# Innovens

**Wall-hung gas condensing boilers**

# MCA 25/28 BIC

Installation and
Service Manual

**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)** |

$\mathsf{CE}$
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

De Dietrich ◆

# 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.

**i** 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 $C \epsilon$ 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 52.

### 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

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# 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.

ℹ   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.
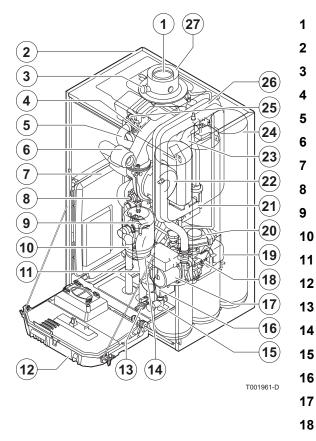
# 3 Technical description

## 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.

▸ Heating and domestic hot water production with integrated DHW tank.

## 3.2 Main parts



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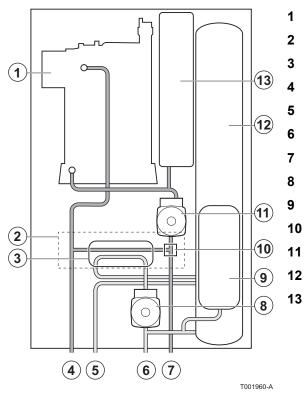
| 1 | Flue gas discharge pipe |
|---|---|
| 2 | Casing/air box |
| 3 | Flue gas measuring point |
| 4 | Mixer pipe |
| 5 | Heating flow hose |
| 6 | Air intake silencer |
| 7 | Box for the control PCBs |
| 8 | Combined venturi and gas valve unit |
| 9 | Flow end hydroblock |
| 10 | Safety valve outlet pipe |
| 11 | Siphon |
| 12 | Control panel |
| 13 | Tank drainage valve |
| 14 | Expansion vessel (DHW circuit) |
| 15 | Tank hydroblock |
| 16 | Shunt pump (DHW circuit) |
| 17 | Shunt pump (Heating circuit) |
| 18 | Return end hydroblock |
| 19 | Plate heat exchanger (DHW circuit) |
| 20 | 3-way valve |
| 21 | Condensate receiver tank |
| 22 | Fan |

| 23 | Heat exchanger (Heating circuit) |
| 24 | Calorifier tank |
| 25 | Ignition/ionization electrode |
| 26 | Expansion vessel (Heating circuit) |
| 27 | Air intake |

# 3.3    Operating principle

### 3.3.1.    Skeleton Diagrams



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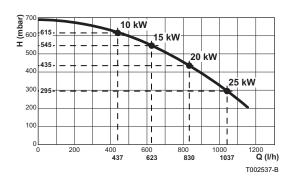
| 1 | Heat exchanger (Heating circuit) |
| 2 | Hydroblocks |
| 3 | Plate heat exchanger (DHW circuit) |
| 4 | Heating flow |
| 5 | Domestic hot water outlet |
| 6 | Domestic cold water inlet |
| 7 | Heating return |
| 8 | Shunt pump (DHW circuit) |
| 9 | Expansion vessel (DHW circuit) |
| 10 | 3-way valve |
| 11 | Shunt pump (Heating circuit) |
| 12 | Calorifier tank |
| 13 | Expansion vessel (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 |



T002537-B

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 68.

### 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.

## 3.4    Technical specifications

| Boiler type | | | MCA 25/28 BIC |
|---|---|---|---|
| **General** | | | |
| Flow rate setting | Adjustable | | Modulating, Start/Stop, 0 - 10 V |
| Nominal output (Pn) Heating System (80/60 °C) | minimum-maximum | kW | 5,0 - 24,1 |
| | Factory setting | kW | 19,4 |
| Nominal output (Pn) Heating System (50/30 °C) | minimum-maximum | kW | 5,6 - 25,5 |
| | Factory setting | kW | 20,5 |
| Nominal output (Pn) DHW System | minimum-maximum | kW | 5,0 - 29,9 |
| | Factory setting | kW | 29,9 |
| Nominal input (Qn) Heating System (Hi) | minimum-maximum | kW | 5,2 - 25,0 |
| | Factory setting | kW | 20,1 |
| Nominal input(Qn) Heating System (Hs) | minimum-maximum | kW | 5,8 - 27,8 |
| | Factory setting | kW | 22,3 |
| Nominal input (Qnw) DHW System (Hi) | minimum-maximum | kW | 5,2 - 29,3 |
| | Factory setting | kW | 29,3 |
| Nominal input (Qnw) DHW System (Hs) | minimum-maximum | kW | 5,8 - 32,6 |
| | Factory setting | kW | 32,6 |
| Heating efficiency under full load (Hi) (80/60 °C) | - | % | 96,3 |
| Heating efficiency under full load (Hi) (50/30 °C) | - | % | 102,0 |
| Heating efficiency under partial load (Hi) (Return temperature 60°C) | - | % | 96,1 |
| Heating efficiency under partial load (EN 92/42) (Return temperature 30°C) | - | % | 108,0 |
| **Data on the gases and combustion gases** | | | |
| Gas consumption - Natural gas H (G20) | minimum-maximum | $m^3$/h | 0,55 - 3,10 |
| Gas consumption - Natural gas L (G25) | minimum-maximum | $m^3$/h | 0,64 - 3,61 |
| Gas consumption - Propane G31 | minimum-maximum | $m^3$/h | 0,21 - 1,20 |
| NOx-Emission per year (n =1) | | mg/kWh | 38 |
| Mass flue gas flow rate | minimum-maximum | kg/h | 8,9 - 49,3 |
| Flue gas temperature | minimum-maximum | °C | 30 - 85 |
| Maximum counter pressure | | Pa | 130 |
| **Characteristics of the heating circuit** | | | |
| Water content | | l | 1,8 |
| 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 25/28 BIC |
|---|---|---|---|
| Manometric height central heating circuit (∆T = 20K) | | mbar | 295 |
| **Characteristics of the domestic hot water circuit** | | | |
| Specific hot water flow D (60 °C) | | l/min | 7,5 |
| Specific hot water flow D (30 °C) | | l/min | 20,0 |
| Domestic water resistance | | mbar | 20 |
| Water content | | l | 40,5 |
| Operating pressure (Pmw) | maximum | kPa (bar) | 800 (8,0) |
| **Electrical characteristics** | | | |
| Power supply voltage | | VAC | 230 |
| Power consumption - Full load | maximum | W | 162 |
| | Factory setting | W | 72 |
| Power consumption - Part load | maximum | W | 21 |
| Power consumption - Standby | maximum | W | 4 |
| Electrical protection index | | | IPX4D |
| **Other characteristics** | | | |
| Weight (empty) | Total | kg | 70 |
| | Mounting[1] | kg | 61 |
| Acoustic level at 1 metre | | dB(A) | 44 |

(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**<br>**Domestic hot water sensor**<br>**System sensor**<br>**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
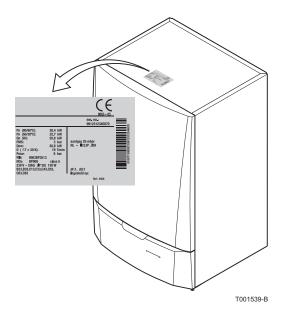
Various options are available depending on the configuration of the installation:

| 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 |
| | | Radio remote control | AD253 |
| | | Interactive remote control | AD254 |
| | | Room sensor | FM52 |

# 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.



T001539-B

### 4.3.2. Location of the boiler



T001898-C

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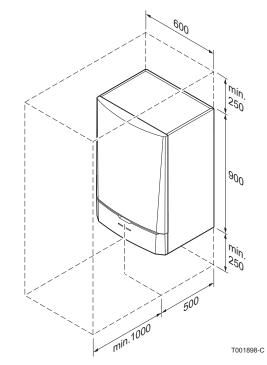
> ⚠ **WARNING**
>
> ▸ Fix the appliance to a solid wall capable of bearing the weight of the appliance when full of water and fully equipped.
> ▸ It is forbidden to store inflammable products and materials in the boiler room or close to the boiler, even temporarily.

> ⚠ **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.
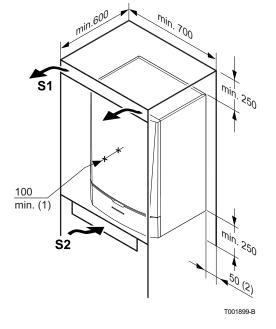
### 4.3.3.     Ventilation

**(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:
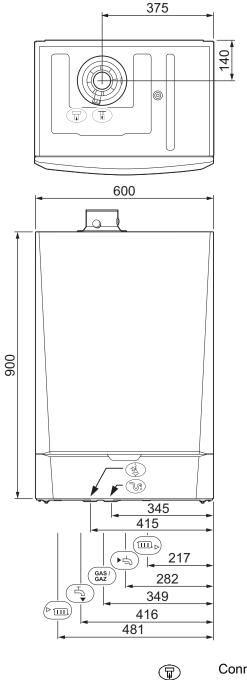
▸ Accumulation of gas

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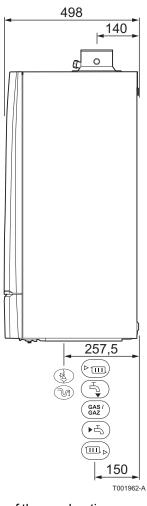
Minimum cross section of the openings: **S1** + **S2**  = 150 cm$^2$

min. 600

min. 700

min. 250

S1

100
min. (1)

S2

min. 250

50 (2)

T001899-B

### 4.3.4.    Main dimensions



T001962-A

| | |
|---|---|
| ⊓ | 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 G¾" |
| ▸⚲ | Domestic cold water inlet G½" |
| **Gas / Gaz** | Gas connection G½" |
| ⚲ | Domestic hot water outlet G½" |
| ▸▥ | Heating circuit flow G¾" |

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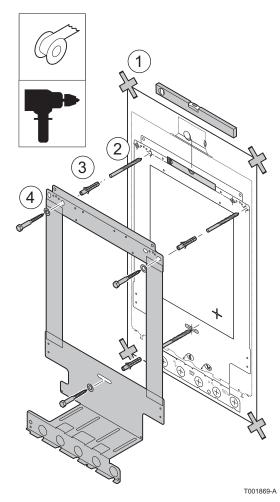
## 4.4    Installing the mounting frame

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.
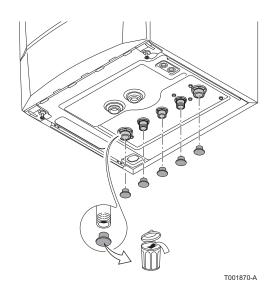
2. Drill 3 holes with a Ø of 10 mm.

> ℹ️ 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.

T001869-A

## 4.5    Positioning the boiler

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

T001870-A

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

T001627-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.

T001872-A

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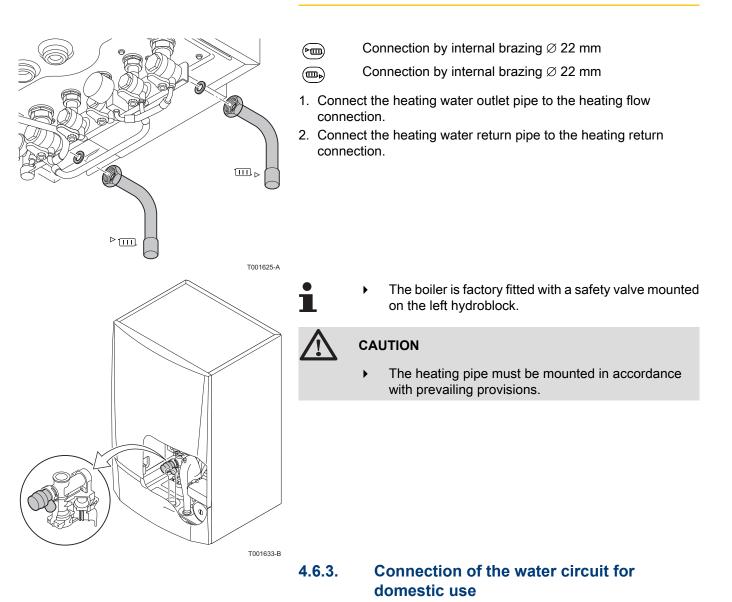
▸ Clean the installation with a universal cleaner to eliminate debris from the appliance (copper, hemp, flux).
▸ Thoroughly flush the installation until the water runs clear and shows no impurities.

**Installing the boiler in existing installations**
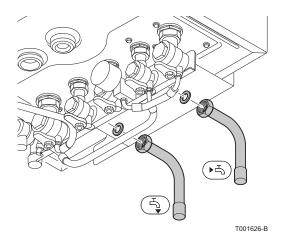
▸ Remove sludge from the installation.

