

ANTEA NEXT KC 18-26-30-35 KR 12-24-28-32 KRB 12-24-28-32

**USER MANUAL** 



# 

It is compulsory to read this manual before proceeding with the boiler installation, use and maintenance operations.

This boiler is intended for production of hot technical water only:

- For heating of residential, commercial and industrial roo
- For heating of industrial process water.
- For indirect production of domestic hot water.

Any other use is forbidden.

## **General information**

Dear Sirs

thank You for choosing and buying one of our products. Please read these instructions carefully in order to properly install, operate, and maintain the product.

Following the boiler installation, the installer should advise the user about boiler operation and its safety devices.

The USER MANUAL and the INSTALLATION AND MAINTENANCE MANUAL are an integral and essential part of the product. They shall be supplied by the installer to the user who shall keep them carefully to consult them whenever necessary.

These documents shall be supplied together with the equipment in case the latter is sold or transferred to others.



## WARNING

We inform users that:

- Boilers shall be installed by an authorised company under the requirements set forth by the prevailing rules, in full compliance with the prevailing regulations and standards.
- Anyone entrusting installation to an unqualified installer will be subject to administrative sanctions.
- Boilers must be maintained by qualified personnel only, under the requirements set forth by the prevailing rules.



## WARNING

According to European Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) the crossed-out wheelie bin symbol indicated on the boiler and on the package means that the boiler, at the time of its decommissionig, must be collected and disposed of separately from other waste (see Decommissioning, disassembly and disposal).



## WARNING

This boiler is intended for production of hot technical water only:

- · For heating of residential, commercial and industrial rooms.
- · For heating of industrial process water.
- · For indirect production of domestic hot water.

Any other use is forbidden.



## DANGER

This boiler must be installed by gualified personnel. The installation by unqualified personnel is forbidden.



## DANGER

This boiler must be installed in compliance with the requirements of the technical standards and legislation in force relating to gas appliances, particularly with reference to ventilation of the premises.

Any installation that does not comply with the requirements of the technical standards and legislation in force is forbidden.



This boiler must be installed according to the manufacturer's instructions given in INSTALLATION AND MAINTENANCE MANUAL: Incorrect installation may cause injury to persons and/or animals and damage to property. The manufacturer shall not be held liable for any such injury and/or damage.



This boiler must be installed inside the building or in a partially sheltered place. A partially sheltered place is a place which is not directly exposed to atmospheric agents. Any installation in a place that is not partially sheltered is forbidden.

# DANGER

This boiler must be correctly and safely connected to an electrical system compliant with the existing technical standards.

Any incorrect and unsafe connection to the electrical system is forbidden.

It is forbidden to connect the boiler to an electrical system lacking a differential switch to protect the boiler power line. Any connection to an electrical system lacking a proper grounding system is forbidden.

WARNING

The boiler is supplied with a power cable featuring two poles + GND, already connected to the electronic board and it is provided with a safety clamp.

This boiler must be connected to a 230V power supply network, as indicated on the label.



This boiler must be connected to a gas distribution system which complies with the existing technical standards. Check the gas system state of conservation before installing the boiler.

Any connection to a gas system which does not comply with the existing technical standards is forbidden.

When connecting the boiler to gas supply network, it is compulsory to install an appropriately sized gasket made from suitable material.

The boiler gas inlet coupling is not suitable for hemp, teflon tape or similarly made gaskets.

After connecting the boiler, check the connection for tightness.

Once gas is in the pipes, leak test by a naked flame is forbidden; use specific products available on the market.



With gas fired boilers, take the following measures if you smell gas:

- Do not turn on or off electric switches and do not turn on electric appliances.
- · Do not ignite flames and do not smoke.
- · Close the main gas cock.
- Open doors and windows.
- Contact a Service Centre, a qualified installer or the gas supply company.

Never use a flame to locate a gas leak.

The boiler is designed for installation in the countries indicated on the technical data plate applied both to the package and to the boiler itself: installation in any other country may be a source of danger for people, animals and/or property. The manufacturer will bear no contractual and tortious liability for failure to comply with all the instructions above.



Before installing the boiler, check that the technical data correspond to the requirements for its correct use in the system. Check that the boiler is intact and it has not been damaged during transport and handling. Do not install equipment which is clearly damaged and/or faulty. For correct installation of the appliance, please refer to INSTALLATION AND MAINTE-NANCE MANUAL.

