

Package FT 74

X control panel



M000578



Installation and Service Manual


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1 Safety instructions


Danger


This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

 Any operation on the installation must be performed by a qualified technician respecting professional regulations and in accordance with this document.


 Before any work, switch off the mains supply to the appliance. Protect the installation against any unwanted restarts.


 For a proper operating of the boiler, follow carefully the instructions.

 The manufacturer is not liable for any improper use of the appliance or failure to maintain or install the unit correctly (the user shall take care to ensure that the system is installed by a qualified engineer).

 Work on electrical equipment must be carried out by a qualified professional in compliance with the prevailing regulations.

1.1 Important recommendations

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

 To guarantee protection against the corrosion of domestic hot water calorifiers fitted with a titanium anode (protection system), always leave the control panel switched on. To switch off the heating or the domestic hot water, use the Summer or Antifreeze mode.

1.2 Liabilities

1.2.1 Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various applicable European Directives. They are therefore delivered with **CE** marking and all relevant documentation. In the interest of customers, we are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

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

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

1.2.2 Installer's liability

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

- Read and follow the instructions given in the manuals provided with the appliance
- Install the appliance in accordance with the legislation and standards currently in force
- 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

2 About this manual

2.1 Symbols used in the manual



Caution danger

Risk of injury and damage to equipment. Attention must be paid to the warnings on safety of persons and equipment



Specific information

Information must be kept in mind to maintain comfort



Refer to another manual or other pages in this instruction manual

DHW: Domestic hot water

3 Description

3.1 General

Electrical board for heating which includes the production of domestic hot water as a priority.

The control panel X equips the boilers SEMPRA Evolution.

The standard delivery of panel X includes :

- 1 X control panel
- 1 Boiler sensor measuring the temperature in the boiler

The following options can be ordered :

- DHW sensor with simulation connector for the connection of a domestic hot water calorifier without titanium anode (Package AD212 - C100000030)

3.2 Presentation

- **The control panel X, for controlling a 1-stage burner, includes:**

- 1 Boiler thermostat
- 1 domestic hot water thermostat
- 1 electronic thermostat
- 1 Safety thermostat

If 2 ambient thermostats are also added (option), the board allows 2 direct circuits to be controlled.

The boiler thermostat regulates the boiler operating temperature.

The safety thermostat with manual reset ensures that the boiler operates safely.



In the event that there is an abnormal rise in the temperature in the boiler 110° C. Advise your installation engineer.

If domestic hot water is being heated, the domestic hot water thermostat allows the average temperature of the stored domestic hot water to be regulated giving priority to the preparation of domestic hot water.

Whenever there is a demand for domestic hot water, the domestic hot water priority starts the burner and the dhw pump stops the heating pumps. On the summer setting, the boiler temperature is not maintained between two domestic loads. The temperature of the domestic hot water is measured with the dhw sensor.

3.3 Technical specifications

Electricity supply : 230V (-10%, +10%) - 50 HZ

Value of the water probes (Boiler and Domestic hot water)

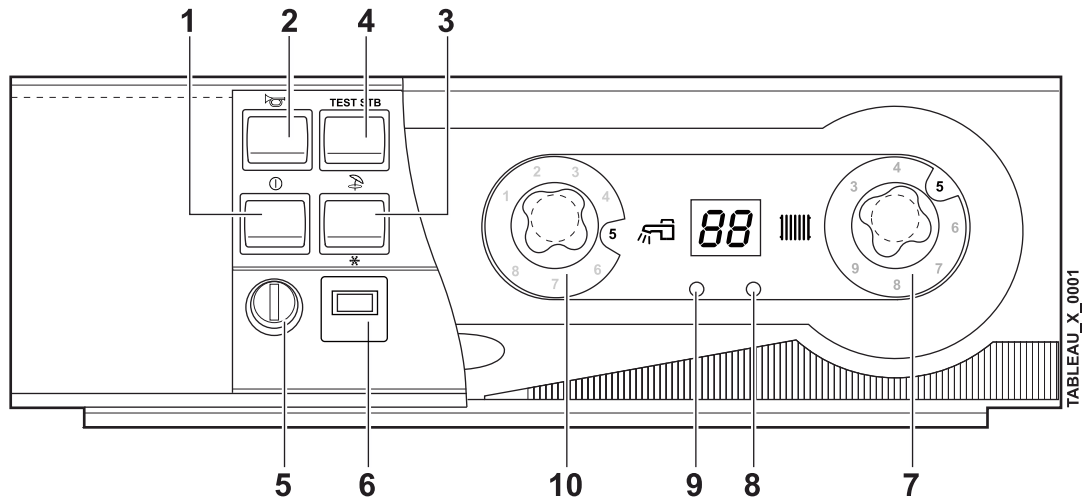
Temperature in °C	Resistance in ohm	Temperature in °C	Resistance in ohm
0°C	32 014 Ω	50°C	3 661 Ω
10°C	19 691 Ω	60°C	2 535 Ω
20°C	12 474 Ω	70°C	1 794 Ω
30°C	8 080 Ω	80°C	1 290 Ω
40°C	5 372 Ω	90°C	941 Ω