‣ 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



T001625-A

| | |
|---|---|
| ⊙▥ | 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.



T001633-B

> ℹ ‣ 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.

### 4.6.3. Connection of the water circuit for domestic use

1. Connect the cold water inlet pipe to the domestic cold water connection.
2. Connect the domestic hot water outlet pipe to the domestic hot water connection.

T001626-B

⊡ Connection by internal brazing ∅ 16 mm

⊡ Connection by internal brazing ∅ 16 mm

⚠ **CAUTION**

▸ The domestic water pipes must be connected in accordance with prevailing provisions.

▸ If using synthetic pipes, follow the manufacturer's (connection) instructions.

### 4.6.4. Connecting the expansion vessel

The boiler is fitted as standard with an 12-litre expansion vessel.

If the water volume is greater than 150 litres or the static height of the system exceeds 5 metres, an additional expansion vessel must be fitted. Refer to the table below to determine the expansion vessel required for the installation.

**Conditions of validity of the table:**
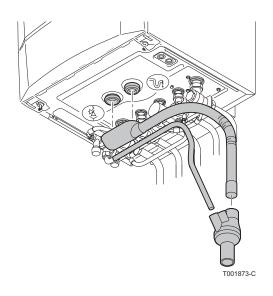
▸ 3-bar safety valve

▸ Average water temperature: 70 °C
Supply temperature: 80 °C
Return temperature: 60 °C

▸ The filling pressure in the system is lower than or equal to the initial pressure in the expansion vessel

| Initial pressure of the expansion vessel | Volume of the expansion vessel depending on the volume of the installation (in litres) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 100 | 125 | 150 | 175 | 200 | 250 | 300 | > 300 |
| 0.5 bar | 4,8 | 6,0 | 7,2 | 8,4 | 9,6 | 12,0 | 14,4 | Volume of the installation  x 0,048 |
| 1 bar | 8,0 | 10,0 | 12,0 [(1)] | 14,0 | 16,0 | 20,0 | 24,0 | Volume of the installation  x 0,080 |
| 1.5 bar | 13,3 | 16,6 | 20,0 | 23,3 | 26,6 | 33,3 | 39,9 | Volume of the installation x 0,133 |
| (1)  Factory configuration | | | | | | | | |

ℹ It is possible to fit the boiler with an expansion vessel for DHW (package option HG77) under the integrated expansion vessel for heating.

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### 4.6.5.    Connecting the condensate discharge pipe



T001873-C
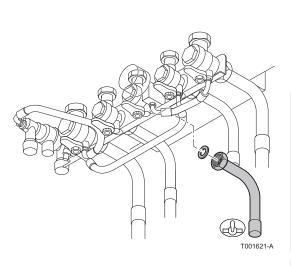
1. Mount a standard drainage pipe, Ø 32 mm or more, leading to the mains drainage system.
2. Mount the flow collector.
3. Into this, insert the condensate collector hose coming from the siphon ⎔ and the safety valve ⎔.
4. Into this, insert the discharge hose from the disconnector.
5. Mount a trap or a siphon in the discharge pipe.

> ⚠ **CAUTION**
>
> Do not make a fixed connection owing to maintenance work on the siphon.

> ℹ
> ‣ 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



T001621-A

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

⎔    Connection by internal brazing Ø 18 mm

1. Connect the gas inlet pipe.
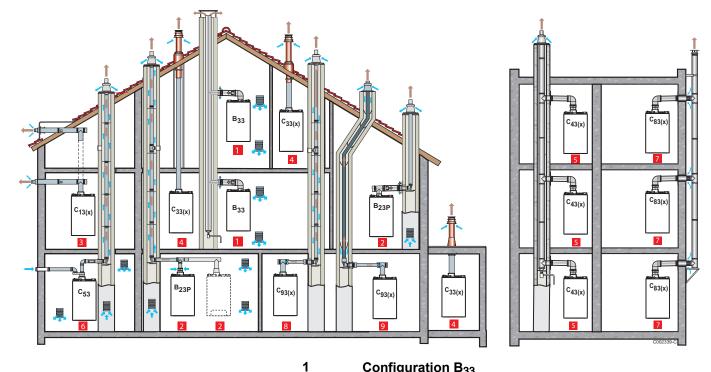
> ⚠ **WARNING**
>
> ‣ Close the main gas valve before starting work on the gas pipes.
> ‣ Before mounting, check that the gas meter has sufficient capacity. To do this, you should keep in mind the consumption of all domestic appliances.
> ‣ If the gas meter has too low a capacity, inform the energy supply 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

> ℹ 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 25/28 BIC** |
| 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) | 40.0 |
| C$_{13(x)}$ | Concentric pipes connected to a horizontal terminal | Alu or PPS | 60/100 mm | 4.2 |
| | | | 80/125 mm | 20.0 |
| C$_{33(x)}$ | Concentric pipes connected to a vertical terminal | Alu or PPS | 60/100 mm | 5.5 |
| | | | 80/125 mm | 20.0 |
| 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 | 40.0 |
| 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) | 9.0 |
| | Concentric pipes in the boiler room Flexible single conduit in the chimney | PPS | 60/100 mm 80 mm (Flexible duct) | 20.0 |

> ⚠️ **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
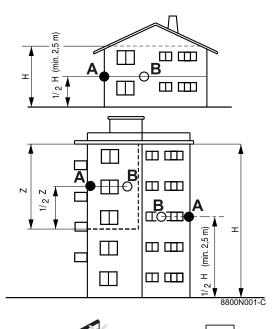
| | |
|---|---|
| **A** | Recommended position |
| **B** | Possible position |
| **H** | Inhabited height controlled by the sensor |
| **Z** | Inhabited area controlled by the sensor |

8800N001-C
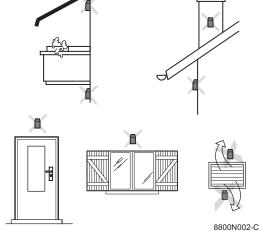
**Positions to be avoided:**
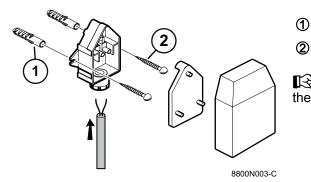
▸ masked by a building element (balcony, roof, etc.)

▸ close to a disruptive heat source (sun, chimney, ventilation grid, etc.)

8800N002-C

### 4.9.2.    Connecting the outside sensor

Mount the sensor using the screws and dowels provided.

①      Inserts

②      Ø4 wood screw

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

8800N003-C

## 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 ⏚.

⚠ **CAUTION**

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

▸     Boiler pump (Heating circuit).

▸     Boiler pump (DHW circuit).

▸     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.
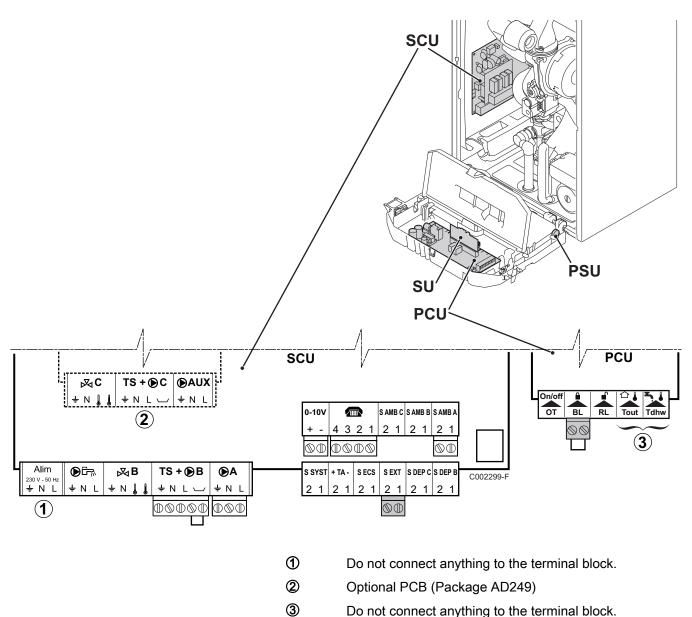
⚠ **CAUTION**

> ▸ 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)
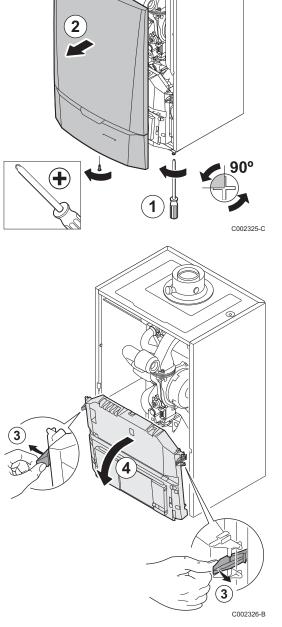
③           Do not connect anything to the terminal block.

## 4.10.4.    Accessing the connection terminal blocks
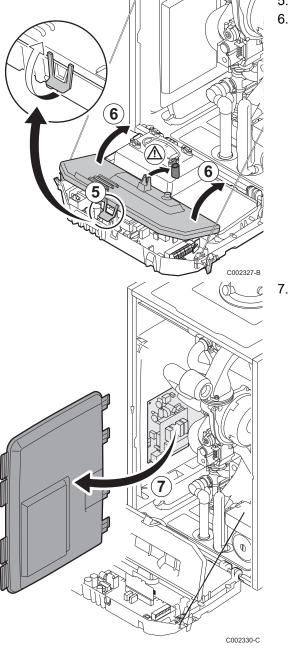
To access the connection terminal blocks, proceed as follows:

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



C002325-C

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



C002326-B
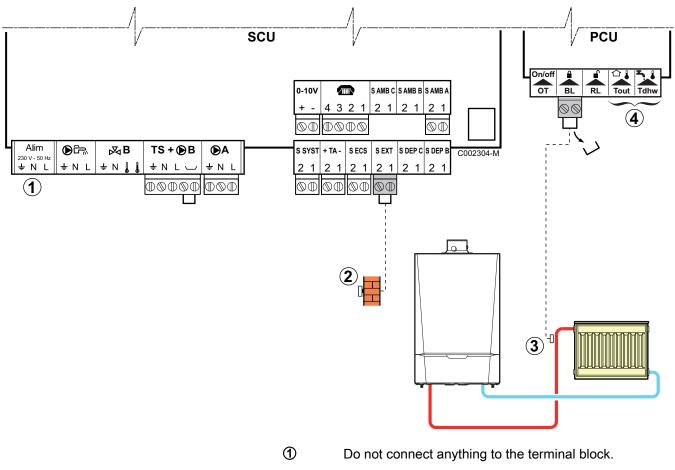
5. Lift the clip located in front of the control panel.
6. Lift the control panel cover.

C002327-B

7. Unclip the PCB cover.

C002330-C

### 4.10.5.    Connecting a direct heating circuit



①        Do not connect anything to the terminal block.
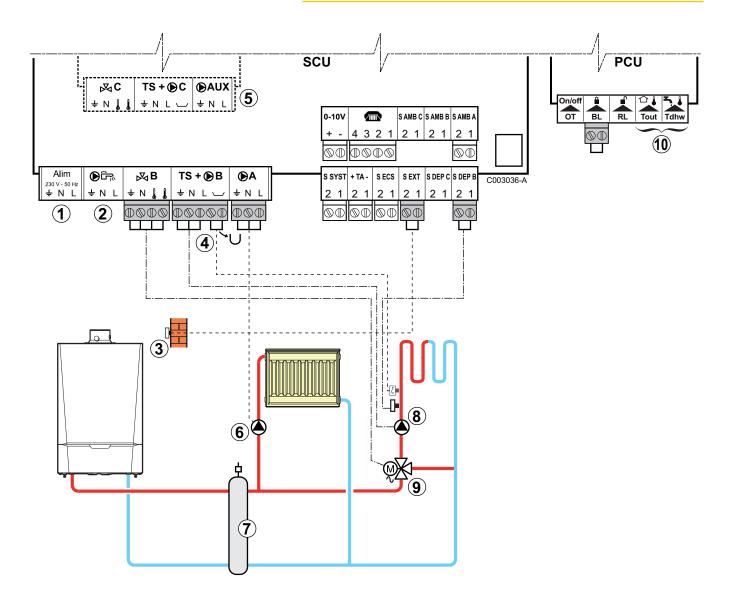
②        Connect the outside temperature sensor.