Damage and/or injury caused by incorrect installation or use and/or damage and/or injury due to non-observance of the manufacturer's instructions shall release the manufacturer from any and all contractual and extra-contractual liability. Do not obstruct the air intake openings.

Only original accessories or optional kits (including the electric ones) are to be installed.

Properly dispose of the packaging as all the materials can be recycled. The packaging must therefore be sent to specific waste management sites.

After removing the packaging, make sure that its elements (clips, plastic bags, foam polystyrene etc.) are not left within the reach of children as they are potential hazard sources.

In the event of failure and/or faulty functioning, switch off the boiler. Do not attempt to make repairs: contact qualified technicians.

Original parts must be used for all repairs to the boiler.

Non-observance of the above requirements may affect the safety of the boilers and endanger people, animals and/or property.

The appliance can be used by children aged no less than 8 and by persons with reduced physical, sensory or mental capabilities, or who do not have proper experience and knowledge, provided that they are supervised or they have been instructed on safe use of the appliance and have understood the inherent risks. Do not allow children to play with the appliance. Cleaning and maintenance intended to be carried out by the user shall not be performed by unattended children.



An easily accessible switch with contact separation in all poles must be installed upstream of the product, directly connected to the power supply terminals to allow complete disconnection under overvoltage category III conditions and to ensure fully safe maintenance operations.

If the power cable is damaged, it must be replaced by Fondital or its technical service department or a similarly qualified person in order to prevent any risk.



## WARNING

The appliance is designed to have a DHW working pressure of 0.6 MPa (6 bar) and a DHW inlet pressure of 0.05 MPa - 0.6 MPa (0.5 bar - 6 bar).



## DANGER

Before starting the boiler, and each time it is at a standstill for several days, make sure the trap is full of water. If the trap is empty, fill it by pouring water into the boiler through the flue gas venting duct.



## WARNING

The boiler must be serviced periodically as indicated in the relevant section of this manual.

Appropriate boiler maintenance ensures efficient operation, environment preservation, and safety for people, animals and objects.

Incorrect and irregular maintenance can be a source of danger for people, animals and property.

The user is strongly advised to have the system serviced and repaired by qualified personnel, satisfying all prevailing law requirements, and trained to properly carry out these operations.

In the event of long periods of inactivity of the boiler, disconnect it from the electrical power mains and close the gas cock.



#### With the electrical power disconnected and the gas cock closed, the device's electrical anti-freeze function does not work.

Should there be a risk of freezing, add antifreeze: it is not advisable to drain the system as this may result in damage; use specific anti-freeze products suitable for multi-metal heating systems.

## 

Damage and/or injury caused by incorrect installation and/or incorrect use and/or unauthorized changes to the boiler and/or non-observance of the manufacturer's instructions and/or of the relative standards/laws in force in the country of installation, shall release the manufacturer from any and all liability.



## WARNING

The user may only access parts of the boiler that can be reached without using special equipment or tools. The user is not authorised to remove the boiler casing or to operate on any internal parts.

No one, including qualified personnel, is authorised to modify the boiler.

The manufacturer shall not be held responsible in case of damage to people, animals, or property due to failure to follow the above mentioned instructions.

# CE

The manufacturer declares that this product complies with the essential requirements of the applicable European directives and regulations in force.

The declaration of conformity can be requested from the manufacturer.

We hereby inform you that certain models, versions and/or accessories relevant to the products this manual refers to, might not be available in some countries.

Therefore, it is recommended to contact the manufacturer or the importer in order to get the necessary information about the actual availability of such models, versions and/or accessories.

The manufacturer reserves the right to modify the products and/or its components as deemed necessary, in any moment and without prior notice.

This instruction manual is available in two languages, Italian and English, without prejudice to the prevalence of Italian language in case of differences in translation and/or dispute on construction of the text.

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## 1. Instructions for the user

## 1.1 Control panel



Fig. 1 Control panel

- A. Display.
- **B.** Encoder and confirmation of parameters.
- C. Menu button.
- **D.** Reset key and back to previous page.
- E. Operating status selection.