■ Conformity / Marking


This product complies to the requirements to the european directives and following standards:

- 2006/95/EC Low Voltage Directive
- Reference Standard: EN 60.335.1
- 2004/108/EC Electromagnetic Compatibility Directive
- Generic standards: EN1000-6-3 , EN 61000-6-1

4 Presentation



1. General ON / OFF switch


Position  : Start


Position  : Stop

2. Alarm indicator

This indicator lights up when the burner is on safety (failure).

3. Summer / Winter switch

WINTER position  : Heating and domestic hot water working.

SUMMER position  : Only domestic hot water operating. If no accumulator is connected, the boiler remains off.

i The stopping of the heating accelerator is set at 12 minutes after moving to "Summer" mode.

4. Test-STB button

Button kept pressed down, safety thermostat test cutting the pump(s).

5. Safety thermostat with manual reset

Set to 110° C

6. X control panel: Timed circuit breaker (4 A)

7. Electronic thermostat

Set the boiler temperature between 30° C and 90° C using manual setting

8. Indicator lights up

Boiler temperature display

When preparing domestic hot water

9. Indicator lights up


Domestic hot water display

10. Electronic thermostat

Regulating the storage temperature of domestic hot water between 10° C and 80° C

i After switching on, the system performs an automatic purge of the accumulator interchanger for one minute by intermittently operating the domestic load pump and the heating pump. This purge sequence is deactivated if the temperature in the accumulator is above 25° C.

5 Commissioning

 **The first start-up is to be performed by your installation/ commissioning engineer**

Before starting the boiler, check if the installation **is filled with water**

Start the boiler in the following order :


- Place the boiler thermostat 7 in the required position. If necessary, change the position of the maximum temperature.
- When preparing domestic hot water:
Place thermostat 10 on the required setting. Setting 6 (approx 60° C) recommended.

This value must always be below the temperature limiter for the domestic hot water load.


- Check that safety thermostat 5 is properly set. To do so, Unscrew the safety thermostat cover and press the reset button using a screwdriver.
- Place the Summer / Winter switch 3 on Winter ❄️.
- Place the Stop /Start 1 switch on Start ⌚.

6 Assembly, electrical connections and installer's settings


6.1 Control panel assembly


 Refer to the manual delivered with the boiler.

6.2 Connecting the boiler sensor

 Refer to the manual delivered with the boiler.

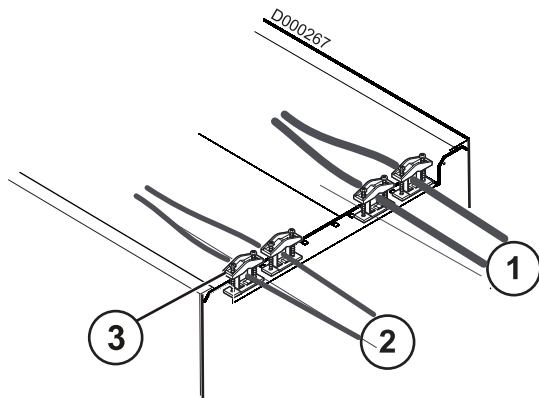
6.3 Electrical connections

 Only qualified professionals may carry out electrical connections, always with the power off.

 As the electrical wiring has been carefully checked in the factory, the internal connections on the control panel must not be changed in any way.

