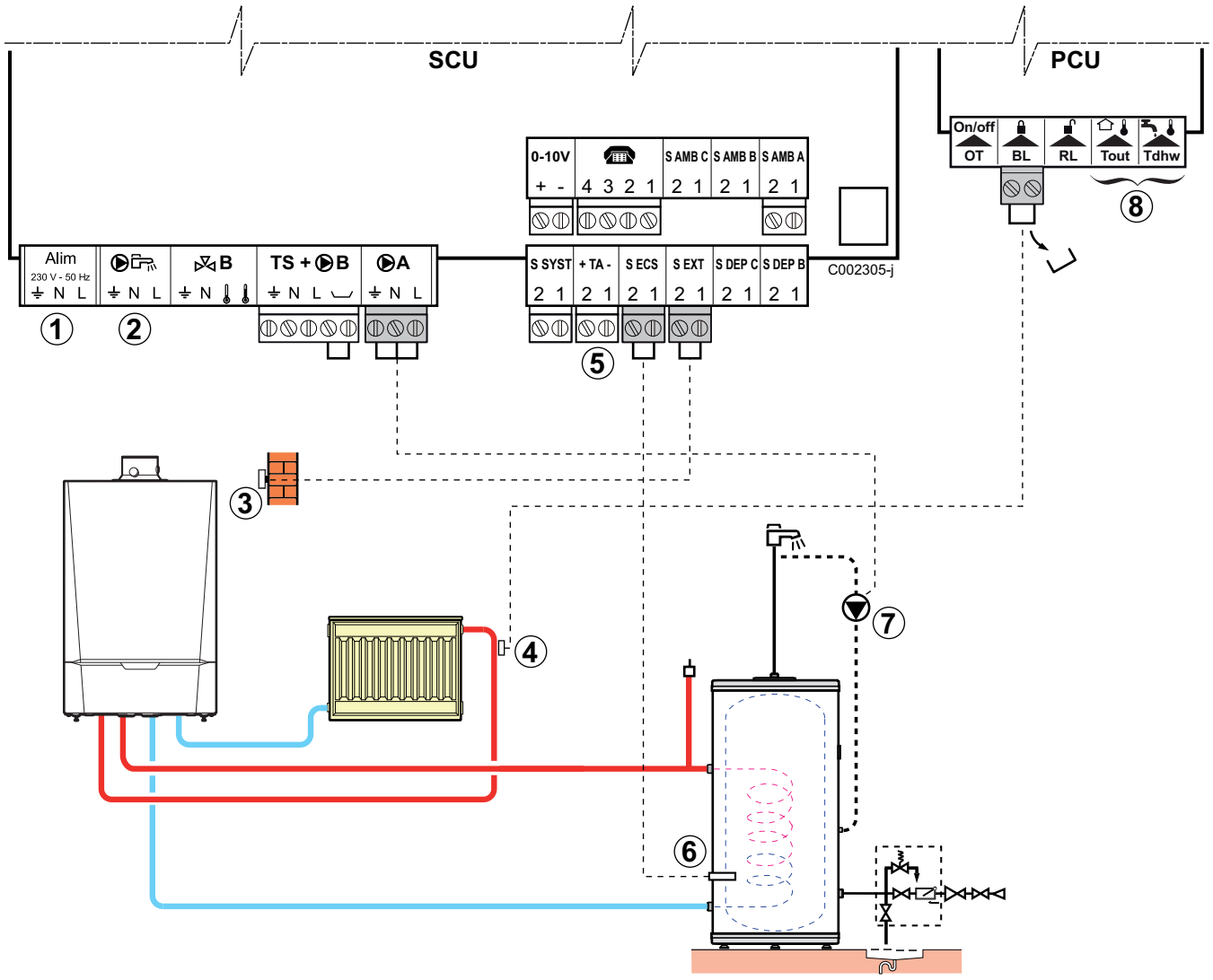
④ Do not connect anything to the terminal block.

Install the expansion vessel on the heating return pipe .

See chapter: "Connecting the expansion vessel", page 22

Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
If safety thermostat is connected to **BL** on the connection terminal block: **IN.BL**	Installer level **#PRIMARY INSTAL.P** menu	**STOP HEAT**	"Professional settings", page 81

4.10.6. Connecting a direct heating circuit and a domestic hot water tank



① Do not connect anything to the terminal block.

②

CAUTION

Do not connect anything to the outlet on the terminal block. The reversal valve is connected to the PCU PCB in the boiler.

③ Connect the outside temperature sensor.

④ Connect a safety thermostat if the heating circuit is for underfloor heating.

- Remove the bridge.
- Connect the wires from the safety thermostat to the connector.

⑤ Connect the DHW tank anode.

CAUTION

- If the tank is fitted with a Titan Active System® impressed current anode, connect the anode to the inlet (+ TA on the anode, - on the tank).
- If the tank is not fitted with an impressed current anode, put the simulation connector in place (delivered with the DHW sensor - package AD212).

⑥ Connect the DHW sensor (Package AD212).

⑦ Connect the domestic hot water looping pump (Optional).

⑧ Do not connect anything to the terminal block.

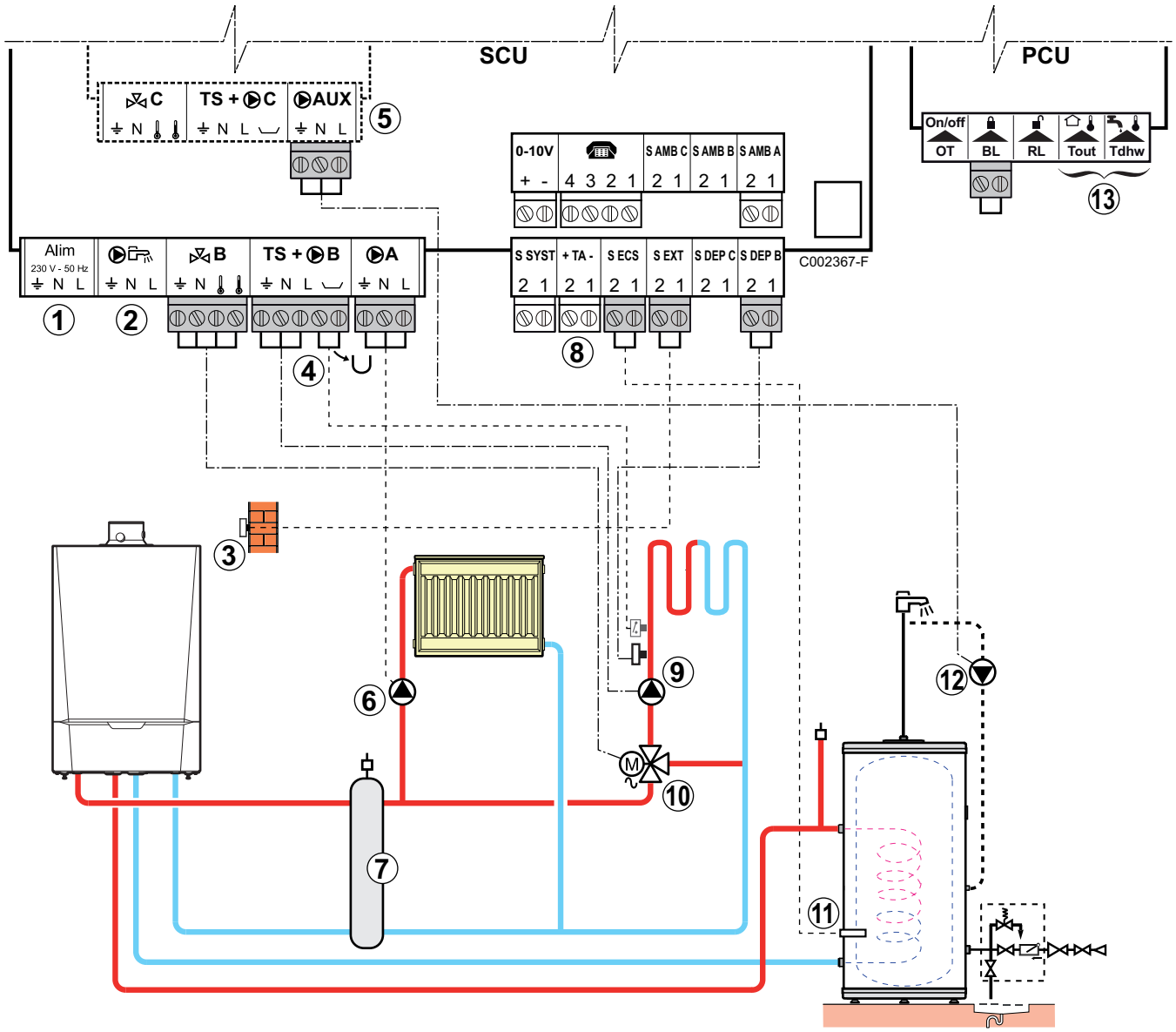
Install the expansion vessel on the heating return pipe .

See chapter: "Connecting the expansion vessel", page 22

Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
If a domestic hot water looping pump is connected to **A** on the terminal block: **O.PUMP A**(1)	Installer level **#SYSTEM** menu	**DHW LOOP**	"Setting the parameters specific to the installation", page 70
If safety thermostat is connected to **BL** on the connection terminal block: **IN.BL**	Installer level **#PRIMARY INSTAL.P** menu	**TOTAL STOP**	"Professional settings", page 81
If a DHW tank (type BS60) is connected: **BS60**(1)	Installer level **#SYSTEM** menu	**ON**	"Setting the parameters specific to the installation", page 70
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

4.10.7. Connecting two circuits and a domestic hot water tank

■ Domestic hot water tank before the pressure release header



① Do not connect anything to the terminal block.

②

CAUTION

Do not connect anything to the outlet on the terminal block. The reversal valve is connected to the PCU PCB in the boiler.

③ Connect the outside temperature sensor.

④ Connect a safety thermostat if the heating circuit is for underfloor heating.

- Remove the bridge.
- Connect the wires from the safety thermostat to the connector.

⑤ Connecting an additional circuit to the AD249 option.

⑥ Connect the heating pump (circuit **A**).

If underfloor heating is being used, put a safety thermostat in place after the heating pump. The safety thermostat will shut down the heating pump in the event of overheating.

⑦ Low loss header.

⑧ Connect the DHW tank anode.

CAUTION

- If the tank is fitted with a Titan Active System® impressed current anode, connect the anode to the inlet (+ TA on the anode, - on the tank).
- If the tank is not fitted with an impressed current anode, put the simulation connector in place (delivered with the DHW sensor - package AD212).

⑨ Connect the heating pump (circuit **B**).

⑩ Connect the 3-way valve (circuit **B**).

⑪ Connect the DHW sensor (Package AD212).

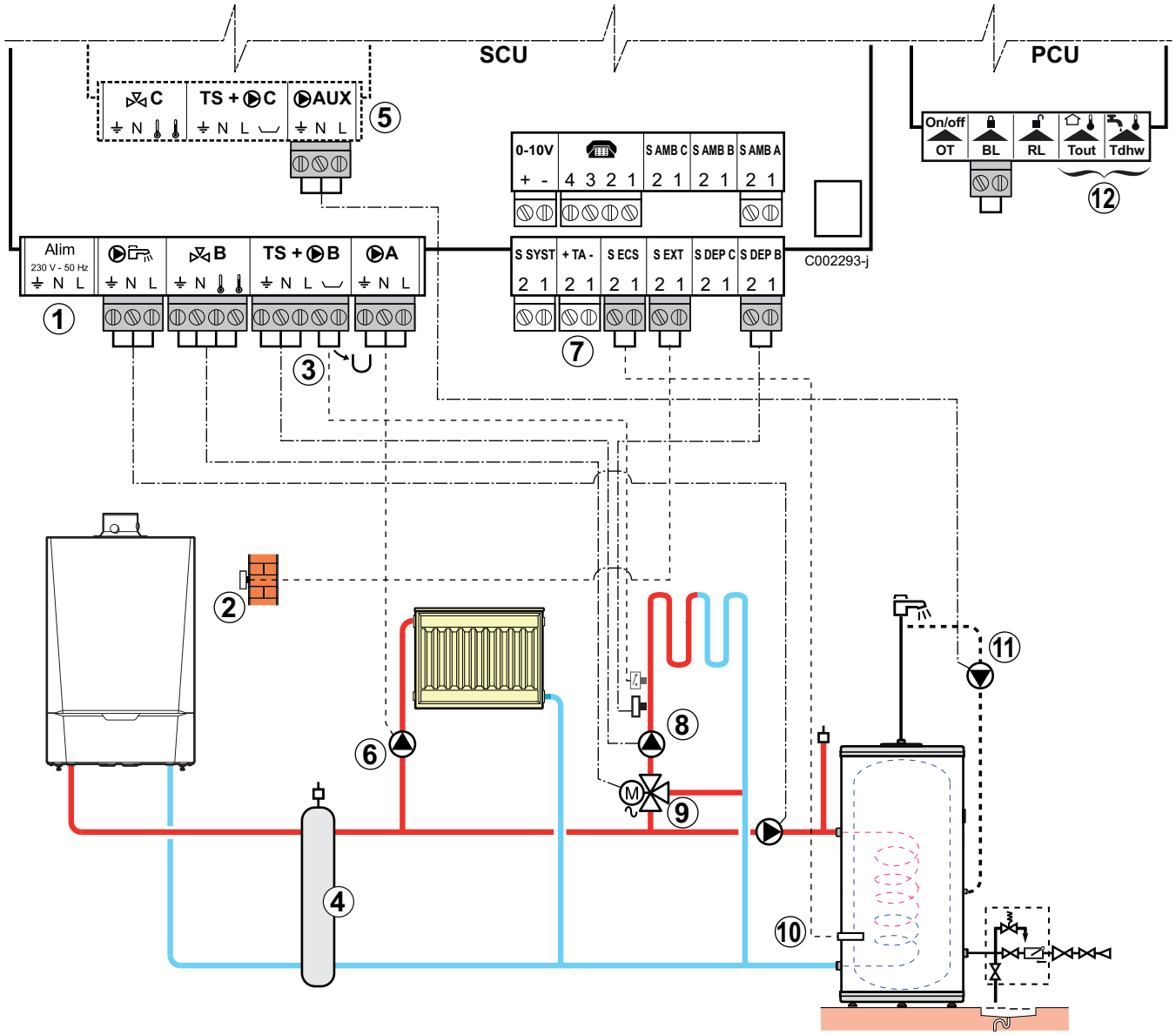
⑫ Connect the domestic hot water looping pump to the **AUX** outlet on the AD249 option

⑬ Do not connect anything to the terminal block.

Install the expansion vessel on the heating return pipe .

See chapter: "Connecting the expansion vessel", page 22

■ Domestic hot water tank after the low-loss header



① Do not connect anything to the terminal block.

② Connect the outside temperature sensor.

③ Connect a safety thermostat if the heating circuit is for underfloor heating.

- Remove the bridge.
- Connect the wires from the safety thermostat to the connector.

④ Low loss header

⑤ Connecting an additional circuit to the AD249 option.

⑥ Connect the heating pump (circuit **A**).

If underfloor heating is being used, put a safety thermostat in place after the heating pump. The safety thermostat will shut down the heating pump in the event of overheating.

⑦ Connect the DHW tank anode.

CAUTION

- If the tank is fitted with a Titan Active System® impressed current anode, connect the anode to the inlet (+ TA on the anode, - on the tank).
- If the tank is not fitted with an impressed current anode, put the simulation connector in place (delivered with the DHW sensor - package AD212).

⑧ Connect the heating pump (circuit **B**).

⑨ Connect the 3-way valve (circuit **B**).

⑩ Connect the DHW sensor (Package AD212).

⑪ Connect the domestic hot water looping pump to the **AUX** outlet on the AD249 option.

⑫ Do not connect anything to the terminal block.

Install the expansion vessel on the heating return pipe .

See chapter: "Connecting the expansion vessel", page 22

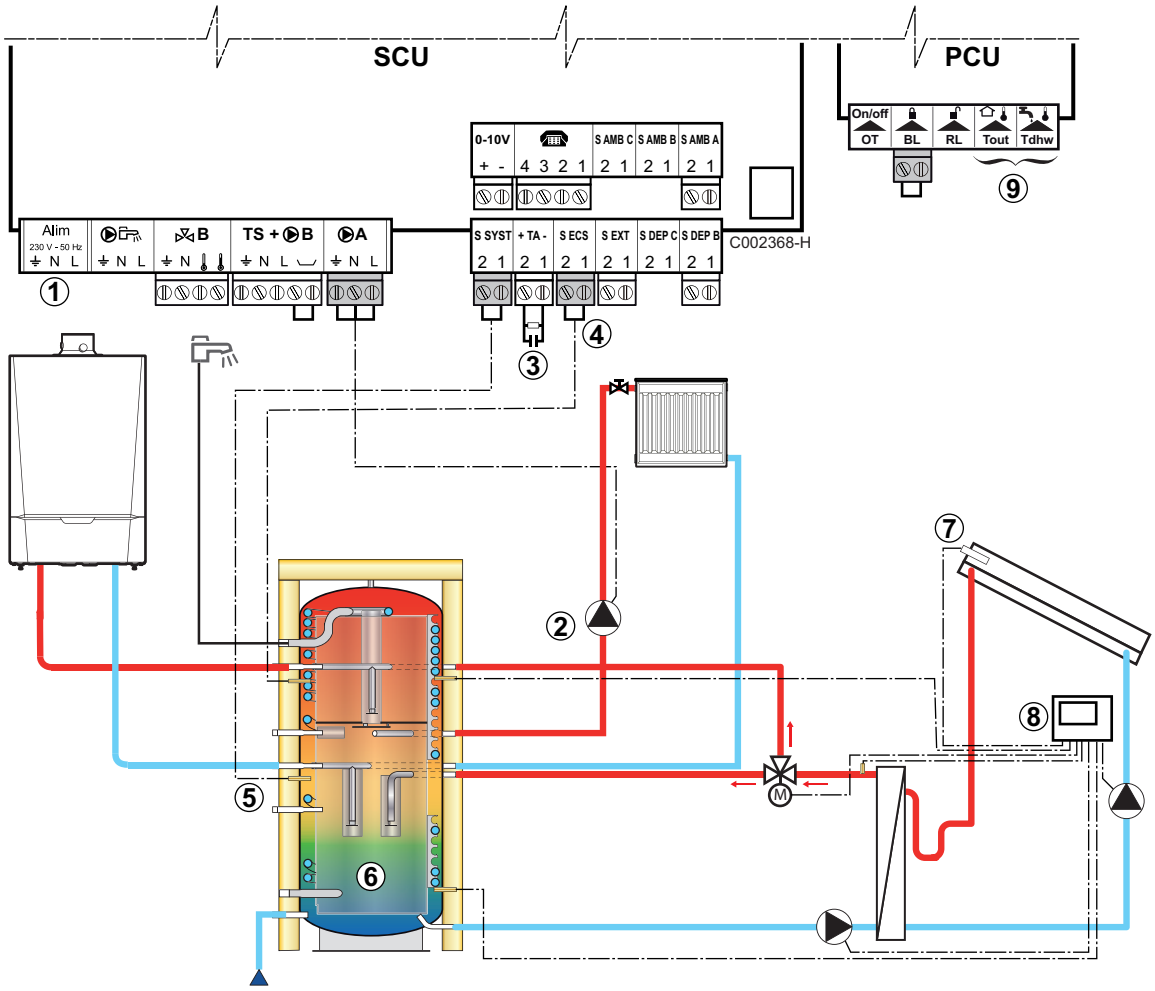
Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
P.DHW:(1)	Installer level **#SYSTEM** menu	**PUMP**	"Setting the parameters specific to the installation", page 70
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

4.10.8. Hot water storage tank connection

■ QUADRO DU 750 storage tank

In this installation example, the storage tank (type QUADRO DU 750) incorporates a domestic hot water zone. The boiler starts up systematically to maintain the domestic hot water zone in the storage tank or to maintain the independent tank at temperature.

If the storage tank does not have a DHW zone, use an independent domestic hot water tank.



① Do not connect anything to the terminal block.

② Connect the heating pump (Circuit A).

③ Connect the DHW tank anode.

If the tank is not fitted with an impressed current anode, put the simulation connector in place (delivered with the DHW sensor - package AD212).

④ Connect the DHW sensor (Package AD212).

⑤ Connect the sensor from the storage tank (Package AD250).

⑥ Buffer tank.

⑦ Solar sensor probe.

⑧ Connect the solar station to the solar collectors.

⑨ Do not connect anything to the terminal block.

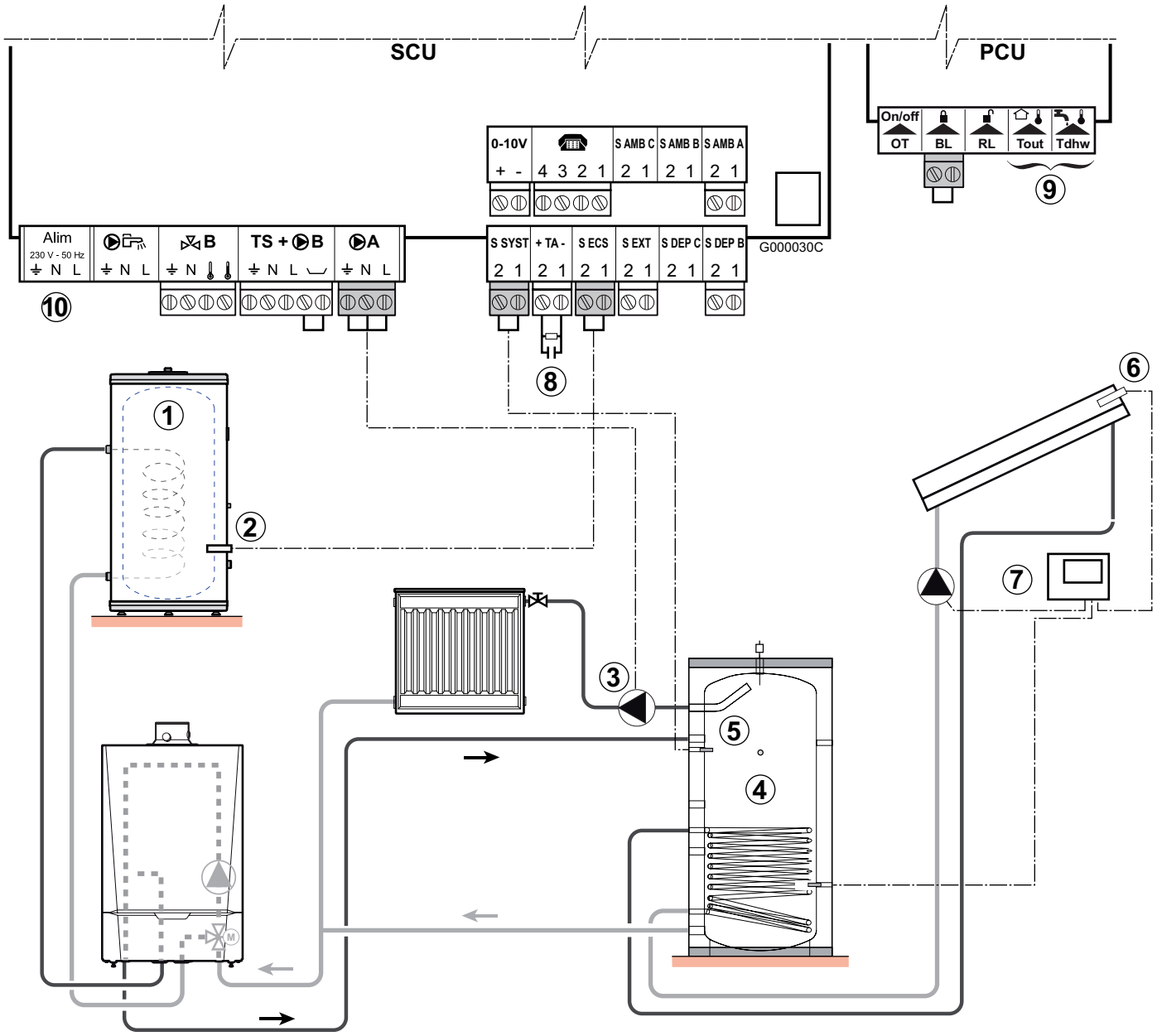
Install the expansion vessel on the heating return pipe (111).

See chapter: "Connecting the expansion vessel", page 22

Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
I.SYST(1)	Installer level **#SYSTEM** menu	**STORAGE TANK**	"Setting the parameters specific to the installation", page 70
P.DHW:(2)	Installer level **#SYSTEM** menu	**PUMP**	
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED** (2) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

The DHW part is maintained at the DHW set point by the boiler.
The heating zone is maintained at the set temperature calculated according to the outside temperature. The zone is reheated when the heating buffer temperature sensor ⑤ falls -6°C below the calculated set temperature.
Reheating in the heating zone stops when the heating buffer temperature rises above the calculated set temperature.

■ PS type storage tank and DHW tank loaded by the boiler



①	Connect a domestic hot water tank if the storage tank ④ is only used for heating
②	Connect the DHW sensor (Package AD212).
③	Connect the heating pump (Circuit **A**).
④	Buffer tank.
⑤	Connect the sensor from the storage tank.
⑥	Solar sensor probe.
⑦	Connect the solar station to the solar collectors.
⑧	Connect the DHW tank anode.

If the tank is not fitted with an impressed current anode, put the simulation connector in place (delivered with the DHW sensor - package AD212).

⑨ Do not connect anything to the terminal block.

Install the expansion vessel on the heating return pipe .

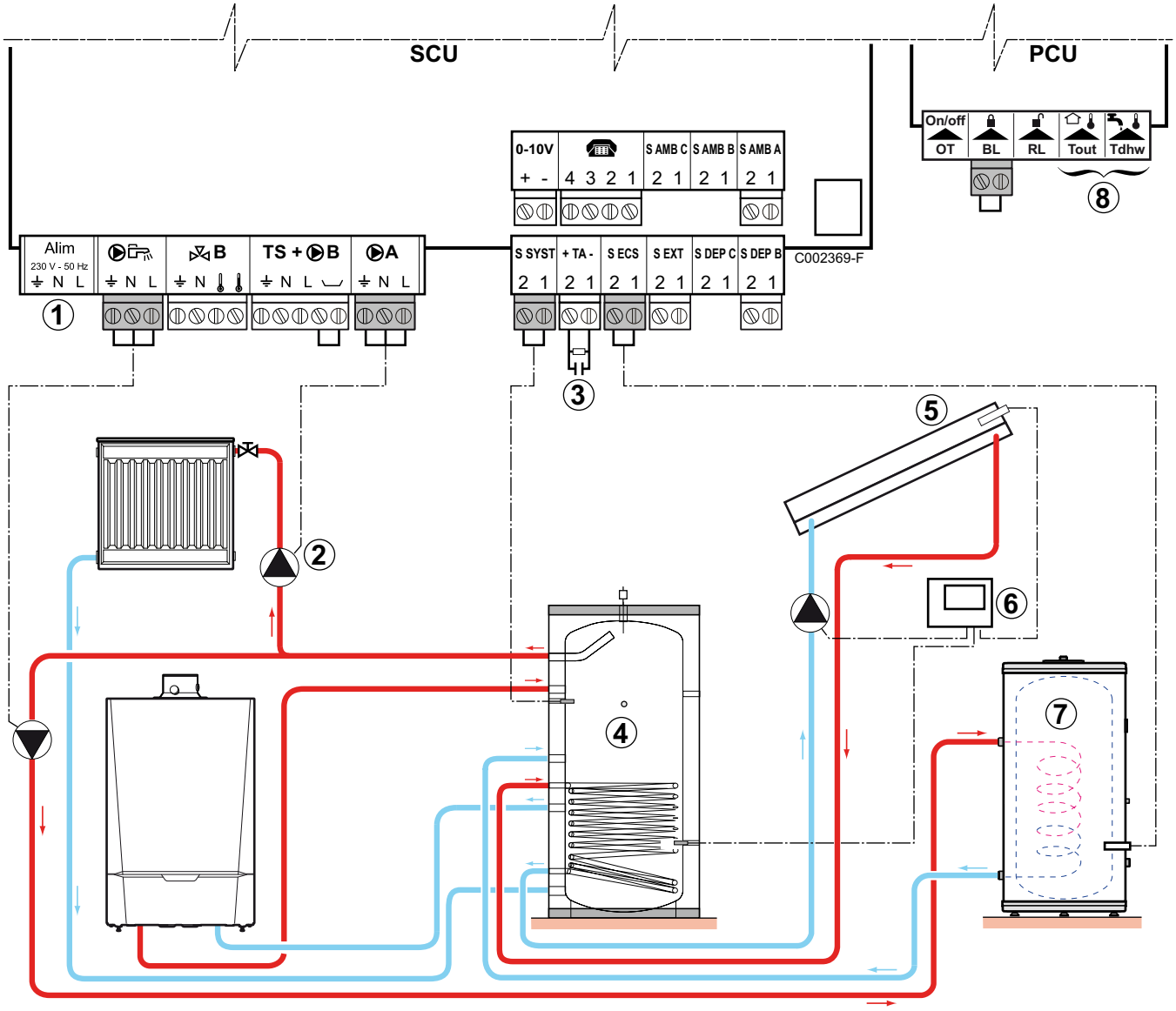
See chapter: "Connecting the expansion vessel", page 22

Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
I.SYST(1)	Installer level **#SYSTEM** menu	**STORAGE TANK**	"Setting the parameters specific to the installation", page 70
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

The DHW part is maintained at the DHW set point by the boiler.
The heating zone is maintained at the set temperature calculated according to the outside temperature. The zone is reheated when the heating buffer temperature sensor falls -6°C below the calculated set temperature. Reheating in the heating zone stops when the heating buffer temperature rises above the calculated set temperature.