Ref.	Symbol	Description
1	$\bigcirc$	The flame indicates that the burner is on. When the burner is off, the flame indicator is no longer there.
2		The bar associated with the numerical value (ref.15) indicates the percentage of instantaneous boiler power.
	000	The radiator symbol indicates the heating function display area.
3		Grey symbol: no heating demand.
		Red symbol: at least one heating zone in heat demand.
4		The clock indicates that heating programming has been activated.
5	-	Setpoint of zone temperature.
6	-	Setpoint of zone 2 temperature.
7	-	Setpoint of zone 3 temperature.
		The house symbol indicates the zone setpoint.
	$\square () ]$	Uncoloured symbol: no heating demand for zone 1.
8		Red symbol: heating demand for zone 1.
		The radiator symbol indicates the flow water setpoint required by the zone.
	UUUU	Uncoloured symbol: no heating demand for zone 1.
		Red symbol: heating demand for zone 1.
	<b>û</b> 02	The house symbol indicates the zone setpoint.
		Uncoloured symbol: no heating demand for zone 2.
9		Red symbol: heating demand for zone 2.
	<b>M</b> 02	The radiator symbol indicates the flow water setpoint required by the zone.
		Uncoloured symbol: no heating demand for zone 2.
		Red symbol: heating demand for zone 2.
	$\wedge 00$	The house symbol indicates the zone setpoint.
	LUU3	Uncoloured symbol: no heating demand for zone 3.
10		Red symbol: heating demand for zone 3.
_		The radiator symbol indicates the flow water setpoint required by the zone.
	1001 00	Uncoloured symbol: no heating demand for zone 3.
		Red symbol: heating demand for zone 3.
		The tap symbol indicates the DHW function display area.
11	[ ~ ~	Grey symbol: no active DHW demand.
10	_	Red symbol: DHW demand present.
12	-	DHW setpoint.
13		The clock indicates that the DHW programming has been activated.
	+1.	The symbol indicates that the boiler can perform solar functions.
14		Grey symbol: solar pump switched off.
	$\bigcirc$	Red symbol: solar pump switched on.
15	-	Instantaneous boiler power percentage. With the boiler off, no message appears.
16	-	Day and date.
17	-	Current time.

#### 1.2 Interpreting boiler status from display indications

#### 1.2.1 Normal operation

Boiler OFF

Boiler in SUMMER mode No active function DHW temperature is displayed

Boiler in WINTER mode No active function The flow temperature and the domestic hot water temperature are displayed

Boiler in SUMMER mode Domestic hot water withdrawal DHW temperature displayed

Boiler in WINTER mode Domestic hot water withdrawal DHW temperature displayed

Boiler in WINTER mode CH function active Flow temperature displayed

## 1.2.2 Malfunction

To identify any malfunctions, refer to paragraph *Troubleshooting* on page 29.













#### 1.3 Menu selection

The following menu functions can be accessed:

- SETTINGS;
- INFO.

#### SETTINGS MENU

By selecting the **SETTINGS** menu, the following functions are available:

- · LANGUAGE: allows you to change the language shown on the display;
- DATE AND TIME: allows you to change the date and time shown on the display;
- · ZONE DESIGNATION: allows zones to be named. Three zones are available;
- TEMP.HEAT.ECO: 4 different time slots can be set during programming; this parameter allows the setpoint to be assigned to a fifth time slot;
- ANTI-LEGIONELLA: allows you to change the start time, duration, temperature and frequency of activation of the anti-legionella function;
- AIR PURGE: starts the air purge procedure;
- PROGRAMMING: enables/disables DHW and/or CH programming.

To open the SETTINGS menu proceed as follows:

- press key 🗐;
- turn the encoder (key B), the area where symbol 📥 is located turns grey;
- press the encoder;
- turn the encoder clockwise or anticlockwise to select the menu item to be edited;
- press the encoder to open the selected menu item;
- make changes by acting on the encoder;
- press key D until the display returns to the main page.



#### LANGUAGE

The following languages are available: Italian, Spanish, English, Romanian, Polish. To change the language shown on the display, proceed as follows:

- go to the LANGUAGE item;
- press the encoder;
- turn the encoder (key B) to select the desired language;
- · press the encoder to set the selected language;
- press key ☺ until the display returns to the main page.