Electrical connections must match the electrical diagrams delivered with the equipment and comply with the instructions in the manual.

The equipment must have a power supply equipped with a omnipolar switch with an opening distance above 3 mm. The earthing must comply with the NFC 15.100 (France) or the RGPT (Belgium) standards.




- ① Power supply 230 V
- ② Sensors
- ③ Cable clamps

All connections are made with the terminal boxes designed for that purpose on the back of the boiler's command board.

The connection cables enter the boiler via the openings on the back panel, these openings may be used later for cable guides.

These cables will be fixed on to the control panel with cable clips (supplied in a separate bag).

 The available output per outlet is 450 W (2 A, with $\cos \varphi = 0,7$) and the inrush current must be lower than 16 A.

The sensor cables have to be separated from the 230V circuit cables.

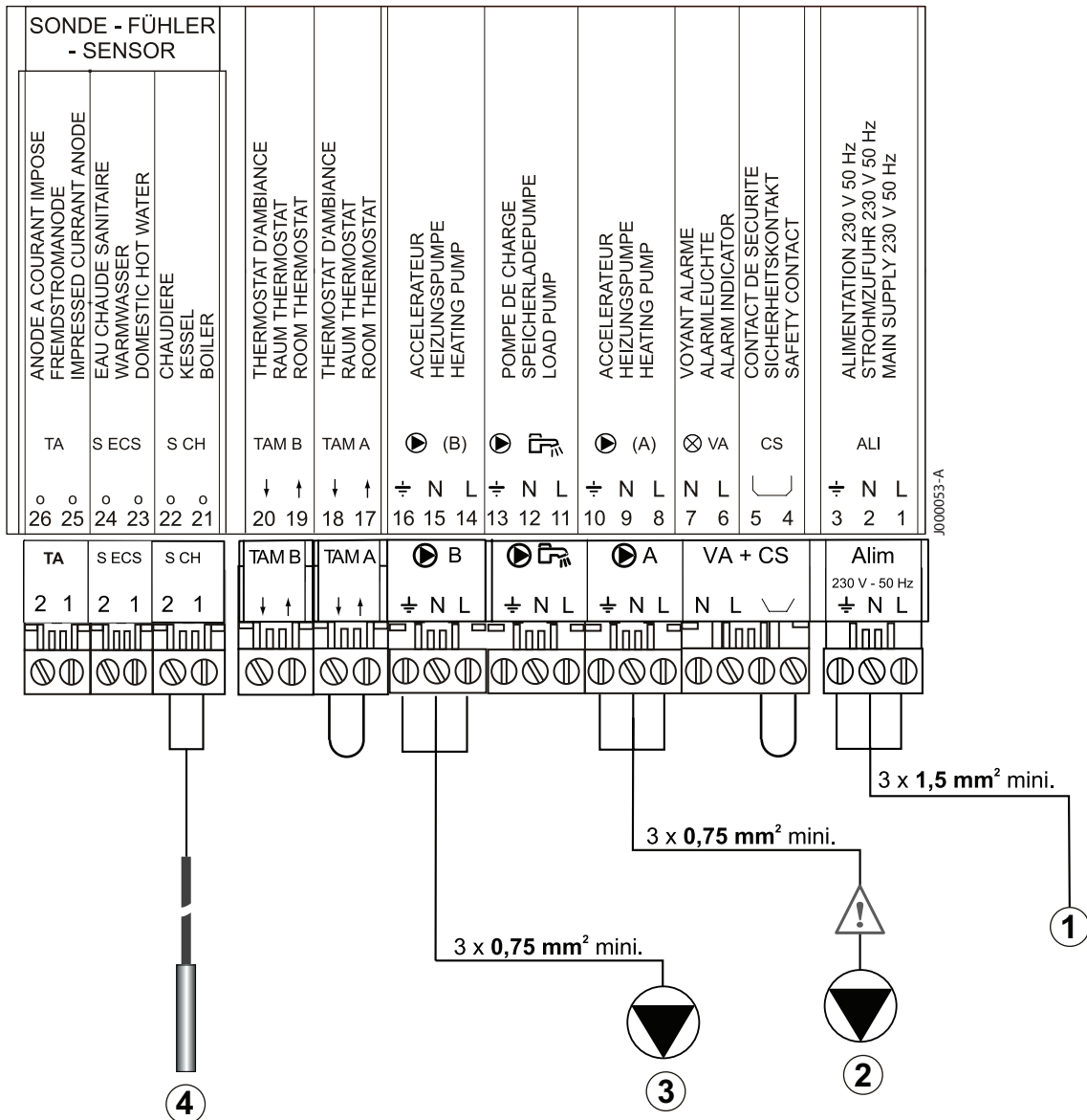
 In the boiler : Use the 2 wire guides on either side of the boiler.