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.

| 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 56 |
| 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 68 |

### 4.10.6. Connecting two heating circuits



| ① | Do not connect anything to the terminal block. |
|---|---|
| ② | ⚠ **CAUTION**<br><br>Do not connect anything to the DHW pump outlet as 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.<br><br>▸ Remove the bridge.<br>▸ 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**).
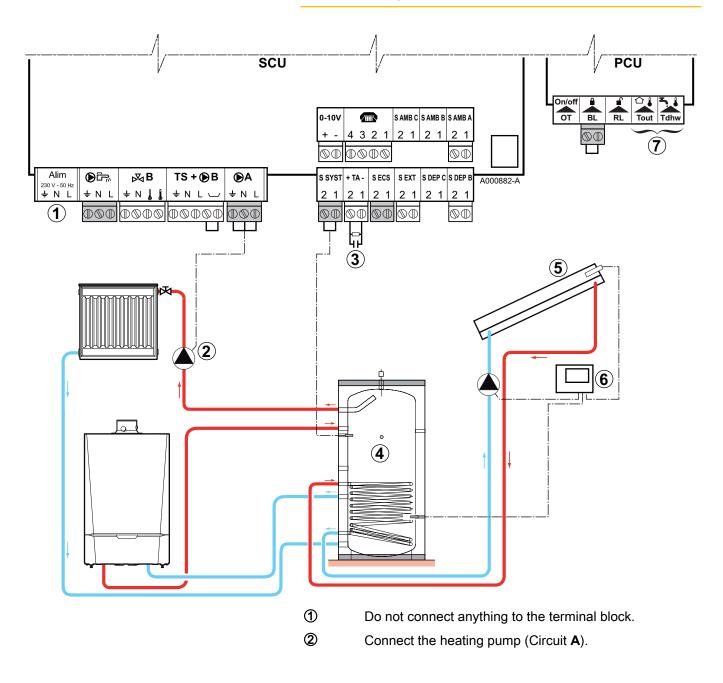
> **i** If underfloor heating is being used, put a safety thermostat in place after the heating pump. The safety thermostat will shut down the heating pump in the event of overheating.

⑦        Low loss header.

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

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

⑩        Do not connect anything to the terminal block.

## 4.10.7. Hot water storage tank connection (Type PS)



①        Do not connect anything to the terminal block.

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

③          Connect the DHW tank anode.

> **i** If the tank is not fitted with an impressed current anode, put the simulation connector in place (delivered with the DHW sensor - package AD212).
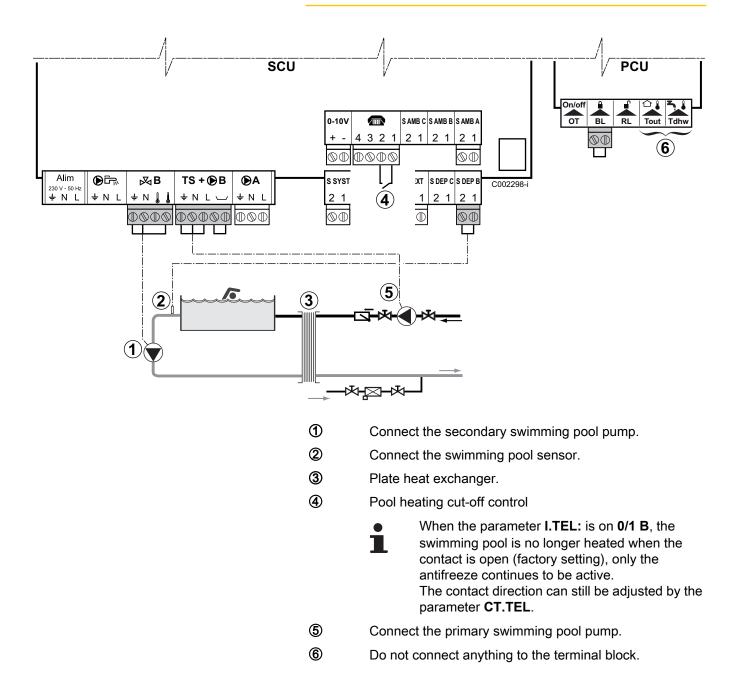
④          **PS** storage tank.

⑤          Solar sensor probe.

⑥          Connect the solar station to the solar collectors.

⑦          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 56 |
| **I.SYST**(1) | Installer level **#SYSTEM** menu | **STORAGE TANK** | ☞ "Setting the parameters specific to the installation", page 57 |
| **P.DHW:**(1) | Installer level **#SYSTEM** menu | **PUMP** | |
| (1)   The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED** | | | |

> **i** 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.

## 4.10.8. 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

> **i**     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 56 |
| **CIRC. B:** | Installer level **#SYSTEM** menu | **SWIM.P.** | ☞ "Setting the parameters specific to the installation", page 57 |
| 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 68 |

■ **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.

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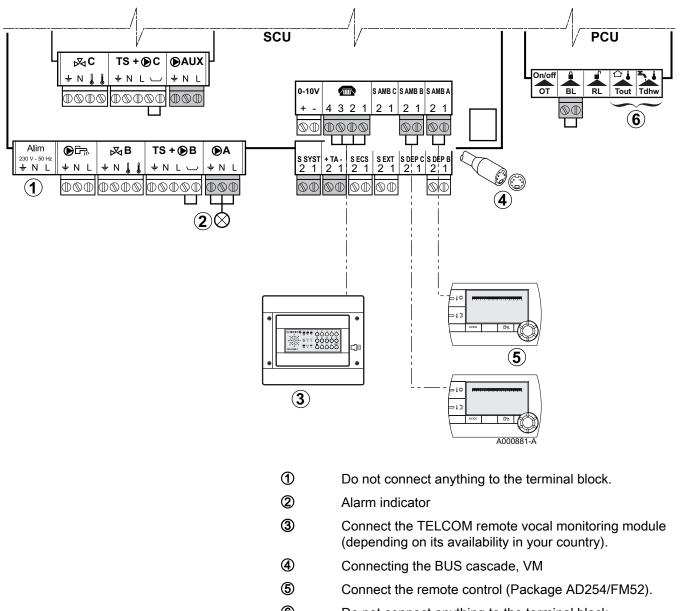
The secondary pump operates during programme **B** comfort periods in summer and winter alike.

■ **Stopping**

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

### 4.10.9.   Connecting the options

For example: TELCOM voice remote monitoring module, remote controls for circuits **A** and **B**
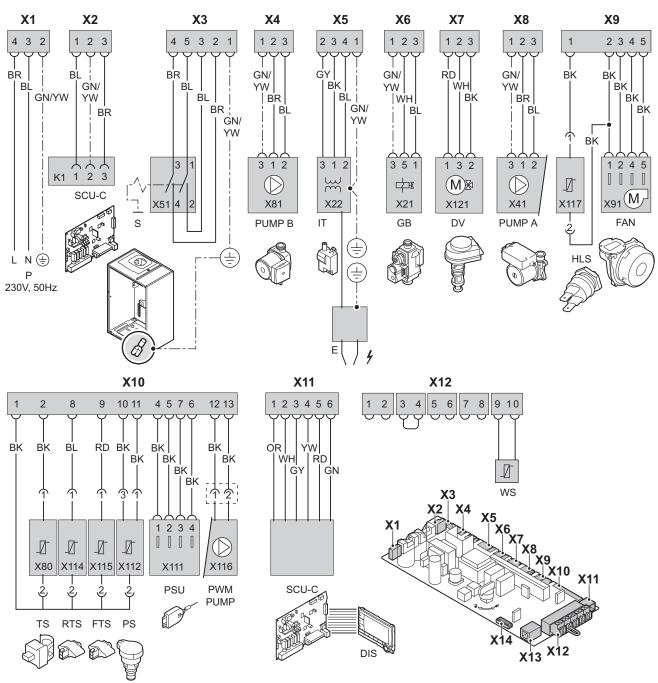
De Dietrich ◆

A000881-A

| ① | Do not connect anything to the terminal block. |
| ② | Alarm indicator |
| ③ | Connect the TELCOM remote vocal monitoring module (depending on its availability in your country). |
| ④ | Connecting the BUS cascade, VM |
| ⑤ | Connect the remote control (Package AD254/FM52). |
| 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 56 |
| **O.PUMP A**[(1)] | Installer level **#SYSTEM** menu | **FAILURE** | ☞ "Setting the parameters specific to the installation", page 57 |
| (1)  The parameter is only displayed if **INSTALLATION** parameter is set to **EXTENDED** | | | |

## 4.11   Electrical diagram



T001963-D

| P | Power supply | DV | 3-way valve | PS | Pressure sensor |
|---|---|---|---|---|---|
| SCU-C | control panel PCB | PUMP A | Shunt pump (Central heating) | PSU | Parameter storage for PCBs PCU and SU |
| S | On/Off switch | HLS | Safety thermostat | PWM PUMP | Modulation signal from the boiler pump |
| PUMP B | Shunt pump (DHW) | FAN | Fan | DIS | Display |
| IT | Ignition transformer | TS | Temperature sensor | WS | DHW sensor |
| E | Ignition power relay | RTS | Return sensor | | |
| GB | Combined venturi and gas valve unit | FTS | Flow 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.

ℹ️ ▸ 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

ℹ️ 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.
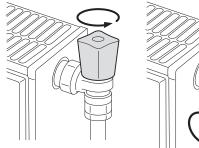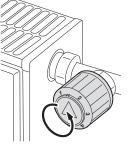
> ⚠ **CAUTION**
>
> ▸ Fill the water siphon before starting the boiler to avoid combustion products escaping from the boiler.
> ▸ Mount the vent hose above the siphon.

## 4.12.3. Filling the system

T000181-B
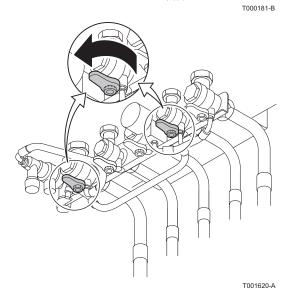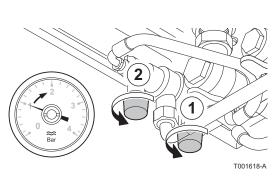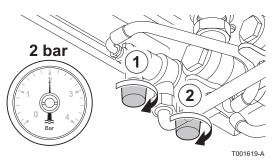
> ⚠ **CAUTION**
>
> Before filling, open the valves on every radiator in the installation.

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

**2 bar**

T001619-A



T001507-B

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

4. Check the tightness of the water connections.
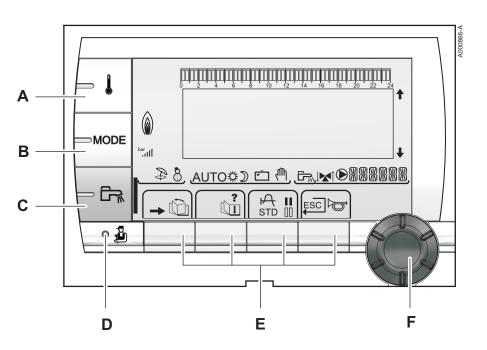
# 5 Commissioning

## 5.1 Control panel
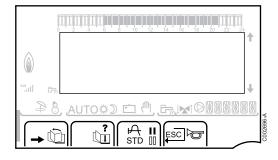
### 5.1.1. Description of the keys



| | |
|---|---|
| **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 |
| **II** | 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 |
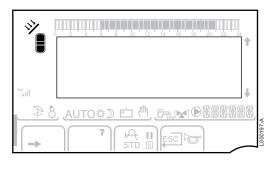
De Dietrich

■ **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 |
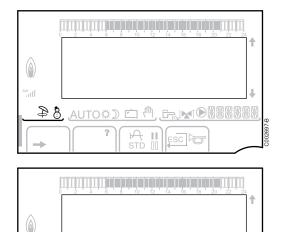
■ **Operating modes**



| | |
|---|---|
| ☿ | 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
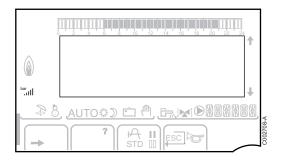
▭     Holiday mode: The symbol is displayed when a HOLIDAY override (antifreeze) is activated

    ▸   Flashing symbol: Holiday mode programmed

    ▸   Steady symbol: Holiday mode active

✋     Manual mode

**De Dietrich** ◆

### ■ 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.

.ıll  Water pressure level
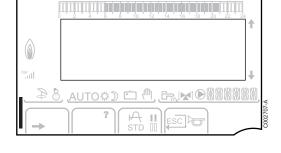
- ▸ . : 0,9 to 1,1 bar
- ▸ .ı : 1,2 to 1,5 bar
- ▸ .ıl : 1,6 to 1,9 bar
- ▸ .ıll : 2,0 to 2,3 bar
- ▸ .ılll : > 2,4 bar
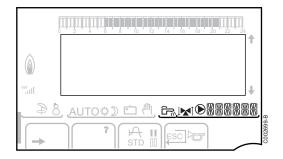
### ■ Domestic Hot Water override



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
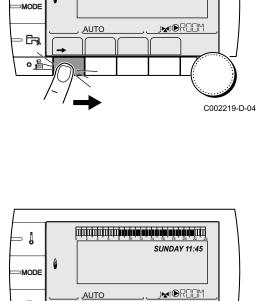
### ■ Installer level

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

1. Press the ➜ key.



C002219-D-04



C002271-F-04

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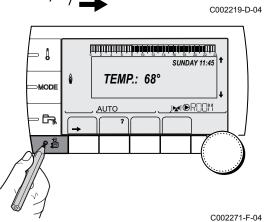
ℹ️ It is also possible to access the installer level by pressing only the 🔧 key for around 5 seconds.