#### DATE AND TIME

To change the date and time shown on the display, proceed as follows:

- turn the encoder (key B) clockwise until the DATE AND TIME item turns grey;
- · press the encoder to access the date and time values;
- turn the encoder until the value you want to change turns grey;
- · press the encoder to modify the previously selected value;
- turn the encoder clockwise or anticlockwise until the required value is displayed;
- · press the encoder to confirm the displayed value;
- once date and time values have been set, press key 🗇 until the display returns to the main page.

LANGUAGE	30 / 08 / 2019
ZONE DESIGNATION	
ANTI-LEGIONELLA	15 : 30
Letter Settings	DATE AND TIME

#### ZONE DESIGNATION

To assign a name to zones, proceed as follows:

- turn the encoder (key B) clockwise until the ZONE DESIGNATION item turns grey;
- press the encoder to access the zone list (3 zones are available);
- turn the encoder until the zone you want to change turns grey;
- press the encoder to change the name of the previously selected zone, the first character of the selected zone turns grey;
- · press the encoder again to enable editing of the first character of the selected zone;
- · turn the encoder clockwise or anticlockwise to set the first character;
- · press the encoder to confirm the displayed character;
- turn the encoder to go on the second character of the selected zone; repeat the above procedure to set the required character. A maximum of 6 characters can be set for each zone;
- once the required characters have been set for the selected zone, press key 🗇 until the display returns to the main page.



#### TEMP.HEAT.ECO

To set the eco heating temperature, proceed as follows:

- turn the encoder (key B) clockwise until the TEMP.HEAT.ECO item turns grey;
- · press the encoder;
- turn the encoder until the symbol  $\checkmark$  turns grey;
- · press the encoder to modify the temperature value;
- turn the encoder clockwise or anticlockwise until the required value is displayed;
- · press the encoder to confirm the displayed value;
- press key ☺ until the display returns to the main page.

LANGUAGE DATE AND TIME ZONE DESIGNATION TEMP. HEAT. ECO ANTI-LEGIONELLA	32.0
Letter Settings	LEMP. HEAT. ECO

#### ANTI-LEGIONELLA (KRB model only)

To set the start time, duration, temperature and frequency of activation of the anti-legionella function, proceed as follows:

- turn the encoder (key B) clockwise until the ANTI-LEGIONELLA item turns grey;
- press the encoder;
- turn the encoder clockwise or anticlockwise until the parameter (start time, duration, temperature, activation frequency) you want to change turns grey;
- · press the encoder to modify the previously selected parameter;
- turn the encoder until the symbol  $\checkmark$  turns grey;
- press the encoder to change the parameter value (if you are changing the start time parameter, you must press the encoder twice);
- turn the encoder clockwise or anticlockwise until the required value is displayed;
- · press the encoder to confirm the displayed value;
- press key D until the display returns to the main page.



#### AIR PURGE

To start the air purge procedure, proceed as follows:

- turn the encoder (key B) clockwise until the AIR PURGE item turns grey;
- press the encoder;
- turn the encoder until the symbol  $\checkmark$  turns grey;
- turn the encoder until ON is displayed;
- press the encoder to start the purge procedure, which will have a duration equal to the value set in the technical parameters; set the value to OFF or press 🗇 to terminate the purge procedure early. Exiting the menu will disable the function (OFF) and return system to normal operation.
- press key 🗇 until the display returns to the main page.





## WARNING

#### The air purge procedure must be carried out by qualified personnel.

#### PROGRAMMING

To enable/disable the DHW and/or CH programming, proceed as follows:

- turn the encoder (key B) clockwise until the PROGRAMMING item turns grey;
- press the encoder;
- turn the encoder clockwise or anticlockwise until the desired programming is selected (No Enabling, Sanitary, Sanitary and heating, Heating);
- press the encoder to confirm the previously selected programme;
- press key 🗇 until the display returns to the main page.





#### INFO MENU

Selecting the INFO menu allows you to view some system parameters.

To open the INFO menu proceed as follows:

- press key 🗐;
- turn the encoder (key B), the area where symbol *i* is located turns grey;
- press the encoder;
- turn the encoder clockwise or anticlockwise to display the available parameters;
- press key Duntil the display returns to the main page.



