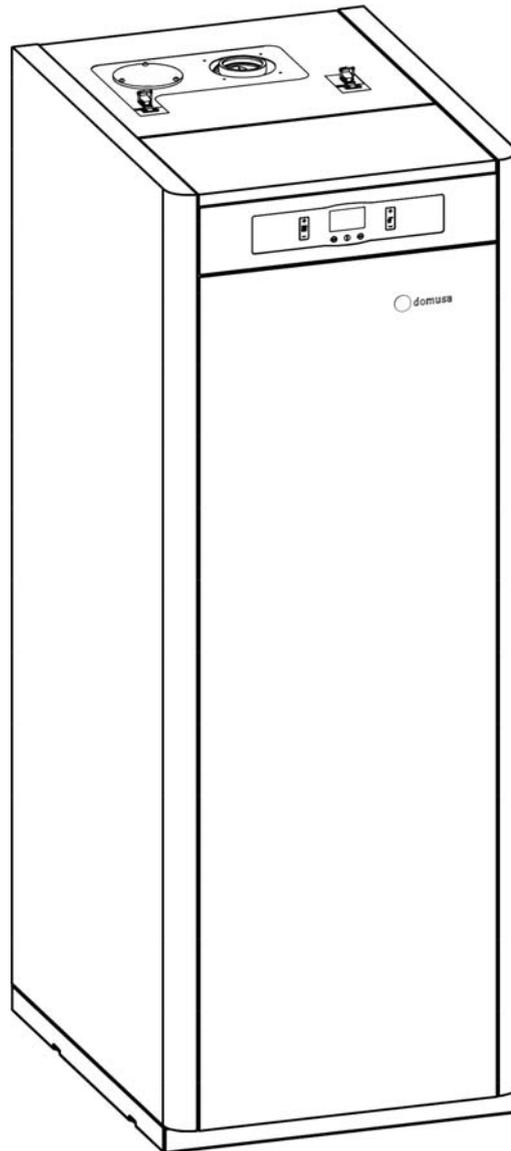


OPERATION USER GUIDE

→ AVANTTIA



DOMUSA
T E K N I K

Thank you for choosing a DOMUSA TEKNIK heating boiler. From the range of **DOMUSA TEKNIK** products you have chosen the **Avanttia** model. With a suitable hydraulic installation, this boiler is capable of providing you with the temperature comfort suitable for your home, as well as balanced and economical Domestic Hot Water (DHW) production.

This manual forms an essential part of the product and it must be given to the user. Read the warnings and recommendations in the manual carefully, as they contain important information on the safety, use and maintenance of the installation.

These boilers are to be installed by skilled personnel only, in accordance with the legislation in force and following the manufacturer's instructions.

The start-up of these boilers and any maintenance operations must only be carried out by **DOMUSA TEKNIK's** Authorised Technical Assistance Services.

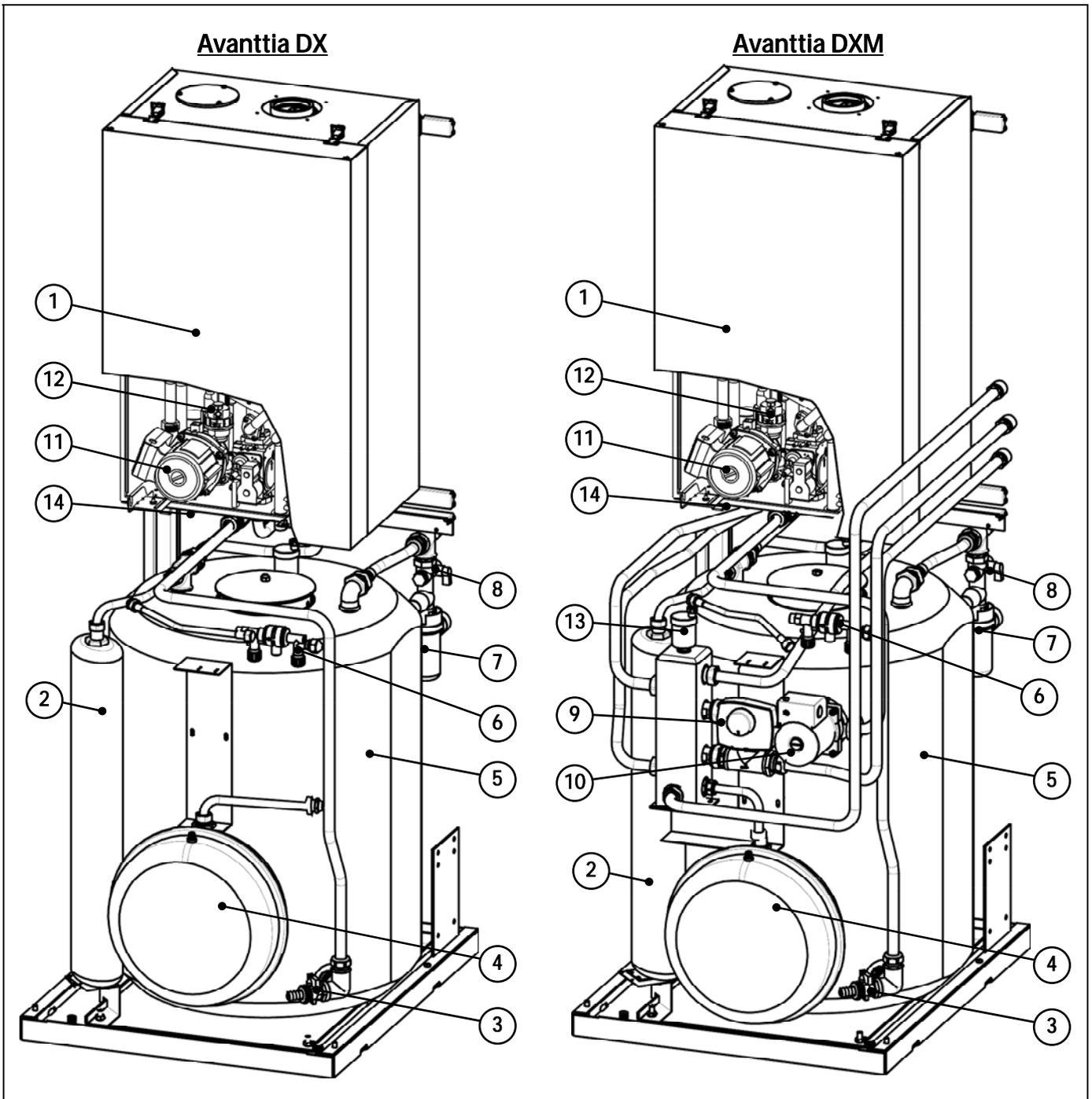
The instructions shall include the substance of the following: This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of 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.

Incorrect installation of these boilers could result in damage to people, animals or property, and the manufacturer will hold no liability in such cases.

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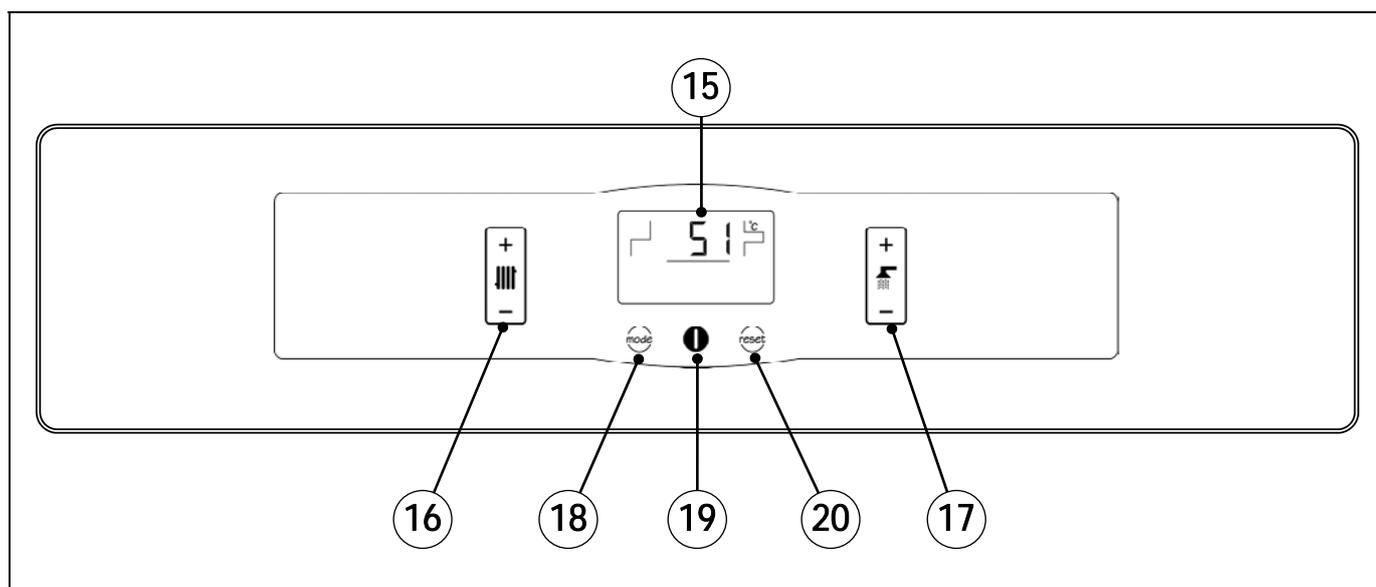
1 COMPONENTS DIAGRAM



- 1. Heat exchanger.
- 2. DHW expansion vessel.
- 3. Main primary circuit drain.
- 4. Heating expansion vessel.
- 5. DHW storage tank Inox.
- 6. Disconnect fill.
- 7. Siphon safety group.