■ **After Sales level**

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

1. Press the ➡ key.



C002219-D-04

2. Press key 🔧 for around 5 seconds.

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



C002235-F-04

## 5.1.4.    Browsing in the menus
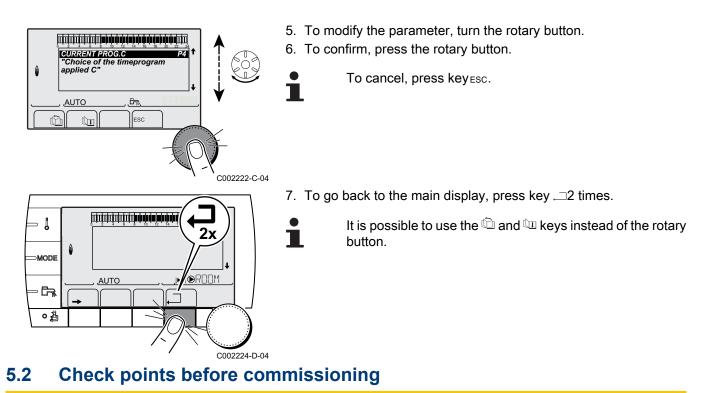
1. To select the desired menu, turn the rotary button.
2. To access the menu, press the rotary button.
   To go back to the previous display, press the key ⌐.



C002220-B-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 ⌐.



C002221-C-04

C002222-C-04

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

**i** To cancel, press key ESC.



C002224-D-04

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

**i** 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.

T001518-B

## 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.
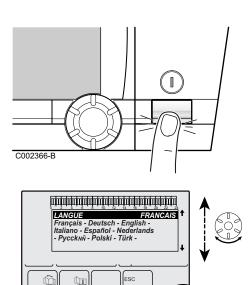
## 5.2.4. Electrical connections

▸ 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.

C002366-B

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



C002286-C

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 94

ℹ 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 53
  ☞ "Setting the air/gas ratio  (Part load)", page 54
▸ Set the fan speed using the parameters **MIN.VENT.**, **MAX.VENT.BOIL**, **MAX.VENT.DHW** and **START SP.**:

☞ See chapter: "Professional settings", page 68

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

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.

T001581-A

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

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

---

**SUNDAY 11:45**

**TEMP.: 68°**

AUTO          ◁▷ROOM

→      ?

C002271-F-04

---

**AUTO => PMAX**

| GENE : | PMAX |
| BOILER TEMP. | 68°C |
| CURRENT | 10µA |
| WIND SPEED | 5600 tr/min |

AUTO          ◁▷ROOM

C002347-F-04
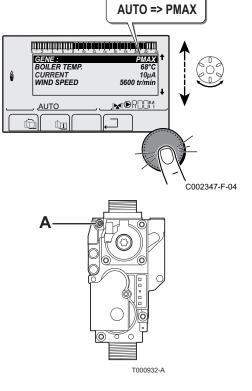
4. Turn the rotary button until **PMAX** is displayed. The full load is set.
5. Measure the percentage of $O_2$ or $CO_2$ in the flue gases (Front panel removed) .

---

A

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.

ℹ The flame must not be detached.
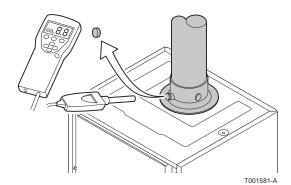
| O₂/CO₂ control and setting values for gas H (G20) at full load | | | | |
|---|---|---|---|---|
| Boiler type | Setting value | | Checking value | |
| | O₂ (%) | CO₂ (%) | O₂ (%) | CO₂ (%) |
| MCA 25/28 BIC | 5,2 ± 0,4 | 8,8 ± 0,2 | 5,2 ± 0,5 | 8,8 ± 0,3 |

| O₂/CO₂ control and setting values for gas L (G25) at full load | | | | |
|---|---|---|---|---|
| Boiler type | Setting value | | Checking value | |
| | O₂ (%) | CO₂ (%) | O₂ (%) | CO₂ (%) |
| MCA 25/28 BIC | 4,9 ± 0,4 | 8,8 ± 0,2 | 4,9 ± 0,5 | 8,8 ± 0,3 |

| O₂/CO₂ control and setting values for propane (G31) at full load | | | | | Diameter of the gas diaphragm (x.xx) |
|---|---|---|---|---|---|
| Boiler type | Setting value | | Checking value | | Fit the gas restrictor in the gas block |
| | O₂ (%) | CO₂ (%) | O₂ (%) | CO₂ (%) | Ø mm |
| MCA 25/28 BIC | 5,2 ± 0,3 | 10,3 ± 0,2 | 5,2 ± 0,5 | 10,3 ± 0,3 | 4,00 |

### 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.

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



AUTO => PMIN

C002348-F-04
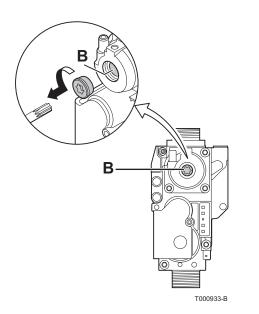
4. Turn the rotary button until **PMIN** is displayed. The part load is set.

   ℹ️ 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) .

T000933-B

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.

**i** ▸ 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.

**i** 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 25/28 BIC | 5,9 ± 0,4 | 8,4 ± 0,2 | 5,9 ± 0,4 | 8,4 ± 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 25/28 BIC | 5,6 ± 0,4 | 8,4 ± 0,2 | 5,6 ± 0,4 | 8,4 ± 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 25/28 BIC | 5,8 ± 0,3 | 9,9 ± 0,2 | 5,8 ± 0,3 | 9,9 ± 0,2 |
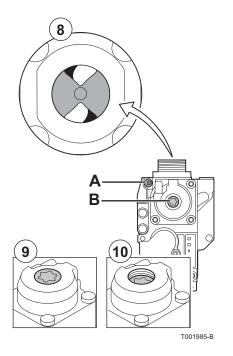
**i** Repeat the high speed test and the low speed test as often as necessary until the correct values are obtained without having to make additional adjustments.

To exit the mode **EMISSION MEASUREMENTS**, press ⃔ several times.
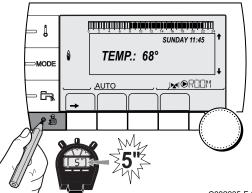
### 5.4.4. Basic setting for the gas/air ratio

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 87
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.

T001985-B

## 5.5 Checks and adjustments after commissioning

### 5.5.1. Displaying the parameters in extended mode

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**.

ℹ️
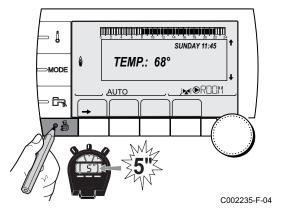
▸ Turn the rotary button to scroll through the menus or modify a value.
▸ Press the rotary button to access the selected menu or confirm a value modification.
   ☞ For a detailed explanation of menu browsing, refer to the chapter: "Browsing in the menus", page 49

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

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| 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 | | |

C002235-F-04

> **i** 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

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

> **i**
> ▸ 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 49

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**) <br> 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.<br>▸ The boiler operates at a set point temperature equal to **BOILER MAX**. | ▸ The ▶AUX outlet on the connection terminal block is not active.<br>▸ 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.<br>▸ 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.<br>▸ The boiler operates at a set point temperature equal to **BOILER MAX**. |
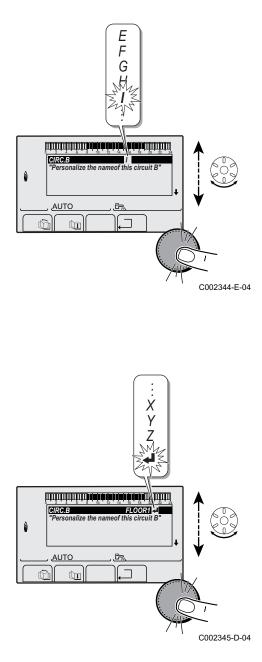
## 5.5.3.    Naming the circuits and generators



C002235-F-04

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

ℹ️
▸ 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 49

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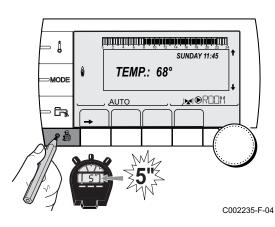
**i** To move from one character to another, turn the rotary button. To exit without modifications, press key ESC.

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.

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

C002344-E-04

C002345-D-04

## 5.5.4.    Setting the heating curve

1. Access the installer level: Press key 🔧 for around 5 seconds.

2. Select the menu **#SECONDARY INSTAL.P**.

**i** ▸ 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 49.

C002235-F-04

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

C002316-E-04

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

C002317-D-04

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

   **i**       **0.7 =** Heating curve set.

C002318-B-04

■ **Heating curve without BCT**

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 ...**

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

C002319-B

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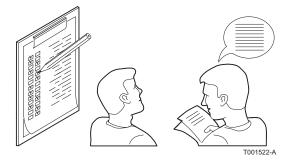
The **BCT** (Base heat Curve Temperature) parameter allows a minimum operating temperature to be imposed on the heating circuit (this temperature may be constant if the circuit gradient is nil).



C002320-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 ...**

x          Value set to the parameter **HCZP D**

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

## 5.5.5.     Finalizing work



T001522-A
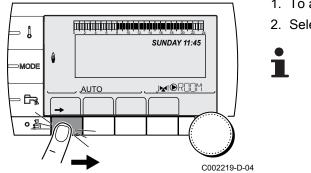
1. Remove the measuring equipment.
2. Put the flue gas sampling plug back in place.
3. Refit the front panel. Tighten the two screws by a quarter turn.
4. Raise the temperature in the heating system to approximately 70°C.
5. Shut down the boiler.
6. After about 10 minutes, vent the air in the heating 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 82.
12. Give all the instruction manuals to the user.

Commissioning of the boiler is now complete.

ℹ          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.

**De Dietrich** ◆

## 5.6    Reading out measured values

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**.

**i**

▸    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 49.

| 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



C002235-F-04

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

ℹ
   ‣ 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 49
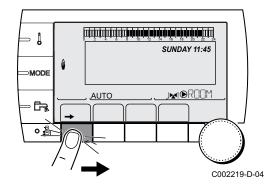
| Installer level - Menu #LANGUAGE | |
|---|---|
| **Adjustment range** | **Description** |
| FRANCAIS | Display in French |
| DEUTSCH | Display in German |
| ENGLISH | Display in English |
| ITALIANO | Display in Italian |
| ESPANOL | Display in Spanish |
| NEDERLANDS | Display in Dutch |
| POLSKI | 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**.

ℹ
   ‣ 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 49

3. Set the following parameters:
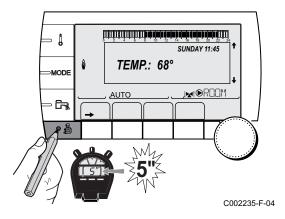
| User level - Menu #SETTING | | | | |
|---|---|---|---|---|
| **Parameter** | **Adjustment range** | **Description** | **Factory setting** | **Customer setting** |
| **SUM/WIN** | 15 to 30 °C | Used to set the outside temperature above which heating will be shut down.<br><br>▸    The heating pumps are shut down.<br>▸    The burner will only start for domestic hot water needs.<br>▸    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<br>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<br>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<br>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<br>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<br>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<br>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**<br>(2)   The parameter is only displayed if a room sensor is connected to the circuit concerned<br>(3)   The parameter is only displayed if no room sensor is connected to the circuit concerned or the sensor has no influence<br>(4)   The parameter is only displayed if the circuit concerned is actually connected | | | | |

## 5.7.3.  Professional settings

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

> ℹ️
> ▸  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 49.