INFO

#### 1.4 Hourly heating programming

Hourly programming is only possible if you have enabled the programming of DHW and CH or CH only (see section *PROGRAMMING* on page *14*).

Below is the hourly programming procedure required when there is a room thermostat in zone 1 and no management of zone 2 and zone 3 (parameter **P61=7**).

To set the hourly heating programming, proceed as follows:

- turn the encoder (key B), the area where the heating symbol 🖤 is located turns grey;
- press the encoder;
- turn the encoder clockwise or anticlockwise to select the day of the week to be programmed;
- · press the encoder to start hourly programming of the selected day;
- turn the encoder clockwise or anticlockwise to go on the parameters to be edited; turning the encoder anticlockwise allows you to change the parameters of the individual time slot in the following order:
  - » Time slot: up to a maximum of 4 time slots (F1, F2, F3, F4) can be set. If the start time is the same as the end time, the time slot is not active.
  - » Start time: corresponds to the time at which the selected time slot starts to be active.
  - » Temperature: corresponds to CH water temperature setpoint.
  - » End time: corresponds to the time at which the selected time slot is no longer active.



To set the start time of the first time slot (F1) proceed as follows:

- turn the encoder until the start time turns grey;
- · press the encoder;
- turn the encoder clockwise or anticlockwise until the required time value is displayed (it is possible to increase or decrease this value in 15-minute intervals);
- press the encoder to confirm the displayed value;
- repeat the above procedure to set the heating water temperature and the end time of the first time slot (F1).



To set the programming of the second time slot (F2), the third time slot (F3) and the fourth time slot (F4), repeat the above procedure. To move from time slot F1 to the next time slot (F2, F3 or F4), it is necessary to:

- turn the encoder until the F1 value turns grey;
- · press the encoder;
- turn the encoder clockwise until the time slot to be edited is displayed (F2, F3 or F4);
- · press the encoder to confirm the change of the time slot displayed;
- once the required values have been set for the selected time slot, press key 🗇 until the display returns to the main page.



#### **COPY PROGRAMMING FUNCTION**

It is possible to copy the same hourly heating programming set for a particular day to the remaining days of the week. Below is the procedure for copying the Monday hourly programming to the remaining days of the week:

- turn the encoder (key B), the area where the heating symbol 🖤 is located turns grey;
- press the encoder;
- turn the encoder clockwise or anticlockwise to go to Monday;
- · press the encoder to start hourly programming of Monday;
- turn the encoder until the F1 value turns grey;
- · press the encoder;
- press the encoder;
- turn the encoder until the day of the week to which you want to copy the Monday programme turns grey; press the encoder to confirm (the day turns red);
- repeat the procedure defined in the previous point for the remaining days for which you want to copy the programming. To deselect a day on which you wanted to copy the programming, turn the encoder until the day turns grey and then press the encoder (the day turns black);
- turn the encoder until the symbol  $\square$  turns grey;
- press the encoder, a confirmation that the programme has been copied successfully will be displayed. After a few seconds, the display will return to the main page.





MON

## 1.5 DHW programming (KRB model only)

Hourly programming is only possible if you have enabled the programming of DHW or DHW and CH (see section *PROGRAMMING* on page *14*) and the boiler is equipped with water heater.

DHW programming involves changing the temperature and the 4 time slots.

#### 1.5.1 DHW temperature programming

To change the setpoint temperature of the water heater, which will be the same for all time slots, proceed as follows:

- turn the encoder (key B), the area where the heating symbol  $\overleftarrow{\mathcal{C}}$  is located turns grey;
- · press the encoder;
- turn the encoder clockwise, the area where symbol 护 is located turns grey;
- · press the encoder;
- turn the encoder clockwise or anticlockwise until the required temperature setpoint value is displayed;
- · press the encoder to confirm the displayed value;
- press key 🗇 to quit the DHW temperature programming function.