Outside the boiler : Use 2 pipes or cable guides at least 10 cm apart.

All electrical connections are made on the marked bars located under the boiler's card screen. Power supply connection is made using a 3 wire cable with a 1,5 mm² diameter on the 3 plot bar (terminals 1, 2, 3) located under the boiler's card card. For other electrical connections, use the 3 wire cable with a diameter of 0,75 mm².

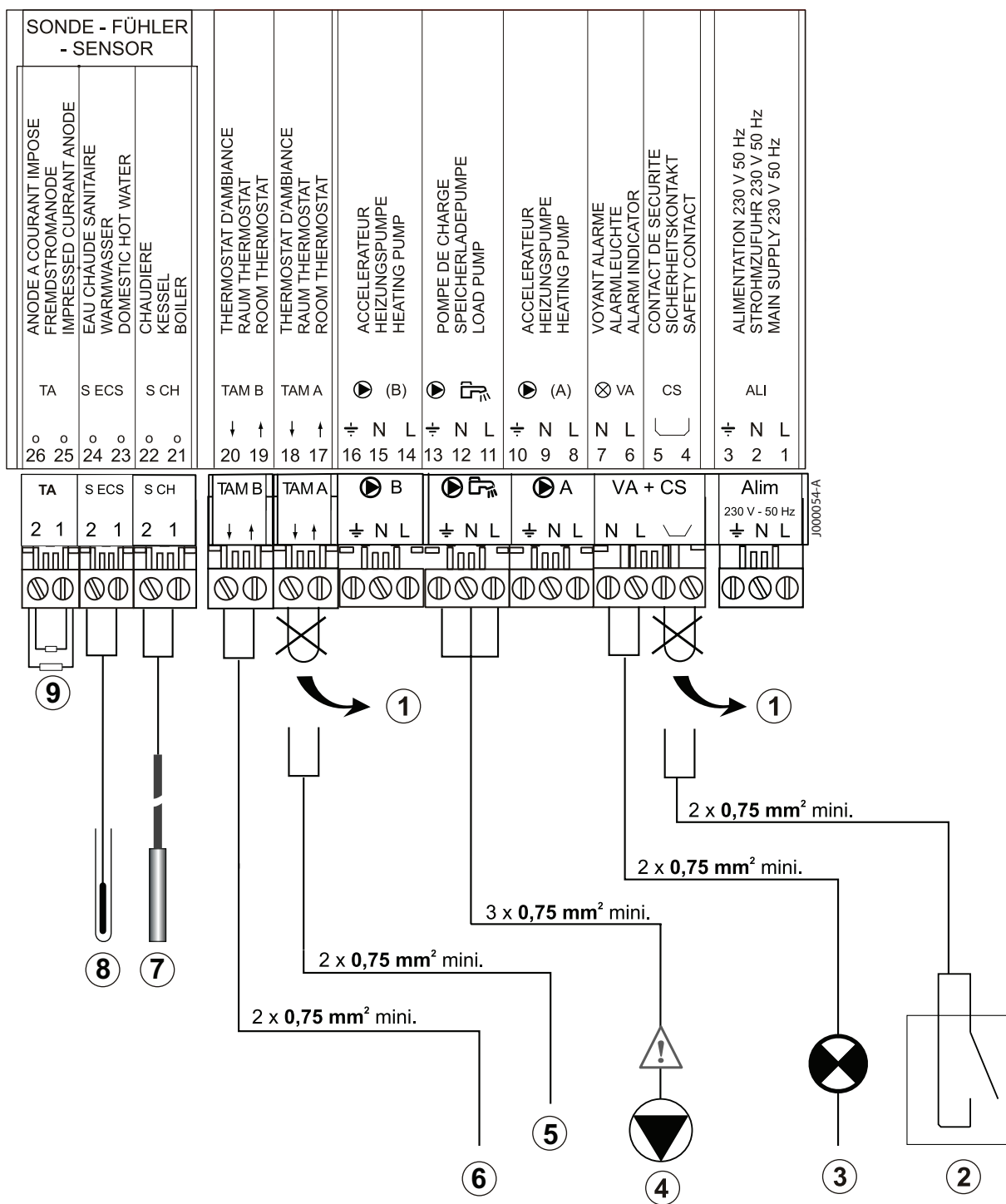
Keep to the polarity shown on the terminals: phase (L), neutral (N) and earth \perp .