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| 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 25/28 BIC |
|---|---|---|---|
| Gas H (G20) (Factory setting) | MIN.VENT. | rpm | 1800 |
| | MAX.VENT.BOIL | rpm | 4600 |
| | MAX.VENT.DHW | rpm | 6300 |
| | START SP. | rpm | 3000 |
| Gas L (G25) | MIN.VENT. | rpm | 1800 |
| | MAX.VENT.BOIL | rpm | 4300 |
| | MAX.VENT.DHW | rpm | 5900 |
| | START SP. | rpm | 3000 |
| Propane (G31) | MIN.VENT. | rpm | 1800 |
| | MAX.VENT.BOIL | rpm | 4300 |
| | MAX.VENT.DHW | rpm | 5900 |
| | START SP. | rpm | 3000 |

**Installer level - Menu #SECONDARY LIMITS**

| Parameter | Adjustment range | Description | Factory setting |
|---|---|---|---|
| MAX.CIRC.A | 20 to 95 °C | Maximum temperature (Circuit A)<br>☞ "MAX.CIRC...", page 72 | 75 °C |
| MAX.CIRC.B | 20 to 95 °C | Maximum temperature (Circuit B)<br>☞ "MAX.CIRC...", page 72 | 50 °C |
| MAX.CIRC.C | 20 to 95 °C | Maximum temperature (Circuit C)<br>☞ "MAX.CIRC...", page 72 | 50 °C |
| OUT.ANTIFREEZE | **OFF**, -8 to +10 °C | Outside temperature at which the installation's antifreeze protection is activated.<br>Below this temperature the pumps are permanently on and the minimum temperatures for each circuit are respected.<br>When **NIGHT :STOP** is set, the reduced temperature is maintained in each circuit (Menu **#SECONDARY INSTAL.P**).<br>**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<br>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<br>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<br>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 73 | 1.5 | |
| **ANTICIP.A** [1] | 0.0 to 10.0 | Activation and adjustment of the anticipation time ☞ **"ANTICIP.A**, **ANTICIP.B**, **ANTICIP.C "**, page 73 | **NO** | |
| **ROOM INFL. A** [1] | 0 to 10 | Influence of room sensor A ☞ **"ROOM S.INFL"**, page 74 | 3 | |
| **CIRC.CURVE B** [2] | 0 to 4 | Heating curve of the circuit B ☞ **"CIRC. CURVE ..."**, page 73 | 0.7 | |
| **ANTICIP.B** [1] | 0.0 to 10.0 | Activation and adjustment of the anticipation time ☞ **"ANTICIP.A**, **ANTICIP.B**, **ANTICIP.C "**, page 73 | **NO** | |
| **ROOM INFL. B** [1] | 0 to 10 | Influence of room sensor B ☞ **"ROOM S.INFL"**, page 74 | 3 | |
| **CIRC.CURVE C** [2] | 0 to 4 | Heating curve of the circuit C ☞ **"CIRC. CURVE ..."**, page 73 | 0.7 | |
| **ANTICIP.C** [1] | 0.0 to 10.0 | Activation and adjustment of the anticipation time ☞ **"ANTICIP.A**, **ANTICIP.B**, **ANTICIP.C "**, page 73 | **NO** | |
| **ROOM INFL. C** [1] | 0 to 10 | Influence of room sensor C ☞ **"ROOM S.INFL"**, page 74 | 3 | |
| **SCREED DRYING** | **NO, B, C, B+C** | Drying the floor ☞ **"SCREED DRYING"**, page 73 | **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 74 | **DEC.** | |
| | **STOP** | The boiler is stopped (Night mode) ☞ **"NIGHT"**, page 74 | | |
| **IN 0-10V** | **OFF / TEMPERATURE / POWER %** | Activating the control at 0-10 V ☞ **"Function 0-10 V"**, page 75 | **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**
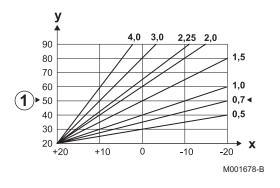
■ **MAX.CIRC...**

⚠ **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.

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### ■ CIRC. CURVE ...
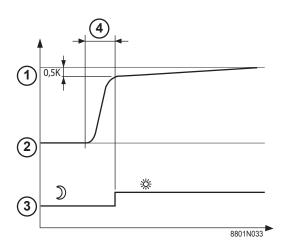
**Heating curve circuit A, B or C**

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

### ■ ANTICIP.A, ANTICIP.B, ANTICIP.C



8801N033

| | |
|---|---|
| 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.

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

### ■ SCREED DRYING
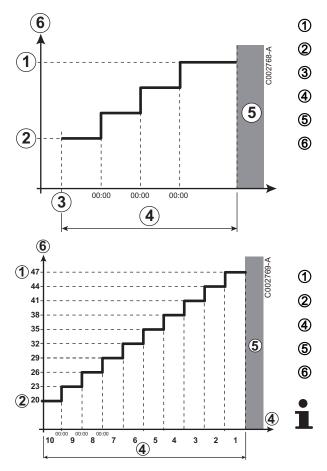
Used to force a constant flow temperature or a train to accelerate screed drying on underfloor heating.
The setting for these temperatures must follow the screed-layer's recommendations.
The activation of this parameter (setting other than **OFF**) forces the permanent display of **SCREED DRYING** and 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)

**ℹ**     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

**ℹ**     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.



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| **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
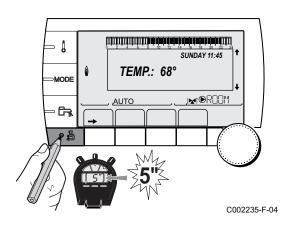
1. Access the installer level: Press key 🔧 for around 5 seconds.
2. Select the menu **#NETWORK**.
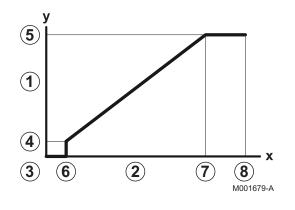
🛈
> ▸ Turn the rotary button to scroll through the menus or modify a value.
> ▸ Press the rotary button to access the selected menu or confirm a value modification.
>
> ☞ For a detailed explanation of menu browsing, refer to the chapter:  "Browsing in the menus", page 49

3. Set the following parameters:
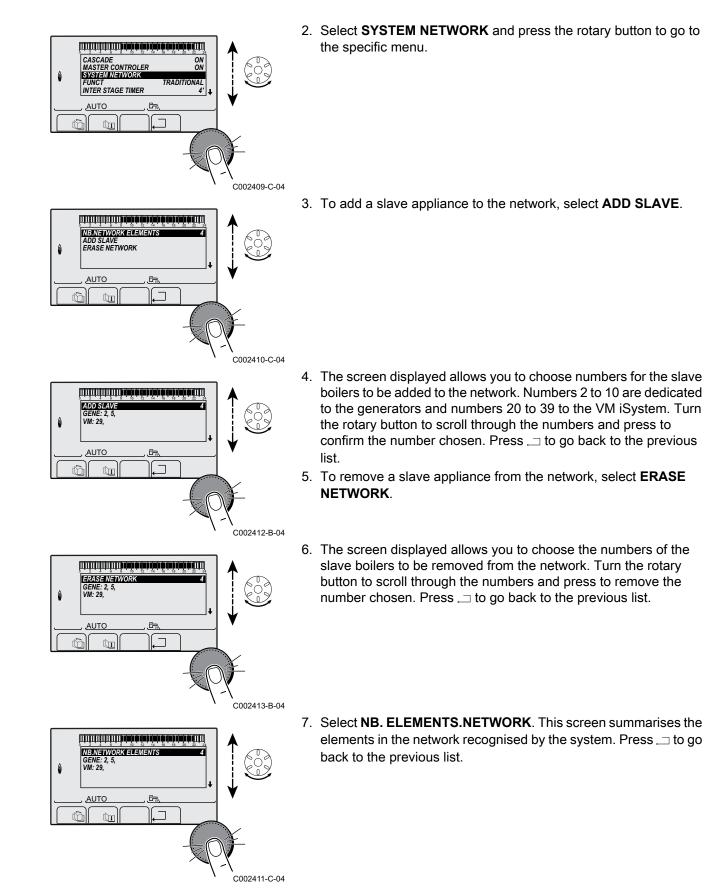
**Installer level - Menu #NETWORK[1]**

| 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 78 | | |
| 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 78 | | |
| 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.

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

| | |
|---|---|
| CASCADE | ON |
| MASTER CONTROLER | ON |
| **SYSTEM NETWORK** | |
| FUNCT | TRADITIONAL |
| INTER STAGE TIMER | 4' |

AUTO

C002409-C-04

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

| | |
|---|---|
| **NB.NETWORK ELEMENTS** | **4** |
| ADD SLAVE | |
| ERASE NETWORK | |

AUTO

C002410-C-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**.

| | |
|---|---|
| **ADD SLAVE** | **4** |
| GENE: 2, 5, | |
| VM: 29, | |

AUTO

C002412-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.

| | |
|---|---|
| **ERASE NETWORK** | **4** |
| GENE: 2, 5, | |
| VM: 29, | |

AUTO

C002413-B-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.

| | |
|---|---|
| **NB.NETWORK ELEMENTS** | **4** |
| GENE: 2, 5, | |
| VM: 29, | |

AUTO

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■ **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**.
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.
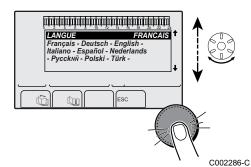
## 5.7.5. Return to the factory settings

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:



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| 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.
▸ If the water temperature in the storage tank is less than 7°C, it is reheated to its set point.

⚠ **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 81

‣ Carry out the inspection and standard maintenance operations once a year.

☞ See chapter:  "Standard inspection and maintenance operations", page 83

‣ Carry out specific maintenance operations if necessary.

☞ See chapter:  "Specific maintenance operations", page 88

## 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 53 + "Setting the air/gas ratio  (Part load)", page 54
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.**<br>**CURRENT**<br>**WIND SPEED**<br>**BACK TEMP** | °C<br>µA<br>rpm<br>°C |
| | **PMIN** | Operating at minimum output | **BOILER TEMP.**<br>**CURRENT**<br>**WIND SPEED**<br>**BACK TEMP** | °C<br>µA<br>rpm<br>°C |
| | **PMAX** | Operating at maximum output | **BOILER TEMP.**<br>**CURRENT**<br>**WIND SPEED**<br>**BACK TEMP** | °C<br>µA<br>rpm<br>°C |

# 7.3 Customising maintenance

### 7.3.1. Maintenance message

The boiler incorporates a function that can be used to display a maintenance message. To set the parameters for this function, proceed as follows:
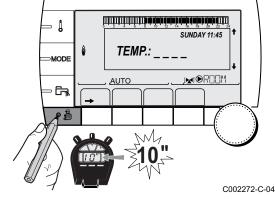
1. Access the "After Sales" level: Hold down the 🔧 key until **#PARAMETERS** is displayed.

2. Select the menu **#REVISION**.



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ℹ️
   ‣ 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 49

3. Set the following parameters:

| After Sales level - Menu #REVISION | | |
|---|---|---|
| **Parameter** | **Adjustment range** | **Description** |
| **TYPE** | **NO** | Factory setting<br>No message indicating that maintenance is necessary |
| | **MANU** | Recommended setting<br>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. | | |

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**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:

1. Access the "After Sales" level: Hold down the 🔧 key until **#PARAMETERS** is displayed.

2. Select the menu **#SUPPORT**.

   ℹ️
   ▸   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 49

3. Set the following parameters:

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| After Sales level - Menu #SUPPORT | |
|---|---|
| **Parameter** | **Description** |
| **NAME** | Input the installer's name |
| **TELEPHONE NUM.** | Input the installer's telephone number |
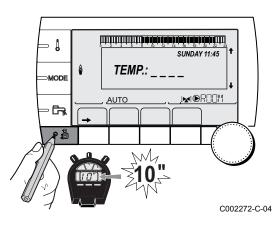
When the message **REVISION** is displayed, press **?** to display the professional's telephone number.

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## 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.

**i**     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 expansion vessel

Check the expansion vessel and replace it if necessary.

## 7.4.3.    Checking the ionization current

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

☞ See chapter:  "Reading out measured values", page 65
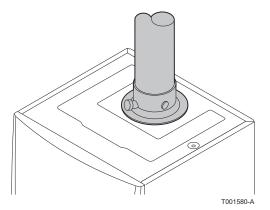
## 7.4.4.    Checking the transfer capacity
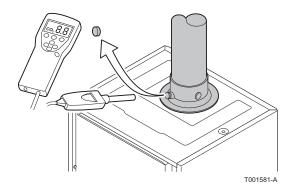
If the transfer capacity is particularly weak (temperature too low and/or flow rate less than 6,2 l/min), clean the plate exchanger (domestic hot water end).

☞ See chapter:  "Cleaning the plate exchanger", page 89

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

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



T001580-A

### 7.4.6.        Checking combustion

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.



T001581-A
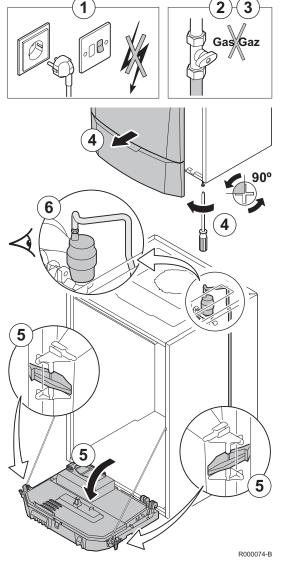
> ⚠️ **CAUTION**
>
> Ensure that the opening around the sensor is completely sealed when taking measurements.