#### 1.5.2 DHW hourly programming

To set the hourly DHW programming, proceed as follows:

- turn the encoder (key B), the area where the heating symbol
- press the encoder;
- turn the encoder clockwise until the area where symbol <sup></sup><sup>™</sup> is located turns grey;
- press the encoder;
- turn the encoder clockwise or anticlockwise to select the day of the week to be programmed;
- press the encoder to start hourly programming of the selected day;
- turn the encoder clockwise or anticlockwise to go on the parameters to be edited; turning the encoder anticlockwise allows you to change the parameters of the individual time slot in the following order:
  - » Time slot: up to a maximum of 4 time slots (F1, F2, F3, F4) can be set. If the start time is the same as the end time, the time slot is not active. The water heater heating is only active during the periods defined in the set time slots; during the remaining periods only the frost protection threshold is guaranteed.
  - » Start time: corresponds to the time at which the selected time slot starts to be active.
  - » Temperature: corresponds to the water heater temperature setpoint. The setpoint temperature of the water heater is the same for the 4 time periods; to change this value please refer to paragraph *DHW temperature programming*.
  - » End time: corresponds to the time at which the selected time slot is no longer active.



To set the start time of the first time slot (F1) proceed as follows:

- turn the encoder until the start time turns grey;
- · press the encoder;
- turn the encoder clockwise or anticlockwise until the required time value is displayed (it is possible to increase or decrease this value in 15-minute intervals);
- · press the encoder to confirm the displayed value;
- repeat the above procedure to set the end time of the first time slot (F1).



To set the programming of the second time slot (F2), the third time slot (F3) and the fourth time slot (F4), repeat the above procedure. To move from time slot F1 to the next time slot (F2, F3 or F4), it is necessary to:

- turn the encoder until the F1 value turns grey;
- · press the encoder;
- turn the encoder clockwise until the time slot to be edited is displayed (F2, F3 or F4);
- · press the encoder to confirm the change of the time slot displayed;
- once the required values have been set for the selected time slot, press key 🖾 until the display returns to the main page.



#### **COPY PROGRAMMING FUNCTION**

It is possible to copy the same DHW hourly programming set for a particular day to the remaining days of the week. Below is the procedure for copying the Monday hourly programming to the remaining days of the week:

- turn the encoder (key B), the area where the heating symbol  $\sum$  is located turns grey;
- · press the encoder;
- turn the encoder clockwise until the area where symbol <sup>☉</sup> is located turns grey;
- · press the encoder;
- · turn the encoder clockwise or anticlockwise to go to Monday;
- · press the encoder to start hourly programming of Monday;
- turn the encoder until the F1 value turns grey;
- · press the encoder;
- turn the encoder until the symbol  $\square$  is displayed;
- · press the encoder;
- turn the encoder until the day of the week to which you want to copy the Monday programme turns grey; press the encoder to confirm (the day turns red);
- repeat the procedure defined in the previous point for the remaining days for which you want to copy the programming. To deselect a day on which you wanted to copy the programming, turn the encoder until the day turns grey and then press the encoder (the day turns black);
- turn the encoder until the symbol ☐ turns grey;
- press the encoder, a confirmation that the programme has been copied successfully will be displayed. After a few seconds, the display will return to the main page.



#### 1.6 Boiler operation

#### 1.6.1 Switching on and switching off



It is presumed that the boiler has been installed by a qualified installer, it has been commissioned and is ready to operate correctly.

- Open the gas shut-off cock.
- Turn the master switch installed ahead of the boiler to ON.
- The display turns on and indicates the function currently active (see Interpreting boiler status from display indications on page 10).
- Select the boiler operating mode: OFF/SUMMER/WINTER (See key (E) in Fig. 1 Control panel on page 8).
- Set desired CH temperature (see CH function on page 21).
- Set desired DHW temperature (see DHW function on page 22).
- · Set the desired temperature on the ambient thermostat in the building (if installed).

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After a prolonged period with the boiler not in use, and with LPG fired boilers in particular, some starting difficulty may be encountered.

Before starting the boiler switch on another gas powered device (e.g. kitchen range). Beware that even by following this procedure, the boiler might still experience some starting difficulties and shut down once or twice. Press the "RESET" button to restore boiler operation.

## 1.6.2 Selecting the operating mode

To select the boiler operation mode press key **E** Operating mode selection.

Whenever the key is pressed, the "SUMMER", "WINTER", "OFF" modes are enabled in sequence.

"SUMMER" operating status

When the "SUMMER" mode is enabled, only the DHW production function is active.

"WINTER" operating status

When the "WINTER" mode is enabled, both DHW and CH functions are active.