6.3.1 Basic connections



- 1 Power supply 230 V
- 2 Heating pump Circuit A
- 3 Heating pump Circuit B
- 4 Boiler sensor

6.3.2 Connecting the options



- 1 Remove bridge
- 2 Safety contact
- 3 Alarm indicator
- 4 DHW pump
- 5 Room thermostat Circuit A
- 6 Room thermostat Circuit B
- 7 Boiler sensor
- 8 Domestic hot water sensor (optional *)
- 9 TAS protection connector (optional *)

* DHW sensor with TAS simulation connector for the connection of a domestic hot water calorifier without titanium anode

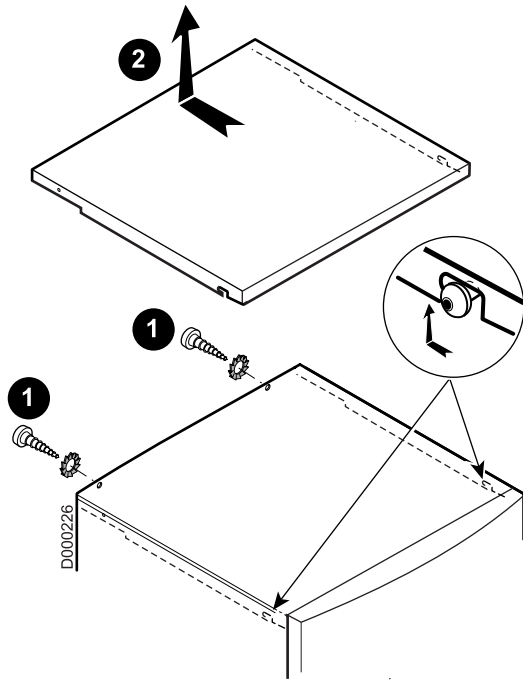
If only one circuit is used, connect the ambient thermostat to circuit A and do not bridge this connector.

- **Connection to a flue gas thermostat (TF)**
When used in combination with a wood fired boiler : the flue gas thermostat is connected on the terminals (CS) after having removed the existing bridge.
- **Safety contact connection (CS)**
Terminals (CS) after having removed the bridge : allows the connection of a safety device (e.g. low water pressure switch, fire safety, ...).

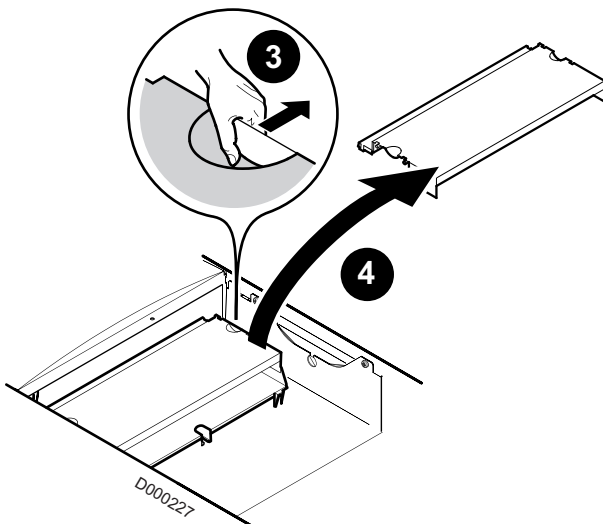
6.4 Installer's settings

! The settings below have different functions and configure the installation. They may only be changed by a qualified professional.

- ▶ Access to the potentiometers for setting the domestic hot water pump timer and the domestic hot water load temperature limiter.