■ PS type storage tank and DHW tank loaded by this storage tank

The boiler only starts up production of domestic hot water if the storage tank is not hot enough to guarantee tank loading.



① Do not connect anything to the terminal block.

② Connect the heating pump (Circuit **A**).

③ Connect the DHW tank anode.

If the tank is not fitted with an impressed current anode, put the simulation connector in place (delivered with the DHW sensor - package AD212).

④ Buffer tank.

⑤ Solar sensor probe.

⑥ Connect the solar station to the solar collectors.

⑦ Domestic hot water boiler.
Connect the DHW sensor.

⑧ Do not connect anything to the terminal block.

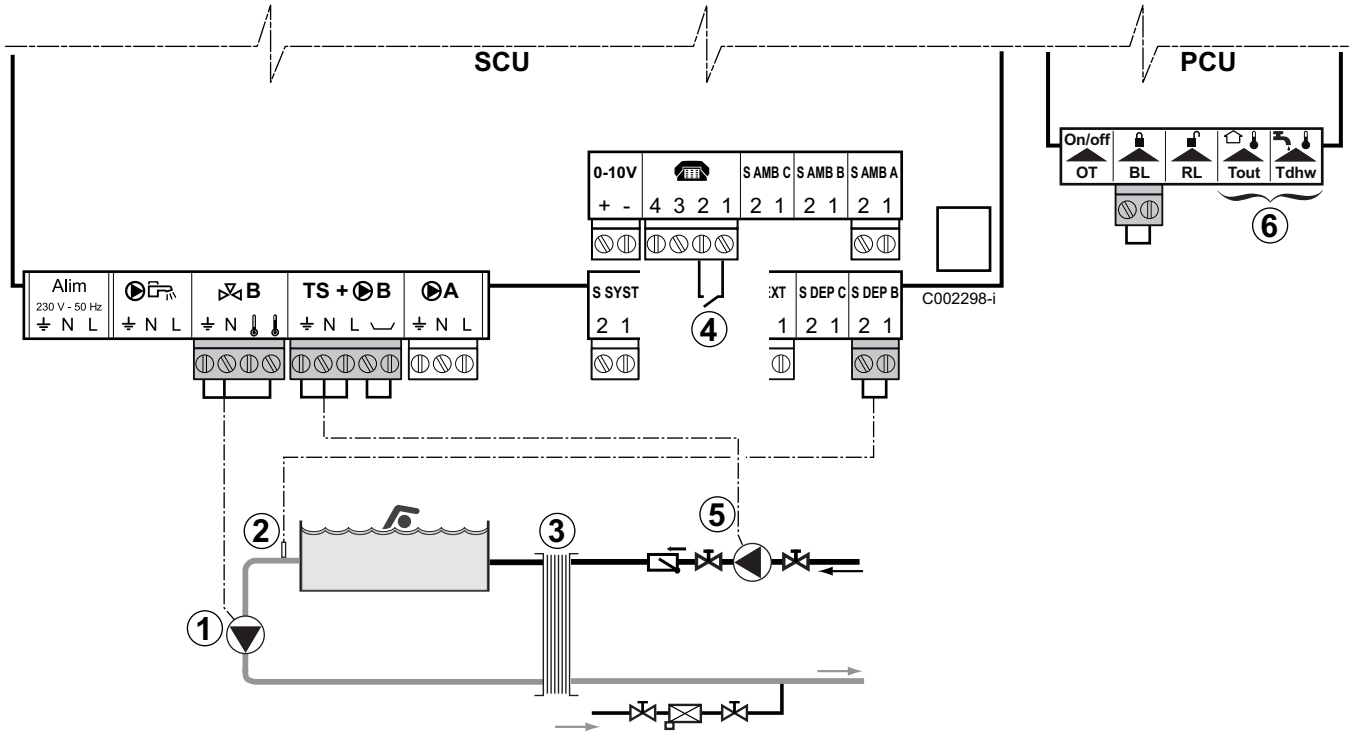
Install the expansion vessel on the heating return pipe .

See chapter: "Connecting the expansion vessel", page 22

Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
I.SYST(1)	Installer level **#SYSTEM** menu	**ST.TANK+DHW**	"Setting the parameters specific to the installation", page 70
P.DHW:(1)	Installer level **#SYSTEM** menu	**PUMP**	
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

The DHW tank is loaded from the storage tank. If, during DHW loading, the temperature of the storage tank falls below the primary DHW set point (parameter PRIM.TEMP.DHW), the boiler maintains the latter at temperature to guarantee the loading of the DHW tank The heating zone is maintained at the set temperature calculated according to the outside temperature. The zone is reheated when the heating buffer temperature sensor falls -6°C below the calculated set temperature. Reheating in the heating zone stops when the heating buffer temperature rises above the calculated set temperature.

4.10.9. Pool connection



① Connect the secondary swimming pool pump.

② Connect the swimming pool sensor.

③ Plate heat exchanger.

④ Pool heating cut-off control

When the parameter **I.TEL:** is on **0/1 B**, the swimming pool is no longer heated when the contact is open (factory setting), only the antifreeze continues to be active.
The contact direction can still be adjusted by the parameter **CT.TEL**.

⑤ Connect the primary swimming pool pump.

⑥ Do not connect anything to the terminal block.

Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
CIRC. B:	Installer level **#SYSTEM** menu	**SWIM.P.**	"Setting the parameters specific to the installation", page 70
If **I.TEL:** is used **I.TEL:**	Installer level **#SYSTEM** menu	**0/1 B**	
MAX. CIRC. B	Installer level **#SECONDARY LIMITS** menu	Set the value of **MAX.CIRC.B** to the temperature corresponding to the needs of the exchanger	"Professional settings", page 81

Controlling the pool circuit

The control system can be used to manage a swimming pool circuit in both cases:

Case 1: The control system regulates the primary circuit (boiler/exchanger) and the secondary circuit (exchanger/pool).

- Connect the primary circuit pump (boiler/exchanger) to the **B** outlet on the connection terminal block. The temperature **MAX.CIRC.B** is then guaranteed during comfort periods on programme **B** in summer and winter alike.
- Connect the swimming pool sensor (package AD212) to the **S DEP B** inlet on the connection terminal block.
- Set the set point of the pool sensor using key in the range 5 - 39°C.

Case 2: The pool has already a regulation system that is to be kept. The control system only regulates the primary circuit (boiler/exchanger).

- Connect the primary circuit pump (boiler/exchanger) to the **B** outlet on the connection terminal block.
  The temperature **MAX.CIRC.B** is then guaranteed during comfort periods on programme **B** in summer and winter alike.

The swimming pool can also be connected to circuit **C** by adding the AD249 option:

- Make the connection to the terminal blocks marked **C**.
- Set the parameters for circuit **C**.

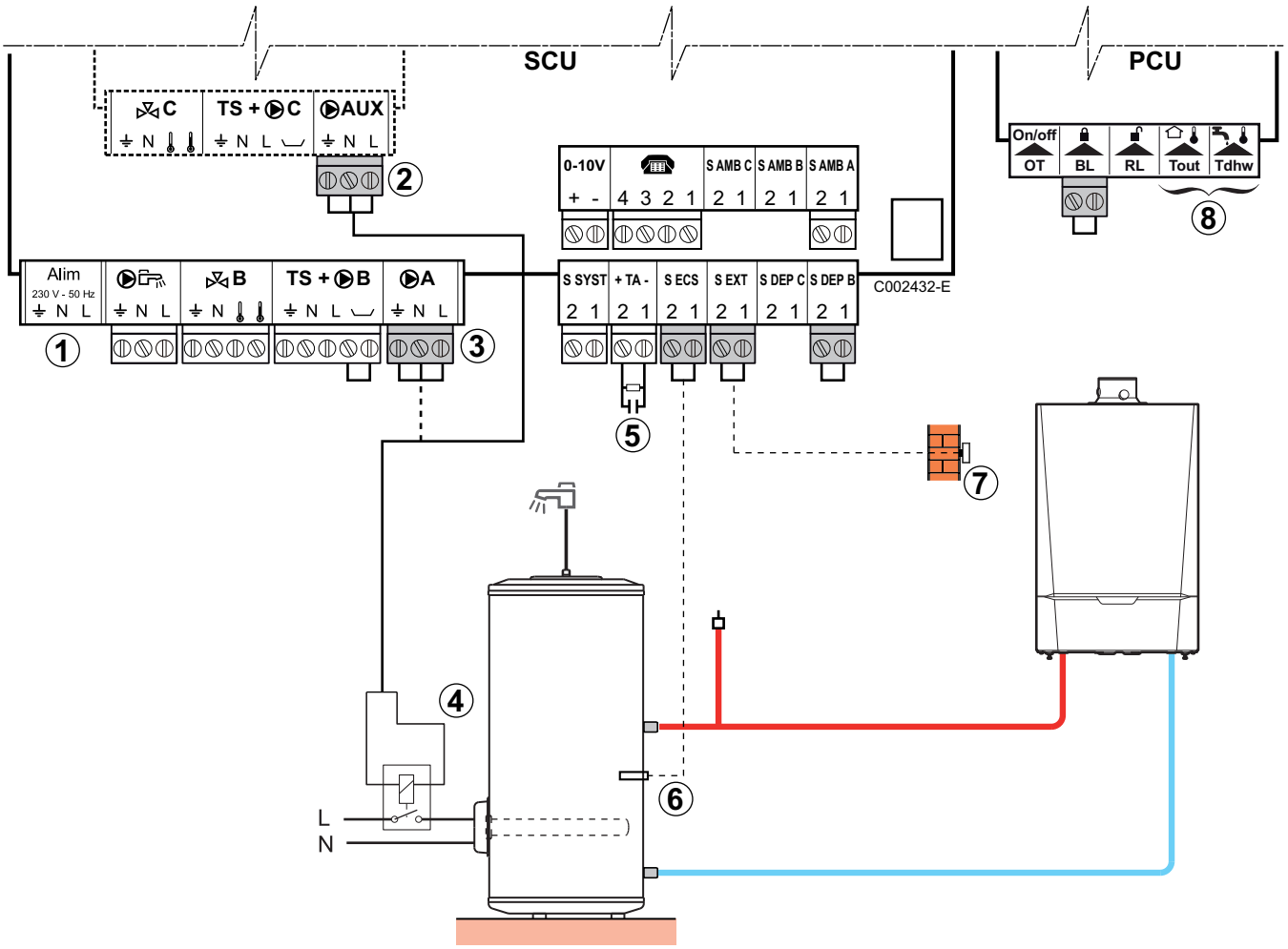
■ Hourly programming of the secondary circuit pump

The secondary pump operates during programme **B** comfort periods in summer and winter alike.

■ Stopping

To prepare your pool for winter, consult your pool specialist.

4.10.10. Connecting a mixed tank



① Do not connect anything to the terminal block.

② Option of connecting the electric tank (with AD249 option)
or to ③

③ Outlet circuit **A** - Option of connecting the electric tank (or to ②)

④ Power control relay to the electrical resistor

⑤ Connect the DHW tank anode.

If the tank is not fitted with an impressed current anode, put the simulation connector in place (delivered with the DHW sensor - package AD212).

⑥ Connect the DHW sensor (Package AD212).

⑦ Connect the outside temperature sensor

⑧ Do not connect anything to the terminal block.

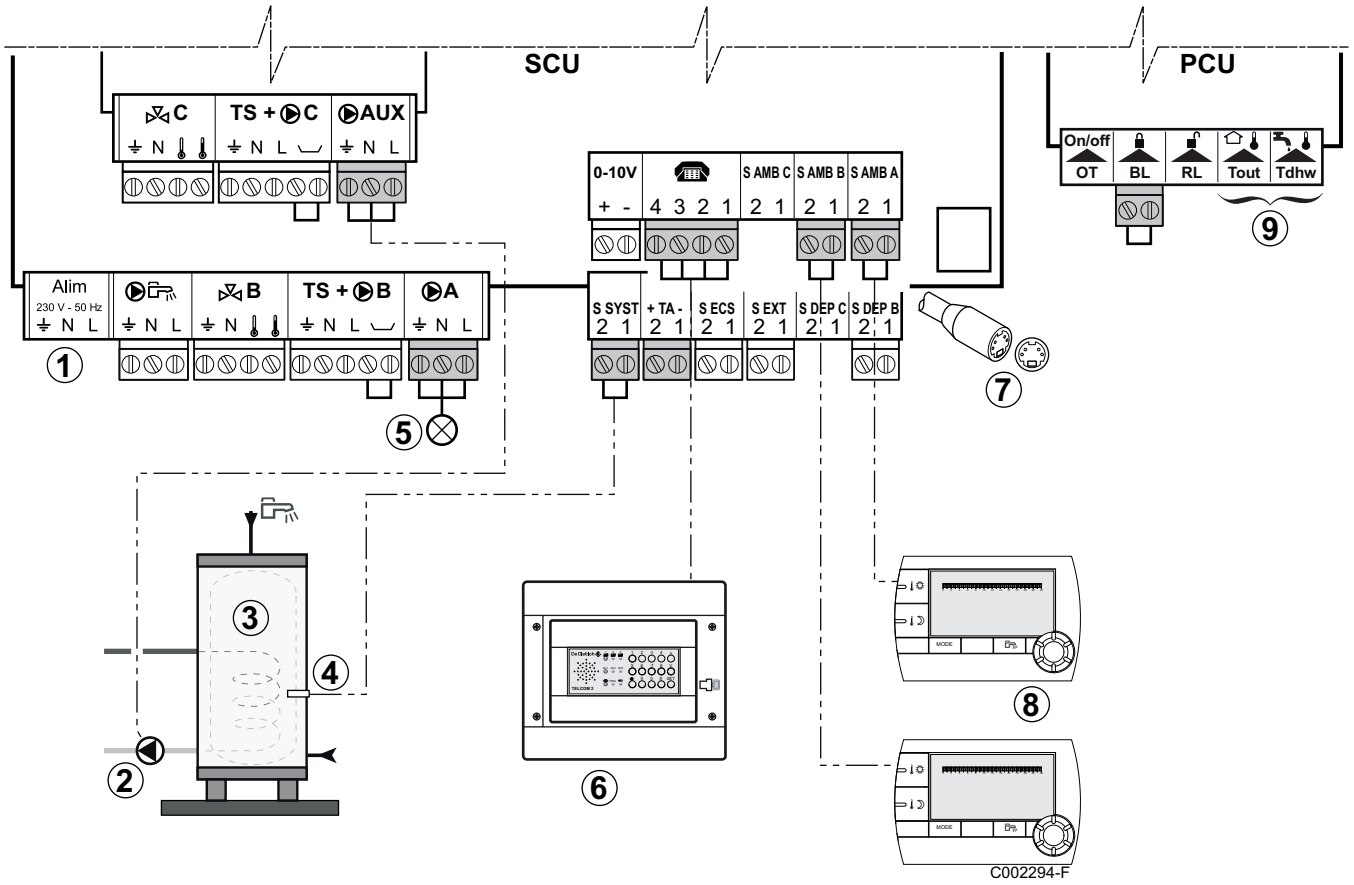
Install the expansion vessel on the heating return pipe .

See chapter: "Connecting the expansion vessel", page 22

Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
If the electric tank is connected to **A**: **CIRC. A:**(1)	Installer level **#SYSTEM** menu	**DHW ELEC**	"Setting the parameters specific to the installation", page 70
If the electric tank is connected to **AUX**: **S.AUX:**(1)	Installer level **#SYSTEM** menu	**DHW ELEC**	
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

4.10.11. Connecting the options

For example: TELCOM remote vocal monitoring module, remote controls for circuits **A** and **B**, second DHW tank

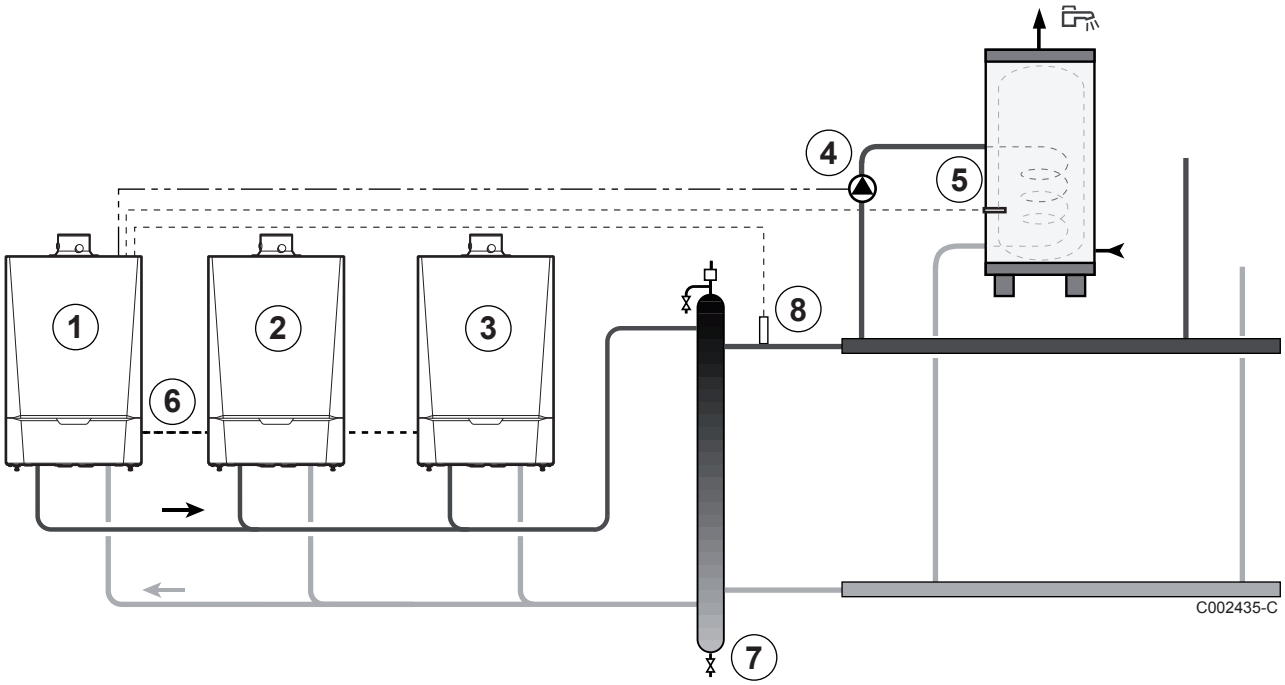


①	Do not connect anything to the terminal block.
②	Connect the load pump of the second tank.
③	Second domestic hot water tank
④	Connect the DHW sensor of the second tank.
⑤	Alarm indicator
⑥	Connect the TELCOM remote vocal monitoring module (depending on its availability in your country).
⑦	Connecting the BUS cascade, VM
⑧	Connect the remote control (Package AD254/FM52).
⑨	Do not connect anything to the terminal block.

Settings to be made for this type of installation			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
O.PUMP A(1)	Installer level **#SYSTEM** menu	**FAILURE**	"Setting the parameters specific to the installation", page 70
If second tank connected: **S.AUX:**(1)	Installer level **#SYSTEM** menu	**DHW**	
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

4.10.12. Connection in cascade

■ DHW tank after the mixing tank



①	Master boiler
②	Secondary boiler
③	Secondary boiler
④	D.H.W. load pump
⑤	Connect the DHW sensor (Package AD212)
⑥	Cable **BUS**
⑦	Low loss header
⑧	Cascade outlet sensor Connect the sensor to the terminal block **S SYST** on the master boiler.

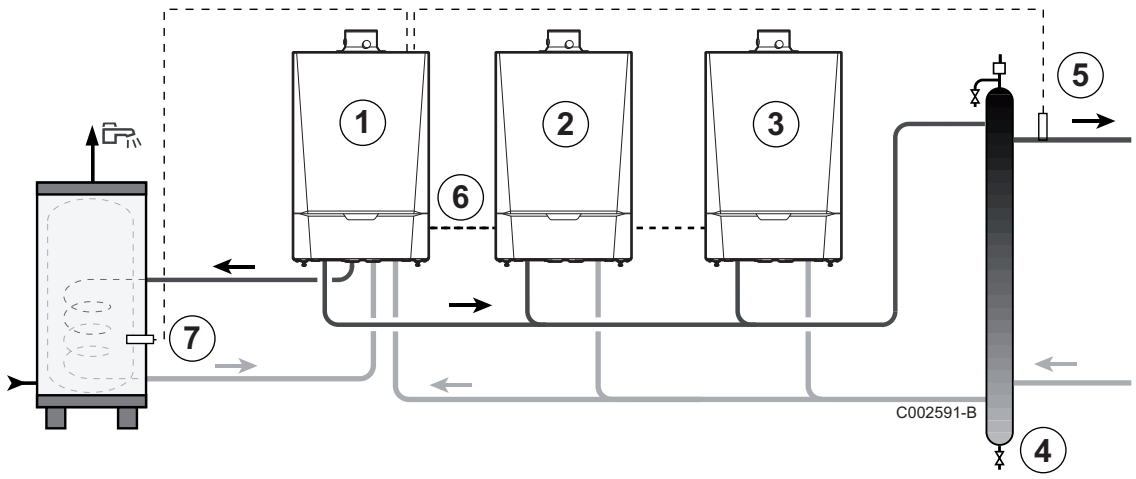
Install the expansion vessel on the heating return pipe .

See chapter: "Connecting the expansion vessel", page 22

Settings to be made for this type of installation: Master boiler			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
P.DHW:(1)	Installer level **#SYSTEM** menu	**PUMP**	"Setting the parameters specific to the installation", page 70
CASCADE:(1)	Installer level **#NETWORK** menu	**ON**	"Configuring the network", page 88
MASTER CONTROLLER(1)	Installer level **#NETWORK** menu	**ON**	
SYSTEM NETWORK(1)	Installer level **#NETWORK** menu	**ADD SLAVE**	
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

Settings to be made for this type of installation: Follower boilers			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
CASCADE:(1)	Installer level **#NETWORK** menu	**ON**	"Configuring the network", page 88
MASTER CONTROLLER(1)	Installer level **#NETWORK** menu	**OFF**	
SLAVE NUMBER(1)	Installer level **#NETWORK** menu	2, 3, ...	
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

DHW tank on master boiler



① Master boiler

② Secondary boiler

③ Secondary boiler

④ Low loss header

⑤ Cascade outlet sensor
Connect the sensor to the terminal block **S SYST** on the master boiler.

⑥ Cable **BUS**

⑦ Connect the DHW sensor (Package AD212)

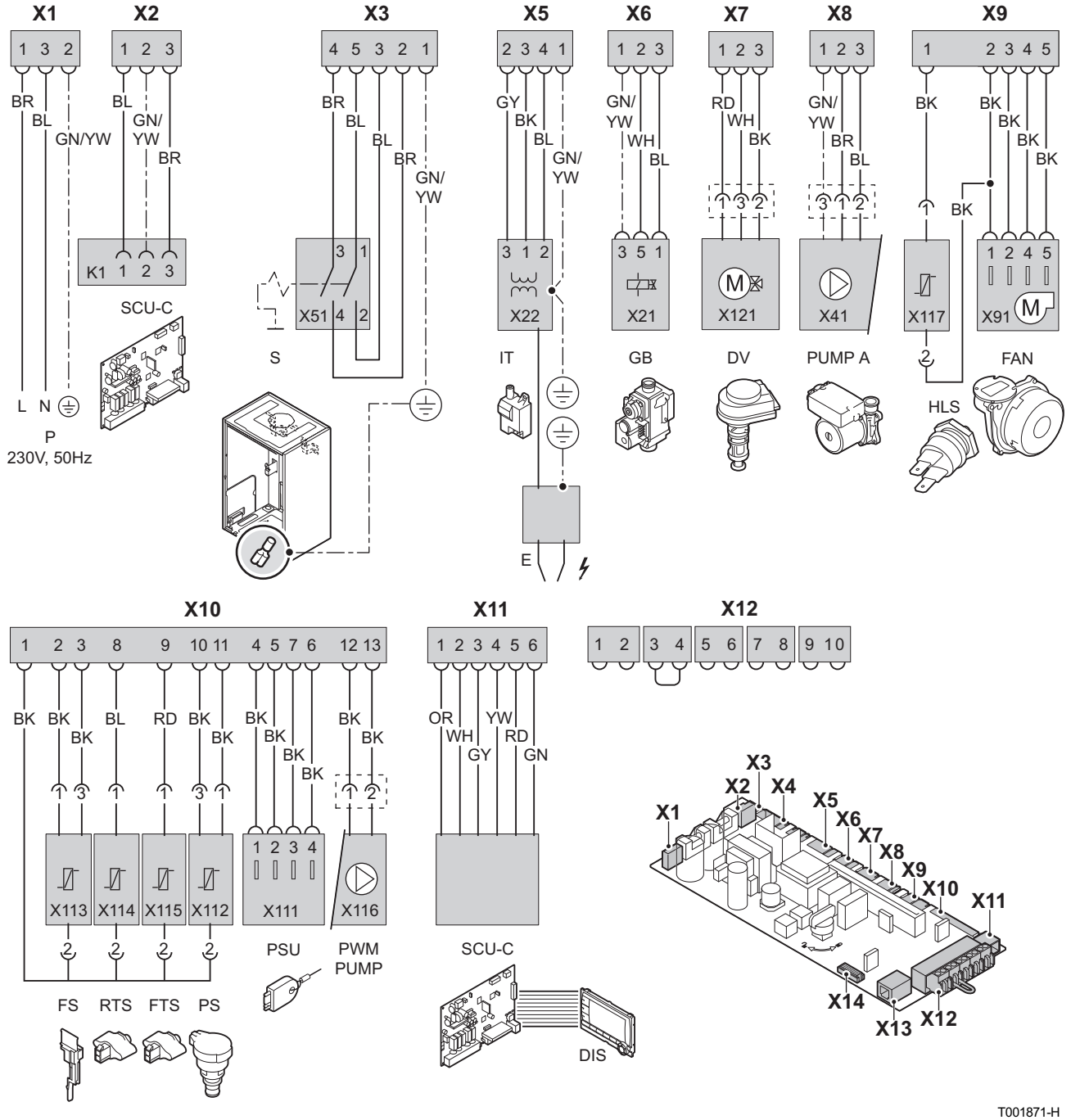
Install the expansion vessel on the heating return pipe .