3.  Set the boiler to full load. ☞ See chapter: "Setting the air/gas ratio (Full load)", page 53. 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 54. The boiler is now operating on part load. Measure the percentage of $CO_2$ and compare this value with the checking values given.

### 7.4.7. Checking the automatic air vent
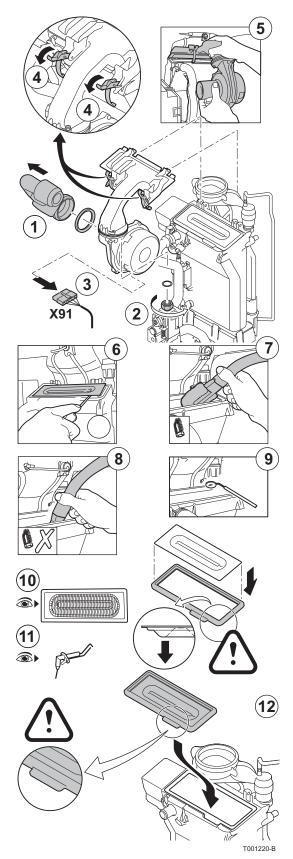
1. Switch off the boiler electrical power supply.
2. Close the gas valve on the boiler.
3. Close the main gas inlet valve.
4. Unscrew the two screws located under the front panel by a quarter turn and remove the panel.
5. Tilt the control box forwards by opening the holding clips located at the sides.
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.

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### 7.4.8. 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.

### 7.4.9. Checking the siphon

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

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### 7.4.10. 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.



T001220-B

# 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:
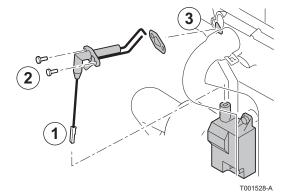
## 7.5.1. Replacing the ionization/ignition electrode
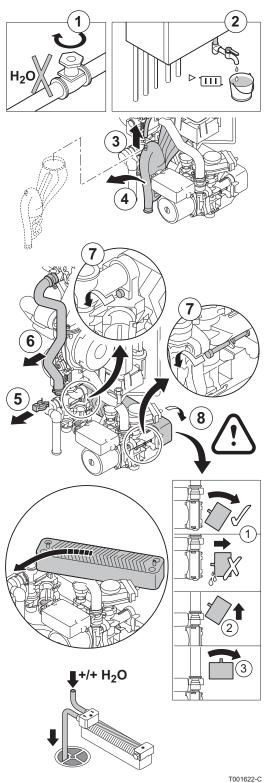
Replace the ionization/ignition electrode in the following cases:

▸ 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.    Cleaning the plate exchanger

Depending on the water quality and the operating mode, limescale deposits may form in the plate exchanger. Periodic descaling may therefore be necessary. As a general rule, a periodic inspection, along with cleaning, if necessary, is sufficient. The following factors may affect the periodicity:

▸ Water hardness.

▸ Composition of the limescale.

▸ Number of hours' operation of the boiler.

▸ Draw-off rate.

▸ Domestic hot water set point temperature.

If descaling of the plate exchanger is necessary, proceed as follows:

1. Close the main water valve.

2. Drain the boiler.
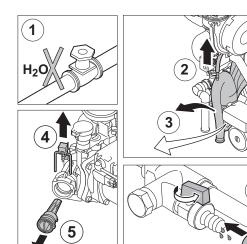
> ⚠ **WARNING**
>
> ☞ To drain the boiler tanks, see chapter:  "Replacing the boiler tanks", page 90
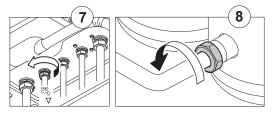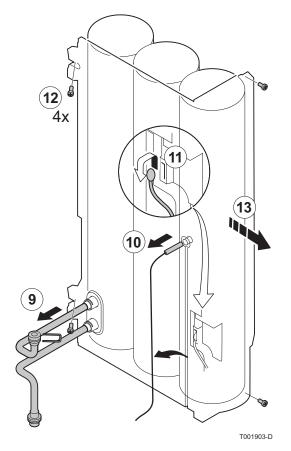
3. Remove the air vent hose above the siphon.

4. Remove the siphon.

5. Remove the clip holding the heating flow hose in place on the left side of the hydroblock.

6. Dismantle the heating flow hose on the left side of the hydroblock and not on the heat exchanger side (heating circuit).

7. Unscrew the 2 hexagonal socket screws located to the right and left of the plate exchanger.

8. Slightly turn the plate exchanger and carefully remove it from the boiler.

9. Clean the plate exchanger with a descaling product (e.g. citric acid with a pH of approximately 3). To do this, a specific cleaning appliance is available as an accessory. After cleaning, rinse thoroughly under running water.

10. Re-assemble all of the components.

T001622-C

### 7.5.3. Replacing the boiler tanks
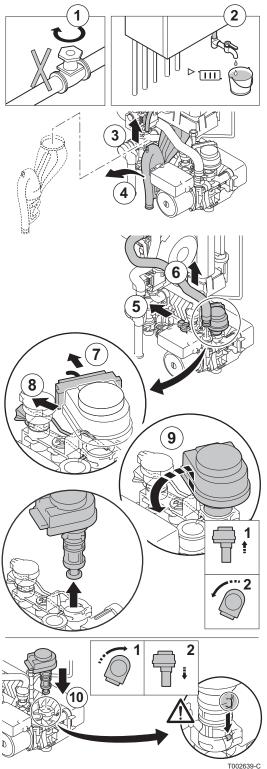
Replace the boiler tanks when they are defective. To do this, proceed as follows:

1. Close the main water valve.
2. Remove the air vent hose above the siphon.
3. Remove the siphon.
4. Remove the clip holding the plug in place.
5. Remove the plug.
6. Open the drainage valve on the tank hydroblock to drain the boiler tanks.
7. Unscrew the connection on the domestic hot water outlet.
8. Unscrew the connection on the pipe that links the hydroblock to the boiler tanks.
9. Remove the pipes connected to the boiler tanks.
10. Remove the DHW sensors from the tanks and disconnect the cables.
11. Disconnect the instrument box cable from the tanks.
12. Unscrew the 4 screws located on the front and back of the boiler tanks.
13. Remove the boiler tanks with the left-hand section of the insulation.
14. To re-assemble, perform the above actions in reverse order.

T001903-D

### 7.5.4. 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.
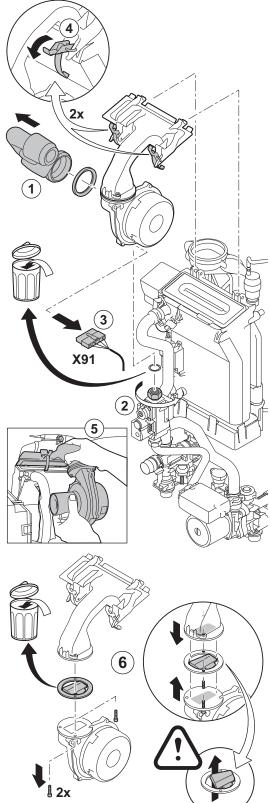
ℹ     Lift and rotate by a quarter turn.

10. Proceed as for dismantling in reverse.

> ⚠ **CAUTION**
>
> Be careful of the positioning cams on the 3-way valve.
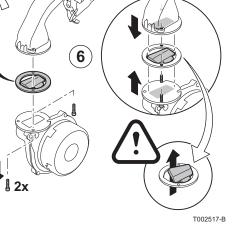
T002639-C

### 7.5.5. 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.

T002517-B

## 7.5.6.    Assembling the boiler

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.

**Check Contrôler**

C002434-A

T001523-B

# 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.

> **i** 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<br><br>▶ 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<br><br>▶ 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<br><br>▶ Check the circulation (direction, pump, valves)<br>▶ Check the water pressure<br>▶ Check the cleanliness of the heat exchanger<br><br>Sensor error<br><br>▶ Check that the sensors are operating correctly<br>▶ 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<br><br>▸ Check the circulation (direction, pump, valves)<br>▸ Check the water pressure<br>▸ Check the cleanliness of the heat exchanger<br><br>Sensor error<br><br>▸ Check that the sensors are operating correctly<br>▸ 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<br><br>▸ Set the type of generator again in the menu **#CONFIGURATION** (Refer to the original rating plate)<br><br>Bad connection<br><br>▸ 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<br><br>▸ Check the contact on the **BL** inlet<br><br>Parameter error<br><br>▸ Check the parameter **IN.BL**<br><br>Bad connection<br><br>▸ Check the wiring |
| B13 | BL. PCU COM<br>BL.COM PCU-D4 | Communication error with the SCU PCB | Bad connection<br><br>▸ Check the wiring<br><br>SCU PCB not installed in the boiler<br><br>▸ Install an SCU PCB |
| B14 | BL.WATER MIS. | The water pressure is lower than 0,8 bar | Not enough water in the circuit<br><br>▸ 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<br><br>▸ Check that the gas valve is fully opened<br>▸ Checking the gas supply pressure<br>▸ Check whether the gas pressure control system has been correctly fitted<br>▸ 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<br><br>▸ Replace the SU PCB |
| B17 | BL.PCU ERROR | The parameters saved on the PCU PCB are impaired | Parameter error on the PCU PCB<br><br>▸ Replace the PCU PCB |
| B18 | BL.BAD PSU | The PSU PCB is not recognised | Wrong PSU PCB for this boiler<br><br>▸ Replace the PSU PCB |
| B19 | BL.NO CONFIG | The boiler has not been configured | The PSU PCB has been changed<br><br>▸ 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<br><br>▸ Check that the SU PCB has been correctly put in place on the PCU PCB<br>▸ Replace the SU PCB |

| Code | Messages | Description | Checking / solution |
|------|----------|-------------|---------------------|
| B22 | BL.FLAME LOS | No flame during operation | No ionization current<br><br>▸ Purge the gas supply to remove air<br>▸ Check that the gas valve is fully opened<br>▸ Check the supply pressure<br>▸ Check the operation and setting of the gas valve unit<br>▸ Check that the air inlet and flue gas discharge flues are not blocked<br>▸ 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)<br>▸ Check that the sensor is actually connected to the **P.DHW** inlet on the SCU<br>▸ Check the Ohmic value of the sensor. Replace it if necessary<br>▸ 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)<br>▸ Check that the sensor is actually connected to the X20 inlet on the PCU<br>▸ Check the Ohmic value of the sensor. Replace it if necessary<br>▸ Check the wiring |
| M04 | REVISION | A service is required | The date programmed for the service has been reached<br><br>▸ Carry out maintenance on the boiler<br>▸ 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 |
| M06 | REVISION B | | ▸ Carry out maintenance on the boiler |
| M07 | REVISION C | | ▸ To clear the inspection, press key ☞ |
| M20 | DISGAS | A boiler vent cycle is underway | Switching the boiler on<br><br>▸ 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. |
| | FL.DRY.C XX DAYS | | |
| | FL.DRY.B+C XX DAYS | | ▸ Wait for the number of days shown to change to 0<br>▸ Set the parameter **SCREED DRYING** to **OFF** |
| 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.<br>▸ 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.<br><br>▸ Wait until the end date has been passed<br>▸ Set the parameter **STOP NXX** to **OFF** |

De Dietrich ◆

# 8.3 Message history



C002272-C-04



C002381-B-04



C002382-B-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 49

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

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

# 8.4 Faults (Code type Lxx or Dxx)



C002604-B-04
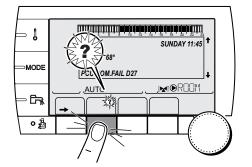
In the event of operational failure, the control panel flashes and displays an error message and a corresponding code.