- 8. Safety group.
- 9. Heating mixed circuit circulation pump.
- 10. Motorized 3 way valve.
- 11. Heating circuit circulation pump.
- 12. Automatic boiler drain valve.
- 13. Automatic air vent.
- 14. Main heating circuit drain.

2 CONTROL ELEMENTS



15. Digital display:

This is the main boiler functioning display, on which all the operating information, settings and values appear. This display is also used to access the appliance's user and service settings. In standard operating mode (default display), the actual boiler temperature is shown. If malfunction occurs, an alarm code will appear on the digital display instead of the temperature.

16. Boiler temperature touch button:

This is used to select the boiler setpoint temperature. It is also used to disable the hot water function.

17. DHW temperature touch button:

This is used to select the setpoint temperature for domestic hot water. It is also used to disable the DHW function.

18. MODE touch button:

This button is used to access and browse the different menus.

19. ON touch button:

This button switches the boiler on and off.

20. RESET touch button:

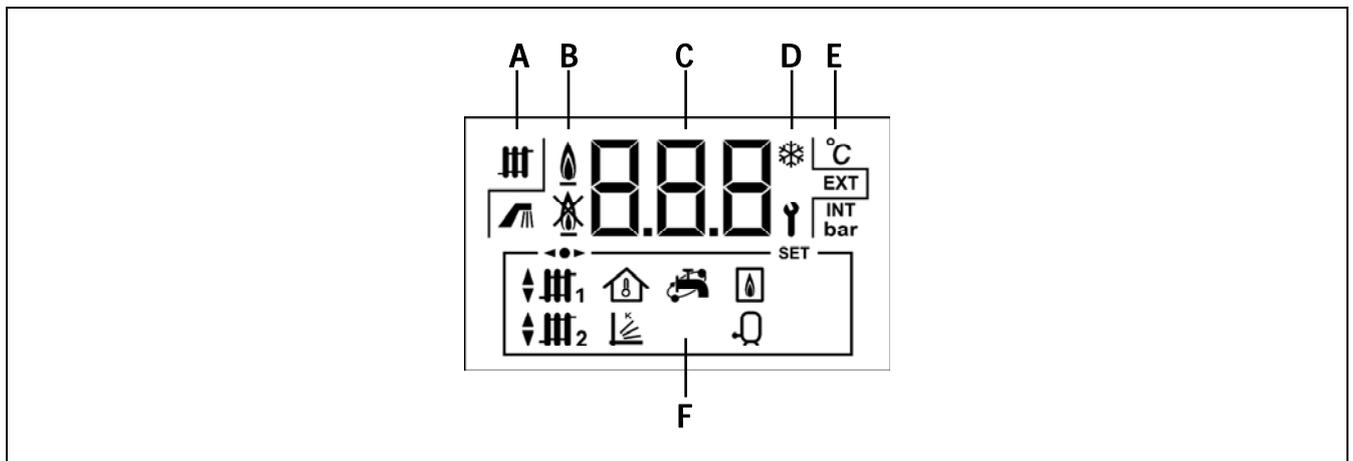
When the boiler is in lock-out mode, the RESET button is pressed to reset the lock-out and restore "Standard" functioning. If you are modifying any of the settings or browsing the menus, you may press the RESET button to exit the menu WITHOUT SAVING and return to the previous menu level.

3 DIGITAL DISPLAY

The **Avanttia** boilers are electronic and have a display **(15)** for viewing the different boiler settings. The display has various zones where different icons and numbers appear to indicate the different statuses.

3.1 Operation in “standard” display mode

Display presentation in “standard” mode:



- A** Indication of boiler status:
- Heating function enabled.
 - DHW production enabled.
- B** Indication of burner status:
- Burner functioning.
 - Boiler lock-out.
- C** Numerical display.
- D** Special operating icons.
- Anti-frost function:** This flashes when the boiler’s anti-frost function is enabled.
 - Servicing spanner:** Steady: When any of the boiler’s technical settings on the “*Service menu*” are being browsed or modified.
Flashing: When manual functioning of any of the outlets is forced.
- E** Auxiliary icons.
- °C** Steadily lit when the digits show a temperature.
 - bar** Steadily lit when a value or setting connected with the boiler water pressure is shown.
 - EXT** Steadily lit when a value or setting connected with the outside temperature is shown.
 - INT** Steadily lit when a value or setting connected with the temperature inside the home or settings connected with the LAGO FB OT+ are shown.
- F** Operating mode icons (see next page).

 **cd1 radiator:** This appears on the display when the circulating pump of direct circuit 1 is switched on (**BC1** on and **Sr1** not connected) or when a value or setting connected with direct circuit 1 is shown.

 **cd2 radiator:** This appears on the display when the circulating pump of direct circuit 2 is switched on (**BC2** on and **Sr2** not connected) or when a value or setting connected with direct circuit 2 is shown.

 **cm1 radiator:** This appears on the display when the circulating pump of mixed circuit 1 is switched on (**BC1** on and **Sr1** connected) or when a value or setting connected with mixed circuit 1 is shown. The arrows appear according to the mixed circuit 1 mixer valve control. The upper arrow indicates that the hot channel of the valve is open, and the lower arrow shows that the hot channel of the valve is closed.

 **cm2 radiator:** This appears on the display when the circulating pump of mixed circuit 2 is switched on (**BC2** on and **Sr2** connected) or when a value or setting connected with mixed circuit 2 is shown. The arrows appear according to the mixed circuit 2 mixer valve control. The upper arrow indicates that the hot channel of the valve is open, and the lower arrow shows that the hot channel of the valve is closed.

 **House:** Steadily lit when a value or setting connected with the temperature inside or outside the home or settings connected with the room thermostat or remote controls are shown.

 **K curves:** Steadily lit when a value or setting connected with operating in accordance with outside weather conditions or K curves is shown.

 **Recirculation:** Steadily: When any value or parameter related to the recirculation of DHW is displayed or when it's ON the recirculation of DHW function (the auxiliary input of the controller is closed).

Flashes: When the DHW recirculation pump is ON (Auxiliary boiler relay activated).

 **Boiler:** Steadily when viewing any value or parameter related to the gas boiler.

 **Hot water tank:** Steadily lit when a value or setting connected with the DHW hot water tank temperature or functioning is shown.

 **Browser:** Steadily lit when any of the "User Menus" or "Service menus" are being browsed.

SET Flashes when access is made to modify any of the settings.

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3.2 Changing the settings

The boiler adjustment settings are located in the *"User Menu"* and the *"Service menu"*. To access the *"User Menu"*, press . Then press  repeatedly to progress sequentially through the user settings. If the setting shown can be modified, SET will flash on the display and the setting can be changed by pressing the "+" and "-" symbols for DHW **(17)** and heating **(16)**.

4 OPERATION

The **Avanttia** boiler is designed to heat a heating installation and provide domestic hot water, instantly and/or by collection.

Standarizing functioning:

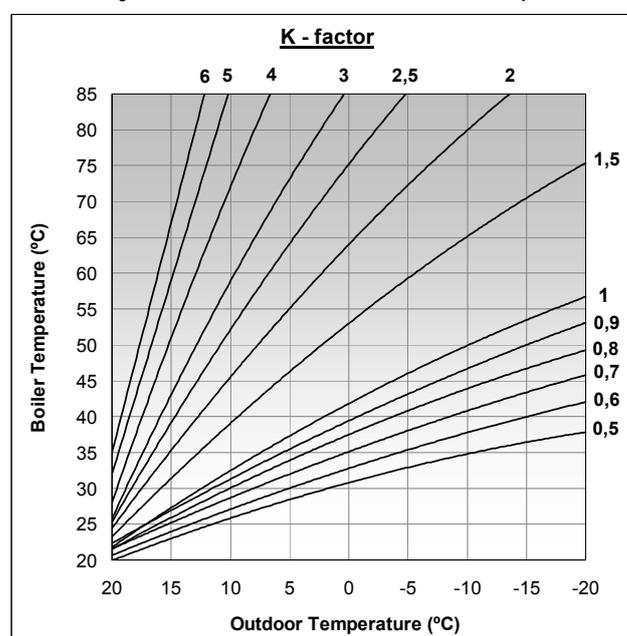
The boiler provides both heating and DHW in this mode. The burner and the circulating pump will switch on and the diverter valve will switch to DHW mode. When the DHW storage tank reaches the DHW setpoint temperature selected, it was ready to warm the heating installation, by putting the diverter valve in heating mode. The burner will shut down when the boiler reaches its selected setpoint temperature. The circulation pump will stop when the room temperature reaches or exceeds the temperature set on the installation's room thermostat (if it has one).

Functioning according to outdoor temperature conditions

When the boiler is connected to an outdoor temperature sensor (supplied with the boiler), the electronic control allows selecting the way of automatic adjustment of the outdoor temperature conditions. In this way of the boiler setpoint temperature value is exact automatically for the electronic control depending on the outdoor temperature conditions, according functioning curves (K), optimizing the setpoint to achieve the major degree of comfort and possible energy efficiency.

When the way of functioning with curves is activated, it will be necessary to select a curve K, instead of the boiler setpoint temperature value. The range of curves is 0,5 to 6,0.

K curve indicate the relation between the outdoor temperature sensor and the boiler setpoint temperature value. The following diagram show the relation for each point on the K curve. To select the correct curve for your installation, consult your installer or the "*Installation and Operation Instructions*" of the boiler.