See chapter: "Connecting the expansion vessel", page 22

Settings to be made for this type of installation: Master boiler			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
P.DHW:(1)	Installer level **#SYSTEM** menu	**RV**	"Setting the parameters specific to the installation", page 70
CASCADE:(1)	Installer level **#NETWORK** menu	**ON**	"Configuring the network", page 88
MASTER CONTROLLER(1)	Installer level **#NETWORK** menu	**ON**	
SYSTEM NETWORK(1)	Installer level **#NETWORK** menu	**ADD SLAVE**	
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

Settings to be made for this type of installation: Follower boilers			
Parameters	**Access**	**Settings to be made**	**See chapter**
INSTALLATION	Installer level **#SYSTEM** menu	**EXTENDED**	"Displaying the parameters in extended mode", page 69
CASCADE:(1)	Installer level **#NETWORK** menu	**ON**	"Configuring the network", page 88
MASTER CONTROLLER(1)	Installer level **#NETWORK** menu	**OFF**	
SLAVE NUMBER(1)	Installer level **#NETWORK** menu	2, 3, ...	
(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**			

4.11 Electrical diagram



P	Power supply	**DV**	3-way valve	**FTS**	Flow sensor
SCU-C	control panel PCB	**PUMP A**	Modulating control on the boiler pump	**PS**	Pressure sensor
S	On/Off switch	**HLS**	Safety thermostat	**PSU**	Parameter storage for PCBs PCU and SU
IT	Ignition transformer	**FAN**	Fan	**PWM PUMP**	Modulation signal from the boiler pump
E	Ignition power relay	**FS**	Flowmeter	**DIS**	Display
GB	Combined venturi and gas valve unit	**RTS**	Return sensor		

4.12 Filling the system

4.12.1. Water treatment

In most cases, the boiler and the central heating installation can be filled with normal tap water and no water treatment will be necessary.

WARNING

Do not add chemical products to the central heating water without first consulting a water treatment professional. For example: antifreeze, water softeners, products to increase or reduce the pH value, chemical additives and/or inhibitors. These may cause faults in the boiler and damage the heat exchanger.

- Rinse the central heating installation with at least 3x the volume of the central heating installation. Flush the DHW pipes with at least 20 times the volume of the pipes.

For an optimum functioning of the boiler, the water of the installation must comply with following characteristics:

		Total installed heat output (kW)			
		≤ 70	70 - 200	200 - 550	> 550
Degree of acidity (water non-treated)	pH	7 - 9	7 - 9	7 - 9	7 - 9
Degree of acidity (water treated)	pH	7 - 8,5	7 - 8,5	7 - 8,5	7 - 8,5
Conductivity at 25°C	µS/cm	≤ 800	≤ 800	≤ 800	≤ 800
Chlorides	mg/l	≤ 150	≤ 150	≤ 150	≤ 150
Other components	mg/l	< 1	< 1	< 1	< 1
Total water hardness(1)	°f	1 - 35	1 - 20	1 - 15	1 - 5
	°dH	0,5 - 20,0	0,5 - 11,2	0,5 - 8,4	0,5 - 2,8
	mmol/l	0,1 - 3,5	0,1 - 2,0	0,1 - 1,5	0,1 - 0,5

(1) For installations that are heated at constant high temperatures with a total installed heat output; up to 200 kW a maximum total water hardness of 8,4 °dH (1,5 mmol/l, 15 °f) applies and for above 200 kW a maximum total water hardness of 2,8 °dH (0,5 mmol/l, 5 °f) applies

If a water treatment is necessary, **De Dietrich Thermique** recommends the following manufacturers:

- Cillit
- Climalife
- Fernox
- Permo
- Sentinel

4.12.2. Filling the siphon

T001523-B

1. Remove the siphon.
2. Fill the siphon with water. This must be filled up to the level markers.
3. Re-assemble the siphon.

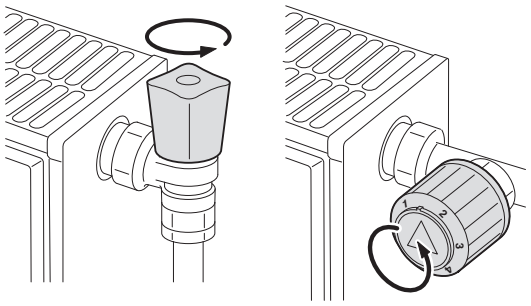
CAUTION

- Fill the water siphon before starting the boiler to avoid combustion products escaping from the boiler.
- Mount the vent hose above the siphon.

4.12.3. Filling the system

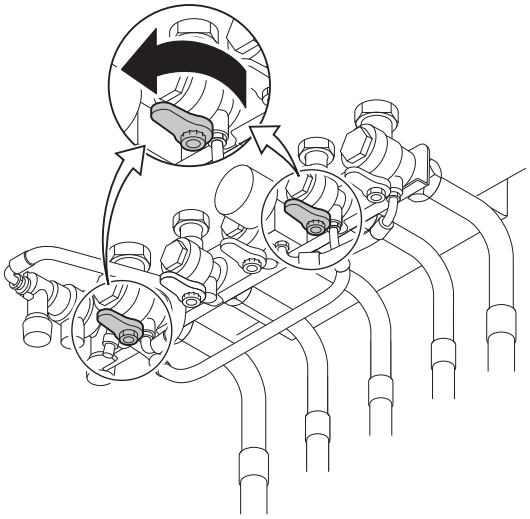
CAUTION

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



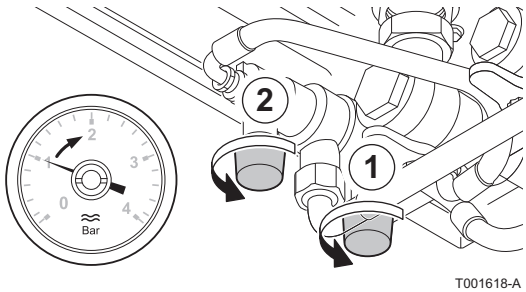
T000181-B

1. Open the cold water inlet and heating outlet valves.

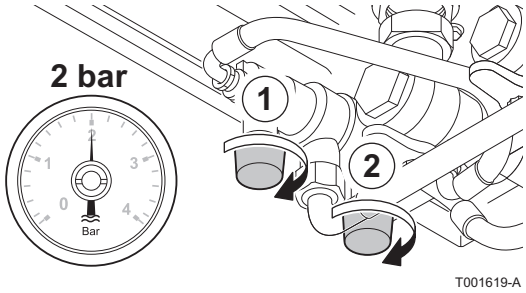


T001620-A

2. Open the disconnector valves (During filling, air can escape from the system via the automatic air vent).



T001618-A



T001619-A

3. Close the disconnector valves when the manometer indicates a pressure of 2 bar

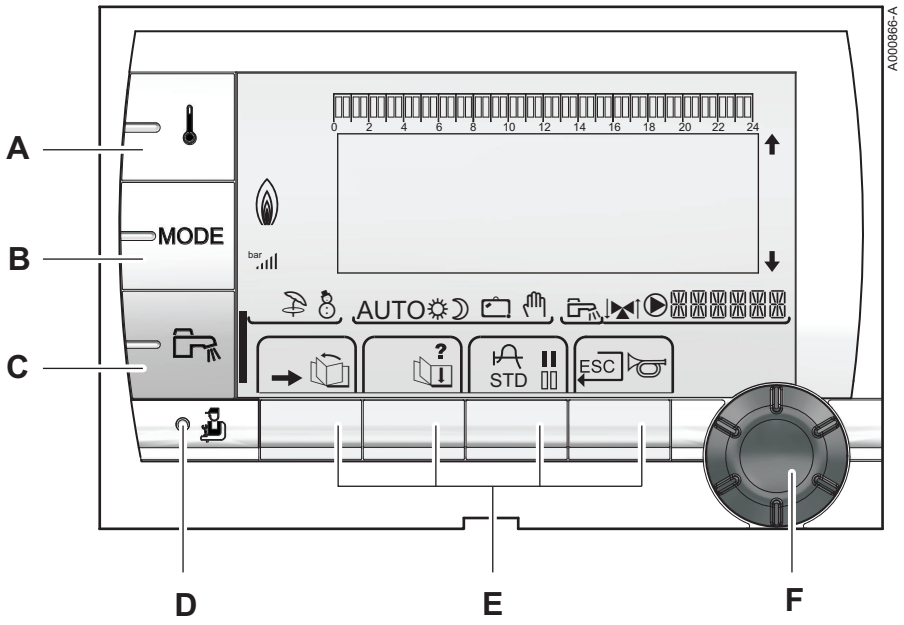
T001507-B

4. Check the tightness of the water connections.

5 Commissioning

5.1 Control panel

5.1.1. Description of the keys

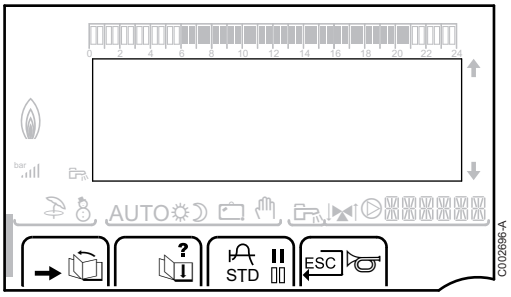


A	Temperature setting key (heating, DHW, swimming pool)
B	Operating mode selection key
C	DHW override key
D	Key to access the parameters reserved for the installer
E	Keys on which the function varies as and when selections are made
F	Rotary setting button:

- Turn the rotary button to scroll through the menus or modify a value
- Press the rotary button to access the selected menu or confirm a value modification

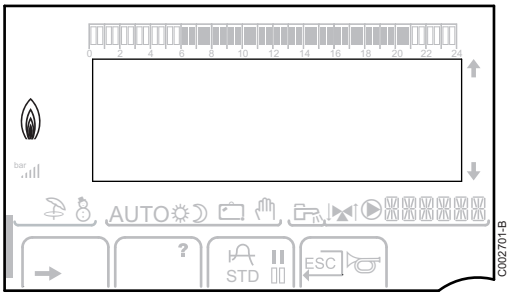
5.1.2. Description of the display

■ Key functions



→	Access to the various menus
	Used to scroll through the menus
	Used to scroll through the parameters
?	The symbol is displayed when help is available
	Used to display the curve of the parameter selected
STD	Reset of the time programmes
	Selection of comfort mode or selection of the days to be programmed
	Selection of reduced mode or deselection of the days to be programmed
	Back to the previous level
ESC	Back to the previous level without saving the modifications made
	Manual reset

■ Flame output level



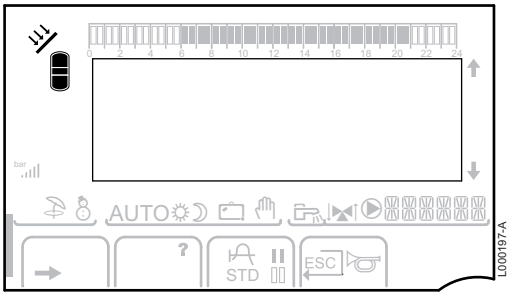
The whole symbol flashes: The burner starts up but the flame is not yet present

Part of the symbol flashes: Output is increasing

Steady symbol: The required output has been reached

Part of the symbol flashes: Output is dropping

Solar (If connected)



The solar load pump is running

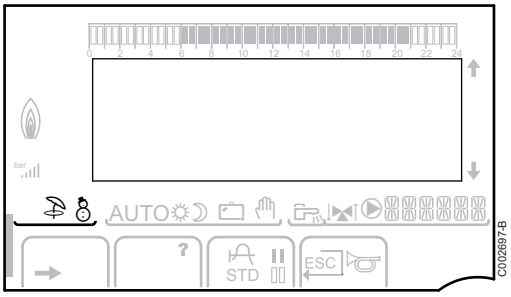
The top part of the tank is reheated to the tank set point

The entire tank is reheated to the tank set point

The entire tank is reheated to the solar tank set point

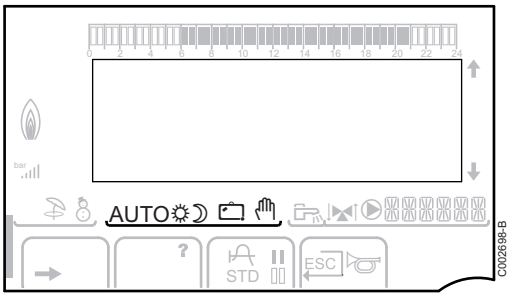
The tank is not loaded - Presence of the solar control system

Operating modes



Summer mode: The heating is off. Domestic hot water continues to be produced

WINTER mode: Heating and domestic hot water working



AUTO Operation in automatic mode according to the timer programme

Comfort mode: The symbol is displayed when a DAY override (comfort) is activated

- Flashing symbol: Temporary override
- Steady symbol: Permanent override

Reduced mode: The symbol is displayed when a NIGHT override (reduced) is activated

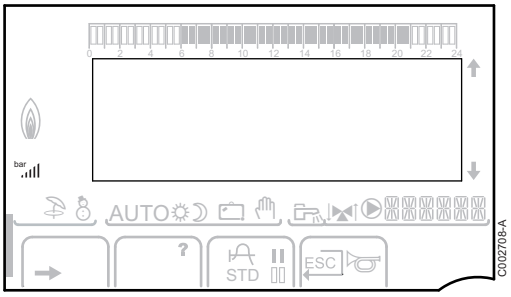
- Flashing symbol: Temporary override
- Steady symbol: Permanent override

Holiday mode: The symbol is displayed when a HOLIDAY override (antifreeze) is activated

- Flashing symbol: Holiday mode programmed
- Steady symbol: Holiday mode active

Manual mode

System pressure



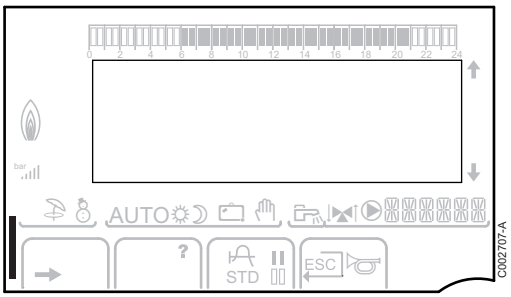
bar Pressure indicator: The symbol is displayed when a water pressure sensor is connected.

- Flashing symbol: The water pressure is insufficient.
- Steady symbol: The water pressure is sufficient.

Water pressure level

- : 0,9 to 1,1 bar
- : 1,2 to 1,5 bar
- : 1,6 to 1,9 bar
- : 2,0 to 2,3 bar
- : > 2,4 bar

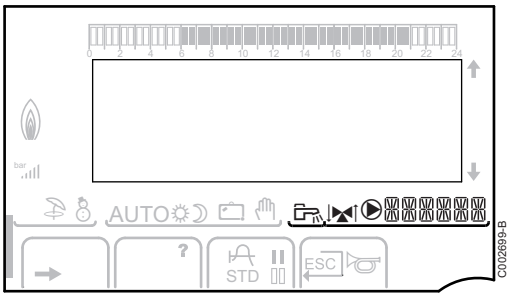
Domestic Hot Water override



A bar is displayed when a DHW override is activated:

- Flashing bar: Temporary override
- Steady bar: Permanent override

Other information



The symbol is displayed when domestic hot water production is running.

Valve indicator: The symbol is displayed when a 3-way valve is connected.

- : 3-way valve opens
- : 3-way valve closes

The symbol is displayed when the pump is operating.

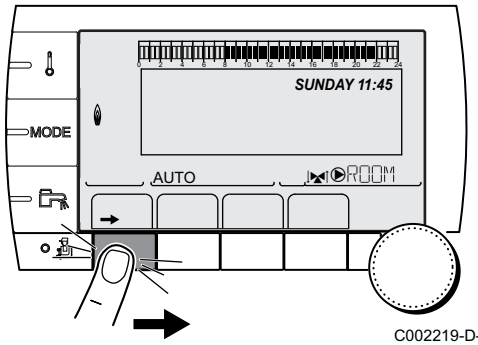
Name of the circuit for which the parameters are displayed.

5.1.3. Access to the various browsing levels

■ User level

The information and settings in the User level can be accessed by everyone.

1. Press the → key.

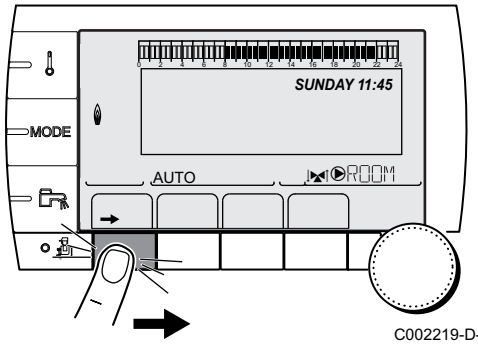


C002219-D-04

■ Installer level

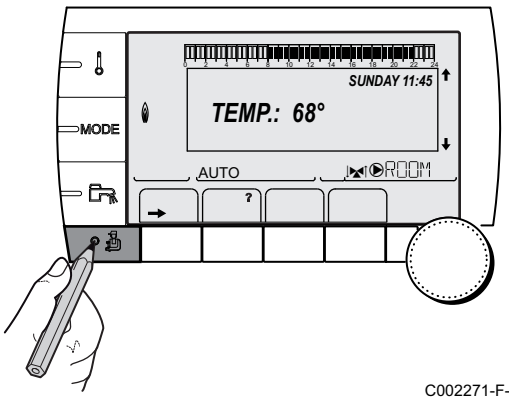
The information and settings in the Installer level can be accessed by experienced people.

1. Press the → key.



C002219-D-04

2. Press the key.

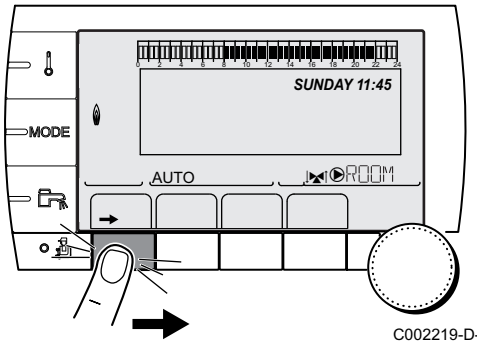


C002271-F-04

It is also possible to access the installer level by pressing only the key for around 5 seconds.

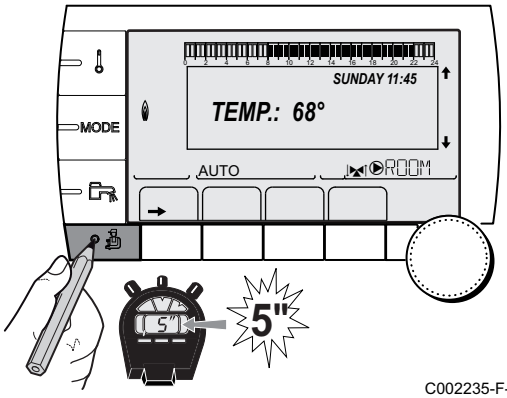
■ After Sales level

The After Sales Service information and settings can be accessed by the professional providing the After Sales Service.



C002219-D-04

1. Press the → key.

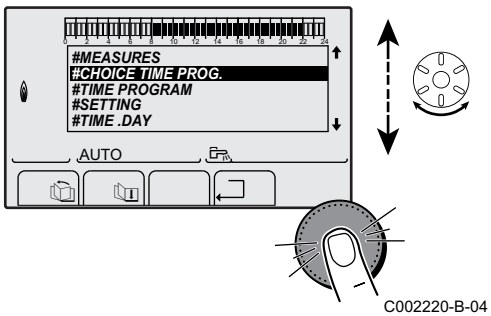


C002235-F-04

2. Press key for around 5 seconds.

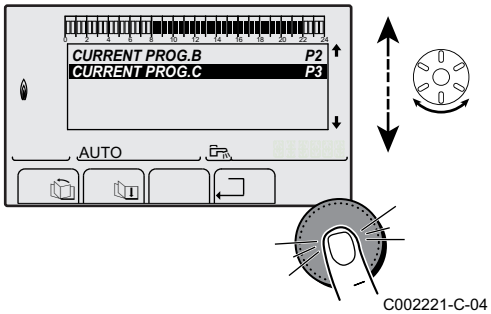
It is also possible to access the After Sales level by pressing only the key for around 10 seconds.

5.1.4. Browsing in the menus



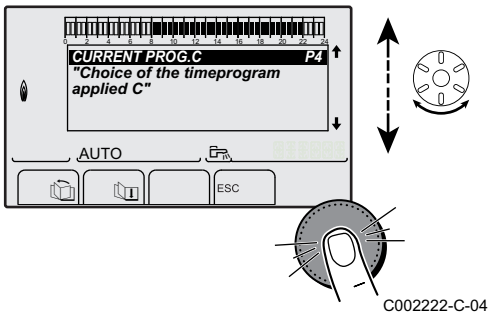
C002220-B-04

1. To select the desired menu, turn the rotary button.
2. To access the menu, press the rotary button.
   To go back to the previous display, press the key ⮌.



C002221-C-04

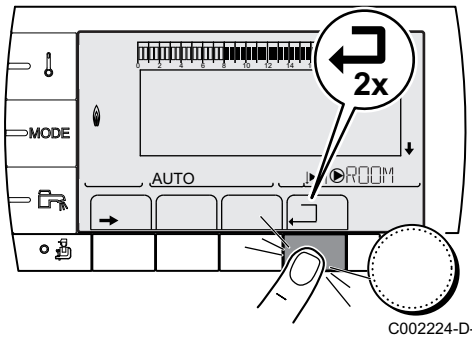
3. To select the desired parameter, turn the rotary button.
4. To modify the parameter, press the rotary button.
   To go back to the previous display, press the key ⮌.



C002222-C-04

5. To modify the parameter, turn the rotary button.
6. To confirm, press the rotary button.

To cancel, press key ESC.



C002224-D-04

7. To go back to the main display, press key ⮌ 2 times.

It is possible to use the and keys instead of the rotary button.

5.2 Check points before commissioning

5.2.1. Preparing the boiler for commissioning

WARNING

Do not put the boiler into operation if the supplied gas is not in accordance with the approved gas types.

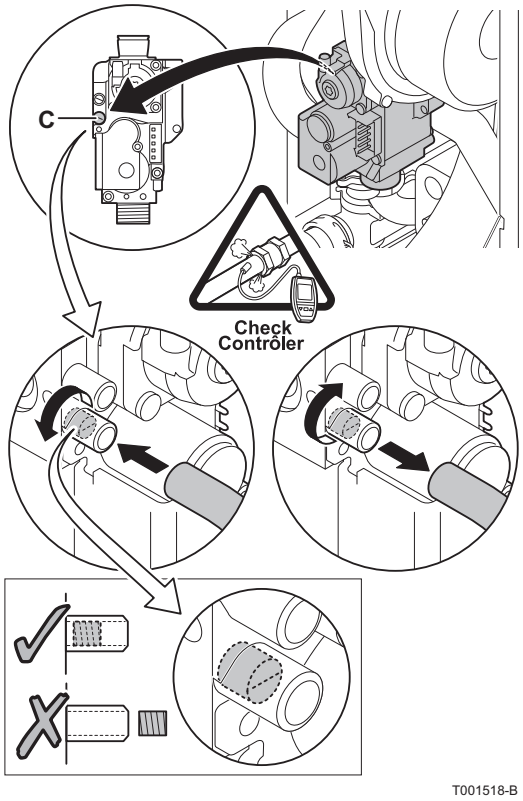
Preparatory procedure for boiler commissioning:

- Check that the gas type supplied matches the data shown on the boiler's data plate.
- Check the gas circuit.
- Check the hydraulic circuit.
- Check the water pressure in the heating system.
- Check the electrical connections to the thermostat and the other external controls.
- Check the other connections.
- Test the boiler at full load. Check the setting of the gas/air ratio and, if necessary, correct it.
- Test the boiler at part load. Check the setting of the gas/air ratio and, if necessary, correct it.
- Finalizing work.

5.2.2. Gas circuit

WARNING

Ensure that the boiler is switched off.



1. Open the main gas supply.
2. Unscrew the two screws located under the front panel by a quarter turn and remove the panel.
3. Tilt the control box forwards by opening the holding clips located at the sides.
4. Check the gas supply pressure at the pressure outlet **C** on the gas valve unit.

WARNING

To ascertain the gas types permitted, see chapter: "Equipment categories", page 8

5. Check the tightness of the gas connections made after the gas valve unit in the boiler.
6. Check the tightness of the gas line, including the gas valves. The test pressure must not exceed 60 mbar.
7. Purge the gas supply pipe within the boiler by unscrewing the pressure outlet on the gas block. Tighten the measurement point when the pipe has been sufficiently purged.
8. Check the tightness of the gas connections in the boiler.

5.2.3. Hydraulic circuit

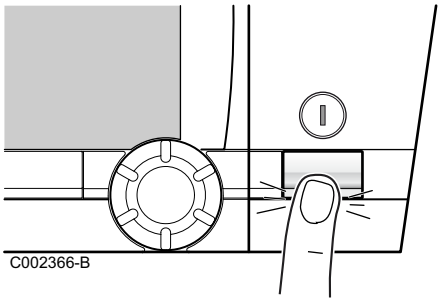
- Check the condensate discharge siphon; it must be filled with clean water up to the mark.
- Check that there are no leaks on the hydraulic connections.

5.2.4. Electrical connections

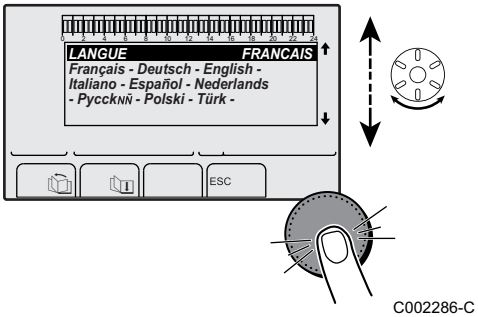
- Check the electrical connections.

5.3 Commissioning the boiler

1. Tilt the control box upwards again and fasten it using the clips located at the sides.
2. Open the main gas supply.
3. Open the gas valve on the boiler.



4. Turn on the boiler using the on/off switch.



5. The first time the boiler is powered up, the **LANGUAGE** menu is displayed. Select the desired language by turning the rotary button.
6. To confirm, press the rotary button.

The boiler will begin an automatic venting-programme (which lasts approx. 3 minutes) and will do this every time the power supply is isolated.

Error during the start-up procedure:

- No information is shown on the display:
  - Check the mains supply voltage
  - Check the fuses
  - Check the connection of the power cable to the connector X1 on the PCU PCB
- If there is a problem, the error is displayed on the screen.

See chapter: "Messages (Code type Bxx or Mxx)", page 104

If a DHW sensor is connected and the anti-legionella function is activated, the boiler starts to heat the water in the DHW tank as soon as the vent programme has been completed. The heating time depends on the size of the DHW installation.

5.4 Gas settings

5.4.1. Adapting to another gas type

WARNING

Only a qualified engineer may carry out the following operations.

The boiler is preset in the factory to operate on natural gas H (G20).

For operation on another group of gases, carry out the following operations:

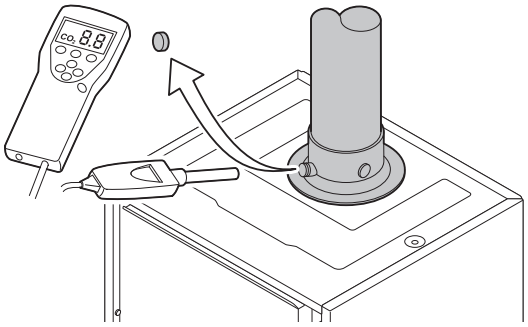
- Set the air/gas ratio.

"Setting the air/gas ratio (Full load)", page 66
"Setting the air/gas ratio (Part load)", page 67

- Set the fan speed using the parameters **MIN.VENT.**, **MAX.VENT.BOIL**, **MAX.VENT.DHW** and **START SP.**:

See chapter: "Professional settings", page 81

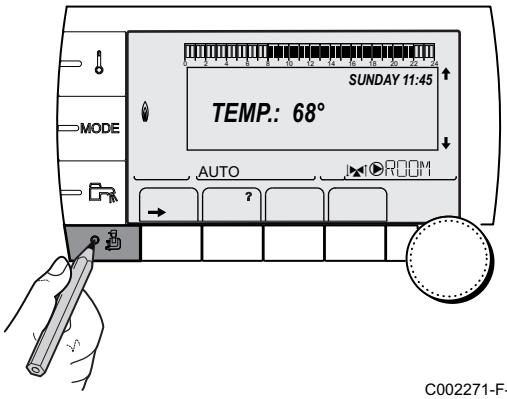
5.4.2. Setting the air/gas ratio (Full load)


T001581-A

1. Unscrew the plug of the flue gas measurement point.
2. Connect the flue gas analyser.

WARNING

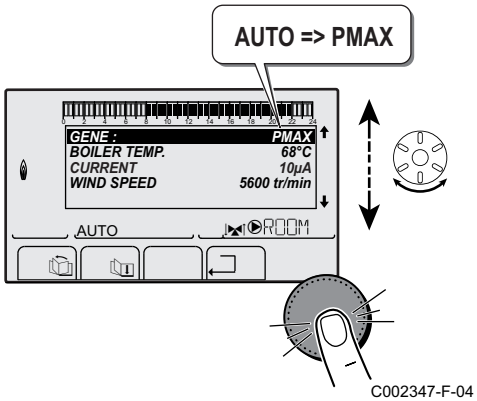
Ensure that the opening around the sensor is completely sealed when taking measurements.