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<br><br>▸ Check the wiring between the PCU and PSU PCBs<br>PSU PCB faulty<br><br>▸ Replace the PSU PCB |
| L01 | **PSU PARAM FAIL** | PCU | The safety parameters are incorrect | Bad connection<br><br>▸ Check the wiring between the PCU and PSU PCBs<br>PSU PCB faulty<br><br>▸ Replace the PSU PCB |
| L02 | **DEF.OUTLET S.** | PCU | The boiler flow sensor has short-circuited | Bad connection<br><br>▸ Check the wiring between the PCU PCB and the sensor<br>▸ Check that the SU PCB is correctly in place<br>▸ Check that the sensor has been correctly fitted<br>Sensor fault<br><br>▸ Check the Ohmic value of the sensor<br>▸ Replace the sensor if necessary |
| L03 | **DEF.OUTLET S.** | PCU | The boiler flow sensor is on an open circuit | Bad connection<br><br>▸ Check the wiring between the PCU PCB and the sensor<br>▸ Check that the SU PCB is correctly in place<br>▸ Check that the sensor has been correctly fitted<br>Sensor fault<br><br>▸ Check the Ohmic value of the sensor<br>▸ 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<br>▶ Check the wiring between the PCU PCB and the sensor<br>▶ Check that the SU PCB is correctly in place<br>▶ Check that the sensor has been correctly fitted<br>Sensor fault<br>▶ Check the Ohmic value of the sensor<br>▶ Replace the sensor if necessary<br>No water circulation<br>▶ Vent the air in the heating system<br>▶ Check the circulation (direction, pump, valves)<br>▶ Check the water pressure<br>▶ Check the cleanliness of the heat exchanger |
| L05 | STB OUTLET | PCU | Boiler temperature too high | Bad connection<br>▶ Check the wiring between the PCU PCB and the sensor<br>▶ Check that the SU PCB is correctly in place<br>▶ Check that the sensor has been correctly fitted<br>Sensor fault<br>▶ Check the Ohmic value of the sensor<br>▶ Replace the sensor if necessary<br>No water circulation<br>▶ Vent the air in the heating system<br>▶ Check the circulation (direction, pump, valves)<br>▶ Check the water pressure<br>▶ Check the cleanliness of the heat exchanger |
| L06 | BACK S.FAILURE | PCU | The return temperature sensor has short-circuited | Bad connection<br>▶ Check the wiring between the PCU PCB and the sensor<br>▶ Check that the SU PCB is correctly in place<br>▶ Check that the sensor has been correctly fitted<br>Sensor fault<br>▶ Check the Ohmic value of the sensor<br>▶ Replace the sensor if necessary |
| L07 | BACK S.FAILURE | PCU | The return temperature sensor is on an open circuit | Bad connection<br>▶ Check the wiring between the PCU PCB and the sensor<br>▶ Check that the SU PCB is correctly in place<br>▶ Check that the sensor has been correctly fitted<br>Sensor fault<br>▶ Check the Ohmic value of the sensor<br>▶ 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<br>▸ Check the wiring between the PCU PCB and the sensor<br>▸ Check that the SU PCB is correctly in place<br>▸ Check that the sensor has been correctly fitted<br>Sensor fault<br>▸ Check the Ohmic value of the sensor<br>▸ Replace the sensor if necessary<br>No water circulation<br>▸ Vent the air in the heating system<br>▸ Check the circulation (direction, pump, valves)<br>▸ Check the water pressure<br>▸ Check the cleanliness of the heat exchanger |
| L09 | STB BACK | PCU | Return temperature too high | Bad connection<br>▸ Check the wiring between the PCU PCB and the sensor<br>▸ Check that the SU PCB is correctly in place<br>▸ Check that the sensor has been correctly fitted<br>Sensor fault<br>▸ Check the Ohmic value of the sensor<br>▸ Replace the sensor if necessary<br>No water circulation<br>▸ Vent the air in the heating system<br>▸ Check the circulation (direction, pump, valves)<br>▸ Check the water pressure<br>▸ Check the cleanliness of the heat exchanger |
| L10 | DEP-RET>MAX | PCU | Difference between the flow and return temperatures insufficient | Sensor fault<br>▸ Check the Ohmic value of the sensor<br>▸ Replace the sensor if necessary<br>Bad connection<br>▸ Check that the sensor has been correctly fitted<br>No water circulation<br>▸ Vent the air in the heating system<br>▸ Check the circulation (direction, pump, valves)<br>▸ Check the water pressure<br>▸ Check the cleanliness of the heat exchanger<br>▸ 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<br>▶ Check the Ohmic value of the sensor<br>▶ Replace the sensor if necessary<br>Bad connection<br>▶ Check that the sensor has been correctly fitted<br>No water circulation<br>▶ Vent the air in the heating system<br>▶ Check the circulation (direction, pump, valves)<br>▶ Check the water pressure<br>▶ Check the cleanliness of the heat exchanger<br>▶ Check that the heating pump is operating correctly |
| L12 | **STB OPEN** | PCU | Maximum boiler temperature exceeded (STB thermostat maximum) | Bad connection<br>▶ Check the wiring between the PCU PCB and the STB<br>▶ Check that the SU PCB is correctly in place<br>▶ Check the electrical continuity of the STB<br>▶ Check whether the STB has been correctly fitted<br>Sensor fault<br>▶ Replace the STB if necessary<br>No water circulation<br>▶ Vent the air in the heating system<br>▶ Check the circulation (direction, pump, valves)<br>▶ Check the water pressure<br>▶ Check the cleanliness of the heat exchanger |
| L14 | **BURNER FAILURE** | PCU | 5 burner start-up failures | No ignition<br>▶ Check the wiring between the PCU PCB and the ignition transformer<br>▶ Check that the SU PCB is correctly in place<br>▶ Check the ionization/ignition electrode<br>▶ Check the earthing<br>▶ SU PCB faulty: Change the PCB<br>Ignition arc, but no flame formation<br>▶ Vent the gas flues<br>▶ Check that the gas valve is fully opened<br>▶ Checking the gas supply pressure<br>▶ Check the operation and setting of the gas valve unit<br>▶ Check that the air inlet and flue gas discharge flues are not blocked<br>▶ Check the wiring on the gas valve unit<br>▶ SU PCB faulty: Change the PCB<br>Presence of the flame but insufficient ionization (<3 µA)<br>▶ Check that the gas valve is fully opened<br>▶ Checking the gas supply pressure<br>▶ Check the ionization/ignition electrode<br>▶ Check the earthing<br>▶ 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<br>Ignition transformer defective<br><br>▸ Check the ionization/ignition electrode |
| | | | | Gas valve defective<br><br>▸ Check the gas valve and replace if necessary |
| | | | | The burner remains very hot: $CO_2$ too high<br><br>▸ Set the $CO_2$ |
| L17 | VALVE FAIL | PCU | Problem on the SU PCB | Bad connection<br><br>▸ Check that the SU PCB is correctly in place |
| | | | | SU PCB faulty<br><br>▸ 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<br><br>▸ Check the wiring between the PCU PCB and the fan |
| | | | | Fan defective<br><br>▸ Check for adequate draw on the chimney connection<br>▸ Replace the fan if need be |
| L35 | BACK>BOIL FAIL | PCU | Flow and return reversed | Bad connection<br><br>▸ Check that the sensor has been correctly fitted |
| | | | | Sensor fault<br><br>▸ Check the Ohmic value of the sensors<br>▸ Replace the sensor if necessary |
| | | | | Water circulation direction reversed<br><br>▸ 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<br><br>▸ Purge the gas supply to remove air<br>▸ Check that the gas valve is fully opened<br>▸ Checking the gas supply pressure<br>▸ Check the operation and setting of the gas valve unit<br>▸ Check that the air inlet and flue gas discharge flues are not blocked<br>▸ Check that there is no recirculation of flue gases |
| L37 | SU COM.FAIL | PCU | Communication failure with the SU PCB | Bad connection<br><br>▸ Check whether the SU PCB has been correctly fitted into the connector on the PCU PCB<br>▸ Change the SU PCB |
| L38 | PCU COM.FAIL | PCU | Communication failure between the PCU and SCU PCBs | Bad connection<br><br>▸ Check the wiring between the PCU and SCU PCBs<br>▸ Run an **AUTODETECTION** in the menu **#CONFIGURATION** |
| | | | | SCU PCB not connected or faulty<br><br>▸ 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<br><br>▸    Check the wiring |
| | | | | External cause<br><br>▸    Check the device connected to the **BL** contact |
| | | | | Parameter incorrectly set<br><br>▸    Check the parameter **IN.BL** |
| L40 | TEST.HRU.FAIL | PCU | HRU/URC unit test error | Bad connection<br><br>▸    Check the wiring |
| | | | | Parameter incorrectly set<br><br>▸    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<br>Water leak<br>Measurement error<br><br>▸    Top up with more water if necessary<br>▸    Reset the boiler |
| L251 | MANOMETRE FAIL | PCU | Pressure gauge fault | Wiring problem<br>The manometer is defective<br>Sensor pcb defective<br><br>▸    Check the wiring between the PCU PCB and the pressure gauge<br>▸    Check whether the pressure gauge has been correctly fitted<br>▸    Replace the pressure gauge if need be |
| D03<br>D04 | OUTL S.B FAIL.<br>OUTL S.C FAIL. | SCU | Circuit B flow sensor fault<br>Circuit C flow sensor fault<br>Remarks:<br>The circuit pump is running.<br>The 3-way valve motor on the circuit is no longer powered and can be adjusted manually. | Bad connection<br><br>▸    Check whether the sensor is connected: ☞ See chapter:  "Deletion of sensors from the memory in the  PCB", page 106<br>▸    Check the link and the connectors<br>▸    Check that the sensor has been correctly fitted |
| | | | | Sensor fault<br><br>▸    Check the Ohmic value of the sensor<br>▸    Replace the sensor if necessary |
| D05 | OUTSI.S.FAIL. | SCU | Outside temperature sensor fault<br>Remarks:<br>The boiler operates on **BOILER MAX** temperature.<br>The valve setting is no longer ensured but monitoring the maximum temperature of the circuit after the valve is ensured.<br>Valves may be manually operated.<br>Reheating the domestic hot water remains ensured. | Bad connection<br><br>▸    Check whether the sensor is connected: ☞ See chapter:  "Deletion of sensors from the memory in the  PCB", page 106<br>▸    Check the link and the connectors<br>▸    Check that the sensor has been correctly fitted |
| | | | | Sensor fault<br><br>▸    Check the Ohmic value of the sensor<br>▸    Replace the sensor if necessary |

| Code | Faults | Cause of the fault | Description | Checking / solution |
|------|--------|--------------------|-------------|---------------------|
| D07 | SYST.SENS.FAIL. | SCU | System sensor fault | Bad connection<br><br>▶ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 106<br>▶ Check the link and the connectors<br>▶ Check that the sensor has been correctly fitted<br><br>Sensor fault<br><br>▶ Check the Ohmic value of the sensor<br>▶ Replace the sensor if necessary |
| D09 | DHW S.FAILURE | SCU | Domestic hot water sensor fault<br>Remarks:<br>Heating of domestic hot water is no longer ensured.<br>The load pump operates.<br>The load temperature of the dhw tank is the same as the boiler. | Bad connection<br><br>▶ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 106<br>▶ Check the link and the connectors<br>▶ Check that the sensor has been correctly fitted<br><br>Sensor fault<br><br>▶ Check the Ohmic value of the sensor<br>▶ Replace the sensor if necessary |
| D11<br>D12<br>D13 | ROOM S.A FAIL.<br>ROOM S.B FAIL.<br>ROOM S.C FAIL. | SCU | A room temperature sensor fault<br>B room temperature sensor fault<br>C room temperature sensor fault<br>Note:<br>The circuit concerned operates without any influence from the room sensor. | Bad connection<br><br>▶ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 106<br>▶ Check the link and the connectors<br>▶ Check that the sensor has been correctly fitted<br><br>Sensor fault<br><br>▶ Check the Ohmic value of the sensor<br>▶ Replace the sensor if necessary |
| D14 | MC COM.FAIL | SCU | Communication failure between the SCU PCB and the boiler radio module | Bad connection<br><br>▶ Check the link and the connectors<br><br>Boiler module failure<br><br>▶ Change the boiler module |
| D15 | ST.TANK S.FAIL | SCU | Storage tank sensor fault<br>Note:<br>The hot water storage tank reheating operation is no longer assured. | Bad connection<br><br>▶ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 106<br>▶ Check the link and the connectors<br>▶ Check that the sensor has been correctly fitted<br><br>Sensor fault<br><br>▶ Check the Ohmic value of the sensor<br>▶ 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<br>Swimming pool sensor fault circuit C<br>Note:<br>Swimming pool reheating is always done during the circuit's comfort period. | Bad connection<br>▸ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 106<br>▸ Check the link and the connectors<br>▸ Check that the sensor has been correctly fitted<br>Sensor fault<br>▸ Check the Ohmic value of the sensor<br>▸ Replace the sensor if necessary |
| D17 | DHW 2 S.FAIL | SCU | Sensor fault tank 2 | Bad connection<br>▸ Check whether the sensor is connected: ☞ See chapter: "Deletion of sensors from the memory in the PCB", page 106<br>▸ Check the link and the connectors<br>▸ Check that the sensor has been correctly fitted<br>Sensor fault<br>▸ Check the Ohmic value of the sensor<br>▸ Replace the sensor if necessary |
| D27 | PCU COM. FAIL | SCU | Communication failure between the SCU and PCU PCBs<br>▸ Check the wiring between the SCU and PCU PCBs<br>▸ Check that the PCU PCB is powered up (green LED on or flashing)<br>▸ Change the PCU PCB | |
| D32 | 5 RESET:ON/OFF | SCU | 5 resets done in less than an hour<br>▸ Switch the boiler off and switch back on | |
| D37 | TA-S SHORT-CIR | SCU | The Titan Active System® is short-circuited<br>▸ Check that the connection cable between the SCU PCB and the anode is not short-circuited<br>▸ Check that the anode is not short-circuited<br>Remarks:<br>Domestic hot water production has stopped but can nonetheless be restarted using key ☞.<br>The tank is no longer protected.<br>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<br>▸ Check that the connection cable between the SCU PCB and the anode is not severed<br>▸ Check that the anode is not broken<br>Remarks:<br>Domestic hot water production has stopped but can nonetheless be restarted using key ☞.<br>The tank is no longer protected.<br>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<br>▸ 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.
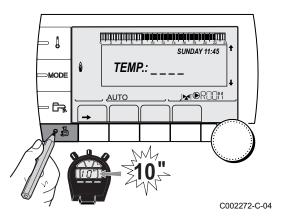
▸ Press key **?** repeatedly until **Do you want to delete this sensor?** is displayed.