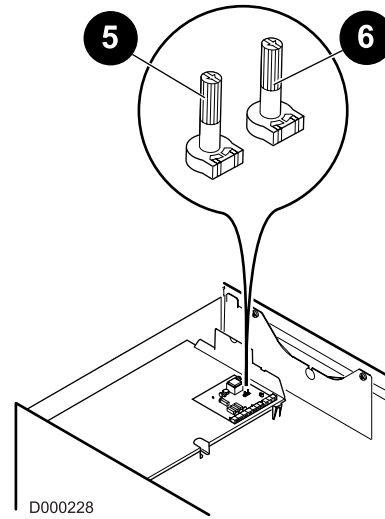


- 1 Take out the 2 nuts and bolts from the back of the boiler.
- 2 Remove the upper panel from the boiler.



- 3 Loosen the protection for the flat bars on either side.
- 4 Disassemble the protective cover from the flat bars.

- Set the domestic hot water load temperature limiter



8575N075A



The potentiometer (6) on the boiler's flat bar allows the temperature of the boiler to be regulated whilst the hot water is being heated.

The load temperature setting may be between 60 and 90° C (factory setting 75° C).

- Setting the timer for the domestic hot water pump

8575N075A



The potentiometer (5) on the boiler's flat bar allows the timing of the domestic hot water pump to be set.

The timer has a setting range from 0 to 10 minutes (factory setting 4 minutes).


- Reassembly

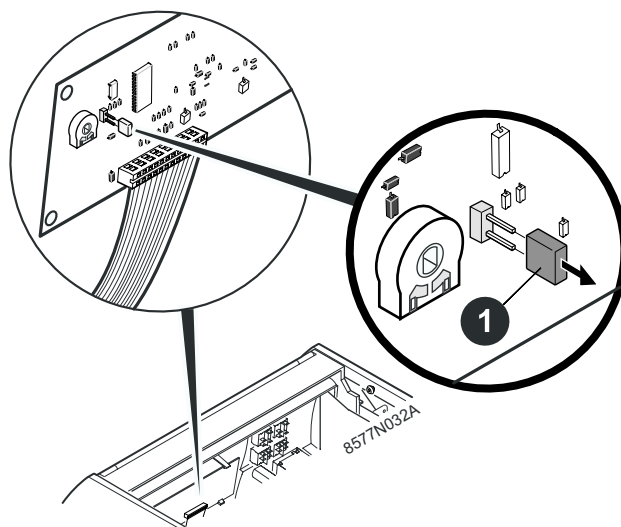
When the setting has finished, assemble the protective cover for the bars and the upper panel in the reverse order as disassembly.

! Do not leave out the toothed washers.

6.5 Deactivating hot water priority

When the domestic hot water priority is deactivated, the heating is not cut off during the hot water heating phases.