IMPORTANT: To connect the outdoor temperature sensor to the boiler, carefully follow the connection instructions provided in the "*Electrical Connections*" section.

Disabling the heating function (Summer Mode):

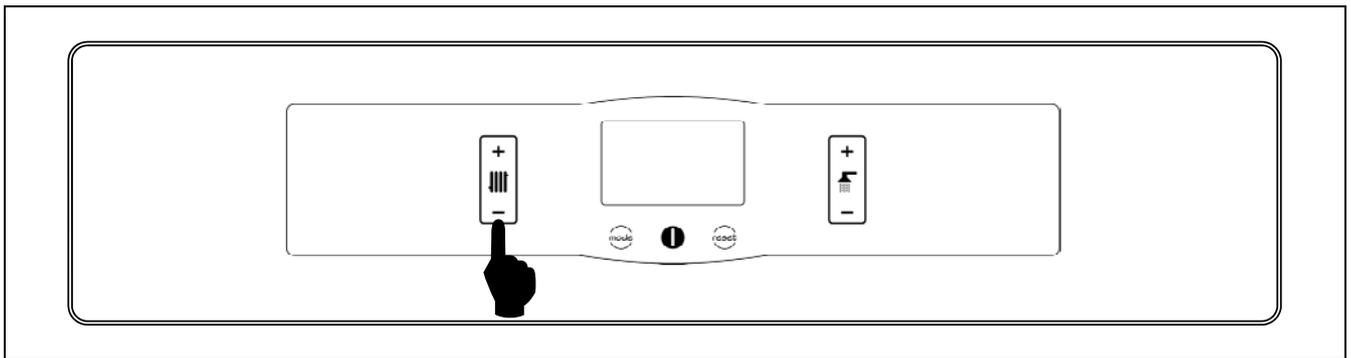
In this mode, the boiler provides DHW but not heating. To disable the heating function, press the heating "—" symbol **(16)** until "OFF" appears on the display.

Disabling the DHW function:

In this mode the boiler provides heating but not DHW. To disable the DHW function, press the DHW "—" symbol **(17)** until "OFF" appears on the display. The burner and the heating pump will switch on. The burner will shut down when the boiler reaches its selected setpoint temperature. The heating pump will stop when the room temperature reaches or exceeds the temperature set on the installation's room thermostat (if it has one).

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4.1 Selecting the boiler setpoint temperature



Depending on the boiler configuration, the Heating “+” and “—” symbols **(14)** may be used to select the desired boiler functioning temperature, as well as enabling and/or disabling the heating function.

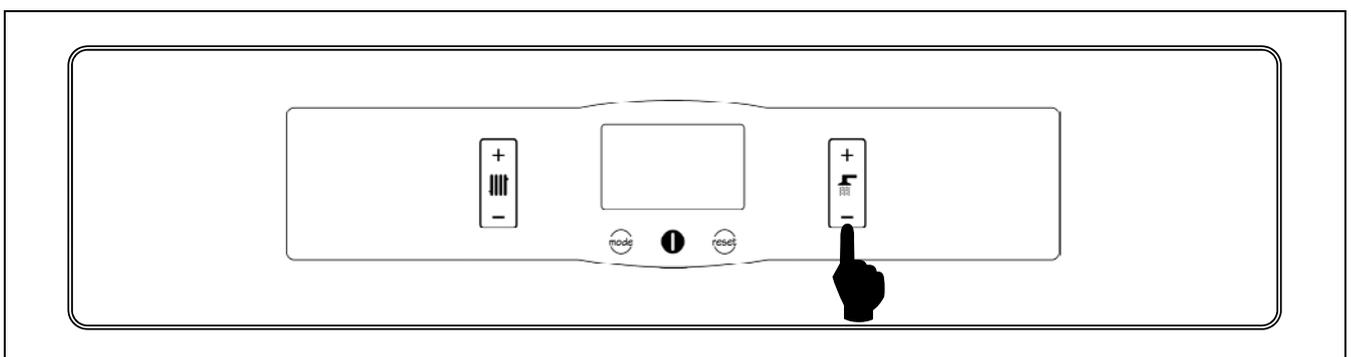
Providing there is a direct circuit that is not functioning according to the outside weather conditions (**P.11 = OFF** and/or **P.31 = OFF**), or when no second heating circuit is installed, the Heating “+” and “—” symbols **(16)** can be used to selected the desired boiler functioning temperature, in addition to enabling and/or disabling the heating function.

The boiler setpoint temperature can also be selected by pressing **mode** until the icon  appears on the display, with the word **SET** flashing. The setting can be changed by pressing the Heating “+” and “—” symbols **(16)**.

In all other cases, pressing the Heating “+” and “—” symbols **(16)** will only enable and/or disable the heating function.

The permitted boiler setpoint temperature range is 25 - 85 °C. Model **Avanttia** boilers are condensing boilers. In order to obtain maximum boiler performance and energy savings, it is recommended to select a setpoint temperature of 60 - 70 °C, providing this is permitted by the heating system installed and the insulation conditions of your home.

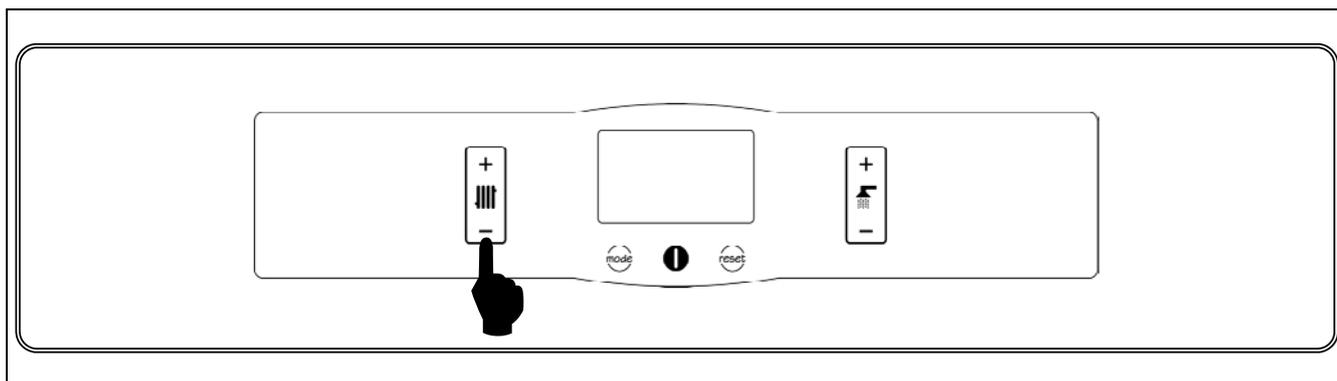
4.2 Selecting the DHW setpoint temperature



The desired DHW temperature can be selected by pressing the DHW “+” and “—” symbols **(17)**. If they are not pressed for 2 seconds, the display will return to “standard” mode.

The DHW setpoint temperature can also be selected by pressing **mode** until the icon  appears on the display, with the word **SET** flashing. The setting can be changed by pressing the DHW “+” and “—” symbols **(17)**.

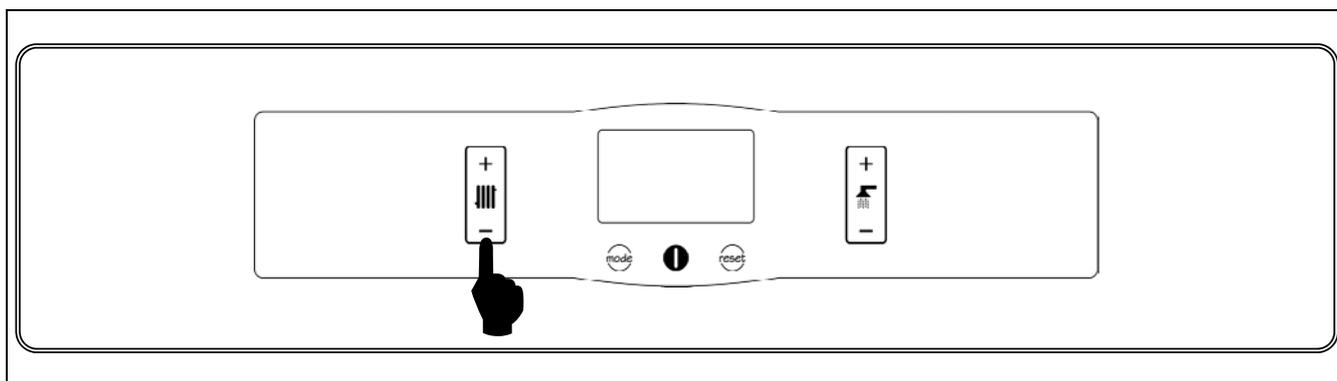
4.3 Selecting the setpoint temperature of heating circuit 1



The flow temperature of the circuit may be selected, providing heating circuit 1 is a mixed circuit (heating pump of circuit 1 (BC_1) and the mixer valve (M_1) and sensor (Sr_1)) and it is not functioning in accordance with outside weather conditions ($P.11 = \text{OFF}$). To select it, press **mode** to browse until the icon $\updownarrow \text{III}_1$ appears on the display with the **SET** symbol flashing. The temperature can be changed by pressing the Heating “+” and “—” symbols (**16**).

However, if the boiler is functioning according to outside weather conditions (external EVT sensor connected and $P.10 = \text{ON}$ and $P.11$ not OFF), the circuit flow temperature cannot be selected; only the K curve can be selected with the $P.11$ setting.