C002271-F-04

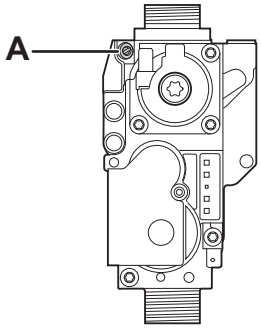
3. In the main display, press key . The menu **EMISSION MEASURMENTS** is displayed on the screen.

If an automatic vent cycle is running, it is not possible to perform these operations.



C002347-F-04

4. Turn the rotary button until **PMAX** is displayed. The full load is set.
5. Measure the percentage of O_2 or CO_2 in the flue gases (Front panel removed) .



T000932-A

6. If this rate does not match the required value, correct the gas/air ratio using the adjustment screw A on the gas valve unit.
7. Check the flame through the flame inspection window.

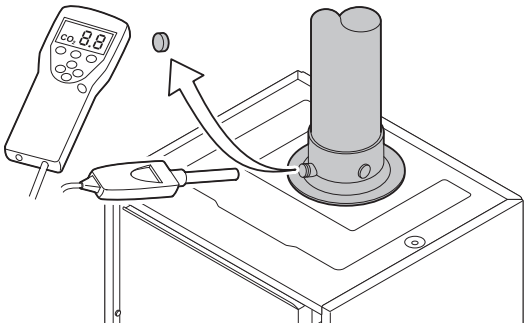
The flame must not be detached.

O_2/CO_2 control and setting values for gas H (G20) at full load				
Boiler type	Setting value		Checking value	
	O_2 (%)	CO_2 (%)	O_2 (%)	CO_2 (%)
MCA 35	4,8 ± 0,4	9,0 ± 0,2	4,8 ± 0,5	9,0 ± 0,3

O_2/CO_2 control and setting values for gas L (G25) at full load				
Boiler type	Setting value		Checking value	
	O_2 (%)	CO_2 (%)	O_2 (%)	CO_2 (%)
MCA 35	4,6 ± 0,4	9,0 ± 0,2	4,6 ± 0,5	9,0 ± 0,3

O_2/CO_2 control and setting values for propane (G31) at full load				
Boiler type	Setting value		Checking value	
	O_2 (%)	CO_2 (%)	O_2 (%)	CO_2 (%)
MCA 35	5,2 ± 0,3	10,3 ± 0,2	5,2 ± 0,5	10,3 ± 0,3

5.4.3. Setting the air/gas ratio (Part load)

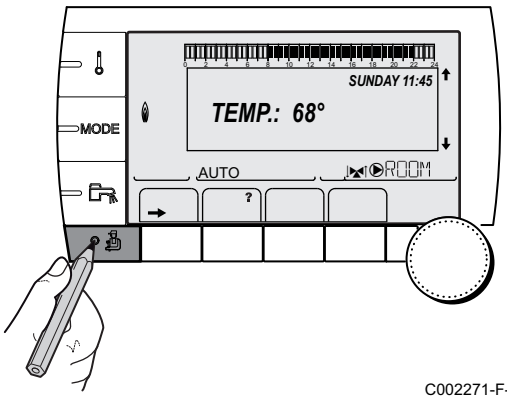


T001581-A

1. Unscrew the plug of the flue gas measurement point.
2. Connect the flue gas analyser.

WARNING

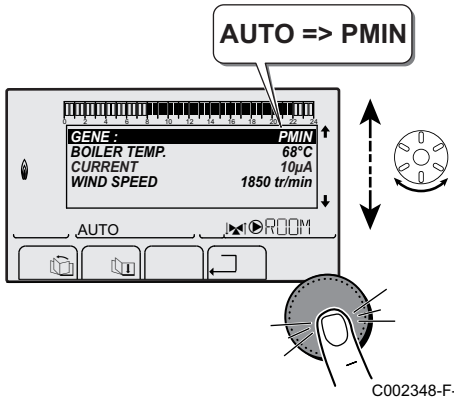
Ensure that the opening around the sensor is completely sealed when taking measurements.



C002271-F-04

3. In the main display, press key . The menu **EMISSION MEASURMENTS** is displayed on the screen.

If an automatic vent cycle is running, it is not possible to perform these operations.

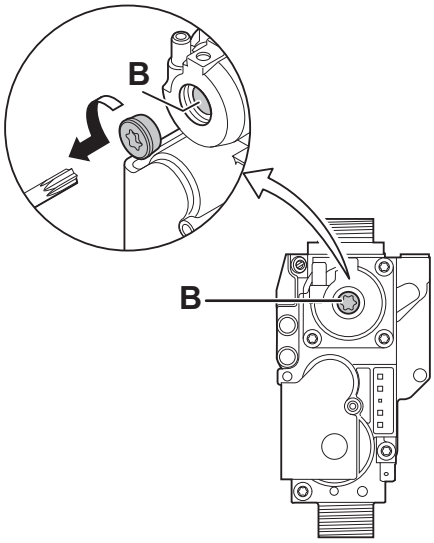


C002348-F-04

4. Turn the rotary button until **PMIN** is displayed. The part load is set.

If an automatic vent cycle is running, it is not possible to perform these operations.

5. Measure the percentage of O_2 or CO_2 in the flue gases (Front panel removed) .



6. If this rate does not match the required value, correct the gas/air ratio using the adjustment screw B on the gas valve unit.

- Turn the screw B anticlockwise to obtain a lower CO_2 value.
- Turn the screw B clockwise to obtain a higher CO_2 value.

7. Check the flame through the flame inspection window.

The flame must be stable and blue in colour with orange particles around the edge of the burner.

O_2/CO_2 control and setting values for gas H (G20) at low speed				
Boiler type	**Setting value**		**Checking value**	
	O_2 (%)	**CO_2 (%)**	**O_2 (%)**	**CO_2 (%)**
MCA 35	5,5 ± 0,4	8,6 ± 0,2	5,5 ± 0,4	8,6 ± 0,2

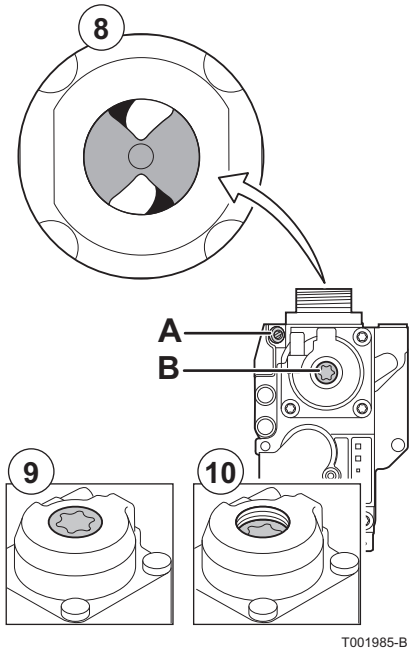
O_2/CO_2 control and setting values for gas L (G25) at low speed				
Boiler type	**Setting value**		**Checking value**	
	O_2 (%)	**CO_2 (%)**	**O_2 (%)**	**CO_2 (%)**
MCA 35	5,3 ± 0,4	8,6 ± 0,2	5,3 ± 0,4	8,6 ± 0,2

O_2/CO_2 control and setting values for propane (G31) at low speed				
Boiler type	**Setting value**		**Checking value**	
	O_2 (%)	**CO_2 (%)**	**O_2 (%)**	**CO_2 (%)**
MCA 35	5,8 ± 0,3	9,9 ± 0,2	5,8 ± 0,3	9,9 ± 0,2

Repeat the high speed test and the low speed test as often as necessary until the correct values are obtained without having to make additional adjustments.

To exit the mode **EMISSION MEASUREMENTS**, press ⮐ several times.

5.4.4. Basic setting for the gas/air ratio



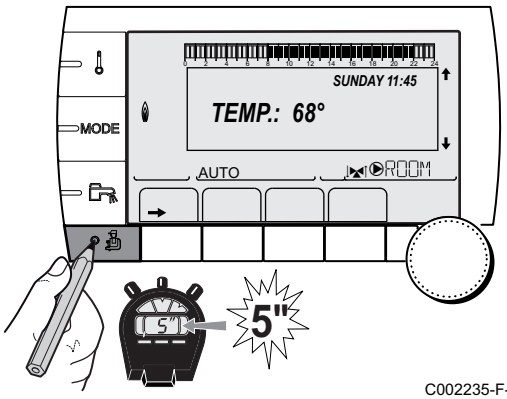
T001985-B

If the gas/air ratio is out of adjustment, the gas valve unit has a basic setting. To do this, proceed as follows:

1. Switch off the boiler electrical power supply.
2. Close the gas valve on the boiler.
3. Remove the air inlet flue on the venturi.
4. Unscrew the top connection on the gas valve unit.
5. Disconnect the connector located under the fan.
6. Release the 2 clips holding the fan/mixing elbow unit in place on the heat exchanger.
7. Completely remove the fan/mixing elbow unit.
   For steps 3 to 7 inclusive, see chapter: "Checking the burner and cleaning the heat exchanger", page 99
8. Turn the setting screw **A** on the gas valve unit to modify the position of the restrictor.
9. Turn the setting screw **B** on the gas valve unit anticlockwise until it matches the front panel.
10. Turn the setting screw **B** on the gas valve unit by 6 turns clockwise.
11. Follow the procedure in reverse to re-assemble all of the components.

5.5 Checks and adjustments after commissioning

5.5.1. Displaying the parameters in extended mode



C002235-F-04

The display mode on the control panel is set as standard in such a way as only to show the conventional parameters. It is possible to switch to extended mode by proceeding as follows:

1. Access the installer level: Press key for around 5 seconds.
2. Select the menu **#SYSTEM**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

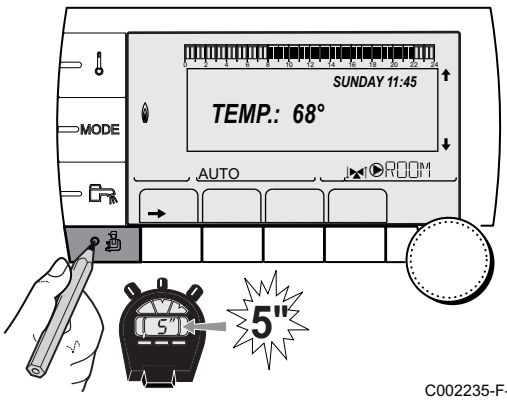
For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

3. Set parameter **INSTALLATION** to **EXTENDED**.

Installer level - Menu #SYSTEM				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
INSTALLATION	**CLASSIC**	Displays the parameters of a conventional installation	**CLASSIC**	
	EXTENDED	Displays all parameters		

Regardless of what is done to the keys, the regulator switches back to **CLASSIC** mode after 30 minutes.

5.5.2. Setting the parameters specific to the installation



C002235-F-04

1. Access the installer level: Press key for around 5 seconds.
2. Select the menu **#SYSTEM**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

3. Set the following parameters according to the connections made to the PCBs:

Installer level - #SYSTEM menu				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
CIRC. A: (1)(2)	**DIRECT**	Use as a direct heating circuit	**DIRECT**	
	PROGRAM.	Use as an independent programmable outlet		
	H.TEMP	Enables operation of circuit A in summer despite manual or automatic summer shutdown		
	DHW	Connection of a second domestic hot water tank		
	DHW ELEC	Used to control the electrical resistor according to the timer programme on circuit A in summer mode		
	DISAB.	No data for circuit A is displayed		
CIRC. B: (1)	**3WV**	Connecting a circuit with 3-way valve (For example: Underfloor heating)	**3WV**	
	SWIM.P.	Using the circuit for pool management		
	DIRECT	Use of circuit in direct heating circuit		
CIRC. C: (1)	**3WV**	Connecting a circuit with 3-way valve (For example: Underfloor heating)	**3WV**	
	SWIM.P.	Using the circuit for pool management		
	DIRECT	Use of circuit in direct heating circuit		
O.PUMP A (1) (2)	**CH.PUMP A**	Heating pump circuit A: The ⏵A outlet is used to control the pump on circuit A	**CH.PUMP A**	
	CIRC.AUX	Used to resume the functions of the **S.AUX:** parameter without adding the PCB + sensor option (Package AD249)		
	DHW LOOP	Used to control the domestic hot water looping pump according to the DHW timer programme and force its operation during an override		
	PRIMARY PUMP	The outlet ⏵A is active if a heating demand is present on the secondary pump		
	ORDER BURNER	The outlet ⏵A is active when a burner demand is present		
	FAILURE	The outlet ⏵A is active if an fault is detected		

(1) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**
(2) If the pump incorporated in the boiler is used for circuit A (parameter **CIRC. A:** set to **DIRECT**), the ⏵A outlet is free
(3) The parameter is only displayed if the parameter **O.PUMP A** is set to **CIRC.AUX** or the 3-way valve PCB option is connected

Installer level - #SYSTEM menu				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
P.DHW: (1)	**PUMP**	Use of a tank load pump on the ⏵ outlet	**RV**	
	RV	Use of a reversal valve for DHW production		
BS60 (1)	**ON**	Small capacity tank	**OFF**	
	OFF	Large capacity tank		
S.AUX (1)(3)	**DHW LOOP**	Use as a domestic loop pump	**DHW LOOP**	
	PROGRAM.	Use as an independent programmable outlet		
	PRIMARY PUMP	The outlet ⏵AUX is active if a heating demand is present on the secondary pump		
	ORDER BURNER	The outlet ⏵AUX is active when a burner demand is present		
	DHW	Use of primary circuit of second DHW tank		
	FAILURE	The outlet ⏵AUX is active if an fault is detected		
	DHW ELEC	Used to control the electrical resistor according to the timer programme on circuit AUX in summer mode		
I.SYST (1)	**SYSTEM**	The inlet sensor is used to connect the common flow sensor of a cascade system	**SYSTEM**	
	STORAGE TANK	Hot water storage tank affected to heating only		
	DHW STRAT	Using the DHW tank with 2 sensors (top and bottom)		
	ST.TANK+DHW	Hot water storage tank affected to heating and domestic hot water		
O. TEL: (1)	**FAILURE**	The telephone outlet is closed in the event of failure	**FAILURE**	
	REVISION	The telephone outlet is closed in the event of revision display		
	DEF+REV	The telephone outlet is closed in the event of failure or revision display		
CT.TEL (1)	**CLOSE**	See table below.	**CLOSE**	
	OPEN			

(1) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**
(2) If the pump incorporated in the boiler is used for circuit A (parameter **CIRC. A:** set to **DIRECT**), the ⏵A outlet is free
(3) The parameter is only displayed if the parameter **O.PUMP A** is set to **CIRC.AUX** or the 3-way valve PCB option is connected

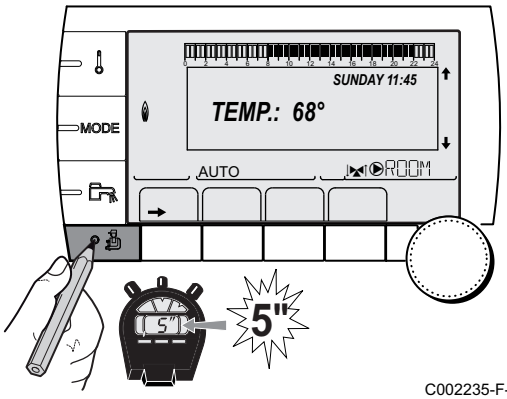
Installer level - #SYSTEM menu				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
I.TEL: (1)	**ANTIFR**	Start anti-freeze in boiler command	**ANTIFR**	
	0/1 A	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit A		
	0/1 B	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit B		
	0/1 A+B	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit A+B		
	0/1 C	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit C		
	0/1 A+C	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit A+C		
	0/1 B+C	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit B+C		
	0/1 A+B+C	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit A+B+C		
	0/1 DHW	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit ECS		
	0/1 A+DHW	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit A+ECS		
	0/1 B+DHW	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit B+ECS		
	0/1 A+B+DHW	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit A+B+ECS		
	0/1 C+DHW	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit C+ECS		
	0/1 A+C+DHW	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit A+C+ECS		
	0/1 B+C+DHW	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit B+C+ECS		
	0/1 AUX	ON or OFF contact: **I.TEL:** can be used as an antifreeze activation inlet on circuit AUX (**S.AUX:** if the AD249 option is connected or the parameter **O.PUMP A** is set to **CIRC.AUX**) When **I.TEL:** is not active, the auxiliary circuit (AUX) follows the maximum boiler temperature (parameter **BOILER MAX**).		

(1) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**
(2) If the pump incorporated in the boiler is used for circuit A (parameter **CIRC. A:** set to **DIRECT**), the ⏵A outlet is free
(3) The parameter is only displayed if the parameter **O.PUMP A** is set to **CIRC.AUX** or the 3-way valve PCB option is connected

Influence of the parameter setting CT.TEL on the I.TEL: contact			
CT.TEL	**I.TEL:**	**☎ contact closed**	**☎ contact open**
CLOSE	**ANTIFR**	The antifreeze mode is active on all boiler circuits.	The mode selected on the boiler is active.
	0/1 A	The mode selected on the circuit is active.	The antifreeze mode is active on the circuit concerned.
	0/1 B	The mode selected on the circuit is active.	The antifreeze mode is active on the circuit concerned.
	0/1 A+B	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 C	The mode selected on the circuit is active.	The antifreeze mode is active on the circuit concerned.
	0/1 A+C	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 B+C	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 A+B+C	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 DHW	The mode selected on the DHW circuit is active.	The antifreeze mode is active for the DHW circuit.
	0/1 A+DHW	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 B+DHW	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 A+B+DHW	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 C+DHW	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 A+C+DHW	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 B+C+DHW	The mode selected on the circuits is active.	The antifreeze mode is active on the circuits concerned.
	0/1 AUX	▸ The ⏵AUX outlet on the connection terminal block is active. ▸ The boiler operates at a set point temperature equal to **BOILER MAX**.	▸ The ⏵AUX outlet on the connection terminal block is not active. ▸ The boiler operates with a set point temperature as a function of the outside temperature.

Influence of the parameter setting CT.TEL on the I.TEL: contact			
CT.TEL	**I.TEL:**	**contact closed**	**contact open**
OPEN	**ANTIFR**	The mode selected on the boiler is active.	The antifreeze mode is active on all boiler circuits.
	0/1 A	The antifreeze mode is active on the circuit concerned.	The mode selected on the circuit is active.
	0/1 B	The antifreeze mode is active on the circuit concerned.	The mode selected on the circuit is active.
	0/1 A+B	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 C	The antifreeze mode is active on the circuit concerned.	The mode selected on the circuit is active.
	0/1 A+C	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 B+C	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 A+B+C	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 DHW	The antifreeze mode is active for the DHW circuit.	The mode selected on the DHW circuit is active.
	0/1 A+DHW	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 B+DHW	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 A+B+DHW	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 C+DHW	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 A+C+DHW	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 B+C+DHW	The antifreeze mode is active on the circuits concerned	The mode selected on the circuits is active
	0/1 AUX	▸ The ⏵AUX outlet on the connection terminal block is not active. ▸ The boiler operates with a set point temperature as a function of the outside temperature.	▸ The ⏵AUX outlet on the connection terminal block is active. ▸ The boiler operates at a set point temperature equal to **BOILER MAX**.

5.5.3. Naming the circuits and generators

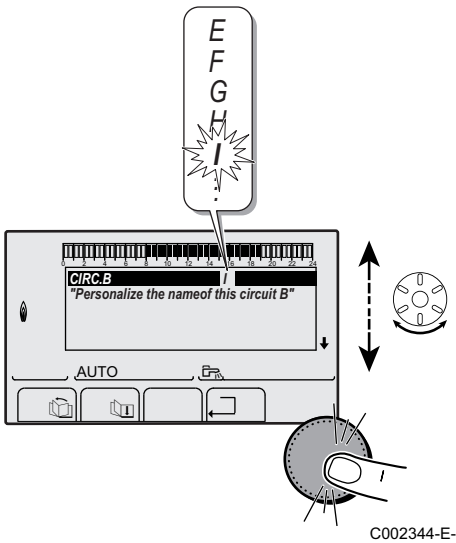


C002235-F-04

1. Access the installer level: Press key for around 5 seconds.
2. Select the menu **#NAMES OF THE CIRCUITS**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62



C002344-E-04

3. Select the circuit or generator you wish to rename.

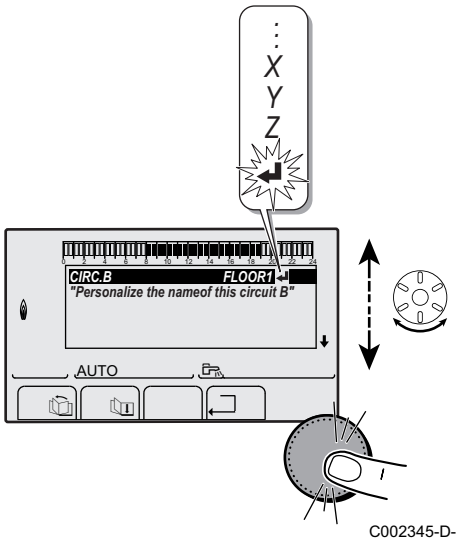
Installer level - Menu #NAMES OF THE CIRCUITS		
Parameter	**Description**	**Name given by the customer**
CIRC. A:	Circuit A	
CIRC. B:	Circuit B	
CIRC. C:	Circuit C	
CIRC.AUX	Auxiliary circuit	
CIRC.DHW	Domestic hot water circuit	
GENE	Generator	

4. Turn the rotary button to choose the first character from the list. To confirm, press the rotary button.
5. Then press again to enter a second character or turn the rotary button to leave an empty space.
6. Choose the other characters in the same way. The input zone may contain up to 6 characters.

To move from one character to another, turn the rotary button. To exit without modifications, press key ESC.

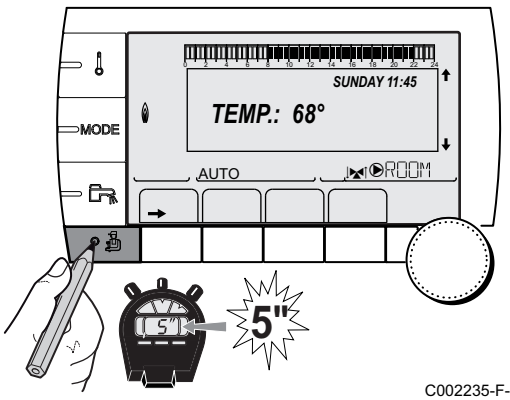
7. To confirm the name, press the rotary button and then turn the button slightly anti-clockwise. When the symbol ↵ appears, press the rotary button. The name is confirmed.

If the name reaches 6 characters, it is automatically confirmed when the last character is confirmed.



C002345-D-04

5.5.4. Setting the heating curve

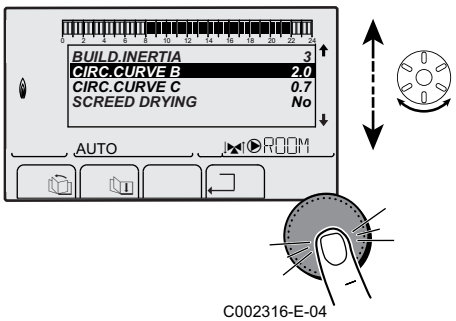


C002235-F-04

1. Access the installer level: Press key for around 5 seconds.
2. Select the menu **#SECONDARY INSTAL.P**.

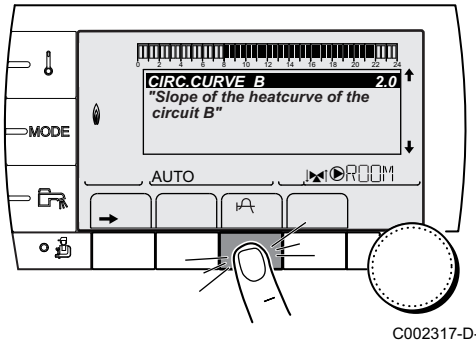
- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62.



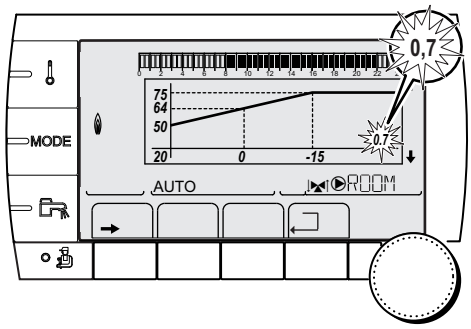
C002316-E-04

3. Select the parameter **CIRC. CURVE ...**.



C002317-D-04

4. To modify the value directly, turn the rotary button.
   To modify the value by displaying the curve, press key .

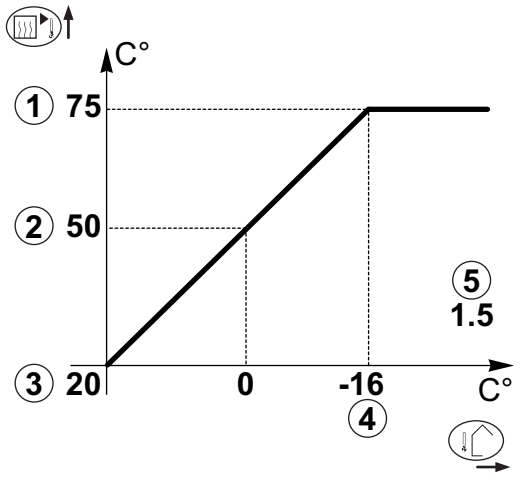


C002318-B-04

5. To modify the curve, turn the rotary button.
6. To confirm, press the rotary button.
   To cancel, press key ESC.

0.7 = Heating curve set.

Heating curve without BCT



C002319-B

① Maximum temperature of the circuit

② Water temperature in the circuit for an outside temperature of 0°C

③ **DAY** set point on the circuit

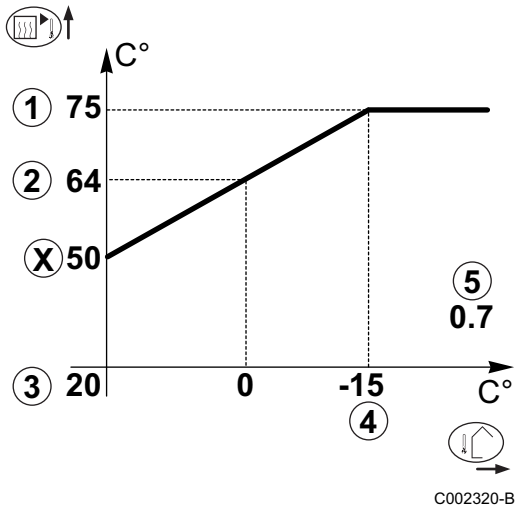
④ Outside temperature for which the maximum water temperature in the circuit is reached

⑤ Value of the heating curve
Select the parameter **CIRC. CURVE ...**

When you modify the heating curve, ② and ④ are recalculated and repositioned automatically.

■ Heating curve with BCT

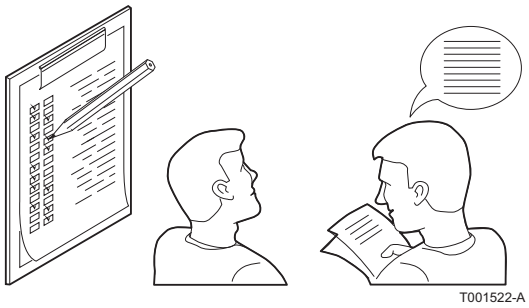
The **BCT** (Base heat Curve Temperature) parameter allows a minimum operating temperature to be imposed on the heating circuit (this temperature may be constant if the circuit gradient is nil).



①	Maximum temperature of the circuit
②	Water temperature in the circuit for an outside temperature of 0°C
③	**DAY** set point on the circuit
④	Outside temperature for which the maximum water temperature in the circuit is reached
⑤	Value of the heating curve Select the parameter **CIRC. CURVE ...**
x	Value set to the parameter **HCZP D**

When you modify the heating curve, ② and ④ are recalculated and repositioned automatically.