"OFF" operating status

When the "OFF" mode is enabled, no function is active.

#### 1.6.3 CH function

To set the water temperature for central heating, proceed as follows:

- turn the encoder (key B), the area where the heating symbol 🖤 is located turns grey;
- · press the encoder;
- turn the encoder clockwise or anticlockwise to increase or decrease the central heating setpoint temperature;
- press the encoder to confirm set value;
- press key 🗁 to quit the setpoint setting.

Heating temperature adjustment range depends on the selected operating range.:

- standard range: from 20 °C to 78 °C (using the encoder as shown above);
- reduced range: from 20 °C to 45 °C (using the encoder as shown above).

Operation range selection is to be implemented by an installer or an authorised Service Centre (see paragraph Selecting the operating range in heating mode in INSTALLATION AND MAINTENANCE MANUAL).

The burner ON symbol 0 shows while the burner is operating.

If the symbol  $\mathbb{W}$  appears on the display, the temperature shown corresponds to the heating water flow temperature setpoint. If the symbol  $\widehat{}$  appears on the display, the temperature shown corresponds to the ambient temperature setpoint to be set (in case of installation of an external probe, it corresponds to the fictitious temperature value).

#### **DHW** function 1.6.4

DHW production function is enabled on KC model and on KR/KRB models with external water heater (optional). DHW production function is enabled in one of the following operating modes: SUMMER or WINTER. Such function has always priority over CH water supply.

To change DHW temperature setpoint, proceed as follows:

- turn the encoder (key B) until the area where the DHW symbol  $\int_{-\infty}^{\infty}$  is located turns grey;
- press the encoder:
- turn the encoder clockwise or anticlockwise to increase or decrease the DHW setpoint temperature;
- press again the encoder to confirm set value;
- press key D to quit the setpoint setting.

#### KC Model

For KC model, DHW temperature may be set within a range from +35 °C to +57 °C.



WARNING

A flow limiter is installed within the boiler, which limits DHW output flow rate.

This limit value is: 8 litres per minute for KC 12 model; 13 litres per minute for KC 26 model, 14 litres per minute for KC 30 model, and 16 litres per minute for KC 35 model.

#### **KR/KRB Models**

On KR/KRB models with external water heater (optional) and water heater temperature probe (optional, supplied by the manufacturer; included in the standard supply for KRB model), temperature range is between 35 °C and 65 °C.

On KR/KRB models with external water heater (optional) and water heater probe (optional, supplied by the manufacturer; included in the standard supply for KRB model), every 15 days the anti-legionella function will be enabled, consisting in raising the water heater temperature to 65°C for 30 minutes independent of other settings.

It is possible to set the start time, the duration in minutes, the temperature and the frequency of activation of the anti-legionella function (see section ANTI-LEGIONELLA (KRB model only) on page 13).

#### **Freeze protection function** 1.6.5

This boiler is fitted with a freeze protection system, which works when the following functions are activated: OFF/SUMMER/WINTER/ CH ONLY.



The freeze protection function only protects the boiler, not the whole heating system.

The central heating system can be effectively protected against icing by using specific anti-freeze products that are suitable for multi-metal systems.

## WARNING

Do not use anti-freeze products for car engines, and check the effectiveness of the product used over time.

In case burner cannot be ignited due to the lack of gas, the freeze protection functions are anyway enabled through the circulation pumps.

#### 1.6.5.1 Flow freeze protection function

When the heating water temperature sensor detects a water temperature of +5 °C, the boiler switches on and stays on at its minimum heat output until the temperature reaches +30 °C or 15 minutes have elapsed.

The pump continues to operate even if the boiler shuts down.

#### 1.6.5.2 Plate heat exchanger freeze protection function (only KC model)

When the DHW temperature sensor detects a water temperature of +5°C, the boiler switches on and stays on at its minimum heat output until the DHW temperature reaches +10°C or 15 minutes have elapsed (the deviating valve is in the DHW position).

During the DHW freeze protection operation the temperature detected by the flow probe is constantly checked, and in case it reaches +60 °C the burner is switched off.

The burner is switched on again if the operation request in anti-freeze mode is still present and the flow temperature is below +60°C. The pump continues to operate even if the boiler shuts down.