4.4 Selecting the setpoint temperature of heating circuit 2



The flow temperature of the circuit may be selected, providing heating circuit 2 is a mixed circuit (heating pump of circuit 1 (BC_2) and the mixer valve (M_2) and sensor (Sr_2)) and it is not functioning in accordance with outside weather conditions ($P.31 = \text{OFF}$). To select it, press **mode** to browse until the icon $\updownarrow \text{III}_2$ appears on the display with the **SET** symbol flashing. The temperature can be changed by pressing the Heating “+” and “—” symbols (**16**).

However, if the boiler is functioning according to outside weather conditions (external EVT sensor connected and $P.10 = \text{ON}$ and $P.11$ not OFF), the circuit flow temperature cannot be selected; only the K curve can be selected with the $P.31$ setting.

When both the boiler’s circuits are functioning with an external sensor, the Heating “+” and “—” symbols (16**) can only be used to enable or disable the heating function.**

5 USER MENU

The "User Menu" shows the settings connected with boiler functioning at each given time, on the digital display.

To access this display mode, press . Press this button repeatedly to browse through the different settings available (see point 3.2). These settings are listed in the table below:

Nº.	Parámetro	Tipo	Rango	Pantalla
1	DHW setpoint temperature	Modificable	Off, 15 – 65 °C By default: Off	
2	Actual DHW temperature	Visual		
3	Boiler setpoint temperature	Modificable	Off, 25 – P.08 By default: Off	
4	Actual boiler temperature	Visual		
5	Water pressure	Visual		
6	Boiler setpoint temperature enabled	Visual		
7	Setpoint flow temperature of mixed circuit 1	Modificable	Off, 10 – 45 °C By default: Off	
8	Actual flow temperature of mixed circuit 1	Visual		
9	Setpoint flow temperature of mixed circuit 2	Modificable	Off, 10 – 45 °C By default: Off	
10	Actual flow temperature of mixed circuit 2	Visual		
11	Actual outdoor temperature	Visual		
12	Heating demand	Visual		
13	Display contrast	Modificable	1 – 5 By default: 3	

6 ADDITIONAL FUNCTIONS

The **Avanttia** boiler has the following additional control functions:

6.1 Antilegionella function

Using the **P.17** parameter, it is possible to activate the function of protection against Legionella bacterium. With the feature enabled, every 7 days, DHW or DHW recirculation circuit tank temperature rises up to 65 °C.

6.2 Pump anti-block function

This feature prevents the boiler circulation pumps from seizing up if they have been out of use for a long period. This system remains enabled while the boiler is plugged into the mains.

6.3 Anti-frost function

This function protects the boiler from freezing up during cold weather. If the boiler temperature drops to below 6 °C, the heating circulation pump will start up. If the boiler temperature continues to drop and reaches 4 °C, the burner will start up, heating the installation. When this function has been activated, it will continue working until the boiler reaches 8 °C. This system remains on standby while the boiler is plugged into the mains.

6.4 Boiler pressure sensor function

This function prevents boiler failure caused by a low water level and excess pressure in the boiler.. The pressure is detected by a pressure sensor (**8**), and its value appears on the control panel display (on the "User Menu"). If the pressure drops below 0.05 MPa (0.5 bar), the electronic control switches off the boiler and triggers an alarm on the display ("E02"). When the boiler pressure exceeds 0.25 MPa (2.5 bar), an alarm is triggered on the display ("HI") to warn of the excess pressure. If this should occur, we recommend calling the nearest **Technical Assistance Service**, and draining the boiler until the pressure is between 0.1 and 0.15 MPa (1 and 1.5 bar).

6.5 Resetting to factory default values

If these settings are wrongly adjusted or if the boiler functions incorrectly, all the original settings of all the parameters can be restored by selecting oH in parameter **P.26**.

6.6 Connecting the LAGO FB OT+remote control

The boiler has a terminal strip, **J5**, for connecting the LAGO FB OT+ remote control (see "Connection Diagram"). This allows the heating mode for circuit 1 to be switched off, according to the room temperature.

Installing the LAFO FB OT+ remote control enables the heating and DHW system to adapt to the scheduled times for use of the installation. It also optimises the installation's functioning, adapting the heating setpoint temperature to the room temperature and improving comfort.

6.7 Room thermostat connection

The boiler has two terminal strips, **J4** and **J6**, for connecting room thermostats or room chronothermostats (TA₁ and TA₂, see "Electrical Connection Diagram"). This allows the heating mode for each circuit installed to be switched off according to the room temperature. To connect it, remove the bridge joining the terminals of each terminal strip, **J4** and **J6**, and connect room thermostat N° 1 or N° 2 for circuits 1 or 2 respectively.

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Installing a room thermostat will optimise the performance of the installation, adapting the heating to your home's requirements and obtaining enhanced comfort. Also, if the thermostat allows the hours of functioning to be programmed (chronothermostat), it can adapt the heating system to the hours of use of the installation.

7 FUNCTIONING OF HEATING CIRCUIT 2 (OPTIONAL)

All the boiler models in the **Avanttia** range may optionally control a second heating circuit. For this second circuit to be controlled, a second circulating pump (**BC₂**) needs to be installed on the boiler if a direct circuit is required, or a pump (**BC₂**) and a mixer valve (**M₂**) if a mixed circuit is required. For correct installation, carefully follow the instructions given in the *"Installation with two heating circuits"* section of this manual.

Direct circuit functioning

Heating circuit 2 will work with the selected boiler setpoint temperature and the temperature of room thermostat 2 (**TA2**) (if the boiler has one). When circuit 2 is functioning with an external sensor (**P.10** = ON and **P.31** not OFF), the boiler temperature will depend on the outside temperature and the curve selected in setting **P.31**.

Mixed circuit functioning

Heating circuit 2 will work with the selected setpoint flow temperature for mixed circuit 2 and the temperature of room thermostat 2 (**TA2**) (if the boiler has one). When circuit 2 is functioning with an external sensor (**P.10** = ON and **P.31** not OFF), the setpoint flow temperature will depend on the outside temperature and the curve selected in setting **P.31**.

In both cases, the burner, the heating pump of circuit 2 (**BC₂**) and the mixer valve (**M₂**) (if the installation has one) will begin to function until the selected temperature is reached in the installation or on room thermostat 2 (if the installation has one). When the temperature of the installation drops below the selected boiler temperature, the burner will start up again, running the heating cycle.

8 LAGO FB OT+ REMOTE CONTROL (OPTIONAL)

A remote control (LAGO FB OT+) can optionally be supplied together with the **Avantia** boiler. This remote control can be used to fully operate the boiler from anywhere in the room in which it is installed. The LAGO FB OT+ remote control governs the parameters of heating circuit N° 1 and the installation's domestic hot water production.

This remote control allows the hours of home comfort to be programmed for heating circuit N° 1, adjusting the installation to the particular requirements of the home by measuring the room temperature and consequently adapting the installation temperature. The remote control can also be used to adjust the hot water and heating set point temperatures at any time, and for viewing the different boiler operation parameters. It also warns of any functioning anomalies affecting the boiler.

The LAGO FB OT+ remote control may optionally be connected to an external sensor, for measuring the outside temperature. With this option installed, the remote control can adjust the home comfort level (circuit N° 1) according to the weather conditions at each particular time, optimising fuel consumption and heating comfort in the home.

The LAGO FB OT+ remote control takes over the control of the boiler when it is connected to it. The different selectable boiler temperatures must be modified using the remote control. It is easy to install, only requiring 2 wires for communication between the boiler and the LAGO FB OT+ control. It is connected to the boiler by connecting the two wires on terminal strip **J6** (see "Electrical Connection Diagram"). For correct installation and functioning, carefully read the instructions enclosed with the remote control.

The following sections contain a general explanation of the different operating modes and options of the LAGO FB OT+ remote control.

NOTE: The "AF outdoor temperature sensor" indicated in the instructions manual of remote controller is not compatible with the boiler, so it is compulsory the use of "EVT outdoor sensor" (provided within the boiler) to measure the outdoor temperature.

8.1 Functioning without an outdoor sensor

Conventional heating installation (direct circuit)

The maximum temperature for heating circuit N° 1, the heating times and the desired room temperatures can be selected on the remote control. The LAGO FB OT+ remote control will calculate the boiler temperature required at each particular time, depending on the temperature of the room, and it will activate or disable the heating mode of circuit N° 1 depending on the heating times and room temperatures programmed.

Installation of heating circuit N° 2 (optional)

If the boiler is supplied with an second heating circuit, this circuit is adjusted and controlled via the boiler control panel (see "*Functioning of heating circuit N° 2 (optional)*").

8.2 Functioning with an external sensor (Optional)

If the LAGO FB OT+ remote control is fitted with an outdoor temperature sensor, it can calculate the heating temperature of heating installation N° 1 according with the outside weather conditions at each particular time, with optimum adjustment of the heating installation conditions for improved heating comfort in the home and energy savings.

The maximum temperature and an operating curve for heating circuit N° 1, the heating times and the room temperatures desired can all be selected on the remote control (see instructions enclosed with the LAGO FB OT+ remote control). The LAGO FB OT+ remote control calculates the required boiler temperature at each particular time, depending on the temperature inside the home and the outside weather conditions, in accordance with the operating curve selected (parameter 01 on the "User Menu" of the LAGO FB OT+), switching the heating on and off in accordance with the heating times and the room temperatures programmed.