5.5.5. Finalizing work

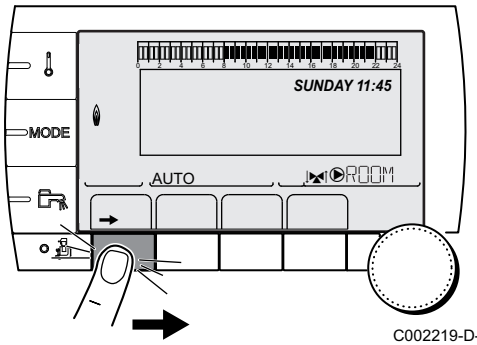


1. Remove the measuring equipment.
2. Put the flue gas sampling plug back in place.
3. Refit the front panel. Tighten the two screws by a quarter turn.
4. Raise the temperature in the heating system to approximately 70°C.
5. Shut down the boiler.
6. After about 10 minutes, vent the air in the heating system.
7. Checking the hydraulic pressure. If necessary, top up the water level in the heating system (recommended hydraulic pressure between 1,5 and 2 bar).
8. Tick the gas category used on the data plate.
9. Complete the checklist.
10. Explain the operation of the installation, the boiler and the regulator to the users.
11. Inform the user of the periodicity of maintenance work to be carried out. Input the service date and the contact details of the installer.
See chapter: "Customising maintenance", page 95.
12. Give all the instruction manuals to the user.

Commissioning of the boiler is now complete.

The various boiler parameters are preset in the factory. These factory settings are suitable for the most common heating systems. For other systems and situations, the parameters can be modified.

5.6 Reading out measured values



C002219-D-04

The various values measured by the appliance are displayed in the **#MEASURES** menu.

1. To access user level: Press the ➞ key.
2. Select the menu **#MEASURES**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62.

User level - Menu #MEASURES		
Parameter	**Description**	**Unit**
OUTSIDE TEMP.	Outside temperature	°C
ROOMTEMP. A (1)	Room temperature of circuit A	°C
ROOMTEMP. B (1)	Room temperature of circuit B	°C
ROOMTEMP. C (1)	Room temperature of circuit C	°C
BOILER TEMP.	Water temperature in the boiler	°C
PRESSURE	Water pressure in the installation	bar
WATER TEMP. (1)	Water temperature in the DHW tank	°C
INST DWH TEMP. (1)	Instant hot water temperature	°C
STOR.TANK.TEMP (1)	Water temperature in the storage tank	°C
DCW TEMPERATURE	Domestic cold water temperature	°C
SWIMMING P.T.B (1)	Water temperature of the swimming pool on circuit B	°C
SWIMMING P.T.C (1)	Water temperature of the swimming pool on circuit C	°C
OUTLET TEMP. B (1)	Temperature of the flow water in circuit B	°C
OUTLET TEMP. C (1)	Temperature of the flow water in circuit C	°C
SYSTEM TEMP. (1)	Temperature of the system flow water if multi-generator	°C
T.DHW BOTTOM (1)	Water temperature in the bottom of the DHW tank	°C
TEMP.TANK AUX (1)	Water temperature in the second DHW tank connected to the AUX circuit	°C
DHW A TEMP. (1)	Water temperature in the second DHW tank connected to circuit A	°C
BACK TEMP	Temperature of the boiler return water	°C
WIND SPEED	Fan rotation speed	rpm
POWER	Instantaneous boiler output (0%: Burner off or running at minimum output)	%
CURRENT (µA)	Ionization current	µA
NB IMPULS.	Number of burner starts (not restartable) The meter is incremented by 8 every 8 start-ups	
RUNTIME	Number of burner operation hours (not restartable) The meter is incremented by 2 every 2 hours	h
IN 0-10V (1)	Voltage at input 0-10 V	V
SEQUENCE	Control system sequence	
CTRL	Software control number	

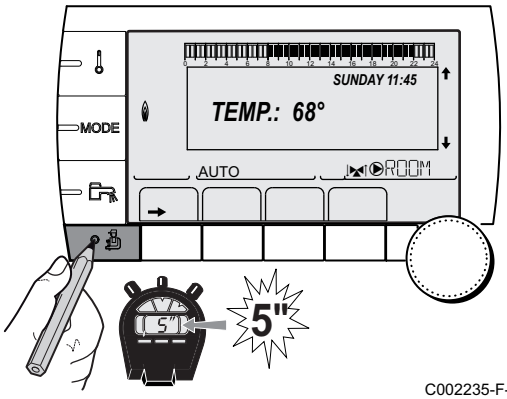
(1) The parameter is only displayed for the options, circuits or sensors actually connected.

5.7 Changing the settings

The boiler control panel is set for the most common heating systems. With these settings, practically all heating systems operate correctly. The user or installer can optimise the parameters according to own preferences.

For the user settings, refer to the user instructions.

5.7.1. Language selection



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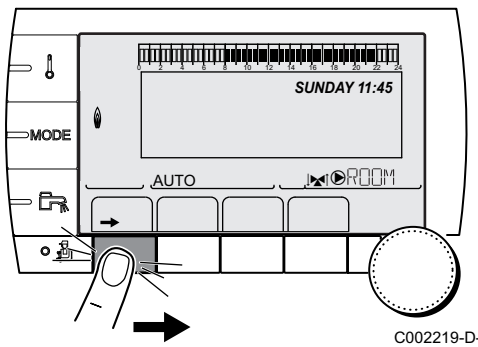
1. Access the installer level: Press key for around 5 seconds.
2. Select the menu **#LANGUAGE**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

Installer level - Menu #LANGUAGE	
Adjustment range	**Description**
FRANCAIS	Display in French
DEUTSCH	Display in German
ENGLISH	Display in English
ITALIANO	Display in Italian
ESPANOL	Display in Spanish
NEDERLANDS	Display in Dutch
POLSKI	Display in Polish
РУССКИЙ	Display in Russian
TÜRK	Display in Turkish

5.7.2. Calibrating the sensors



C002219-D-04

1. To access user level: Press the → key.
2. Select the menu **#SETTING**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

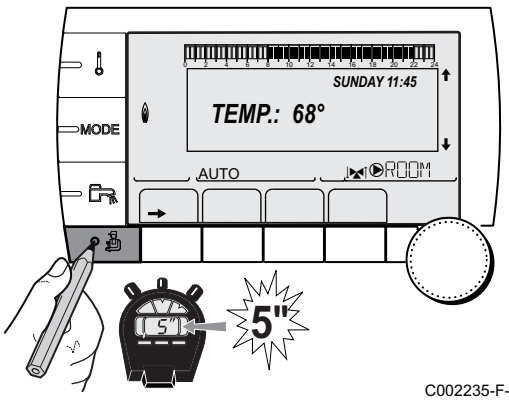
For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

3. Set the following parameters:

User level - Menu #SETTING				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
SUM/WIN	15 to 30 °C	Used to set the outside temperature above which heating will be shut down. ▸ The heating pumps are shut down. ▸ The burner will only start for domestic hot water needs. ▸ The symbol appears.	22 °C	
	NO	Heating is never shut down automatically		
CALIBR. OUT		Outside sensor calibration: Used to correct the outside temperature	Outside temperature	
CALIBR. ROOM A (1)(2)		Calibration of the room sensor on circuit A Make this setting 2 hours after switching on, when the room temperature has stabilised	Room temperature of circuit A	
OFFSET ROOM A (1) (3)	-5.0 to +5.0 °C	Room offset on circuit A: Is used to set a room offset Make this setting 2 hours after switching on, when the room temperature has stabilised	0.0	
ANTIFR. ROOM A	0.5 to 20 °C	Room temperature antifreeze activation on circuit A	6 °C	
CALIBR. ROOM B (2)(1)(4)		Calibration of the room sensor on circuit B Make this setting 2 hours after switching on, when the room temperature has stabilised	Room temperature of circuit B	
OFFSET ROOM B (3) (4)(1)	-5.0 to +5.0 °C	Room offset on circuit B: Is used to set a room offset Make this setting 2 hours after switching on, when the room temperature has stabilised	0.0	
ANTIFR. ROOM B (4)	0.5 to 20 °C	Room temperature at which the antifreeze mode is activated on circuit B	6 °C	
CALIBR. ROOM C (4)(1)(2)		Calibration of the room sensor on circuit C Make this setting 2 hours after switching on, when the room temperature has stabilised	Room temperature of circuit C	
OFFSET ROOM C (4) (1)(3)	-5.0 to +5.0 °C	Room offset on circuit C: Is used to set a room offset Make this setting 2 hours after switching on, when the room temperature has stabilised	0.0	
ANTIFR. ROOM C (4)	0.5 to 20 °C	Room temperature antifreeze activation on circuit C	6 °C	

(1) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**
(2) The parameter is only displayed if a room sensor is connected to the circuit concerned
(3) The parameter is only displayed if no room sensor is connected to the circuit concerned or the sensor has no influence
(4) The parameter is only displayed if the circuit concerned is actually connected

5.7.3. Professional settings



C002235-F-04

1. Access the installer level: Press key for around 5 seconds.
2. Set the following parameters:

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62.

Installer level - #PRIMARY LIMITS menu				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
BOILER MAX	20 to 90 °C	Maximum boiler temperature	75 °C	
MAX.R.HEAT(%) (1)	0-100%	Maximum boiler output during heating	100%	
MAX.DHW(%) (1)(2)	0-100%	Maximum boiler output in DHW	100%	
MIN.VENT. (1)	1000-5000 rpm	Minimum fan speed	See table below	
MAX.VENT.BOIL (1)	1000-7000 rpm	Maximum fan speed setting in heating	See table below	
MAX.VENT.DHW (1)	1000-7000 rpm	Maximum fan speed setting in domestic hot water	See table below	
START RPM (1)	1000-5000 rpm	Optimum start-up speed setting	See table below	
MIN.PUMP SPEED (1)	20-100%	Minimum pump speed	20 %	
MAX.PUMP SPEED (1)	20-100%	Maximum pump speed	60 %	

(1) The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED**
(2) The parameter is only displayed if **P.DHW** is set to **PUMP**

Type of gas used	Parameter	Unit	MCA 35
Gas H (G20) (Factory setting)	**MIN.VENT.**	rpm	1700
	MAX.VENT.BOIL	rpm	6200
	MAX.VENT.DHW	rpm	6200
	START SP.	rpm	4000
Gas L (G25)	**MIN.VENT.**	rpm	1700
	MAX.VENT.BOIL	rpm	6200
	MAX.VENT.DHW	rpm	6200
	START SP.	rpm	4000
Propane (G31)	**MIN.VENT.**	rpm	1700
	MAX.VENT.BOIL	rpm	6200
	MAX.VENT.DHW	rpm	6200
	START SP.	rpm	4000

Installer level - Menu #SECONDARY LIMITS			
Parameter	**Adjustment range**	**Description**	**Factory setting**
MAX.CIRC.A	20 to 95 °C	Maximum temperature (Circuit A) "**MAX.CIRC...**", page 85	75 °C
MAX.CIRC.B	20 to 95 °C	Maximum temperature (Circuit B) "**MAX.CIRC...**", page 85	50 °C
MAX.CIRC.C	20 to 95 °C	Maximum temperature (Circuit C) "**MAX.CIRC...**", page 85	50 °C
OUT.ANTIFREEZE	**OFF**, -8 to +10 °C	Outside temperature at which the installation's antifreeze protection is activated. Below this temperature the pumps are permanently on and the minimum temperatures for each circuit are respected. When **NIGHT :STOP** is set, the reduced temperature is maintained in each circuit (Menu **#SECONDARY INSTAL.P**). **OFF**: Antifreeze protection is not activated	+3 °C
HCZP D A (1) (2)	**OFF**, 20 to 90 °C	Curve base temperature in Daytime mode (Circuit A)	**OFF**
HCZP N A (1) (2)	**OFF**, 20 to 90 °C	Curve base temperature in Nighttime mode (Circuit A)	**OFF**
HCZP D B (1) (2)	**OFF**, 20 to 90 °C	Curve base temperature in Daytime mode (Circuit B)	**OFF**
HCZP N B (1) (2)	**OFF**, 20 to 90 °C	Curve base temperature in Nighttime mode (Circuit B)	**OFF**
HCZP D C (1) (2)	**OFF**, 20 to 90 °C	Curve base temperature in Daytime mode (Circuit C)	**OFF**
HCZP N C (1) (2)	**OFF**, 20 to 90 °C	Curve base temperature in Nighttime mode (Circuit C)	**OFF**
PRIM.TEMP.DHW (1)	50 to 79 °C	Boiler temperature setting if producing domestic hot water	65 °C

(1) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**
(2) The parameter can be set to the heating curve by pressing key .

Installer level - Menu #PRIMARY INSTAL.P(1)				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
BURN.MIN.RUN	0 to 180 seconds	Setting the burner minimum operation time (In heating mode)	30 seconds	
TIMER GENE P. (1)	1 to 30 minutes	Maximum post-operation duration of the generator pump	4 minutes	
IN.BL(1)	**STOP HEAT**	Configuration of the PCU BL inlet If the contact is open, the heating is off. If the parameter **P.DHW:** is set to **RV**, DHW production nevertheless remains functional. Automatic restart when the contact closes.	**TOTAL STOP**	
	TOTAL STOP	Configuration of the PCU BL inlet If the contact is open, heating and DHW production are off. Automatic restart when the contact closes.		
	SAFETY MODE	Configuration of the PCU BL inlet If the contact is open, the boiler goes into safety lockout. The boiler needs to be reset to restart.		
BOIL.INERTIA	1 to 255 seconds	Characterisation of boiler inertia	35 seconds	

(1) The menu is displayed only if the **INSTALLATION** parameter is set to **EXTENDED**

Installer level - Menu #SECONDARY INSTAL.P				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
BUILD. INERTIA (1)	0 (10 hours) to 10 (50 hours)	Characterisation of building's inertia: 0 for a building with low thermal inertia. 3 for a building with normal thermal inertia. 10 for a building with high thermal inertia. **Modification of the factory setting is only useful in exceptional cases.**	3 (22 hours)	
CIRC.CURVE A(2)	0 to 4	Heating curve of the circuit A ☞ **"CIRC. CURVE ..."**, page 86	1.5	
ANTICIP.A(1)	0.0 to 10.0	Activation and adjustment of the anticipation time ☞ **"ANTICIP.A**, **ANTICIP.B**, **ANTICIP.C** ", page 86	**NO**	
ROOM INFL. A (1)	0 to 10	Influence of room sensor A ☞ **"ROOM S.INFL"**, page 87	3	
CIRC.CURVE B(2)	0 to 4	Heating curve of the circuit B ☞ **"CIRC. CURVE ..."**, page 86	0.7	
ANTICIP.B(1)	0.0 to 10.0	Activation and adjustment of the anticipation time ☞ **"ANTICIP.A**, **ANTICIP.B**, **ANTICIP.C** ", page 86	**NO**	
ROOM INFL. B (1)	0 to 10	Influence of room sensor B ☞ **"ROOM S.INFL"**, page 87	3	
CIRC.CURVE C(2)	0 to 4	Heating curve of the circuit C ☞ **"CIRC. CURVE ..."**, page 86	0.7	
ANTICIP.C(1)	0.0 to 10.0	Activation and adjustment of the anticipation time ☞ **"ANTICIP.A**, **ANTICIP.B**, **ANTICIP.C** ", page 86	**NO**	
ROOM INFL. C (1)	0 to 10	Influence of room sensor C ☞ **"ROOM S.INFL"**, page 87	3	
SCREED DRYING	**NO, B, C, B+C**	Drying the floor ☞ **"SCREED DRYING"**, page 86	**NO**	
START DRYING TEMP(3)	20 to 50 °C	Screed drying start temperature	20 °C	
STOP DRYING TEMP(3)	20 to 50 °C	Screed drying stop temperature	20 °C	
NB DAYS DRYING(3)	0 to 99	Number of days of floor drying	0	

(1) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**
(2) The parameter can be set to the heating curve by pressing key
(3) The parameter is only displayed if **SCREED DRYING** is other than **OFF**
(4) The parameter is only displayed if **IN 0-10V** is set to **ON**.
(5) The parameter is only displayed if **P.DHW** is set to **PUMP**
(6) If a reversal valve is connected, DHW priority will always be total regardless of the setting.
(7) The parameter is only displayed if **LEG PROTEC** is other than **OFF**

Installer level - Menu #SECONDARY INSTAL.P				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
NIGHT (1)	**DEC.**	The lower temperature is maintained (Night mode) ☞ **"NIGHT"**, page 87	**DEC.**	
	STOP	The boiler is stopped (Night mode) ☞ **"NIGHT"**, page 87		
IN 0-10V	**OFF** / **TEMPERATURE** / **POWER %**	Activating the control at 0-10 V ☞ "Function 0-10 V", page 88	**OFF**	
VMIN/OFF 0-10V (1)(4)	0 to 10 V	Voltage corresponding to the instruction set minimum	0.5 V	
VMAX 0-10V (1)(4)	0 to 10 V	Voltage corresponding to the instruction set maximum	10 V	
CONS.MIN 0-10V (1)(4)	0 to 100	Minimum set point temperature or output	5	
CONS.MAX 0-10V (1)(4)	5 to 100	Maximum set point temperature or output	100	
BAND WIDTH (1)	4 to 16 K	Control unit bandwidth for the 3-way valves. Option of increasing the bandwidth if the valves are rapid or of reducing it if they are slow.	**12 K**	
BOIL/3WV SHIFT (1)	0 to 16 K	Minimum temperature difference between the boiler and the valves	**4 K**	
H. PUMP DELAY (1)	0 to 15 minutes	Timing of the shutdown of the heating pumps. The timing of heating pump shutdown prevents the boiler overheating.	**4 minutes**	
HW. PUMP DELAY (1)(5)	2 to 15 minutes	Timing of the shutdown of the domestic hot water pump. The timing of the domestic hot water load pump shutdown prevents the boiler and the heating circuits overheating (Only if a load pump is used).	**2 minutes**	
ADAPT	**ON**	Automatic adaptation of the heating curves for each circuit with a room sensor with an influence of >0.	**ON**	
	OFF	The heating curves can only be modified manually.		
PRIORITY DHW(6)	**TOTAL**	Interruption of pool heating and reheating during domestic hot water production.	**TOTAL**	
	SLIDING	Domestic hot water production and heating on the valve circuits if the available output is sufficient and the hydraulic connection allows.		
	NO	Heating and domestic hot water production in parallel if the hydraulic connection allows. ⚠ Risk of overheating in the direct circuit.		

(1) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**
(2) The parameter can be set to the heating curve by pressing key
(3) The parameter is only displayed if **SCREED DRYING** is other than **OFF**
(4) The parameter is only displayed if **IN 0-10V** is set to **ON**.
(5) The parameter is only displayed if **P.DHW** is set to **PUMP**
(6) If a reversal valve is connected, DHW priority will always be total regardless of the setting.
(7) The parameter is only displayed if **LEG PROTEC** is other than **OFF**

Installer level - Menu #SECONDARY INSTAL.P				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
LEG PROTEC		The anti legionella function acts to prevent the development of legionella in the dhw tank, these bacteria are responsible for legionellosis.	**OFF**	
	OFF	Anti-legionella function not activated		
	DAILY	The tank is overheated every day from 4:00 o'clock to 5:00 o'clock		
	WEEKLY	The tank is overheated every Saturday from 4:00 o'clock to 5:00 o'clock		
START.TIM.LEG.P(7)	00:00 to 23:30	Antilegionella start-up time	4:00 h (Increment: 30 minutes)	
DURAT.LEG.PROTECT(7)	60 to 360 min	Antilegionella running time	60 minutes (Increment: 30 minutes)	
OPTIM. DHW(5)	**OFF**	The function is deactivated	**OFF**	
	BOILER. T.	When, in heating mode, the boiler temperature exceeds **PRIM.TEMP.DHW** by +3°C and DHW tank needs are not met, the domestic hot water pump starts up		
	SYST.TEMP	When, in heating mode, the system temperature exceeds **PRIM.TEMP.DHW** by +3°C and DHW tank needs are not met, the domestic hot water pump starts up		
ON.DHW(5)	**OFF**	The function is deactivated	**OFF**	
	BOILER. T.	In DHW mode, the DHW load pump starts up only if the boiler temperature is higher than the **WATER TEMP.** set point + 5°C		
	SYST.TEMP	In DHW mode, the DHW load pump starts up only if the system temperature is higher than the **WATER TEMP.** set point + 5°C		

(1) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**
(2) The parameter can be set to the heating curve by pressing key
(3) The parameter is only displayed if **SCREED DRYING** is other than **OFF**
(4) The parameter is only displayed if **IN 0-10V** is set to **ON**.
(5) The parameter is only displayed if **P.DHW** is set to **PUMP**
(6) If a reversal valve is connected, DHW priority will always be total regardless of the setting.
(7) The parameter is only displayed if **LEG PROTEC** is other than **OFF**

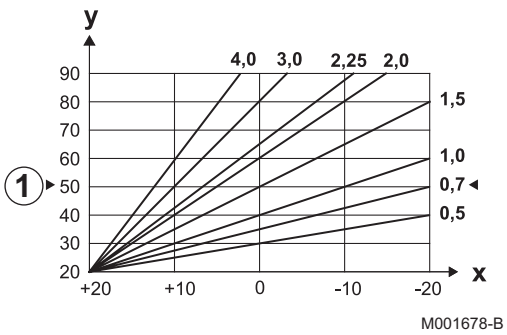
■ MAX.CIRC...

WARNING

If using underfloor heating, do not modify the factory setting (50 °C). To install this, please consult existing legislation.

- In the case of a direct circuit, connect a safety thermostat to the BL contact.
- In the case of a 3-way valve circuit (B or C), connect a safety thermostat to the TS contact.

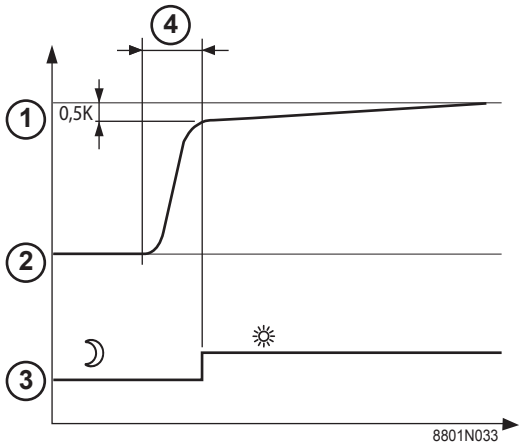
CIRC. CURVE ...



Heating curve circuit A, B or C

x	Outside temperature (°C)
y	Water flow temperature (°C)
①	Maximum temperature of the circuit B - C

ANTICIP.A, ANTICIP.B, ANTICIP.C



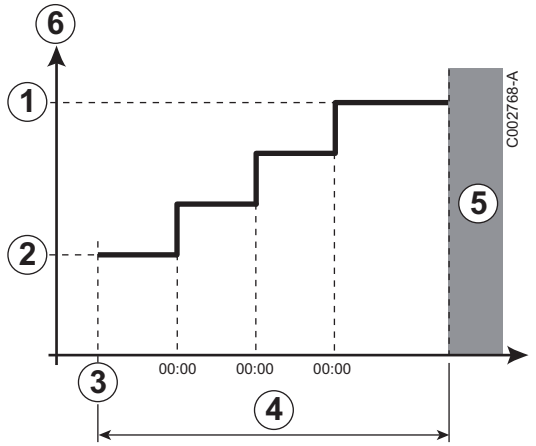
①	Room temperature instruction - Comfort
②	Room temperature instruction - Low
③	Time schedule
④	Anticipation time = Accelerated reheating phase

The anticipation function calculates the heating restart time to reach the desired room temperature less 0.5 K at the time programmed for switching to comfort mode.
The start time of the timed programmed corresponds to the end of the accelerated reheating phase.
The function is activated by setting a different **OFF** value.
The value set corresponds to the time considered necessary to return the installation to the required temperature (outside temperature 0°C), starting from a residual room temperature corresponding to the low nocturnal instruction.
Anticipation is optimised if a room sensor is connected.
The regulator will automatically fine set the anticipation time.

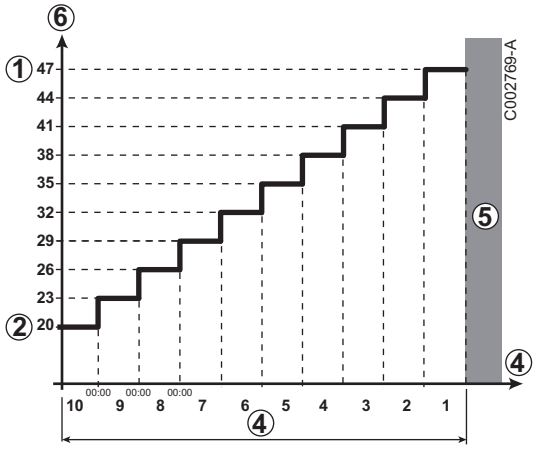
This function is dependent on the surplus output available in the installation.

SCREED DRYING

Used to force a constant flow temperature or a train to accelerate screed drying on underfloor heating.
The setting for these temperatures must follow the screed-layer's recommendations.
The activation of this parameter (setting other than **OFF**) forces the permanent display of **SCREED DRYING** and deactivates all other functions on the control unit.
When floor drying is active on a circuit, all other circuits (e.g. DHW) are shut down. The use of this function is only possible on circuits B and C.



① **STOP DRYING TEMP**
② **START DRYING TEMP**
③ Today
④ **NB DAYS DRYING**
⑤ Normal regulation (End of drying)
⑥ Heating temperature setting (°C)



For example

① **STOP DRYING TEMP**: **47 °C**
② **START DRYING TEMP**: **20 °C**
④ **NB DAYS DRYING**
⑤ Normal regulation (End of drying)
⑥ Heating temperature setting (°C)

Every day at midnight (00:00): the set point (**START DRYING TEMP**) is recalculated and the remaining number of days (**NB DAYS DRYING**) is decremented.

■ ROOM S.INFL

Used to adjust the influence of the room sensor on the water temperature for the circuit concerned.

0	No influence (remote control fitted in a location with no influence)
1	Slight influence
3	Average influence (recommended)
10	Room thermostat type operation

■ NIGHT

This parameter is displayed if at least one circuit does not include a room sensor.

For circuits without a room sensor:

- **NIGHT :DEC.** (Reduced): The reduced temperature is maintained during reduced periods. The circuit pump operates constantly.
- **NIGHT :STOP** (Stop): Heating is shut down during reduced periods. When installation antifreeze is active, the reduced temperature is maintained during reduced periods.

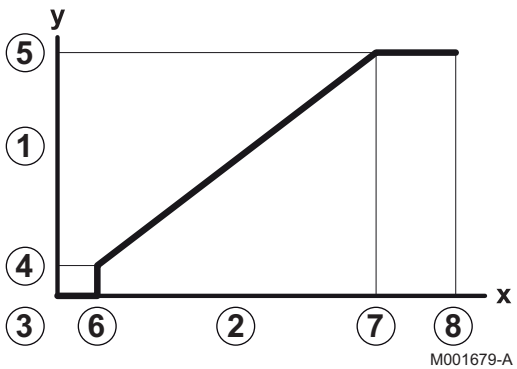
For circuits with a room sensor:

- When the room temperature is lower than the room sensor set point: The reduced temperature is maintained during reduced periods. The circuit pump operates constantly.

- When the room temperature is higher than the room sensor set point: Heating is shut down during reduced periods. When installation antifreeze is active, the reduced temperature is maintained during reduced periods.

Function 0-10 V

This function controls the boiler using an external system that includes a 0-10 V output connected to the 0-10 V input. This command imposes a temperature or output instruction on the boiler. It is necessary to ensure that the **BOILER MAX** parameter is higher than **CONS.MAX 0-10V** if the command is on temperature.

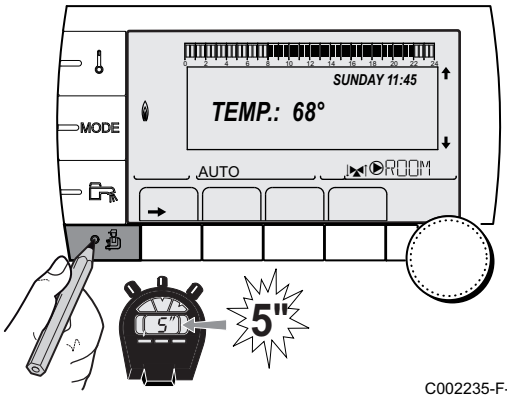


M001679-A

1	Flow set point temperature (°C) or output (%)
2	Voltage at input (V) - DC
3	0 V
4	**CONS.MIN 0-10V**
5	**CONS.MAX 0-10V**
6	**VMIN/OFF 0-10V**
7	**VMAX 0-10V**
8	10 V
x	Voltage at input
y	Boiler temperature or sliding output

If the input voltage is less than **VMIN/OFF 0-10V**, the boiler is off. The boiler temperature setting corresponds strictly to the 0-10 V input. The secondary boiler circuits continue to operate but have no impact on the water temperature in the boiler. If using the 0-10 V input and a secondary boiler circuit, the external regulator providing this 0-10 V power supply must always request a temperature at least equal to the needs of the secondary circuit.