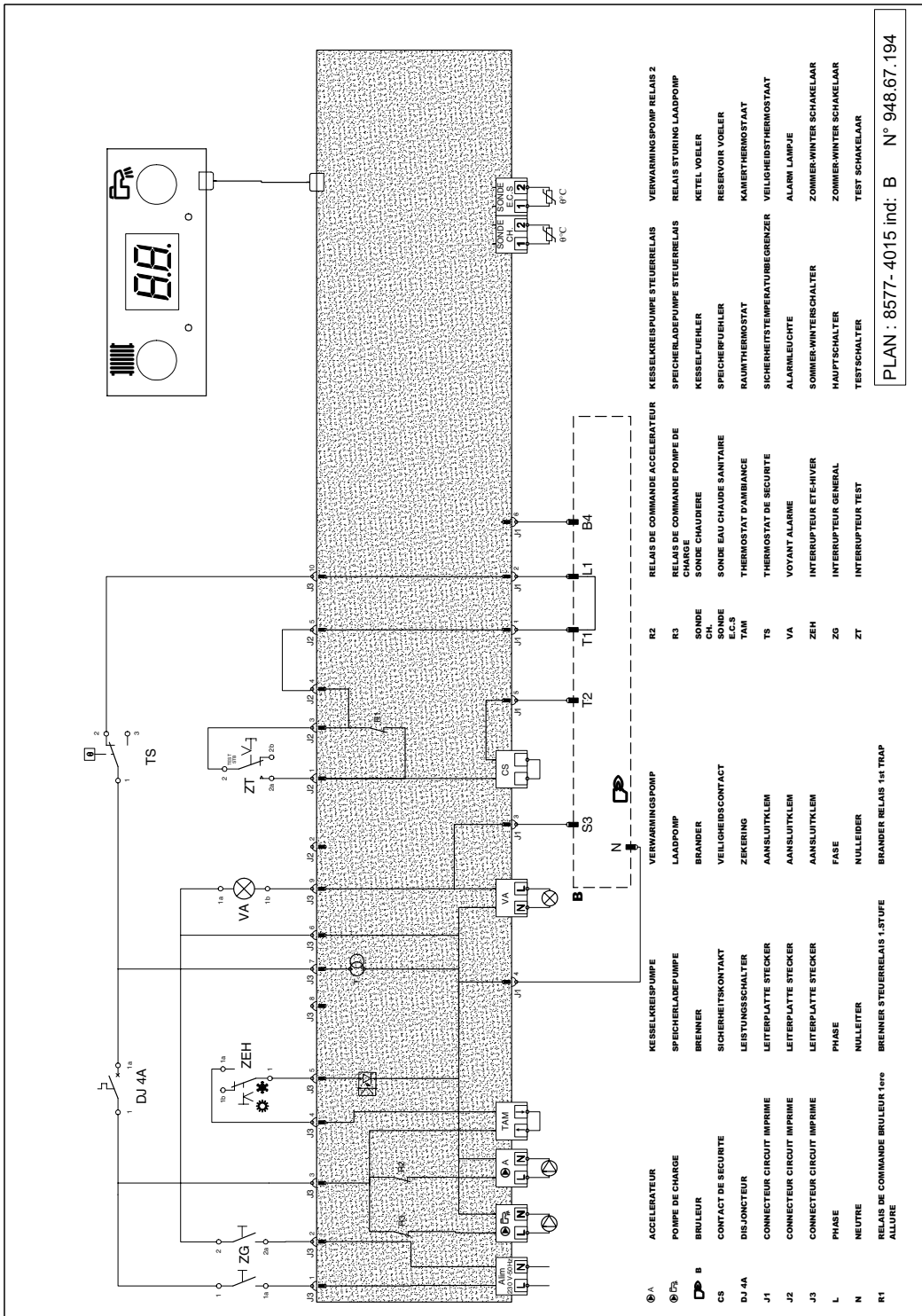
 Cut the power supply to the boiler.



6.6 Heating pump timing

The timer for the heating pump is set at 12 minutes after the room thermostat contact has opened or when switching into summer mode.

6.7 Electrical principle diagram



7 Alarm messages

In the event of a fault, the display may show the following messages ::

Message	Faults	Probable causes	Solution
AL 50	Boiler sensor	The sensor circuit has been broken or short circuited.	Advise the installer. See comments below.
AL 52	Domestic hot water sensor	The sensor is cut	
AL td	Titanium anode	The titanium anode is in open circuit or the tank is empty.	Check that the titanium anode is properly connected or fill the dhw tank.
AL tc		A short circuit has occurred on the titanium anode or connection reversed.	Check that there is no short circuit or an inversion of the wires of the titanium anode.

Operating mode in case of a fault :

AL 50 : The installation is stopped.

AL 52 : In case of a hot water sensor fault, the installation continues to operate, but the heating the domestic hot water is no longer assured.

AL td and AL tc : Production of domestic hot water is stopped. This may be reactivated for 24 hours by disconnecting and reconnecting the power supply to the boiler.

There are 2 options :

- With a domestic hot water tank protected by a titanium anode: the tank is no longer protected against corrosion. This will mean that the accumulator is no longer protected.