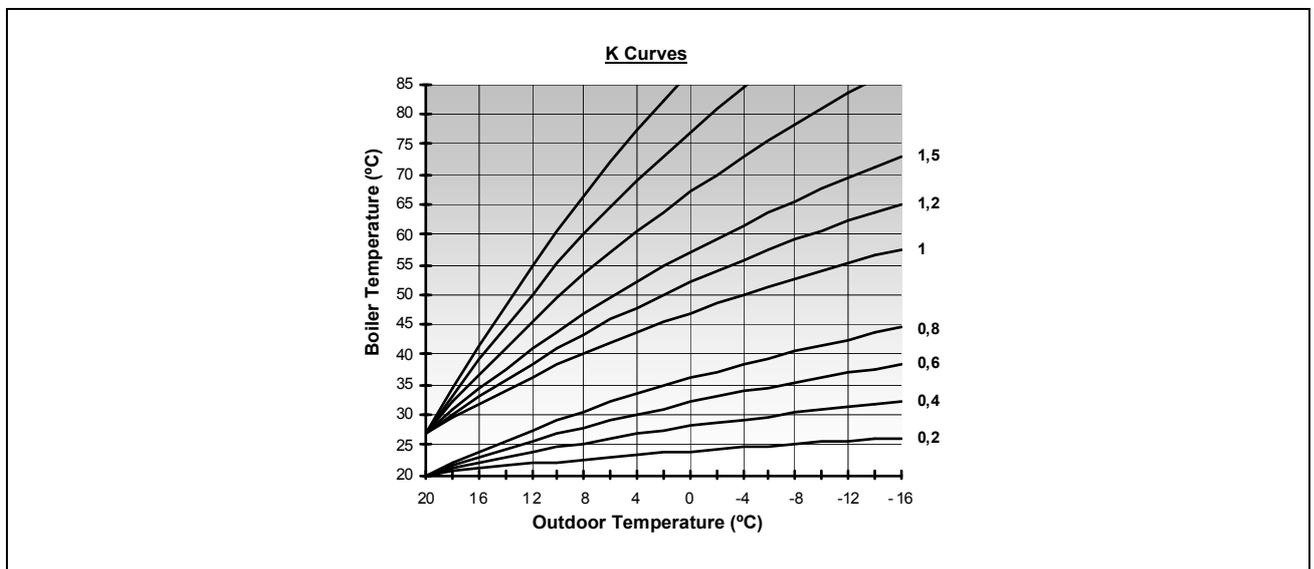
Depending on the type of heating circuit, the following adjustments should be made:

Conventional heating installation (direct circuit)

In setting 01 of the LAGO FB OT+ "User Menu", select a curve of at least 1. The maximum boiler temperature can also be selected on the LAGO FB OT+ remote control.

Installing low temperature heating (mixed circuit)

In setting 01 of the LAGO FB OT+ "User Menu", select a curve of less than 0.8. We also recommend selecting a maximum flow temperature NO HIGHER THAN 85°C, to protect the underfloor heating installation from overheating. To do this, select the maximum flow temperature of heating circuit 1 in setting 07 of the LAGO FB OT+ "Service Menu".



NOTE: The "AF outdoor temperature sensor" indicated in the instructions manual of remote controller is not compatible with the boiler, so it is compulsory the use of "EVT outdoor sensor" (provided within the boiler) to measure the outdoor temperature.

8.3 DHW function

When the remote control is connected to an **Avanttia** boiler, the desired DHW temperature and the desired hours for DHW use can be selected on the LAGO FB OT+ remote control. The LAGO FB OT+ remote control regulates the DHW tank temperature at each particular time, and enables or disables the DHW function according to the times scheduled.

9 START-UP

The start-up of the boiler, for the validity of warranty to be in force, is to be carried out by an authorised Technical Assistance Service. Prior to proceeding to such a start-up, the following steps will be performed:

- Check that the boiler is properly connected to the electric power supply.
- Check that the installation is filled with water (the pressure gauge must indicate a pressure between 0.1 and 0.15 MPa (1 and 1.5 bar)).
- Check for the proper chimney installation.
- Check that the gas supply connection is properly installed.
- Drain the air off the boiler gas circuit by opening the shutoff valve of the gas line and loosening lightly the valve gas intake pressure tapping for a moment as, otherwise, the air would be forced to come out slowly through the pilot burner injector.
- Check that the heating circuits outlet and return flow valves are opened, if any.
- Turn the chronothermostat or LAGO FB OT+ remote control (if these are fitted) to the desired setting.
- It is compulsory to do a combustion analysis in the boiler, using a proper tester. The combustion test will be done through the hole for this purpose, placed in the plastic pipe of combustion products exhaustion inside the boiler. If test is out of margins described in the section "Combustion adjustment", it will be necessary to adjust the combustion.

To start up the boiler, hold down the **I** button, select the desired setpoint temperatures and turn the chronothermostat or LAGO FB OT+ remote control (if these are fitted) to the desired setting.

10 BOILER DELIVERY

The Technical Assistance Service, once the first start-up has been carried out, will explain the boiler operation to the users by informing them about the most necessary remarks.

The installer will be responsible for explaining to the users the operation of any control or regulation device that is a part of the installation and it is not supplied with the boiler.

11 SHUTTING DOWN THE BOILER

To switch off the boiler, hold down the **I** button. In **Off mode, while the boiler is plugged into the mains and connected to the fuel installation**, its heating and hot water functions will be switched off but the anti-frost protection and pump anti-block functions will remain activated.

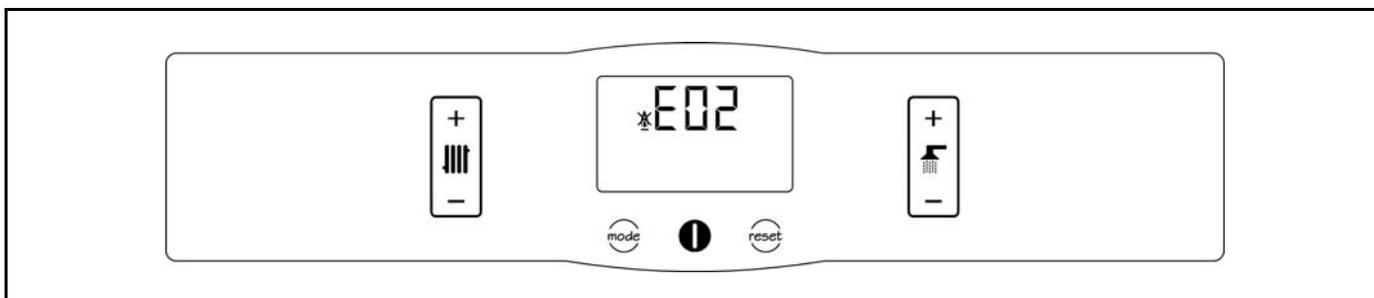
To shut down the boiler functioning completely, unplug it from the mains and cut off the fuel supply.

12 DRAINING THE BOILER

The water is drained from the boiler by opening the air drain valve **(12)**, located inside the boiler on the lower left hand side of the heat exchanger. Connect a flexible tube to this valve and run it to a drain. After draining the boiler, close the valve again and remove the flexible tube.

13 SAFETY CUT-OUTS

The boiler's electronic control system may activate the following safety cut-outs to stop the boiler functioning. When one of these safety cut-outs occurs, the boiler will stop functioning, a cut-out code will flash on the display and the red alarm warning pilot light will flash on the control panel.



If any of the safety cut-outs described below should occur repeatedly, switch off the boiler and call your nearest official technical assistance service.

13.1 Temperature safety cut-out

When this cut-out occurs, the **"E30"** code (temperature alarm) will begin to flash on the digital display and the alarm warning pilot light will flash on the control panel. The burner will switch off and stop heating the installation.

This occurs when the boiler exceeds a temperature of 110 °C. To unblock it, wait until the boiler drops to below 100 °C and press the button .

13.2 Burner cut-out

When this cut-out occurs, the code **"E09"** will begin to flash on the digital display and the flame failure symbol. The burner will switch off and stop heating the installation.

This occurs as a result of an anomaly in the burner or in the fuel installation. To unblock it, press the button .

13.3 Low pressure cut-out

When this cut-out occurs, the code **"E02"** will begin to flash on the digital display and the flame failure symbol. The burner and the boiler circulation pumps will switch off, cutting off the heating and water flow to the installation.

This occurs when the boiler pressure drops to below 0.05 MPa (0.5 bar), preventing the boiler from functioning when the water is drained from the installation, due to either leakage or maintenance operations. To unlock it, press the button .

14 BOILER MAINTENANCE

To maintain the boiler in perfect working order, a yearly overhaul is to be performed by DOMUSA TEKNIK's authorised personnel.

Boiler and flue maintenance

The most important aspects to be checked are as follows:

- The water pressure in the heating installation, **when the water is cold**, must be between 0.1 and 0.15 MPa (1 and 1.5 bar). If it is not between these values, it must be filled until they are reached.
- The control and safety devices (thermostats, gas valve, etc.) must function correctly.
- The burner and the inside of the boiler chamber must be clean. Soft brushes or compressed air are recommended for cleaning the boiler, to prevent damage. **Do not use chemical products.**
- The expansion vessel must be full, in accordance with the specifications on the vessel plate.
- Check the gas and water installations are completely sealed.
- The flues must be free of any obstacles and have no leaks.
- The gas flow must remain between the values indicated on the *Specifications Sheet*.
- The circulating pumps and mixer valves (if the boiler is equipped with these) must not be blocked.

Cleaning the boiler

The boiler does not require any special maintenance. **Yearly cleaning** at the end of the heating season will be sufficient. **The boiler chamber and burner should not be cleaned using chemical products or steel brushes.** After any cleaning operation has been carried out, it is important to ensure that several ignition cycles are performed to check all the elements are functioning correctly.

After checking the boiler is functioning correctly, ensure there are no leaks.