5.7.4. Configuring the network



C002235-F-04

1. Access the installer level: Press key for around 5 seconds.
2. Select the menu **#NETWORK**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

3. Set the following parameters:

Installer level - Menu #NETWORK(1)				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
CASCADE:	**ON** / **NO**	**ON**: System in cascade	**NO**	
VM NETWORK (2)		Specific menu: Enlist VMs in cascade mode ☞ See chapter: "Connecting VM iSystem in cascade", page 91		
MASTER CONTROLLER (3)	**ON** / **NO**	Configure this control system as master on the bus	**ON**	
SYSTEM NETWORK (4)		Specific menu: Enlist generators or VMs in cascade mode ☞ See chapter: "Connecting VM iSystem in cascade", page 91		
FUNCT (4)	**CLASSIC**	Operation in cascade: Successive triggering of the various boilers in the cascade according to requirements	**CLASSIC**	
	PARALLEL	Functioning in parallel cascade: If the outside temperature is lower than the value **PARALLEL CASC.**, all of the boilers are started up at the same time		
PARALLEL CASC. (5)	-10 to 20 °C	Outside temperature triggering all stages in parallel mode	10 °C	
TIMER GENE P. CASC(3)	0 to 30 min	Minimum duration of post-operation of the generator pump	0 mn	
INTER STAGE TIMER (3)	1 to 30 min	Time delay for starting up or shutting down generators.	4 mn	
SLAVE NUMBER (6)	2 to 10	Set the network address of the secondary generator	2	

(1) The menu is displayed only if the **INSTALLATION** parameter is set to **EXTENDED**
(2) The parameter is only displayed if **CASCADE:** is set to **NO**
(3) The parameter is only displayed if **CASCADE:** is set to **ON**
(4) The parameter is only displayed if **MASTER CONTROLLER** is set to **ON**
(5) The parameter is only displayed if **FUNCT** is set to **PARALLEL**
(6) The parameter is only displayed if **MASTER CONTROLLER** is set to **OFF**

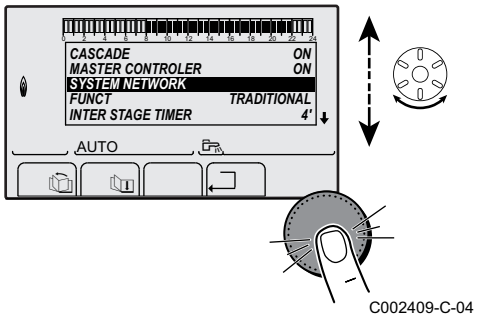
User level - Menu #SETTING				
Parameter	**Adjustment range**	**Description**	**Factory setting**	**Customer setting**
PERMUT(1)	**AUTO** / 1 ... 10	This parameter is used to set the master boiler. ▸ **AUTO**: The master boiler switches automatically every 7 days ▸ 1 ... 10: The master boiler is always the one defined by this value	**AUTO**	

(1) The parameter is only displayed if **CASCADE:** is on **ON** and **MASTER CONTROLLER** on **ON**

■ Connecting appliances in cascade

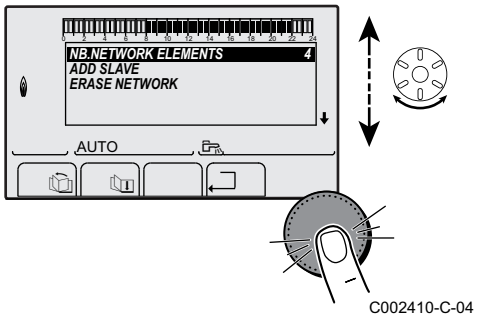
It is possible, in a cascade configuration, to enlist generators and/or VM iSystem as slaves. Proceed as follows:

1. Set parameter **CASCADE:** to **ON**.



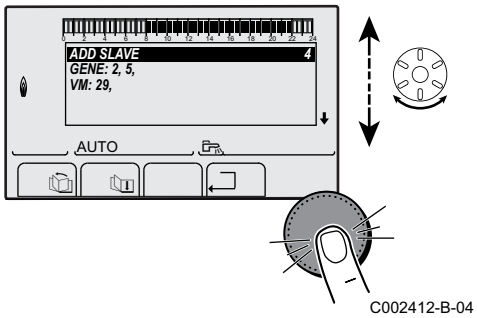
C002409-C-04

2. Select **SYSTEM NETWORK** and press the rotary button to go to the specific menu.



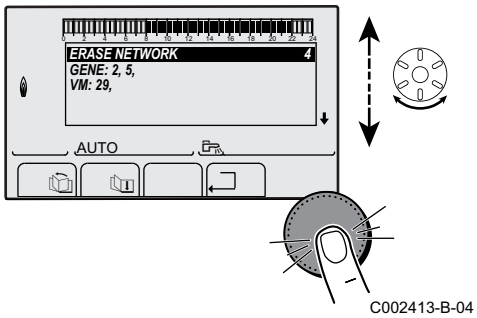
C002410-C-04

3. To add a slave appliance to the network, select **ADD SLAVE**.



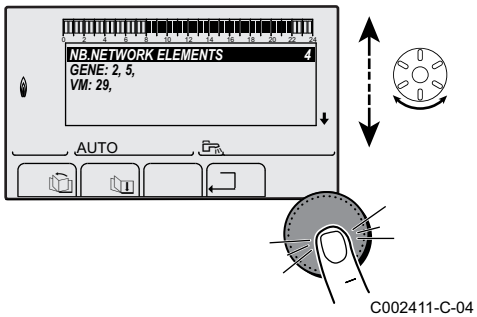
C002412-B-04

4. The screen displayed allows you to choose numbers for the slave boilers to be added to the network. Numbers 2 to 10 are dedicated to the generators and numbers 20 to 39 to the VM iSystem. Turn the rotary button to scroll through the numbers and press to confirm the number chosen. Press ⮐ to go back to the previous list.
5. To remove a slave appliance from the network, select **ERASE NETWORK**.



C002413-B-04

6. The screen displayed allows you to choose the numbers of the slave boilers to be removed from the network. Turn the rotary button to scroll through the numbers and press to remove the number chosen. Press ⮐ to go back to the previous list.



C002411-C-04

7. Select **NB. ELEMENTS.NETWORK**. This screen summarises the elements in the network recognised by the system. Press ⮐ to go back to the previous list.

■ Connecting VM iSystem in cascade

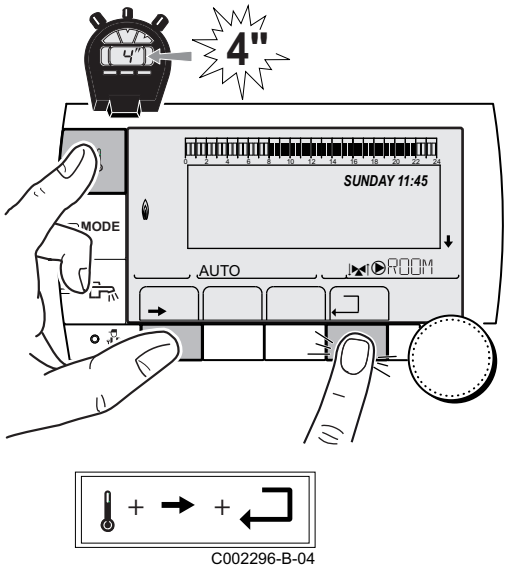
It is possible to assign VMs only as slaves. Proceed as follows:

1. Select **VM NETWORK** and press the rotary button to go to the specific menu.
2. The screen displayed is used to select the numbers of the slave VMs to be added to the network. Numbers 20 to 39 are dedicated to the VMs. Turn the rotary button to scroll through the numbers and press to confirm the number chosen. Press ⮐ to go back to the previous list.
3. To remove a slave VM from the network, select **DELETE VM**IMER VM}.
4. The screen displayed is used to select the numbers of the slave VMs to be removed from the network. Turn the rotary button to scroll through the numbers and press to remove the number chosen. Press ⮐ to go back to the previous list.
5. Select **NB. ELEMENTS.NETWORK**. This screen summarises the elements in the network recognised by the system. Press ⮐ to go back to the previous list.

5.7.5. Return to the factory settings

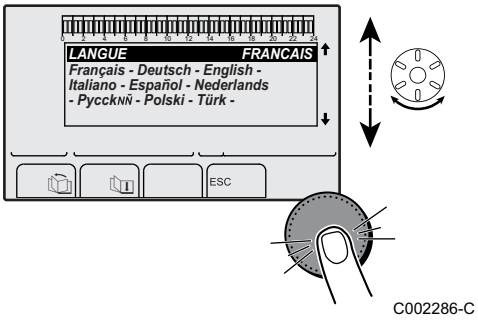
To reset the appliance, proceed as follows:

1. Press key 🌡, → and ⮐ simultaneously for 4 seconds. The menu **#RESET** is displayed.
2. Set the following parameters:



C002296-B-04

Menu #RESET			
Choice of generator	**Parameter**		**Description**
GENERATOR	**RESET**	**TOTAL**	Performs a TOTAL RESET of all parameters
		EXCEPT PROG.	Performs a parameter RESET but retains the timer programmes
		PROG.	Performs a RESET on the timer programmes but retains the parameters
		SENSOR SCU	Performs a RESET of the generator sensors connected
		ROOM SENSOR	Performs a RESET of the room sensors connected



C002286-C

After reset (**TOTAL RESET** and **RESET EXCEPT PROG.**), the control system goes back to the display of the language choice after a few seconds.

1. Select the desired language by turning the rotary button.
2. To confirm, press the rotary button.

6 Switching off the boiler

6.1 Installation shutdown

CAUTION

Do not switch off the mains supply to the appliance. If the central heating system is not used for a long period, we recommend activating the **HOLIDAYS** mode (to ensure the anti-grip of the heating pump).

6.2 Frost protection

When the heating water temperature in the boiler falls by too much, the integrated protection system in the boiler starts up. This protection functions as follows:

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

CAUTION

- The antifreeze protection does not function if the appliance is switched off.
- The integrated protection system only protects the boiler, not the installation. To protect the installation, set the appliance to **HOLIDAYS** mode.

The **HOLIDAYS** mode protects:

- The installation if the outside temperature is lower than 3°C (factory setting).
- The room temperature if a remote control is connected and the room temperature is lower than 6 °C (factory setting).
- The domestic hot water tank if the tank temperature is lower than 4 °C (the water is reheated to 10 °C).

To configure the holidays mode: Refer to the user instructions.

7 Checking and maintenance

7.1 General instructions

WARNING

- Maintenance operations must be done by a qualified engineer.
- An annual inspection is compulsory.
- Only original spare parts must be used.

- Have the flues swept **at least once a year** or more, depending on the regulations in force in your country.
  See chapter: "Chimney sweep instructions", page 94
- Carry out the inspection and standard maintenance operations once a year.
  See chapter: "Standard inspection and maintenance operations", page 96
- Carry out specific maintenance operations if necessary.
  See chapter: "Specific maintenance operations", page 100

7.2 Chimney sweep instructions

CAUTION

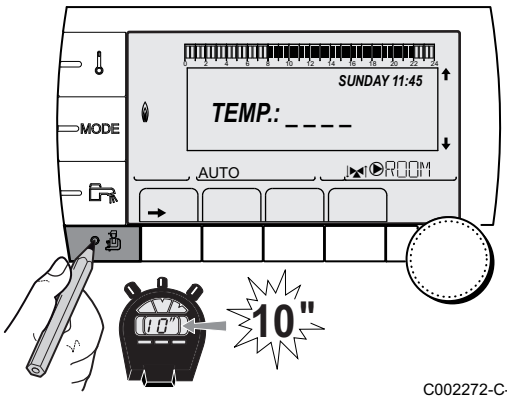
Have the flues swept **at least once a year** or more, depending on the regulations in force in your country. Only a qualified engineer may carry out the following operations.

1. Press the key.
2. Check the combustion each time the flues are swept. See chapter: "Setting the air/gas ratio (Full load)", page 66 + "Setting the air/gas ratio (Part load)", page 67
3. To go back to the main display, press key ⌐2 times.

Menu #EMISSION MEASUREMENTS				
Generator	**Function available**	**Description**	**Values displayed**	
Generator name	**AUTO**	normal operation	**BOILER TEMP.** **CURRENT** **WIND SPEED** **BACK TEMP**	°C µA rpm °C
	PMIN	Operating at minimum output	**BOILER TEMP.** **CURRENT** **WIND SPEED** **BACK TEMP**	°C µA rpm °C
	PMAX	Operating at maximum output	**BOILER TEMP.** **CURRENT** **WIND SPEED** **BACK TEMP**	°C µA rpm °C

7.3 Customising maintenance

7.3.1. Maintenance message



C002272-C-04

The boiler incorporates a function that can be used to display a maintenance message. To set the parameters for this function, proceed as follows:

1. Access the "After Sales" level: Hold down the key until **#PARAMETERS** is displayed.
2. Select the menu **#REVISION**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

3. Set the following parameters:

After Sales level - Menu #REVISION		
Parameter	**Adjustment range**	**Description**
TYPE	**NO**	Factory setting No message indicating that maintenance is necessary
	MANU	Recommended setting Signals that maintenance is necessary on the date selected. Set the date using the parameters below.
	AUTO	⚠ Not applicable. Do not select this setting.
REVISION HOUR(1)	0 to 23	Time at which the **REVISION** display appears
REV. YEAR(1)	2008 to 2099	Year in which the **REVISION** display appears
REVIS. MONTH(1)	1 to 12	Month in which the **REVISION** display appears
REVISION DATE(1)	1 to 31	Day on which the **REVISION** display appears
(1) The parameter is only displayed if **MANU** is configured.		

Clearing the maintenance message:

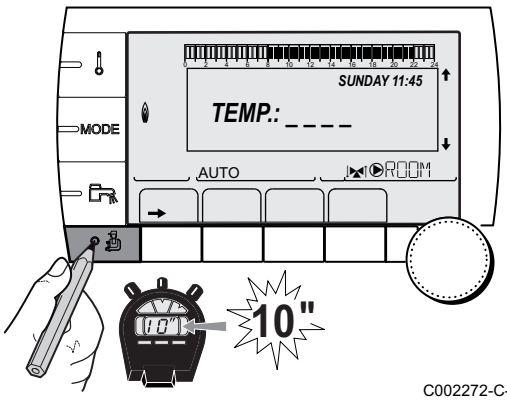
After carrying out the maintenance operations, modify the date in the **#REVISION** menu to clear the message.

In the event of maintenance before the maintenance message is displayed:

After carrying out early maintenance operations, it is necessary to set a new date in the **#REVISION** menu.

7.3.2. Contact details of the professional for After Sales Support

In order to assist the user if an error or service message is displayed, it is possible to provide the contact details of the professional to be contacted. To input the professional's contact details, proceed as follows:



C002272-C-04

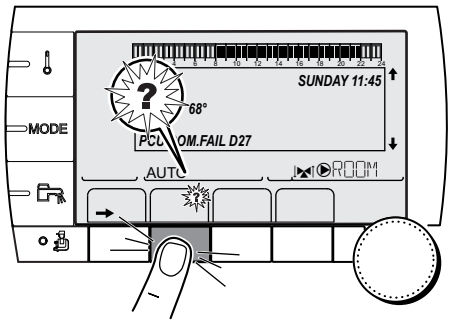
1. Access the "After Sales" level: Hold down the key until **#PARAMETERS** is displayed.
2. Select the menu **#SUPPORT**.

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

3. Set the following parameters:

After Sales level - Menu #SUPPORT	
Parameter	**Description**
NAME	Input the installer's name
TELEPHONE NUM.	Input the installer's telephone number



C002302-D-04

When the message **REVISION** is displayed, press **?** to display the professional's telephone number.

7.4 Standard inspection and maintenance operations

CAUTION

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

7.4.1. Checking the hydraulic pressure

The hydraulic pressure must reach a minimum of 0,8 bar. If the hydraulic pressure is lower than 0,8 bar, the symbol **bar** flashes.

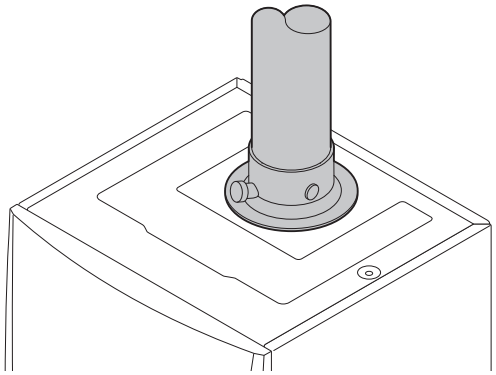
If necessary, top up the water level in the heating system (recommended hydraulic pressure between 1,5 and 2 bar).

7.4.2. Checking the ionization current

The ionization current is displayed in the menu **#MEASURES**.

See chapter: "Reading out measured values", page 78

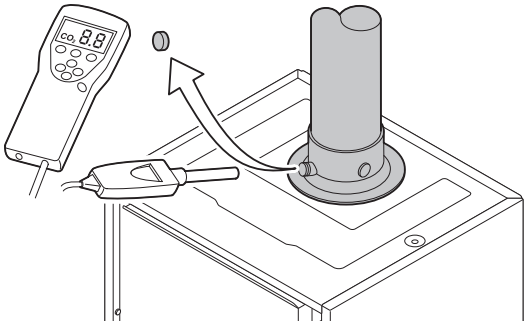
7.4.3. Checking the tightness of the flue gas evacuation and air inlet connections



T001580-A

Check the tightness of the flue gases evacuation and air inlet connections.

7.4.4. Checking combustion



T001581-A

The check on combustion is done by measuring the percentage of O_2/CO_2 in the flue gas discharge flue. To do this, proceed as follows:

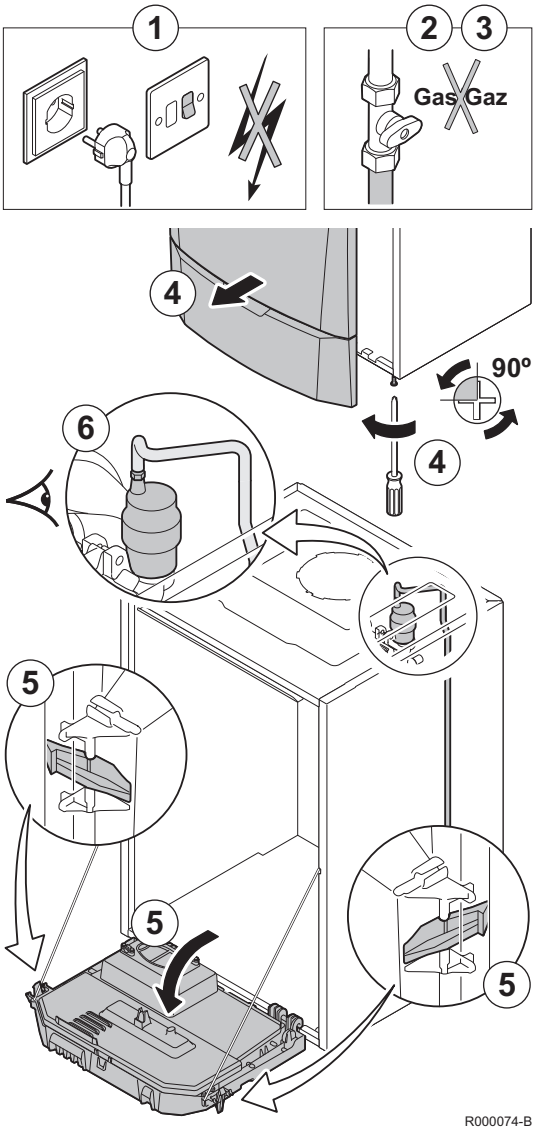
1. Unscrew the plug of the flue gas measurement point.
2. Connect the flue gas analyser.

CAUTION

Ensure that the opening around the sensor is completely sealed when taking measurements.

3. Set the boiler to full load. See chapter: "Setting the air/gas ratio (Full load)", page 66. The boiler is now operating at full load. Measure the percentage of CO_2 and compare this value with the checking values given.
4. Set the boiler to part load. See chapter: "Setting the air/gas ratio (Part load)", page 67. The boiler is now operating on part load. Measure the percentage of CO_2 and compare this value with the checking values given.

7.4.5. Checking the automatic air vent



1. Switch off the boiler electrical power supply.
2. Close the gas valve on the boiler.
3. Close the main gas inlet valve.
4. Unscrew the two screws located under the front panel by a quarter turn and remove the panel.
5. Tilt the control box forwards by opening the holding clips located at the sides.
6. Check whether there is any water in the small hose on the automatic air vent.
7. If any leaks are detected, replace the air vent.

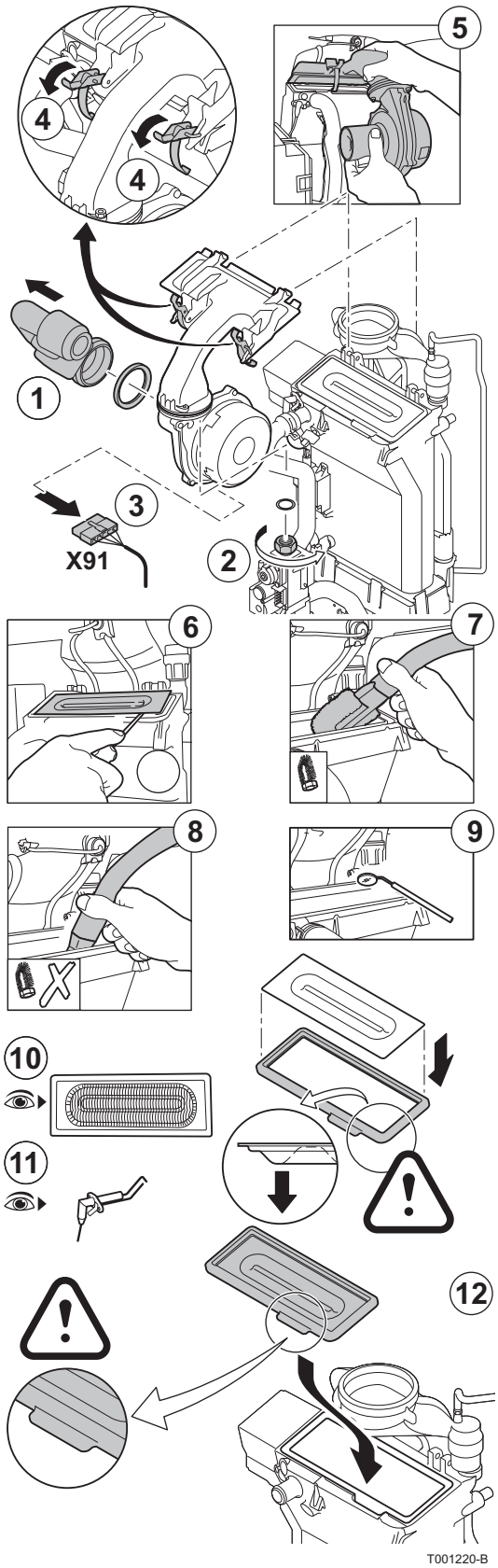
7.4.6. Checking the safety valve

1. Take out the flow collector located under the boiler.
2. Check whether there is any water in the end of the flow pipe on the safety valve.
3. If any leaks are detected, replace the safety valve.

7.4.7. Checking the siphon

1. Remove the siphon and clean it.
2. Fill the siphon with water.
3. Put the siphon back in place.

7.4.8. Checking the burner and cleaning the heat exchanger



CAUTION

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

1. Remove the air inlet flue on the venturi.
2. Unscrew the top connection on the gas valve unit.
3. Disconnect the connector located under the fan.
4. Release the 2 clips holding the fan/mixing elbow unit in place on the heat exchanger.
5. Completely remove the fan/mixing elbow unit.
6. Tilt the burner and remove it, along with the heat exchanger gasket.
7. Use a vacuum cleaner fitted with a special endpiece (accessory) to clean the top part of the heat exchanger (combustion chamber).
8. Thoroughly clean with the vacuum cleaner again without the top cleaning brush on the endpiece.
9. Check (using a mirror, for example) whether any dust can still be seen. If so, hoover it up.
10. The burner does not require any maintenance, it is self-cleaning. Check that there are no cracks and/or other tears on the surface of the dismantled burner. If this is not the case, replace the burner.
11. Checking the ignition electrode / ionization sensor.
12. To re-assemble, perform the above actions in reverse order.

CAUTION

- Remember to reconnect the connector to the fan.
- Check that the gasket is correctly positioned between the mixing elbow and the heat exchanger. (Completely flat in the appropriate groove means it is leak proof).

13. Open the gas inlet valves and switch on the mains supply to the boiler.

7.5 Specific maintenance operations

If the standard inspection and maintenance operations have revealed the necessity to carry out additional maintenance work, proceed as follows, depending on the nature of the work:

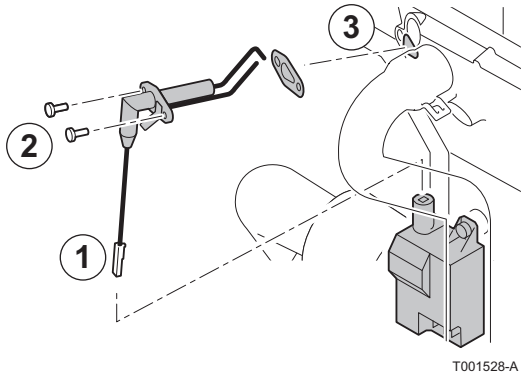
7.5.1. Replacing the ionization/ignition electrode

Replace the ionization/ignition electrode in the following cases:

- Ionization current <3 µA.
- Electrode worn.

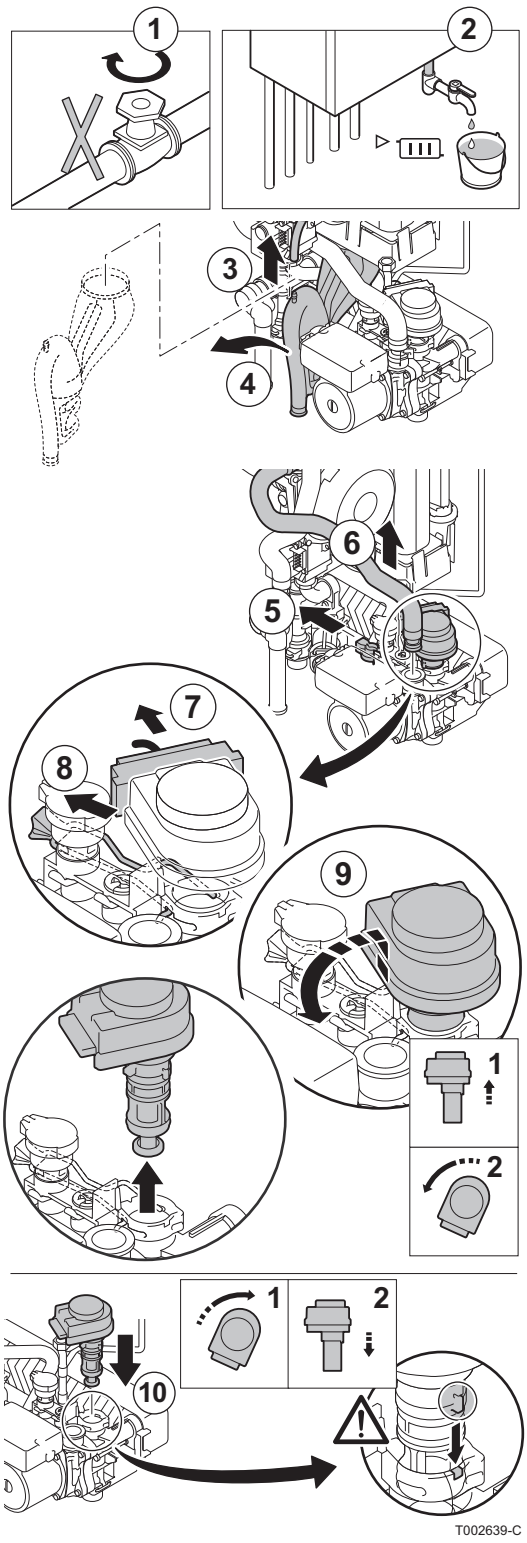
If replacement is necessary, proceed as follows:

1. Remove the cable from the ionization/ignition electrode on the ignition transformer.
2. Unscrew the 2 screws and remove the ionization/ignition electrode.
3. Replace the ionization/ignition electrode.