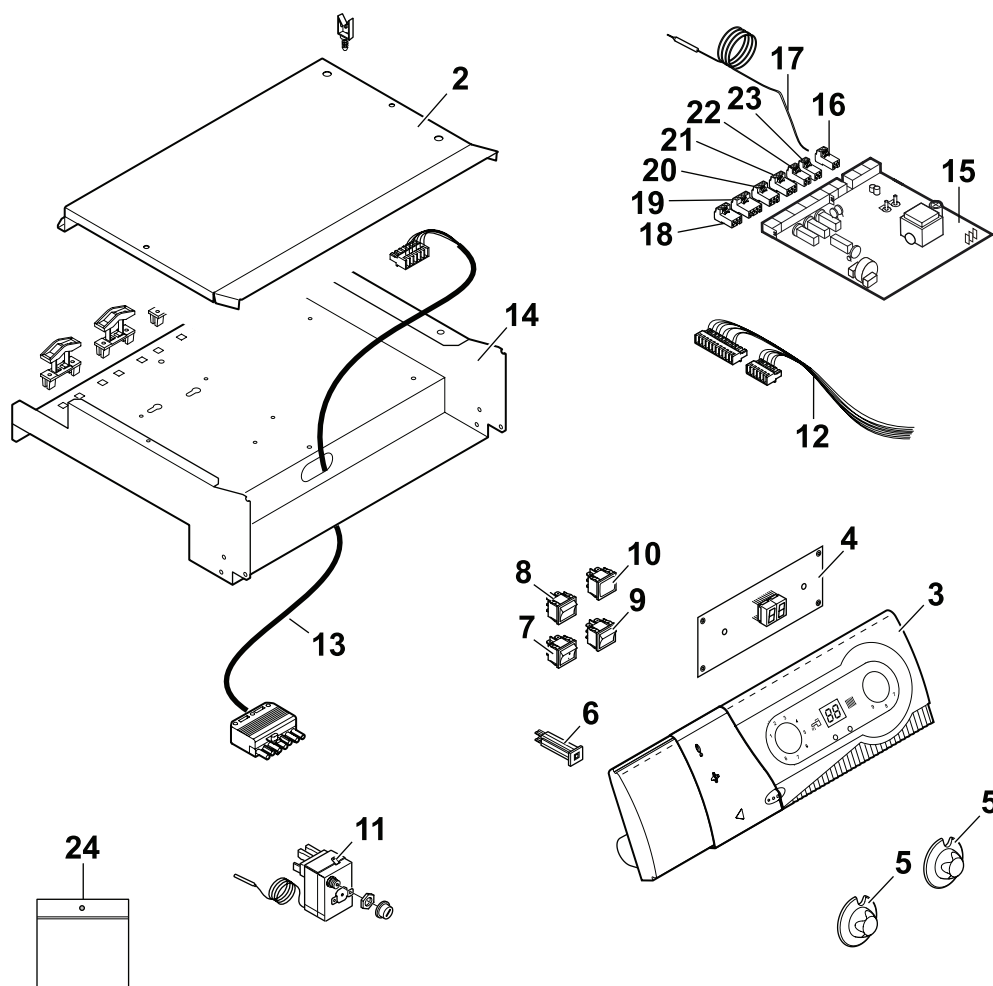
Contact **NECESSARELY** your installation engineer.

- With a domestic hot water tank protected by a magnesium anode: check that the connector delivered with AD212 - C100000030 package is placed on the sensor p.c.b.. Check that the AD212 - C100000030 container connector, with the 22 kOhm resistance and a 100 nF capacitor, is properly connected to terminals **TA 25-26**.

8 Spare parts

i To order a spare part, quote the reference number next to the part required.

X control panel



J000055

■ X control panel

Ref.	Code no.	Description
-	-	X complete control panel (Package FT74)
2	85778502	Card cover
3	97864073	Front panel
4	200000248	Tested central card unit
5	85775500	Setting button + Pin
6	95340288	Timed circuit breaker (4 A)
7	185000035	Bipolar switch
8	95325028	Bipolar inverter switch
9	95325027	Green bipolar switch
10	95216220	Red indicator
11	85000032	Safety thermostat 110 °C
12	85774900	cable form
13	85754945	Burner cable
14	85778505	Supporting frame
15	88065564	Basic relay card
16	300008953	Boiler sensor
17	95362446	KVT sensor 60 l. 1 m
18	30000975	3 pt power supply connector
19	200006051	4 pt connector AV+SC
20	300009074	3 pt connector A pump/SV
21	300009077	3 pt connector auxiliary pump
22	85754920	Connector 2 pt assembled TAM A
23	85754949	Connector 2 pt assembled TAM B
24	85775501	Screw bag

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Subject to alterations.

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