Draining the condensation water

The boiler condensation water drain outlet should not be altered in any way and it must be kept free of obstructions. Yearly cleaning of the condensation collection siphon is recommended.

If a neutralisation system is installed at the condensation drain outlet, it should undergo periodical maintenance, in accordance with the manufacturer's instructions.

Cleaning products

Never use chemical products to clean the boiler. A plastic brush is sufficient, if the cleaning is carried out annually.

The cleaning of the boiler and hydraulic circuit will have lasting effects if water with a hardness of over 25°F is treated previously. For softer water no treatment is required. In any case, a descaling pump should be used to carry out the descaling process.

Avanttia

Anti-frost precautions

The **Avanttia** boiler, have a function to prevent the installation from freezing, ensuring that the boiler is connected to the electrical power supply. In any case, and mainly in geographical zones where very low temperatures are usual, it is advisable to add anti-freezing liquid to heating circuit. When a very long period the boiler is not going to work, it is advisable **to empty the boiler totally**.

Boiler water characteristics

In case of water hardness of over 25-30°F, we recommend using treated water in the heating installation to avoid any scale deposits on the boiler.

Bear in mind that a scale deposit of even a few millimetres will cause a major reduction in boiler performance, as scale is a poor thermal **conductor**.

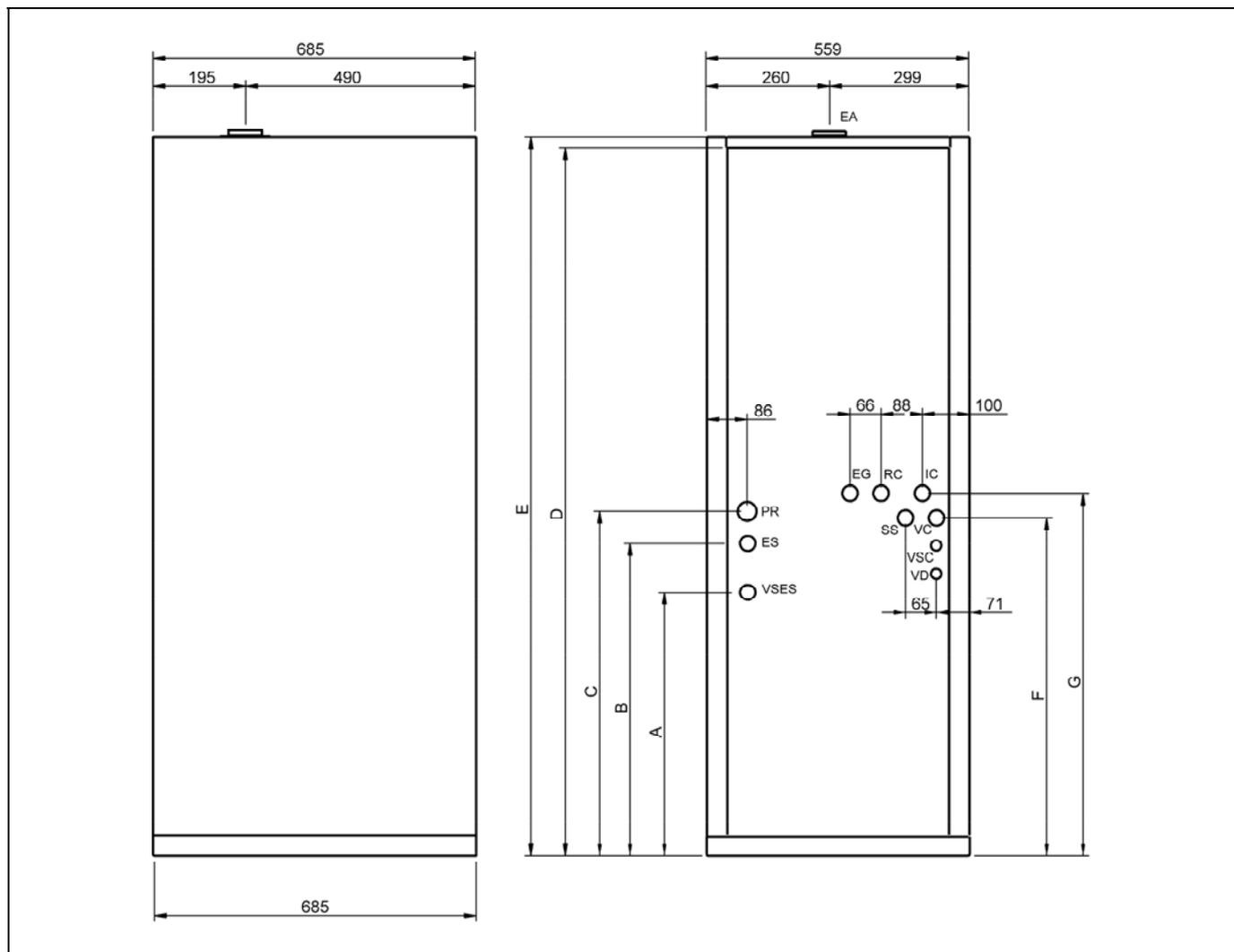
It is essential to treat the water used in the heating circuit in the following cases:

- Very long circuits (containing a large amount of water).
- Frequent filling of the installation.

If repeated partial or total draining of the installation is necessary, we recommend filling it with treated water.

15 DIAGRAMS AND MEASUREMENTS

15.1 Avanttia DX



	Connection
IC: Heating output.	3/4" M
RC: Heating return.	3/4" M
EG: Gas inlet.	3/4" M
ES: DCW inlet.	3/4" M
SS: DHW outlet.	3/4" M
PR: Recirculation outlet.	1/2" M
VSES: DHW safety valve.	-
VD: Disconnect exit.	-
VSC: Heating safety valve.	-
VC: Condensate drain.	-
EA: Gas removal / Air intake.	Ø60-100

	Avanttia 25 DX	Avanttia 37 DX
A	565	665
B	670	770
C	735	835
D	1520	1620
E	1545	1645
F	725	825
G	780	880

16 TECHNICAL CHARACTERISTICS

Specifications		Avanttia	
		25 DX / DXM	37 DX / DXM
Heating consumption (Max/Min)	kW	23,5 / 4,9	34,9 / 7,0
DHW heat consumption (Max/Min)	kW	23,5 / 4,9	34,9 / 7,0
Heating output (Max/Min) at 80/60 °C	kW	23,1 / 4,8	34,2 / 6,8
DHW output (Max/Min)	kW	23,1 / 4,8	34,2 / 6,8
Condensing heating output (Max/Min) at 50/30 °C	kW	25,2 / 5,2	37,6 / 7,5
Full load efficiency at Max/Min output, at 80/60 °C	%	98,1 / 97,4	98,0 / 97,6
Full load efficiency at Max/Min output, at 50/30°C (condensation)	%	107,2 / 106,9	107,7 / 106,9
Partial load (30%) efficiency, with 47 °C return temperature	%	101,6	101,9
Partial load (30%) efficiency, with 30 °C return temperature	%	108,4	108,3
Heat Loss through the case with burner switched on	%	0,1	0,1
Heat Loss through the chimney with burner switched on	%	1,8	1,9
Seasonal efficiency rate (SEDBUK rating)	-	A	
NOx class	-	5	
Category	-	II2H3P	
Type	-	Heating and instantaneous hot water production	
Heating output adjustment	-	Adjustable over entire Max/Min output range	
Type of heating installation	-	Close circuit	
Maximum heating pressure	MPa	0,3 (3 bar)	
Maximum heating temperature	°C	110	
Adjustable heating temperature range	°C	25 - 85	
Expansion heating vessel volume	l	7,5	12
Expansion heating vessel pre-load	MPa	0,1 (1 bar)	
Expansion DHW vessel volume	l	8	
Expansion DHW vessel pre-load	MPa	0,3 (3 bar)	
Minimum DHW pressure	MPa	0,7 (7 bar)	
Adjustable tank DHW temperature range	°C	15 – 65	
Capacity of storage tank	L	100	130
D.H.W. production in 10 min. ΔT = 30 °C	L	245	359
D.H.W. production in 1 hour. ΔT = 30 °C	L	830	1240