T001528-A

7.5.2. Replacing the 3-way valve



If it becomes necessary to replace the 3-way valve, proceed as follows:

1. Close the main water valve
2. Drain the boiler.
3. Remove the air vent hose above the siphon.
4. Remove the siphon.
5. Remove the clip holding the heating return hose in place on the right side of the hydroblock.
6. Remove the heating return hose on the right side of the hydroblock and not on the heat exchanger side (heating circuit).
7. Unplug the actuator.
8. Remove the clip holding the 3-way valve in place.
9. Remove the 3-way valve.

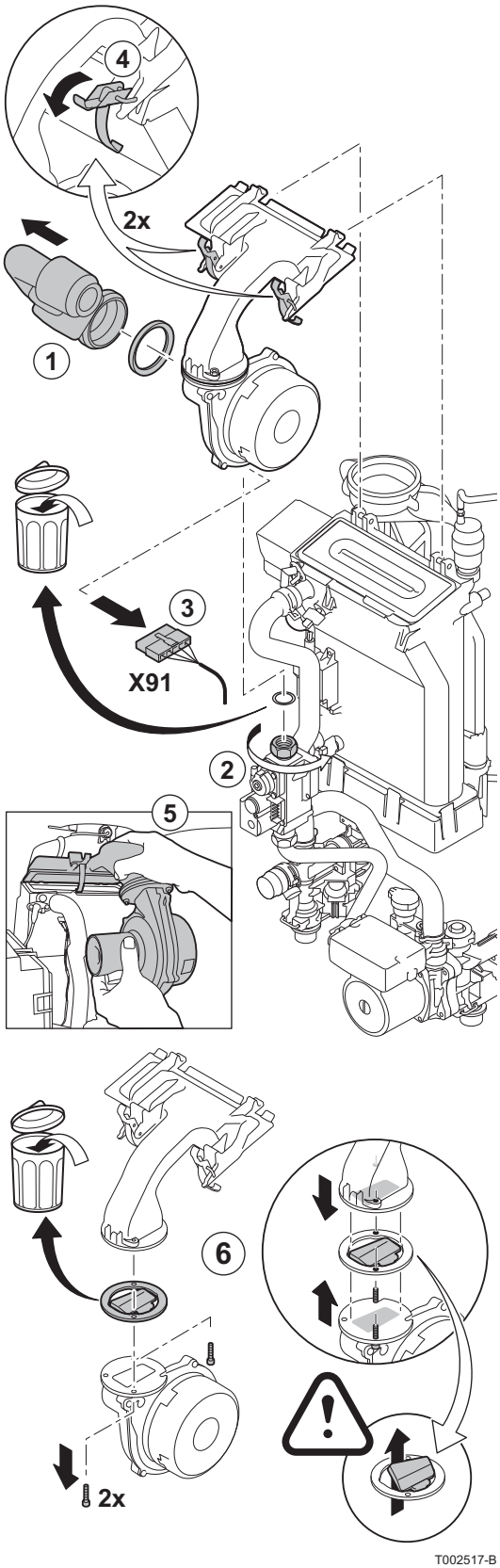
Lift and rotate by a quarter turn.

10. Proceed as for dismantling in reverse.

CAUTION

Be careful of the positioning cams on the 3-way valve.

7.5.3. Replacing the non-return valve



Replace the nonreturn valve when faulty or when the maintenance kit contains one. To do this, proceed as follows:

1. Remove the air inlet flue on the venturi.
2. Unscrew the top connection on the gas valve unit.
3. Disconnect the connector located under the fan.
4. Release the 2 clips holding the fan/mixing elbow unit in place on the heat exchanger.
5. Completely remove the fan/mixing elbow unit.
6. Replace the non-return valve located between the mixing elbow and the fan.
7. To re-assemble, perform the above actions in reverse order.

7.5.4. Assembling the boiler

C002434-A

T001523-B

1. Follow the procedure in reverse to re-assemble all of the components.

CAUTION

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

2. Fill the siphon with clean water up to the mark.
3. Put the siphon back in place.

CAUTION

Mount the vent hose above the siphon.

4. Carefully open the main water valve, fill the installation, vent it and, if need be, top it up with water.
5. Check the seals on the gas and water connections.
6. Switch the boiler back on.

8 Troubleshooting

8.1 Anti-hunting

When the boiler is in Anti-short-cycle operating mode, the symbol **?** flashes.

1. Press the "?" key.
   The message **Operation assured when the restart temperature will be reached** is displayed.

This message is not an error message but an item of information.

8.2 Messages (Code type Bxx or Mxx)

In the case of failure, the control panel displays a message and a corresponding code.

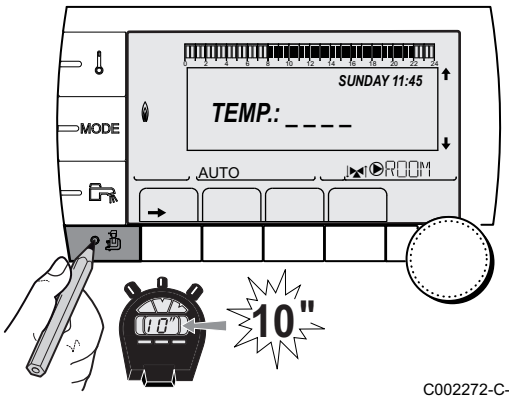
1. Make a note of the code displayed.
   The code is important for the correct and rapid diagnosis of the type of failure and for any technical assistance that may be needed.
2. Switch the boiler off and switch back on.
   The boiler starts up again automatically when the reason for the blocking has been removed.
3. If the code is displayed again, correct the problem by following the instructions in the table below:

Code	Messages	Description	Checking / solution
B00	**BL.CRC.PSU**	The PSU PCB is incorrectly configured	Parameter error on the PSU PCB ▸ Set the type of generator again in the menu **#CONFIGURATION** (Refer to the original rating plate)
B01	**BL.MAX BOILER**	Maximum flow temperature exceeded	The water flow in the installation is insufficient ▸ Check the circulation (direction, pump, valves)
B02	**BL.HEATING SPEED**	The increase in flow temperature has exceeded its maximum limit	The water flow in the installation is insufficient ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger
			Sensor error ▸ Check that the sensors are operating correctly ▸ Check whether the boiler sensor has been correctly fitted

Code	Messages	Description	Checking / solution
B07	**BL.DT OUTL RET.**	Maximum difference between the flow and return temperature exceeded	The water flow in the installation is insufficient ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger
			Sensor error ▸ Check that the sensors are operating correctly ▸ Check whether the boiler sensor has been correctly fitted
B08	**BL.RL OPEN**	The **RL** inlet on the PCU PCB terminal block is open	Parameter error ▸ Set the type of generator again in the menu **#CONFIGURATION** (Refer to the original rating plate)
			Bad connection ▸ Check the wiring
B09	**BL.INV. L/N**	Set the type of generator again in the menu **#CONFIGURATION** (Refer to the original rating plate)	
B10 **B11**	**BL.BL INPUT OPEN**	The **BL** inlet on the PCU PCB terminal block is open	The contact connected to the **BL** inlet is open ▸ Check the contact on the **BL** inlet
			Parameter error ▸ Check the parameter **IN.BL**
			Bad connection ▸ Check the wiring
B13	**BL. PCU COM** **BL.COM PCU-D4**	Communication error with the SCU PCB	Bad connection ▸ Check the wiring
			SCU PCB not installed in the boiler ▸ Install an SCU PCB
B14	**BL.WATER MIS.**	The water pressure is lower than 0,8 bar	Not enough water in the circuit ▸ Top up the installation with water
B15	**BL.GAS PRESS**	Gas pressure too low	Incorrect setting of the gas pressure switch on the SCU PCB ▸ Check that the gas valve is fully opened ▸ Checking the gas supply pressure ▸ Check whether the gas pressure control system has been correctly fitted ▸ Replace the gas pressure control system if need be
B16	**BL.BAD SU**	The SU PCB is not recognised	Wrong SU PCB for this boiler ▸ Replace the SU PCB
B17	**BL.PCU ERROR**	The parameters saved on the PCU PCB are impaired	Parameter error on the PCU PCB ▸ Replace the PCU PCB
B18	**BL.BAD PSU**	The PSU PCB is not recognised	Wrong PSU PCB for this boiler ▸ Replace the PSU PCB
B19	**BL.NO CONFIG**	The boiler has not been configured	The PSU PCB has been changed ▸ Set the type of generator again in the menu **#CONFIGURATION** (Refer to the original rating plate)
B21	**BL. COM SU**	Communication error between the PCU and SU PCBs	Bad connection ▸ Check that the SU PCB has been correctly put in place on the PCU PCB ▸ Replace the SU PCB

Code	Messages	Description	Checking / solution
B22	**BL.FLAME LOS**	No flame during operation	No ionization current ▸ Purge the gas supply to remove air ▸ Check that the gas valve is fully opened ▸ Check the 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
B25	**BL.SU ERROR**	Internal error on the SU PCB	▸ Replace the SU PCB
B26	**BL.DHW. S.**	The DHW tank sensor is disconnected or short circuited	▸ Set the type of generator again in the menu **#CONFIGURATION** (See nameplate) ▸ Check that the sensor is actually connected to the **P.DHW** inlet on the SCU ▸ Check the Ohmic value of the sensor. Replace it if necessary ▸ Check the wiring
B27	**BL.DHW INST**	The sensor on the plate exchanger outlet is disconnected or short circuited	▸ Set the type of generator again in the menu **#CONFIGURATION** (See nameplate) ▸ Check that the sensor is actually connected to the X20 inlet on the PCU ▸ Check the Ohmic value of the sensor. Replace it if necessary ▸ Check the wiring
M04	**REVISION**	A service is required	The date programmed for the service has been reached ▸ Carry out maintenance on the boiler ▸ To clear the inspection, programme another date in the menu **#REVISION** or set the parameter **REVISION TYPE** to **OFF**
M05	**REVISION A**	An A, B or C service is required	The date programmed for the service has been reached ▸ Carry out maintenance on the boiler ▸ To clear the inspection, press key ☜
M06	**REVISION B**		
M07	**REVISION C**		
M20	**DISGAS**	A boiler vent cycle is underway	Switching the boiler on ▸ Wait 3 minutes
	FL.DRY.B XX DAYS	Floor drying is active **XX** DAYS = Number of days' floor drying remaining.	Floor drying is underway. Heating on the circuits not concerned is shut down. ▸ Wait for the number of days shown to change to 0 ▸ Set the parameter **SCREED DRYING** to **OFF**
	FL.DRY.C XX DAYS		
	FL.DRY.B+C XX DAYS		
M23	**CHANGE OUTSI.S**	The outside temperature sensor is defective.	Change the outside radio temperature sensor.
M30	**BL.COM.MODBUS**	No communication with the master regulation by the network MODBUS.	Check the wiring between the module and the master appliance.
M31	**BL.SYSTEM NETWORK**	Incorrect configuration of the network MODBUS.	▸ Check that the address of the appliance is correctly configured in the **#NETWORK** menu. ▸ Check that the cascade configuration is set correctly on the master module.
	STOP N XX	The shutdown is active **XX** = Number of the active shutdown	A shutdown is underway. The circuits selected for this stop are in Antifreeze mode during the period chosen. ▸ Wait until the end date has been passed ▸ Set the parameter **STOP NXX** to **OFF**

8.3 Message history



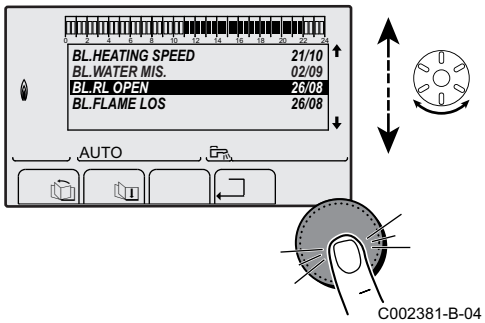
C002272-C-04

The menu (#MESSAGE HISTORIC) is used to consult the last 10 messages displayed by the control panel.

1. Access the "After Sales" level: Hold down the key until **#PARAMETERS** is displayed.
2. Select the menu (#MESSAGE HISTORIC).

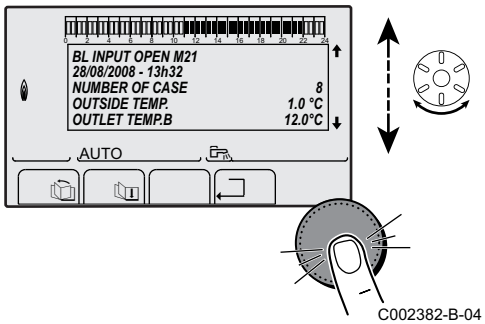
- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62



C002381-B-04

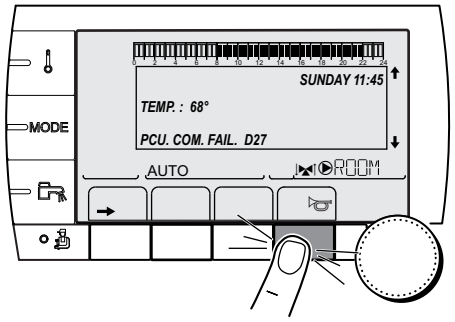
3. The list of the last 10 messages is displayed.



C002382-B-04

4. Select a message to consult the information pertaining to it.

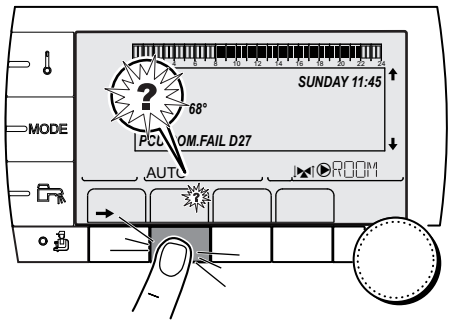
8.4 Faults (Code type Lxx or Dxx)



C002604-B-04

In the event of operational failure, the control panel flashes and displays an error message and a corresponding code.

1. Make a note of the code displayed.
   The code is important for the correct and rapid diagnosis of the type of failure and for any technical assistance that may be needed.
2. Press the key. If the code is displayed again, switch off the boiler and then switch it back on.



C002302-D-04

3. Press the **?** key. Follow the instructions displayed to solve the problem.
4. Consult the meaning of the codes in the table below:

Code	Faults	Cause of the fault	Description	Checking / solution
L00	**PSU FAIL**	PCU	PSU PCB not connected	Bad connection ▸ Check the wiring between the PCU and PSU PCBs
				PSU PCB faulty ▸ Replace the PSU PCB
L01	**PSU PARAM FAIL**	PCU	The safety parameters are incorrect	Bad connection ▸ Check the wiring between the PCU and PSU PCBs
				PSU PCB faulty ▸ Replace the PSU PCB
L02	**DEF.OUTLET S.**	PCU	The boiler flow sensor has short-circuited	Bad connection ▸ Check the wiring between the PCU PCB and the sensor ▸ Check that the SU PCB is correctly in place ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
L03	**DEF.OUTLET S.**	PCU	The boiler flow sensor is on an open circuit	Bad connection ▸ Check the wiring between the PCU PCB and the sensor ▸ Check that the SU PCB is correctly in place ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary

Code	Faults	Cause of the fault	Description	Checking / solution
L04	**DEF.OUTLET S.**	PCU	Boiler temp too low	Bad connection ▸ Check the wiring between the PCU PCB and the sensor ▸ Check that the SU PCB is correctly in place ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
				No water circulation ▸ Vent the air in the heating system ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger
L05	**STB OUTLET**	PCU	Boiler temperature too high	Bad connection ▸ Check the wiring between the PCU PCB and the sensor ▸ Check that the SU PCB is correctly in place ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
				No water circulation ▸ Vent the air in the heating system ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger
L06	**BACK S.FAILURE**	PCU	The return temperature sensor has short-circuited	Bad connection ▸ Check the wiring between the PCU PCB and the sensor ▸ Check that the SU PCB is correctly in place ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
L07	**BACK S.FAILURE**	PCU	The return temperature sensor is on an open circuit	Bad connection ▸ Check the wiring between the PCU PCB and the sensor ▸ Check that the SU PCB is correctly in place ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary

Code	Faults	Cause of the fault	Description	Checking / solution
L08	**BACK S.FAILURE**	PCU	Return temperature too low	Bad connection ▸ Check the wiring between the PCU PCB and the sensor ▸ Check that the SU PCB is correctly in place ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
				No water circulation ▸ Vent the air in the heating system ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger
L09	**STB BACK**	PCU	Return temperature too high	Bad connection ▸ Check the wiring between the PCU PCB and the sensor ▸ Check that the SU PCB is correctly in place ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
				No water circulation ▸ Vent the air in the heating system ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger
L10	**DEP-RET>MAX**	PCU	Difference between the flow and return temperatures insufficient	Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
				Bad connection ▸ Check that the sensor has been correctly fitted
				No water circulation ▸ Vent the air in the heating system ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger ▸ Check that the heating pump is operating correctly

Code	Faults	Cause of the fault	Description	Checking / solution
L11	**RET-DEP>MAX**	PCU	Difference between the flow and return temperatures too great	Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
				Bad connection ▸ Check that the sensor has been correctly fitted
				No water circulation ▸ Vent the air in the heating system ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger ▸ Check that the heating pump is operating correctly
L12	**STB OPEN**	PCU	Maximum boiler temperature exceeded (STB thermostat maximum)	Bad connection ▸ Check the wiring between the PCU PCB and the STB ▸ Check that the SU PCB is correctly in place ▸ Check the electrical continuity of the STB ▸ Check whether the STB has been correctly fitted
				Sensor fault ▸ Replace the STB if necessary
				No water circulation ▸ Vent the air in the heating system ▸ Check the circulation (direction, pump, valves) ▸ Check the water pressure ▸ Check the cleanliness of the heat exchanger
L14	**BURNER FAILURE**	PCU	5 burner start-up failures	No ignition ▸ Check the wiring between the PCU PCB and the ignition transformer ▸ Check that the SU PCB is correctly in place ▸ Check the ionization/ignition electrode ▸ Check the earthing ▸ SU PCB faulty: Change the PCB
				Ignition arc, but no flame formation ▸ Vent the gas flues ▸ Check that the gas valve is fully opened ▸ 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 the wiring on the gas valve unit ▸ SU PCB faulty: Change the PCB
				Presence of the flame but insufficient ionization (<3 µA) ▸ Check that the gas valve is fully opened ▸ Checking the gas supply pressure ▸ Check the ionization/ignition electrode ▸ Check the earthing ▸ Check the wiring on the ionization/ignition electrode

Code	Faults	Cause of the fault	Description	Checking / solution
L16	**PARASIT FLAME**	PCU	Detection of a parasite flame	Ionization current present when there should not be a flame Ignition transformer defective ▸ Check the ionization/ignition electrode
				Gas valve defective ▸ Check the gas valve and replace if necessary
				The burner remains very hot: CO_2 too high ▸ Set the CO_2
L17	**VALVE FAIL**	PCU	Problem on the SU PCB	Bad connection ▸ Check that the SU PCB is correctly in place
				SU PCB faulty ▸ Inspect the SU PCB and replace it if need be
L34	**FAN FAILURE**	PCU	The fan is not running at the right speed	Bad connection ▸ Check the wiring between the PCU PCB and the fan
				Fan defective ▸ Check for adequate draw on the chimney connection ▸ Replace the fan if need be
L35	**BACK>BOIL FAIL**	PCU	Flow and return reversed	Bad connection ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensors ▸ Replace the sensor if necessary
				Water circulation direction reversed ▸ Check the circulation (direction, pump, valves)
L36	**I-CURRENT FAIL**	PCU	The flame went out more than 5 times in 24 hours while the burner was operating	No ionization current ▸ Purge the gas supply to remove air ▸ Check that the gas valve is fully opened ▸ 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
L37	**SU COM.FAIL**	PCU	Communication failure with the SU PCB	Bad connection ▸ Check whether the SU PCB has been correctly fitted into the connector on the PCU PCB ▸ Change the SU PCB
L38	**PCU COM.FAIL**	PCU	Communication failure between the PCU and SCU PCBs	Bad connection ▸ Check the wiring between the PCU and SCU PCBs ▸ Run an **AUTODETECTION** in the menu **#CONFIGURATION**
				SCU PCB not connected or faulty ▸ Replace the SCU PCB

Code	Faults	Cause of the fault	Description	Checking / solution
L39	**BL OPEN FAIL**	PCU	The **BL** inlet opened for a short time	Bad connection ▸ Check the wiring
				External cause ▸ Check the device connected to the **BL** contact
				Parameter incorrectly set ▸ Check the parameter **IN.BL**
L40	**TEST.HRU.FAIL**	PCU	HRU/URC unit test error	Bad connection ▸ Check the wiring
				Parameter incorrectly set ▸ Set the type of generator again in the menu **#CONFIGURATION** (Refer to the original rating plate)
L250	**DEF.WATER MIS.**	PCU	The water pressure is too low	Hydraulic circuit incorrectly vented Water leak Measurement error ▸ Top up with more water if necessary ▸ Reset the boiler
L251	**MANOMETRE FAIL**	PCU	Pressure gauge fault	Wiring problem The manometer is defective Sensor pcb defective ▸ Check the wiring between the PCU PCB and the pressure gauge ▸ Check whether the pressure gauge has been correctly fitted ▸ Replace the pressure gauge if need be
D03 **D04**	**OUTL S.B FAIL.** **OUTL S.C FAIL.**	SCU	Circuit B flow sensor fault Circuit C flow sensor fault Remarks: The circuit pump is running. The 3-way valve motor on the circuit is no longer powered and can be adjusted manually.	Bad connection ▸ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 116 ▸ Check the link and the connectors ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
D05	**OUTSI.S.FAIL.**	SCU	Outside temperature sensor fault Remarks: The boiler operates on **BOILER MAX** temperature. The valve setting is no longer ensured but monitoring the maximum temperature of the circuit after the valve is ensured. Valves may be manually operated. Reheating the domestic hot water remains ensured.	Bad connection ▸ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 116 ▸ Check the link and the connectors ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary

Code	Faults	Cause of the fault	Description	Checking / solution
D07	**SYST.SENS.FAIL.**	SCU	System sensor fault	Bad connection ▸ Check whether the sensor is connected: See chapter: "Deletion of sensors from the memory in the PCB", page 116 ▸ Check the link and the connectors ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
D09	**DHW S.FAILURE**	SCU	Domestic hot water sensor fault Remarks: Heating of domestic hot water is no longer ensured. The load pump operates. The load temperature of the dhw tank is the same as the boiler.	Bad connection ▸ Check whether the sensor is connected: See chapter: "Deletion of sensors from the memory in the PCB", page 116 ▸ Check the link and the connectors ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
D11 **D12** **D13**	**ROOM S.A FAIL.** **ROOM S.B FAIL.** **ROOM S.C FAIL.**	SCU	A room temperature sensor fault B room temperature sensor fault C room temperature sensor fault Note: The circuit concerned operates without any influence from the room sensor.	Bad connection ▸ Check whether the sensor is connected: See chapter: "Deletion of sensors from the memory in the PCB", page 116 ▸ Check the link and the connectors ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
D14	**MC COM.FAIL**	SCU	Communication failure between the SCU PCB and the boiler radio module	Bad connection ▸ Check the link and the connectors
				Boiler module failure ▸ Change the boiler module
D15	**ST.TANK S.FAIL**	SCU	Storage tank sensor fault Note: The hot water storage tank reheating operation is no longer assured.	Bad connection ▸ Check whether the sensor is connected: See chapter: "Deletion of sensors from the memory in the PCB", page 116 ▸ Check the link and the connectors ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary

Code	Faults	Cause of the fault	Description	Checking / solution
D16 **D16**	**SWIM.P.B. S.FAIL** **SWIM.P.C. S.FAIL**	SCU	Swimming pool sensor fault circuit B Swimming pool sensor fault circuit C Note: Swimming pool reheating is always done during the circuit's comfort period.	Bad connection ▸ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 116 ▸ Check the link and the connectors ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
D17	**DHW 2 S.FAIL**	SCU	Sensor fault tank 2	Bad connection ▸ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 116 ▸ Check the link and the connectors ▸ Check that the sensor has been correctly fitted
				Sensor fault ▸ Check the Ohmic value of the sensor ▸ Replace the sensor if necessary
D27	**PCU COM. FAIL**	SCU	Communication failure between the SCU and PCU PCBs ▸ Check the wiring between the SCU and PCU PCBs ▸ Check that the PCU PCB is powered up (green LED on or flashing) ▸ Change the PCU PCB	
D32	**5 RESET:ON/OFF**	SCU	5 resets done in less than an hour ▸ Switch the boiler off and switch back on	
D37	**TA-S SHORT-CIR**	SCU	The Titan Active System® is short-circuited ▸ Check that the connection cable between the SCU PCB and the anode is not short-circuited ▸ Check that the anode is not short-circuited Remarks: Domestic hot water production has stopped but can nonetheless be restarted using key . The tank is no longer protected. If a tank without Titan Active System® is connected to the boiler,check that the TAS simulation connector (delivered with package AD212) is fitted to the sensor card.	
D38	**TA-S DISCONNEC**	SCU	The Titan Active System® is on an open circuit ▸ Check that the connection cable between the SCU PCB and the anode is not severed ▸ Check that the anode is not broken Remarks: Domestic hot water production has stopped but can nonetheless be restarted using key . The tank is no longer protected. If a tank without Titan Active System® is connected to the boiler,check that the TAS simulation connector (delivered with package AD212) is fitted to the sensor card.	
D99	**DEF.BAD PCU**	SCU	The SCU software version does not recognise the PCU connected ▸ Update the SCU with the appropriate software version	

8.4.1. Deletion of sensors from the memory in the PCB

The configuration of the sensors is memorised by the SCU PCB. If a sensor fault appears whilst the corresponding sensor is not connected or has been voluntarily removed, please delete the sensor from the SCU PCB memory.

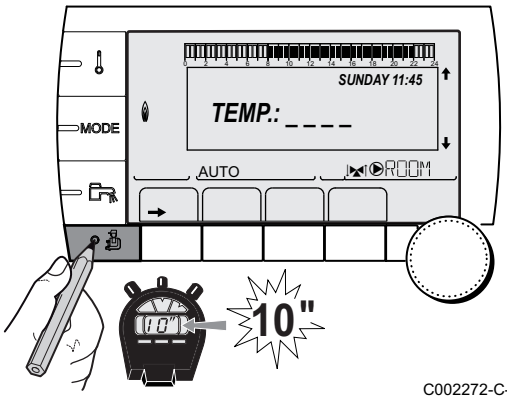
- Press key **?** repeatedly until **Do you want to delete this sensor?** is displayed.
- Select **YES** by turning the rotary button and press to confirm.

The outside temperature sensor cannot be deleted.

8.5 Failure history

The menu **#DEFAULT HISTORIC** is used to consult the last 10 faults displayed by the control panel.

1. Access the "After Sales" level: Hold down the key until **#PARAMETERS** is displayed.
2. Select the menu **#DEFAULT HISTORIC**.



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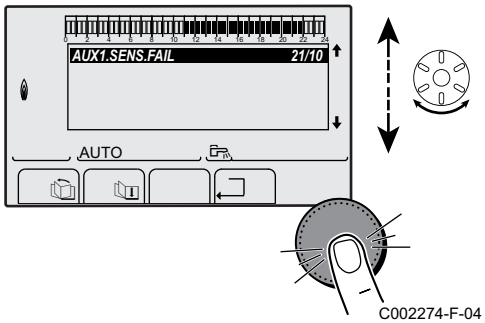
- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

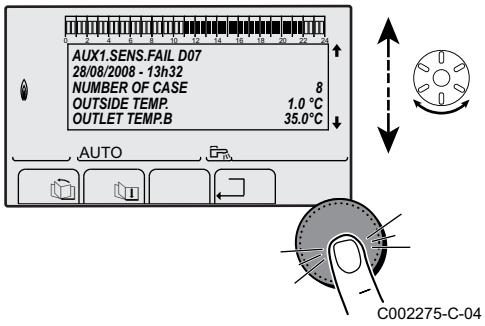
For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

3. The list of the last 10 faults is displayed.



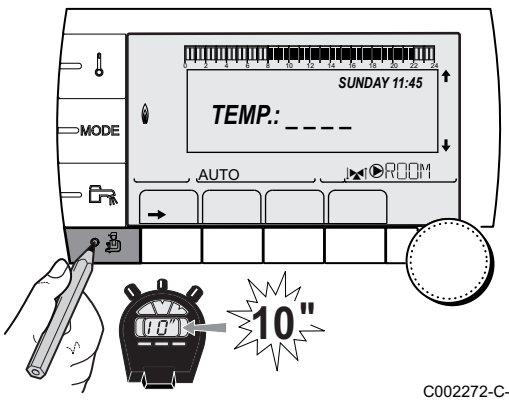
C002274-F-04

4. Select a fault to consult the information pertaining to it.



C002275-C-04

8.6 Parameter and input/output check (mode tests)



C002272-C-04

Use the following menus to target the cause of a malfunction.