▸ Select **YES** by turning the rotary button and press to confirm.

ℹ  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**.

ℹ
▸ 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 49



C002272-C-04

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:

ℹ️
    ▸  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 49

| 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 ⌂. <br> (2)  The parameter is only displayed if **CASCADE:** is set to **ON** <br> (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 ⌂.<br>(2)  The parameter is only displayed if **CASCADE:** is set to **ON**<br>(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<br>Closing the valve |
| **FAILURE** | **ON** | Fault display |
| | **OFF** | No fault |
| (1)  The parameter is only displayed for the options, circuits or sensors actually connected<br>(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 110 |
| **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<br>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.

**i** To order a spare part, give the reference number shown on the list.
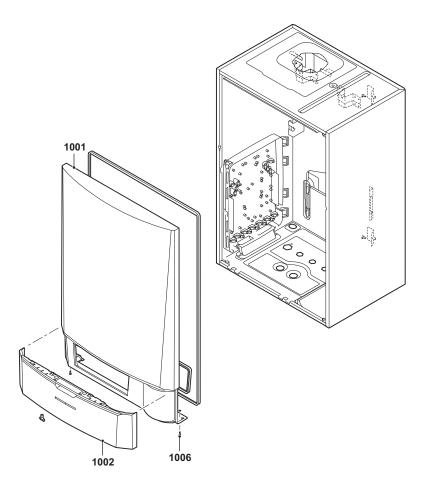
## 9.2 Spare parts

Spare parts list reference: 300022159-002-A
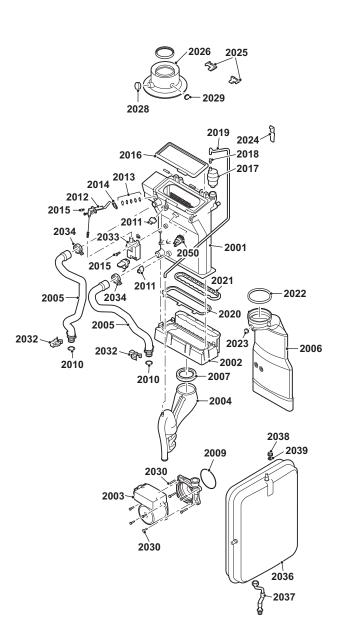
## 9.2.1. Casing

## 9.2.2.  Heat exchanger and burner
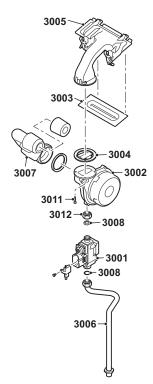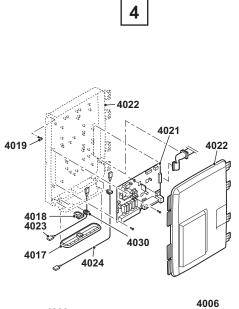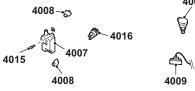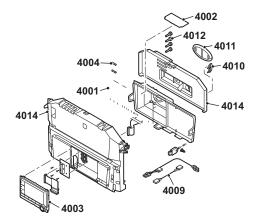
2

### 9.2.3. Fan

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3003

3007

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3002

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3001

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3006

## 9.2.4.   Control panel

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## 9.2.5. Connecting pipes

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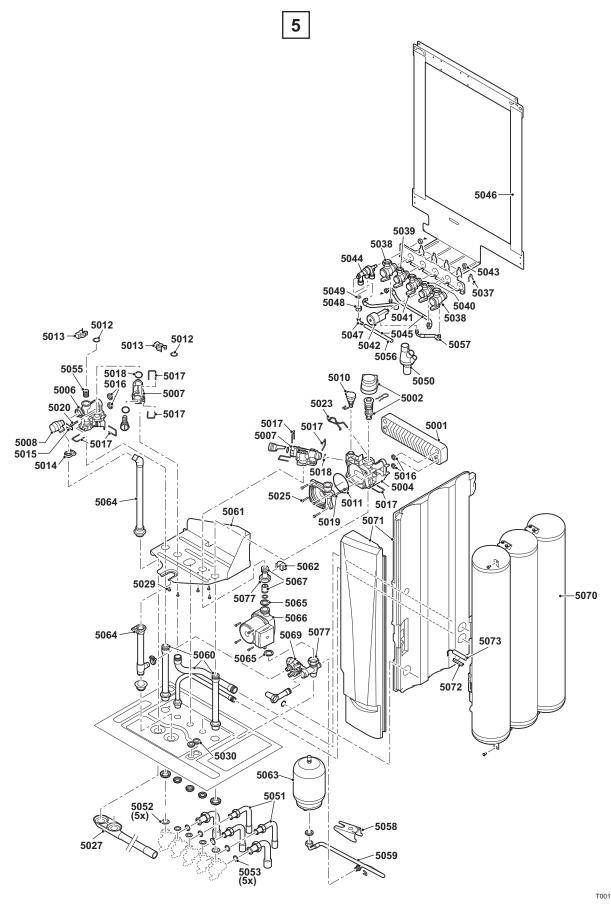
## 9.2.6. Spare parts list

| Markers | Code no. | Description | Part |
|---------|----------|-------------|------|
| **Casing** | | | |
| 1001 | S101309 | Front casing | 1 |
| 1002 | S101297 | Top cover (Control panel) | 1 |
| 1006 | S101403 | Screw | 2 |
| **Heat exchanger and burner** | | | |
| 2001 | S100893 | Heat exchanger 28kW | 1 |
| 2002 | S100894 | Condensate tank 253 mm | 1 |
| 2003 | S100703 | Pump Grundfos UPM 15-70 RES | 1 |
| 2004 | S100905 | Siphon | 1 |
| 2005 | S100909 | Flow and return pipes | 1 |
| 2006 | S100854 | Flue gas discharge pipe (28 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/ionization electrode | 1 |
| 2013 | S59118 | Sight glass | 1 |
| 2014 | S62105 | Sealing plate for the ignition electrode | 10 |
| 2015 | S48950 | Screw M4x10 | 50 |
| 2016 | S100880 | Gasket for burner (28 kW) | 1 |
| 2017 | S62728 | Automatic air vent | 1 |
| 2018 | S100895 | Endpiece M7x1 | 1 |
| 2019 | S100891 | Silicone hose 8x4x715 | 1 |
| 2020 | S100888 | Gasket between heat exchanger and condensate collector 219 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 | Combustion air/flue gas adapter 60/100 | 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 |
| 2036 | S100925 | Expansion vessel | 1 |
| 2037 | S100908 | Pipe between the pump and the expansion vessel | 1 |
| 2038 | S44483 | M8 nut | 10 |
| 2039 | S101007 | Serrated washer 8,2 | 4 |
| 2050 | S101005 | HI temperature sensor | 1 |
| **Fan** | | | |
| 3001 | S101507 | Gas block | 1 |
| 3002 | S100878 | Fan RG118 - R19,5x1 | 1 |
| 3003 | S100879 | Burner 198 mm - 28 kW | 1 |
| 3004 | S100881 | Leakproof seal Ø 83 mm with valve (28kW) | 1 |
| 3005 | S100882 | Gas/air mixer 220x84 mm | 1 |

| Markers | Code no. | Description | Part |
|---|---|---|---|
| 3006 | S101290 | Gas inlet pipe | 1 |
| 3007 | S100911 | Air intake silencer | 1 |
| 3008 | S56155 | Sealing ring Ø 23,8x17,7x2 mm | 20 |
| 3011 | S100951 | Screw M5x25 | 10 |
| 3012 | S101010 | G3/4" nut | 1 |
| 0 | S101542 | Propane diaphragm - 4.00 mm | 1 |
| **Control panel** | | | |
| 4001 | S101478 | PCU-03 PCB | 1 |
| 4002 | S100849 | SU-01 PCB | 1 |
| 4003 | S101249 | 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 | S100845 | Electric cable 1500 mm | 1 |
| 4009 | S101299 | 24V. sensor cable | 1 |
| 4009 | S101302 | Pump cable | 1 |
| 4009 | S101303 | Pump cable (DHW) | 1 |
| 4009 | S101305 | Gas valve unit and ignition transformer cable | 1 |
| 4009 | S101306 | 3-way valve cable | 1 |
| 4010 | S59372 | Draught diverter | 1 |
| 4011 | S100861 | Oval sealing gasket | 5 |
| 4012 | S62185 | Screw Kb30x8 | 10 |
| 4014 | S101251 | Control panel | 1 |
| 4015 | S48950 | Screw M4x10 | 50 |
| 4016 | S101005 | HI temperature sensor | 1 |
| 4017 | S100869 | Gasket SCU | 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 |
| 4030 | S101000 | grommet | 5 |
| **Connecting pipes** | | | |
| 5001 | S100831 | Plate heat exchanger | 1 |
| 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 with hose | 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 |

| Markers | Code no. | Description | Part |
|---------|----------|-------------|------|
| 5019 | S100826 | Screw K50x28 | 10 |
| 5020 | S100836 | Screw M5x15 | 10 |
| 5023 | S100832 | Clip 26 with handle | 20 |
| 5025 | S59141 | Screw M5x18 | 15 |
| 5027 | S101002 | Condensate evacuation hose | 1 |
| 5029 | S100825 | Screw K50x12 | 20 |
| 5030 | S62727 | Grommet Ø 20 mm | 15 |
| 5037 | S101046 | Holding clip | 1 |
| 5038 | S100875 | Valve G3/4" disconnector | 1 |
| 5039 | S100871 | Valve 1/2" DHW end | 1 |
| 5040 | S100874 | Valve G1/2" disconnector | 1 |
| 5041 | S100872 | Gas valve | 1 |
| 5042 | S100876 | Pressure gauge | 1 |
| 5043 | S100231 | M10x1x5 nut | 10 |
| 5044 | S101193 | Disconnector | 1 |
| 5045 | S101011 | Set of pipes (disconnector) | 1 |
| 5046 | S101294 | Mounting frame | 1 |
| 5047 | S100246 | Set of pipes with filling and safety valve | 1 |
| 5048 | S101195 | Union nut 3/8"x12 | 2 |
| 5049 | S62715 | Seal ø 14.5x8.5x2 | 10 |
| 5050 | S100238 | Condensates collector | 1 |
| 5051 | S100912 | Set of pipes 16/18/22 mm | 1 |
| 5052 | S56157 | Seal ø 18.3x12.7x2 | 10 |
| 5053 | S56155 | Seal ø 23.8x17.7x2 | 20 |
| 5055 | S100805 | Filter Central heating | 1 |
| 5056 | S100241 | PVC 12/9 hose650 mm | 1 |
| 5057 | S100896 | Pipe for pressure gauge | 1 |
| 5058 | S101293 | Expansion vessel bracket | 1 |
| 5059 | S101292 | Domestic expansion vessel hose | 1 |
| 5060 | S101313 | Set of pipes | 1 |
| 5061 | S101288 | Bracket | 1 |
| 5062 | S101324 | NTC sensor | 1 |
| 5063 | S101291 | DHW expansion vessel | 1 |
| 5064 | S101314 | Piping kit | 1 |
| 5065 | S56156 | Seal ø 30x21x3 | 10 |
| 5066 | S101316 | Pump Upo 15-30 | 1 |
| 5067 | S101317 | Connection fitting | 1 |
| 5069 | S101318 | Hydroblock | 1 |
| 5070 | S101320 | Calorifier tank with insulation and sensor | 1 |
| 5071 | S101322 | Insulation | 1 |
| 5072 | S101310 | Spring | 1 |
| 5073 | S101311 | DHW sensor | 1 |
| 5077 | S101323 | Union nut G1" | 1 |

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