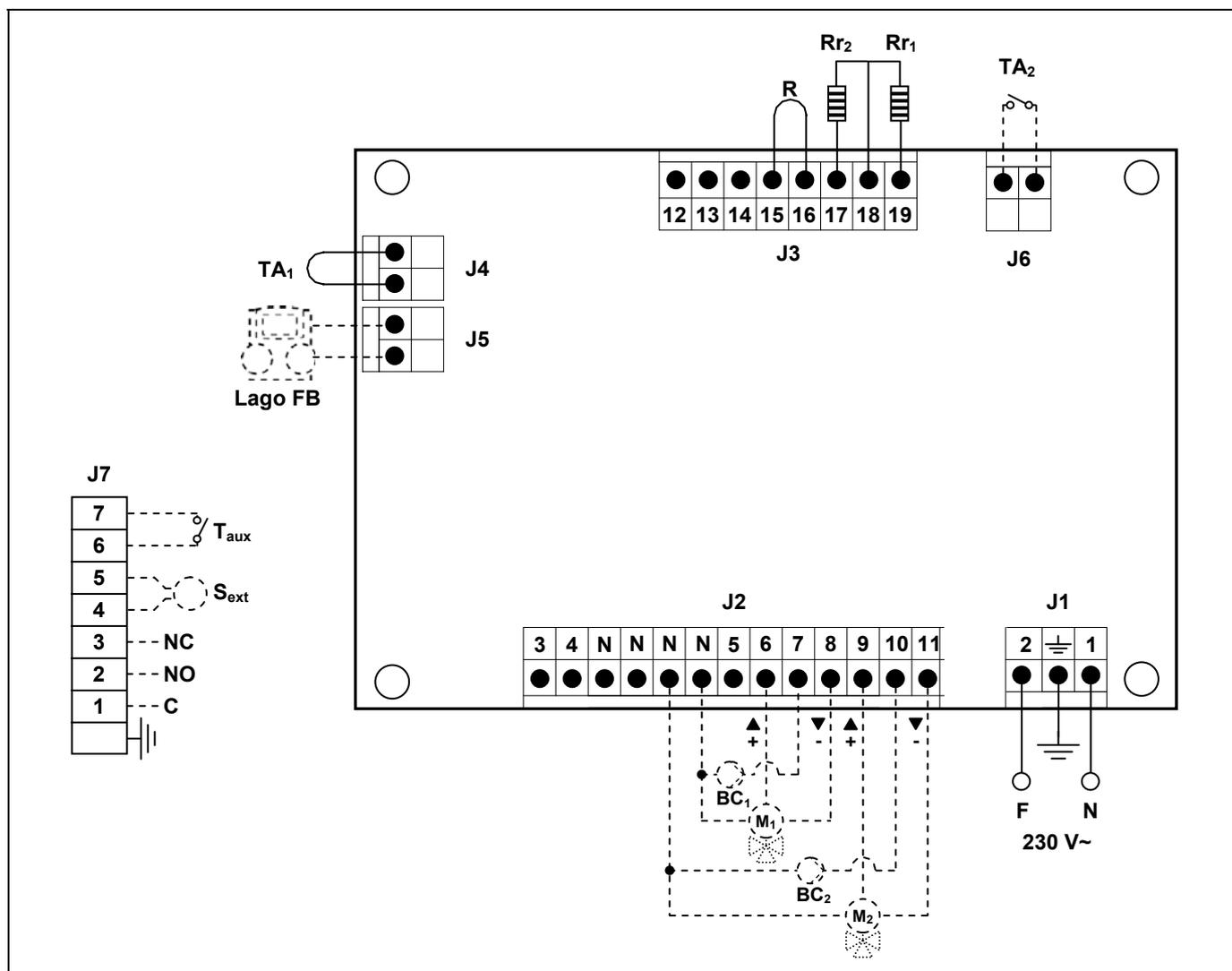
Avanttia

Specifications		Avanttia	
		25 DX / DXM	37 DX / DXM
Electrical supply	-	230 V~ / 50 Hz	
Nominal current	A	0,6	0,6
Electrical maximum consumption (DX/DXM)	W	315 / 415	
Electrical protection	-	IP X5D	
Boiler mounting system type	-	De pie	
Flue exhaust/Air intake system types	-	B23-B33-B53-C13-C33-C43-C53-C63-C83	
Flue exhaust/Air intake system diameters	mm	Coaxial Ø60/100 and Ø80/125 – Dual duct Ø80/80	
Maximum gas pipe pressure drop	Pa	167	167
Flue gas temperature	°C	63	63
Maximum flow of fumes	g/s	10,2	10,2
Max. horizontal coaxial length Ø60/100	m	20	
Max. vertical coaxial length Ø60/100	m	21	
Equivalent elbow length at 90° Ø60/100	m	1,3	
Equivalent elbow length at 45° Ø60/100	m	1	
Max. horizontal coaxial length Ø80/125	m	68	
Max. vertical coaxial length Ø80/125	m	70	
Equivalent elbow length at 90° Ø80/125	m	2,2	
Equivalent elbow length at 45° Ø80/125	m	1	
Equivalent length of adapter Ø60/100 => Ø80/125	m	0,5	
Max. dual duct length Ø80-Ø80	m	110	
Equivalent elbow length at 90° Ø80	m	2,2	
Equivalent elbow length at 45° Ø80	m	1,4	
Hydraulic connection diameter	Heating	3/4	3/4
	DHW	1/2	1/2
	Gas inlet	3/4	3/4
Dimensions (Width x Depth x Height)	mm	559 x 685 x 1545	559 x 685 x 1645
Weight	Kg	180 / 191	195 / 202

17 ELECTRICAL CONNECTION DIAGRAM

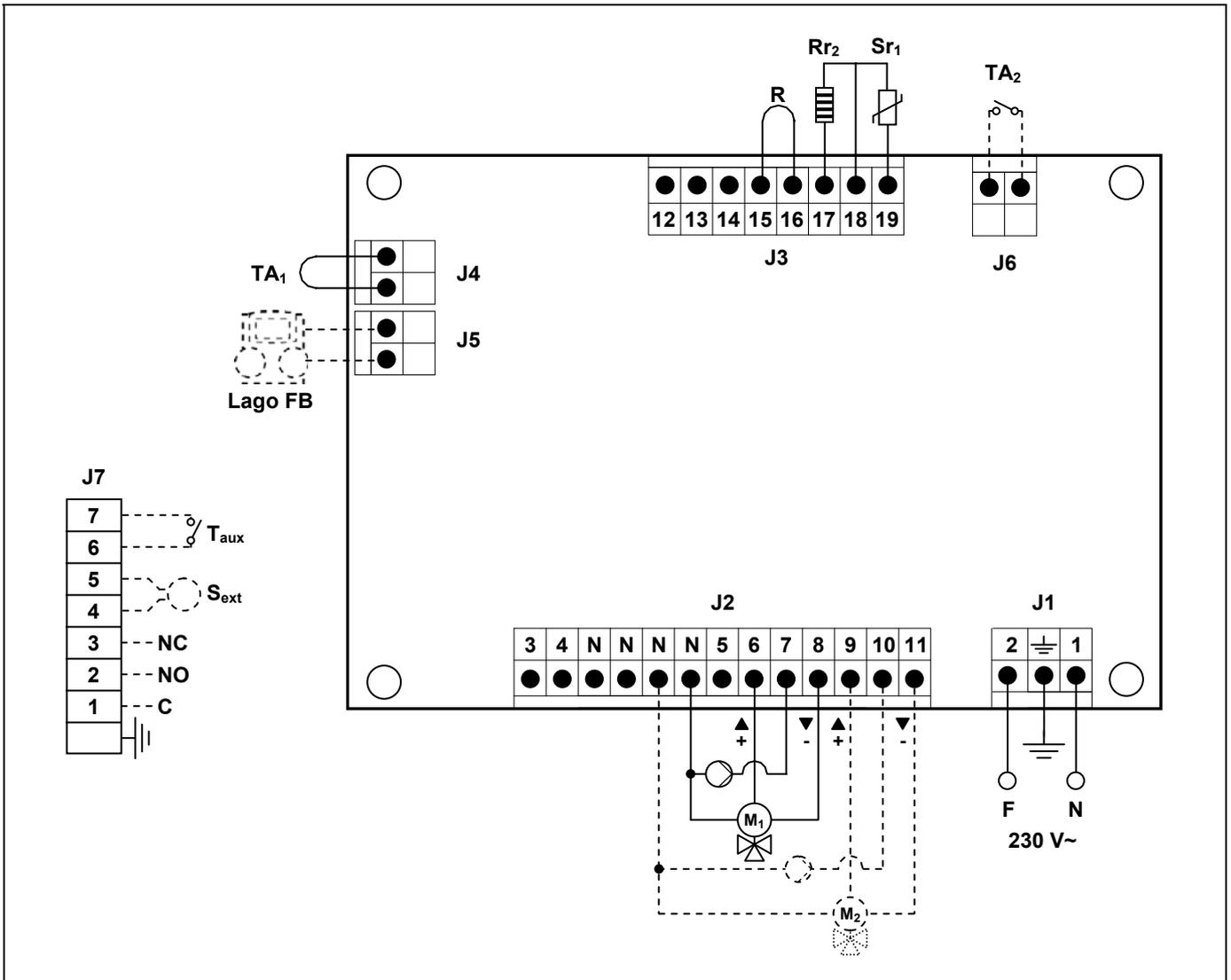
There are a series of removable terminal strips located on the rear of the control panel, for connecting the various options and components of this model. To connect them correctly, carefully follow the indications shown below:

17.1 Avanttia DX



- | | |
|--|--|
| <p>F: Phase.</p> <p>N: Neutral.</p> <p>BC₁: Heating circuit N. 1 circulating pump.</p> <p>BC₂: Heating circuit N. 2 circulating pump.</p> <p>M₁: Underfloor 3 way valve motor circuit 1.</p> <p>M₂: Underfloor 3 way valve motor circuit 2.</p> <p>TA₁: Heating circuit N. 1 room thermostat.</p> <p>TA₂: Heating circuit N. 2 room thermostat.</p> <p>Rr₁: Underfloor circuit N.1 option resistance.</p> <p>Rr₂: Underfloor circuit N.2 option resistance.</p> <p>Raux: Auxiliary relay.</p> <p>R: Phone relay.</p> | <p>C: Common of auxiliary relay.</p> <p>NO: Normally open of auxiliary relay.</p> <p>NC: Normally closed of auxiliary relay.</p> <p>Sext: Exterior room sensor.</p> <p>Taux: Auxiliary entrance.</p> <p>J1: Power supply connector</p> <p>J2: Components connector.</p> <p>J3: Sensor connector.</p> <p>J4: Room thermostat N. 1 connector.</p> <p>J5: Remote control connector.</p> <p>J6: Room thermostat N. 2 connector.</p> <p>J7: Principal connector (Orange).</p> |
|--|--|