1. Access the "After Sales" level: Hold down the key until **#PARAMETERS** is displayed.
2. Check the following parameters:

- Turn the rotary button to scroll through the menus or modify a value.
- Press the rotary button to access the selected menu or confirm a value modification.

For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 62

After Sales level - Menu #PARAMETERS	
Parameter	**Description**
PERMUT	Master boiler active
STAGE	Number of boilers requesting heating
NB.CASC.:	Number of boilers recognised in the cascade
NB. VM:	Number of DIEMATIC VM control systems recognised in the cascade
POWER %	Current output of the boiler
PERCENT PUMP	Modulating pump command
SPEED FAN (1)	Fan rotation speed
SETPOINT FAN	Fan rotation speed desired
MEAN OUTSIDE T	Average outside temperature
CALC.T. BOILER	Temperature calculated by the boiler
BURNER SETPOINT	Set point parameter of the burner
AVERAGE BOIL.T	Average temperature of the boiler flow sensor
BOILER. T. (1)	Measurement of the boiler flow sensor
BACK TEMP (1)	Temperature of the boiler return water
SYSTEM TEMP. (1)	Temperature of the system flow water if multi-generator
SYST. CALC. T. (2)	System flow temperature calculated by the control system
CALCULATED T. A	Calculated temperature for circuit A
CALCULATED T. B (3)	Calculated temperature for circuit B
CALCULATED T. C (3)	Calculated temperature for circuit C
OUTLET TEMP. B (1) (3)	Temperature of the flow water in circuit B
SWIMMING P.T.B	Temperature of the swimming pool water sensor on circuit B
OUTLET TEMP. C (1) (3)	Temperature of the flow water in circuit C
SWIMMING P.T.C	Temperature of the swimming pool water sensor on circuit C
OUTSIDE TEMP. (1)	Outside temperature
ROOMTEMP. A (1)	Room temperature of circuit A
ROOMTEMP. B (1) (3)	Room temperature of circuit B
ROOMTEMP. C (1) (3)	Room temperature of circuit C

(1) The parameter can be displayed by pressing key .
(2) The parameter is only displayed if **CASCADE:** is set to **ON**
(3) The parameter is only displayed for the options, circuits or sensors actually connected

After Sales level - Menu #PARAMETERS	
Parameter	**Description**
WATER TEMP. (1)(3)	Water temperature in the DHW tank
IN 0-10V (1)(3)	Voltage at input 0-10 V
CURRENT (1)	Ionization current
PRESSURE (1)	Water pressure in the installation
STOR.TANK.TEMP (1) (3)	Water temperature in the storage tank
T.DHW BOTTOM (1)(3)	Water temperature in the bottom of the DHW tank
DHW A TEMP. (1)(3)	Water temperature in the second DHW tank connected to circuit A
TEMP.TANK AUX (1)(3)	Water temperature in the second DHW tank connected to the AUX circuit
KNOB A	Position of temperature setting button on room sensor A
KNOB B(3)	Position of temperature setting button on room sensor B
KNOB C(3)	Position of temperature setting button on room sensor C
OFFSET ADAP A	Parallel trigger calculated for circuit A
OFFSET ADAP B (3)	Parallel trigger calculated for circuit B
OFFSET ADAP C (3)	Parallel trigger calculated for circuit C
(1) The parameter can be displayed by pressing key .	
(2) The parameter is only displayed if **CASCADE:** is set to **ON**	
(3) The parameter is only displayed for the options, circuits or sensors actually connected	

After Sales level - Menu #TEST OUTPUTS		
Parameter	**Adjustment range**	**Description**
P. CIRC. A	**ON / NO**	Stop/start pump circuit A
P. CIRC. B (1)	**ON / NO**	Stop/start pump circuit B
P. CIRC. C (1)	**ON / NO**	Stop/start pump circuit C
HW. PUMP (1)	**ON / NO**	Stop/start domestic hot water pump
AUX.CIRC.(1)	**ON / NO**	On/Off auxiliary outlet
3WV B (1)	**REST**	No command
	OPEN	Opening 3-way valve circuit B
	CLOSE	Closure 3-way valve circuit B
3WV C (1)	**REST**	No command
	OPEN	Opening 3-way valve circuit C
	CLOSE	Closure 3-way valve circuit C
TEL.OUTPUT	**ON / NO**	On/Off telephone relay outlet
(1) The parameter is only displayed for the options, circuits or sensors actually connected		

After Sales level - Menu #TEST INPUTS		
Parameter	**Status**	**Description**
PHONE REM.		Bridge on telephone input (1 = presence, 0 = absence)
FLAME		Flame presence test (1 = presence, 0 = absence)
GAS VALVE	**OPEN/CLOSE**	Opening the valve Closing the valve
FAILURE	**ON**	Fault display
	OFF	No fault
(1) The parameter is only displayed for the options, circuits or sensors actually connected		
(2) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**		

After Sales level - Menu #TEST INPUTS		
Parameter	**Status**	**Description**
SEQUENCE		Control system sequence. ☞ See chapter: "Control system sequence", page 120
BOILER		Index of the generator in the system
TYPE		Generator type
R.CTRL A (1)	**ON**	Presence of a remote control A
	OFF	No remote control A
R.CTRL B (1)	**ON**	Presence of a remote control B
	OFF	No remote control B
R.CTRL C (1)	**ON**	Presence of a remote control C
	OFF	No remote control C
CALIBRA.CLOCK(2)		Clock calibration
(1) The parameter is only displayed for the options, circuits or sensors actually connected (2) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**		

After Sales level - #INFORMATION menu	
Parameter	**Description**
S/N SCU	Serial number of the SCU board
CTRL	Software version of the SCU board
S/N PCU	Serial number of the PCU board
VER.ROM	Version of the PCU PCB programme
VERS.PARAM PCU	Version of the PCU PCB parameters
S/N SU	Serial number of the SU board
VERS.PARAM SU	Version of the SU PCB programme
VERS.PARAM PCU	Version of the SU PCB parameters
MC.VERSION (1)	Version of the boiler radio module programme
SOLAR VERS. (1)	Solar control system software version
CALIBRA.CLOCK(2)	Clock calibration
(1) The parameter is only displayed for the options, circuits or sensors actually connected (2) The parameter is only displayed if **INSTALLATION** is set to **EXTENDED**	

After Sales level - Menu #CONFIGURATION		
Parameter	**Adjustment range**	**Description**
MODE:	**MONO/ ALL.CIRC.**	To chose if the exemption made for one remote control applies to a single circuit (**MONO**) or if it must be transmitted to a group of circuits (**ALL.CIRC.**)
TYPE		Generator type (Refer to the original rating plate)
AUTODETECTION	**OFF/ON**	System reset if error **L38** is displayed
TAS	**OFF/ON**	Activation of the Titan Active System® function

8.6.1. Control system sequence

Control system sequence		
Status	**Sub-status**	**Operation**
0	0	Boiler stopped
1	1	Anti-short cycle activated
	2	Reversal valve opening
	3	Start-up of the boiler pump
	4	Awaiting burner start-up
2	10	Open gas valve (External)
	11	Fan start-up
	13	The fan switches to the burner start-up speed
	14	Check RL signal (Function not active)
	15	Burner on switch request
	17	Pre-ignition
	18	Ignition
	19	Check flame presence
	20	Awaiting further action to unsuccessful ignition
3 / 4	30	Burner lit and free modulation on the boiler instruction
	31	Burner lit and free modulation on a limited instruction, equal to a return temperature of +25°C
	32	Burner ignited and free modulation on the boiler set point but output restricted
	33	Burner lit and descending modulation following too large a rise in temperature on the exchanger (4 K in 10 seconds)
	34	Burner lit and minimum modulation following too large a rise in temperature on the exhanger (7 K in 10 seconds)
	35	Burner off following too large a rise in temperature on the exchanger (9 K in 10 seconds)
	36	Burner lit and ascending modulation to guarantee a correct ionization current
	37	Heating: Burner lit and minimum modulation after a burner start-up lasting 30 seconds DHW production: Burner lit and minimum modulation after a burner start-up lasting 100 seconds
	38	Burner lit and modulation fixed higher than the minimum after burner start-up lasting 30 seconds, if the burner was off for more than 2 hours or after powering up
5	40	The burner will stop
	41	The fan switches to post-sweeping speed on the burner
	42	The external gas valve closes
	43	Post-sweeping
	44	Stop fan
6	60	Post-operation of the boiler pump
	61	Stop boiler pump
	62	Reversal valve closure
	63	Start anti short cycle
8	0	Stand-by
	1	Anti-short cycle activated
9	--	Blockage: The sub-status shows the error value
10	--	Blocking
16	--	Antifreeze protection
17	--	Bleed

9 Spare parts

9.1 General

When it is observed subsequent to inspection or maintenance work that a component in the appliance needs to be replaced, use only original spare parts or recommended spare parts and equipment.

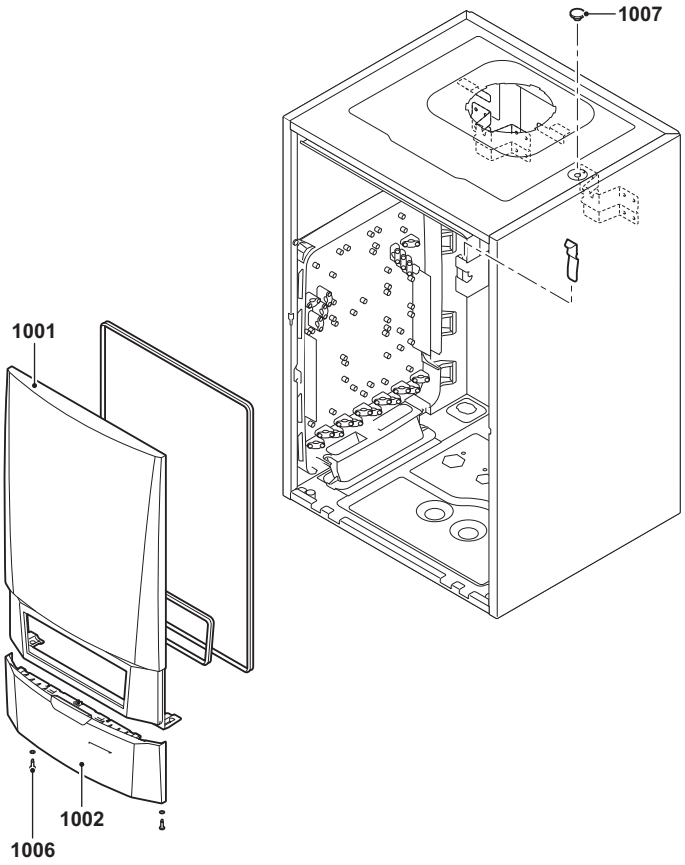
To order a spare part, give the reference number shown on the list.

9.2 Spare parts

Spare parts list reference: 300022160-002-A

9.2.1. Casing

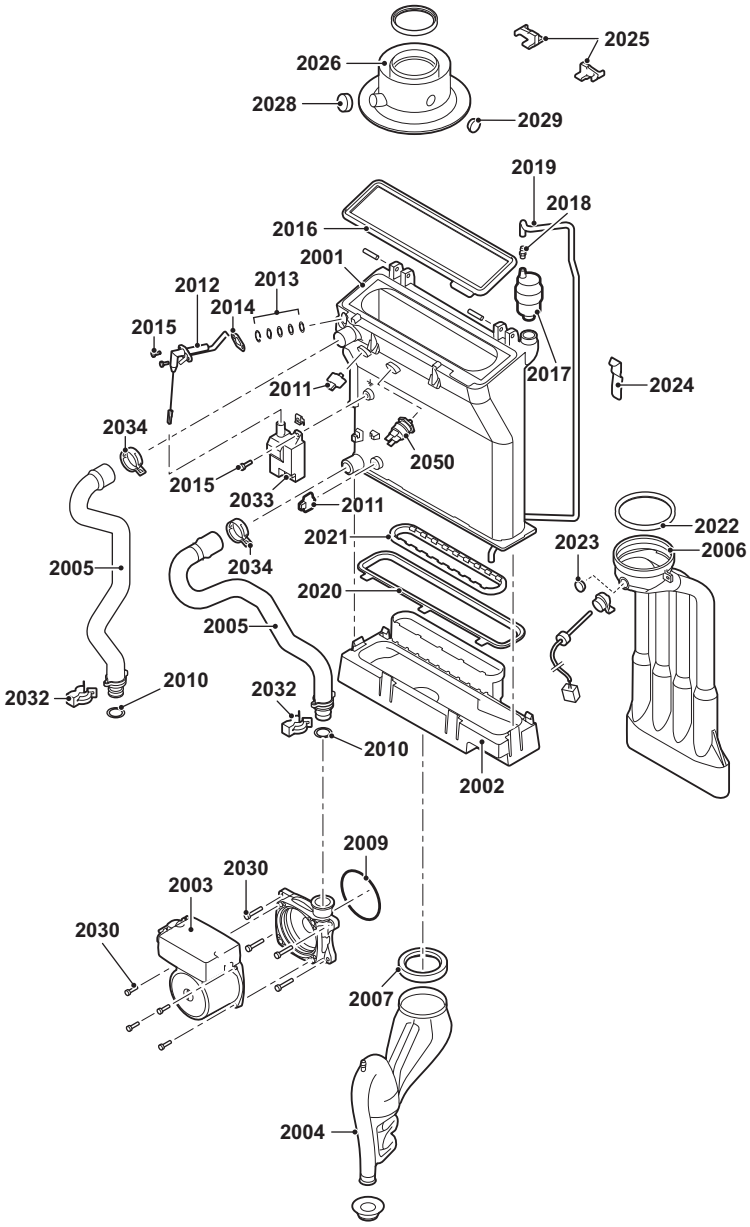
1



EV 119475-1 T001326-B

9.2.2. Heat exchanger and burner

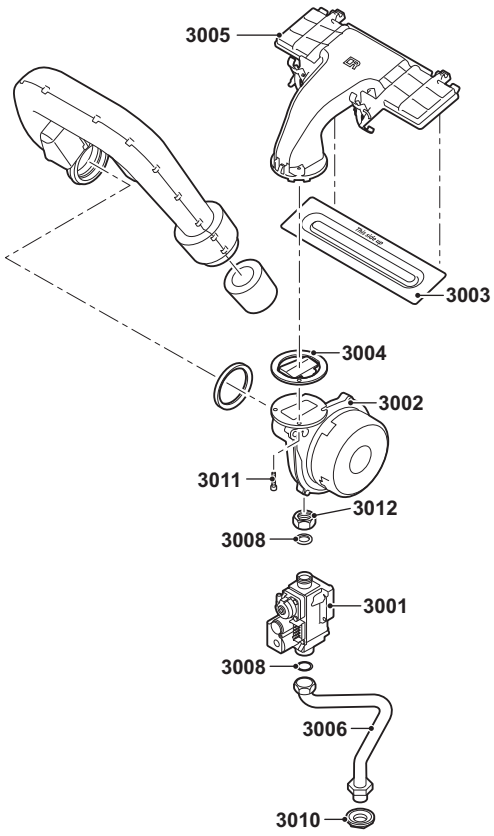
2



EV 119475-2 T001327-B

9.2.3. Fan

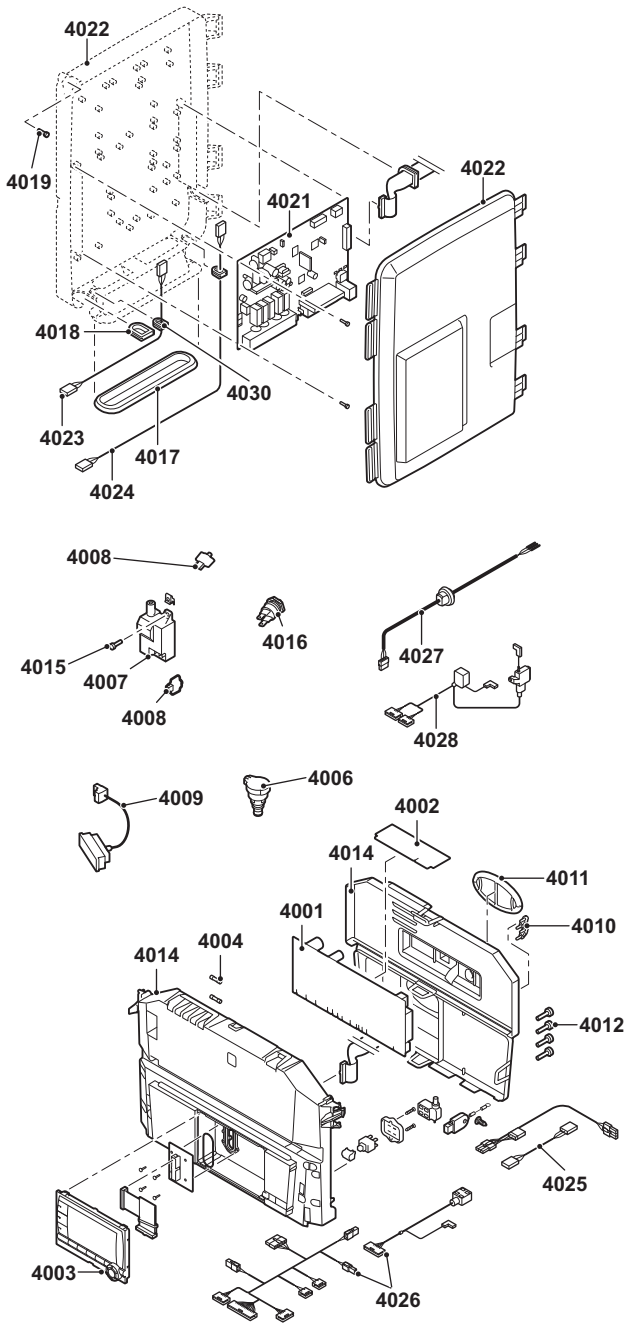
3



EV 119475-3 T001328-B

9.2.4. Control panel

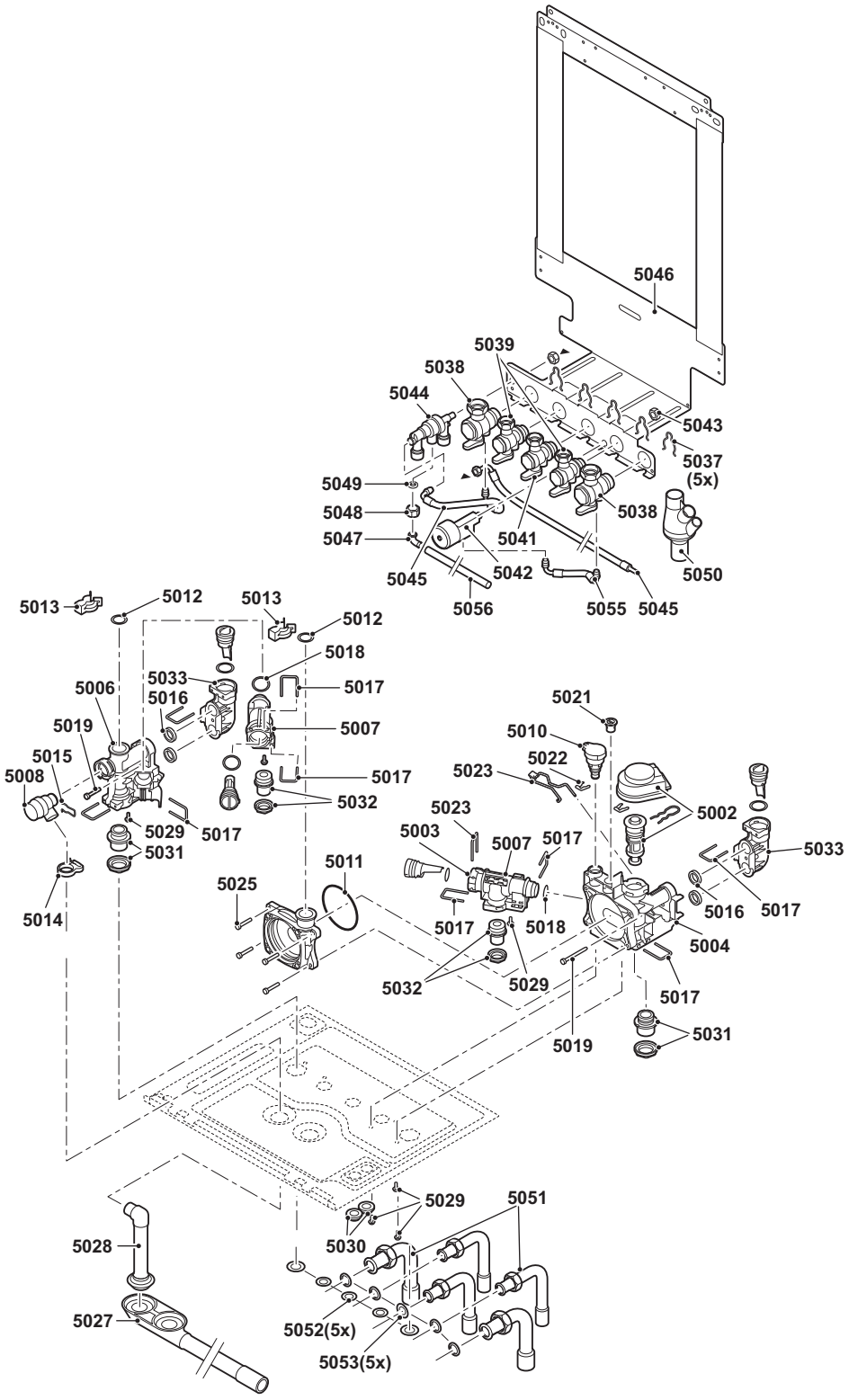
4



EV 119475-4 T001329-C

9.2.5. Connecting pipes

5



EV 119475-5

T001330-B

9.2.6. Spare parts list

Markers	Code no.	Description	Part
Casing			
1001	S101450	Front casing	1
1002	S100940	Control panel flap	1
1006	S101403	Screw	2
1007	S101190	Plug 8,5x0,75x1,0	1
Heat exchanger and burner			
2001	S101180	Heating body 40 kW	1
2002	S101181	Condensates collector 338 mm	1
2003	S101187	Pump UPERO 15-70	1
2004	S100905	Siphon	1
2005	S100909	Flow and return pipes	1
2006	S101199	Flue gas discharge pipe (40 kW)	1
2007	S100906	Siphon gasket	1
2009	S100815	76x4 O-ring	5
2010	S59597	18x2,8 O-ring	10
2011	S101003	NTC temperature sensor	2
2012	S100890	Ignition electrode	1
2013	S59118	Sight glass	1
2014	S62105	Electrode gasket	10
2015	S48950	Screw M4x10	50
2016	S101196	Gasket for burner (40 kW)	1
2017	S62728	Automatic air vent	1
2018	S100895	Endpiece M7x1	1
2019	S100891	Silicone hose 8x4x715	1
2020	S101179	Gasket between heat exchanger and condensate collector 305 mm	1
2021	S100892	Gasket between flue gas discharge and condensate collector	1
2022	S100855	Leak proofing ring Ø 80 mm	5
2023	S100850	Protective plug for the combustion gas evacuation measurement point	1
2024	S100901	Holding strip for the heat exchanger	1
2025	S100848	Holding clip for the flue gas discharge pipe	2
2026	S62768	Flue gas discharge pipe	1
2028	S62232	Protective plug for the combustion gas evacuation measurement point	5
2029	S62233	Protective plug for the combustion gas evacuation measurement point	5
2030	S59141	Screw M5x18	15
2032	S59586	Hairpin clip 18 mm	10
2033	S100838	Ignition transformer with ignition electrode	1
2034	S100954	Hose clamp	10
2050	S101005	HI temperature sensor	1
Fan			
3001	S100887	Gas block	1
3002	S101184	Fan RG118 - R21,5x1	1
3003	S101524	Burner 40kW 284 mm	1
3004	S101198	Leakproof seal Ø 83 mm with valve (40kW)	1
3005	S101185	Gas/air mixer 306x99 mm	1
3006	S100910	Gas inlet pipe	1
3007	S101523	Air intake silencer	1
3008	S56155	Sealing ring Ø 23,8x17,7x2 mm	20

Markers	Code no.	Description	Part
3010	S100806	DHW end connection 15 mm	1
3011	S100951	Screw M5x25	10
3012	S101010	Nuts G3/4	1
Control panel			
4001	S101308	PCU-03 PCB	1
4002	S100849	SU-01 PCB	1
4003	S101249	DDT display board	1
4004	S43561	2,00 glass fuse A slow	10
4004	S6778	6,30 glass fuse A slow	10
4006	S100821	Pressure sensor	1
4007	S100838	Ignition transformer with ignition electrode	1
4008	S101003	NTC temperature sensor	2
4009	S100842	3-way valve cable	1
4010	S59372	Draught diverter	1
4011	S100861	Oval sealing gasket	5
4012	S62185	Screw KB 30x8	10
4014	S101251	Control panel	1
4015	S48950	Screw M4x10	50
4016	S101005	HI temperature sensor	1
4017	S100869	SCU grommet	1
4018	S100862	SCU grommet	5
4019	S62185	Screw Kb30x8	10
4021	S101048	SCU 04	1
4022	S100860	Box SCU	1
4023	S100843	SCU 230V. cable	1
4024	S100847	SCU cable	1
4025	S100846	Pump cable	1
4026	S100840	24V. sensor cable	1
4027	S100845	Cable L = 1500 mm	1
4028	S100844	Gas valve unit and ignition transformer cable	1
4030	S101000	grommet	1
Connecting pipes			
5002	S100823	Actuator with 3-way valve	1
5004	S100822	Right hand hydroblock + actuator + pressure sensor	1
5006	S100828	Left hand hydroblock	1
5007	S100824	Cartridge body	1
5008	S100829	Safety valve	1
5010	S100821	Pressure sensor	1
5011	S100815	76x4 O-ring	5
5012	S59597	18x2,8 O-ring	10
5013	S59586	Hairpin clip 18 mm	10
5014	S100873	Hose holding clip	5
5015	S100835	Hairpin clip 16 mm	10
5016	S100810	25,2x17 O-ring	20
5017	S100813	Clip 26	20
5018	S100816	22x2,5 O-ring	10
5019	S100826	Screw K50x28	10
5021	S100837	Plug 13,9	10
5022	S100814	Clip 10,3	5
5023	S100832	Clip 26 with handle	10
5025	S59141	Screw M5x18	15

Markers	Code no.	Description	Part
5027	S101002	Condensate evacuation hose	1
5028	S100866	Safety valve hose	1
5029	S100825	Screw K50x12	20
5030	S62727	Grommet Ø 20 mm	15
5031	S100809	Flow and return connection 18 mm	1
5032	S100808	DHW end connection 13 mm	1
5033	S100827	Connection for hydroblock Solo	1
5037	S101046	Holding clip	1
5038	S100875	Valve G3/4" disconnector	1
5039	S100871	Valve 1/2" DHW end	1
5041	S100872	Gas valve	1
5042	S100876	Pressure gauge	1
5043	S100231	M10x1x5 nut	10
5044	S101193	Disconnector	1
5045	S101011	Pipe kit	1
5046	S100937	Mounting frame	1
5047	S100246	Pipe	1
5048	S101195	Union nut 3/8"x12	2
5049	S62715	Seal ø 14.5x8.5x2	10
5050	S100238	Condensates collector	1
5051	S100912	Pipes - 16/18/22	1
5052	S56157	Seal ø 18.3x12.7x2	10
5053	S56155	Seal ø 23.8x17.7x2	20
5055	S100896	Pipe for pressure gauge	1
5056	S100241	PVC 12/9 hose mm	1

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