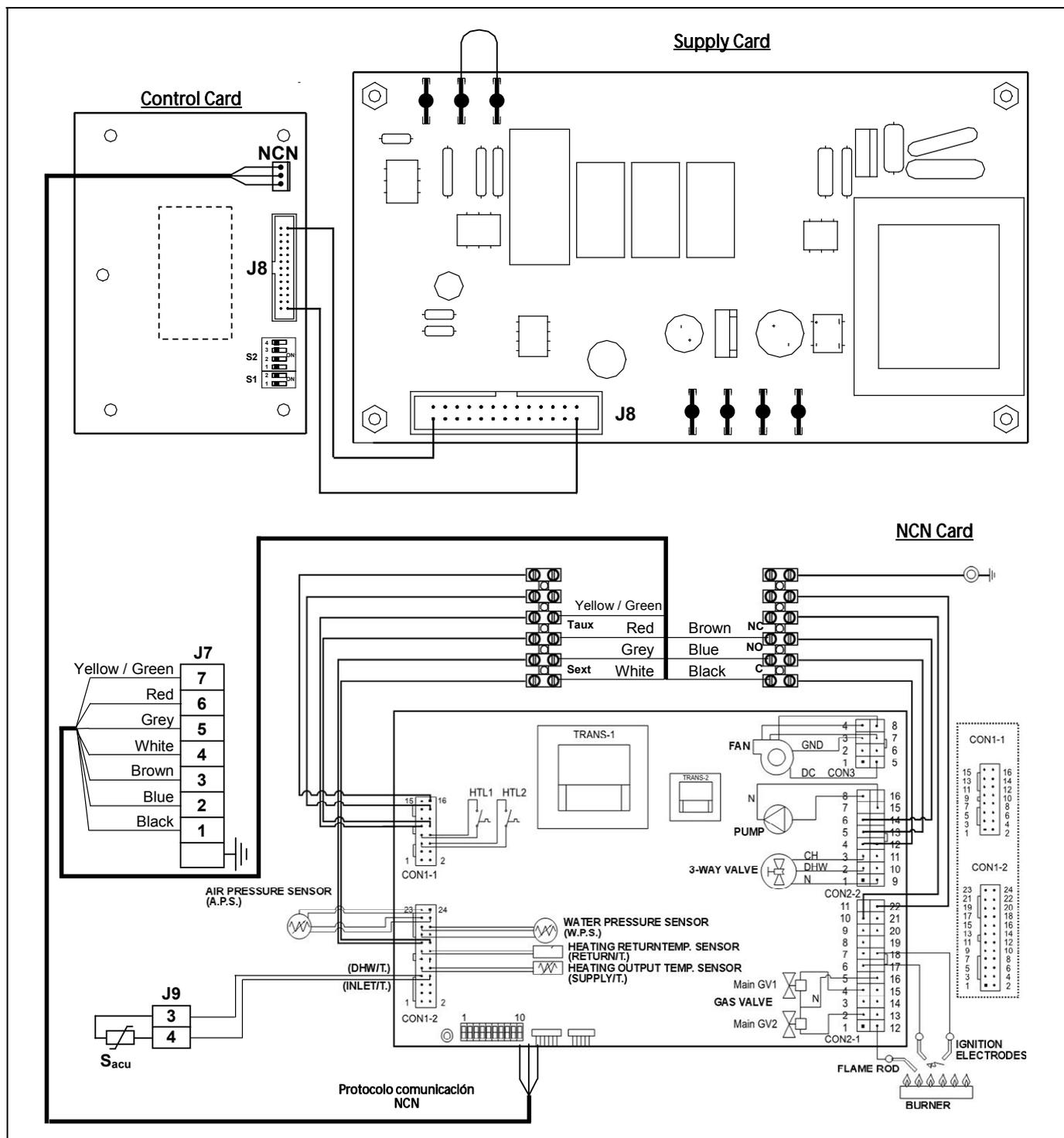
17.2 Avanttia DXM



- | | |
|--|---|
| <p>F: Phase.</p> <p>N: Neutral.</p> <p>BC₁: Heating circuit N. 1 circulating pump.</p> <p>BC₂: Heating circuit N. 2 circulating pump.</p> <p>M₁: Underfloor 3 way valve motor circuit 1.</p> <p>M₂: Underfloor 3 way valve motor circuit 2.</p> <p>TA₁: Heating circuit N. 1 room thermostat.</p> <p>TA₂: Heating circuit N. 2 room thermostat.</p> <p>Sr₁: Heating circuit mixed 1 sensor.</p> <p>Rr₂: Underfloor circuit N.2 option resistance.</p> <p>Raux: Auxiliary relay.</p> <p>R: Phone relay.</p> | <p>C: Common of auxiliary relay.</p> <p>NO: Normally open of auxiliary relay.</p> <p>NC: Normally closed of auxiliary relay.</p> <p>Sext: Exterior room sensor.</p> <p>Taux: Auxiliary entrance.</p> <p>J1: Power supply connector.</p> <p>J2: Components connector.</p> <p>J3: Sensor connector.</p> <p>J4: Room thermostat N. 1 connector.</p> <p>J5: Remote control connector.</p> <p>J6: Room thermostat N. 2 connector.</p> <p>J7: Principal connector (Orange).</p> |
|--|---|

18 ELECTRICAL DIAGRAM

18.1 Avanttia



NCN: Display of communication connector.

J7: Principal connector (Orange).

J8: Communication connector of plates.

J9: Sensor connector.

S1, S2: Boiler model selector.

19 ALARM CODES

The **Avanttia** boiler has an electronic circuit which performs continuous self-testing to detect any malfunctioning in the boiler. When the electronic control detects malfunctioning, this is indicated by an alarm code flashing on the display. The following list describes the alarm codes that may appear:

Cod.	Causa	Acción requerida
E02	Low water pressure	If it occurs repeatedly, call the TAS.
E03	Ignition failure	Reset the boiler.
E04	Flame simulation	Call the TAS.
E05	Boiler temperature sensor: open	Call the TAS.
E06	Boiler temperature sensor: shorted	Call the TAS.
E07	Sensor_1: open	Call the TAS.
E08	Sensor_1: shorted	Call the TAS.
E09	Fan anomaly	Reset the boiler.
E10	Air pressure anomaly	Reset the boiler.
E11	Water pressure sensor failure	Call the TAS.
E12	Flame extinguished	Reset the boiler.
E15	BMC anomaly	Reset the boiler.
E16	Heat exchanger overheating	Reset the boiler.
E17	Switch selection error	Reset the boiler.
E18	Return temperature sensor: open	Call the TAS.
E19	Return temperature sensor: shorted	Call the TAS.
E21	Sensor_2: open	Call the TAS.
E22	Sensor_2: shorted	Call the TAS.
E27	Air pressure sensor anomaly	Reset the boiler.
E28	Water leak	Call the TAS.
E30	Fume outlet overheating	Reset the boiler.
E40	Outdoor temperature sensor: shorted	Call the TAS.
E41	Outdoor temperature sensor: open	Call the TAS.
E62	External safety system	Call the TAS.
E64	Safety valve anomaly	Call the TAS.
E65	External pump anomaly	Reset the boiler.
E82	Boiler communication failure	Call the TAS.
E93	Abnormal functioning of panel buttons	Call the TAS.
A01	Sr ₁ sensor: open circuit or shorted	Call the TAS.
A02	Sr ₂ sensor: open circuit or shorted	Call the TAS.
A03	Si sensor: open circuit or shorted	Call the TAS.
A05	Wrong button held down on control panel	Call the TAS.
A06	Boiler model configuration error	Call the TAS.
A07	NCN control communication error	Call the TAS.
CnF	Wrong micro switch configuration	Call the TAS.

NOTA: It will be very useful for the technical assistance service if you can inform them of the alarm code that has appeared on call-out

20 COMMERCIAL GUARANTEE

DOMUSA TEKNIK's **commercial guarantee**(*) covers the standard functioning of the products manufactured by DOMUSA Calefacción S.Coop., in accordance with the following conditions and time periods:

1. This **commercial guarantee** is valid for the following periods, as from the **start-up** date:

2 Years for electric and hydraulic elements: pumps, valves, etc.

5 Years for heat exchangers.

5 Years for domestic hot water tanks.

During the 2-year period following the start-up date, DOMUSA TEKNIK will carry out any repairs of original flaws or defects totally free of charge.

After these 2 years have elapsed and until the end of the guarantee period, labour costs and call-out charges will be payable by the user.

2. The annual overhaul is not included in the terms of this guarantee.

3. The **start-up** and **annual overhaul** are to be carried out by personnel authorised by DOMUSA TEKNIK.

4. The **commercial guarantee** will be null and void in the following cases:

- If the annual overhaul by personnel authorised by DOMUSA TEKNIK has not been carried out.
- La caldera no haya sido instalada respetando las leyes y reglamentos vigentes en la materia.
- If the boiler has not been installed in accordance with the applicable laws and regulations for this type of appliance.
- If the boiler has not been started up immediately after its installation, by personnel authorised by DOMUSA TEKNIK.

Failures due to misuse or incorrect installation, use of non-suitable electrical power or fuel, supply with water with physical or chemical properties causing incrustation or corrosion, incorrect handling of the appliance and, in general, for any reason beyond DOMUSA TEKNIK's control, are excluded from this guarantee.

This guarantee does not affect the consumer's rights as stipulated by law.

Note: Start-up is included in the price of the boiler. **The call-out charge is not included.**

DOMUSA

T E K N I K

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DOMUSA TEKNIK reserves the right to make modifications of any kind to its product characteristics without prior notice.



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