#### 1.6.5.3 Water heater freeze protection function (for KR/KRB models with external water heater).

The water heater probe measures the temperature of water in the cylinder. When this temperature is less than 5°C a water heater freeze protection function begins: the circulating pump begins working and the burner is switched on.

On KR/KRB models with external water heater (optional) with NTC probe (10 k $\Omega$  @  $\beta$ =3435; refer to water heater technical specifications), the freeze protection function also protects the water heater.

When water heater probe detects a water temperature of +5 °C, the boiler switches on and stays on at its minimum heat output until the temperature of the water heater water reaches +10 °C or 15 minutes have elapsed.

The pump continues to operate even if the boiler shuts down.

During the water heater freeze protection operation the temperature detected by the flow probe is constantly checked, and in case it reaches +60°C the burner is switched off.

The burner is switched on again if the operation request in anti-freeze mode is still present and the flow temperature is below +60°C.

#### 1.6.5.4 Ambient probe freeze protection function

If the boiler board is OFF, or in DHW ONLY mode, and the ambient probes detect a temperature below 5°C, a heating request to heat the probe-controlled room is launched.

The heating function ends when the probe ambient temperature reading reaches +6°C.

#### 1.6.5.5 External probe freeze protection function

If the external temperature probe detects a temperature below +5 °C, system outputs a heating request to maintain the fictitious ambient temperature at +5 °C.

The heating function ends when the external temperature read by the probe reaches +6 °C.

The "External probe freeze protection function" can be disabled via the boiler "super-technical" parameters. To do this, contact a service centre.

#### 1.6.6 Anti-seize function

If the boiler remains inactive and connected to the power mains, the circulation pump and the deviating valve (if any) will be shortly enabled every 24 hours so as to avoid any shut-down.

The same applies to the relay which can be freely programmed whenever this latter is used to power a recirculation pump or a deviating valve.

#### 1.6.7 Timed post-circulation function

After each central heating, DHW or freeze protection request, the pump continues to be powered for 30 seconds. If a new central heating, DHW or freeze protection request is received during this period, the post-circulation function is cancelled in order to fulfil the request.

#### 1.6.8 Timed post-ventilation function

After each central heating, DHW or freeze protection request, the fan continues to work for 10 seconds.

If a new operating request is received during this period, the post-ventilation function is cancelled in order to fulfil the request.

#### 1.6.9 Operation with ambient probe (optional)

Boiler can be connected to a probe measuring the ambient temperature (optional not compulsory, supplied by the manufacturer). Once the ambient temperature value is known, the boiler automatically regulates the heating water temperature, increasing it as the ambient temperature decreases and decreasing it when the ambient temperature gets close to the set temperature.

Heating water temperature varies based on a programme written inside boiler electronic microprocessor.

When the ambient probe is connected, the encoder (key B) is no longer used to set heating water temperature, and becomes the button to edit ambient temperature as required.

To set the desired ambient temperature, refer to paragraph CH function on page 21.

To connect the ambient probe, see paragraph Ambient probe installation (optional) in INSTALLATION AND MAINTENANCE MANU-AL.



## WARNING

Only original ambient temperature probes supplied by the manufacturer must be used.

The use of non-original ambient probes, not supplied by the manufacturer, may affect the operation of the ambient probe itself and of the boiler.

#### 1.6.10 Operation with external probe (optional)

Boiler can be connected to a probe measuring the external temperature (optional - not compulsory, supplied by the manufacturer) Once the external temperature value is known, the boiler will automatically adjust the heating water temperature: increasing it as the external temperature decreases and decreasing it as the external temperature increases. This will both improve room comfort and reduce fuel consumption. The maximum temperature is respected all the same.

This boiler operating mode is called "sliding temperature operation".

Heating water temperature varies based on a programme written inside boiler electronic microprocessor.

With an external sensor, the encoder (key B) no longer set the heating water temperature, and becomes the button for changing the fictitious ambient temperature, namely the desired theoretical temperature in the rooms to be heated.

For optimal curve adjustment, a position close to +20 °C is recommended.

For further details on "cruising temperature operation", refer to paragraph Installation of the (optional) external probe and sliding temperature operation in INSTALLATION AND MAINTENANCE MANUAL.



## WARNING

Only original external temperature probes supplied by the manufacturer must be used. The use of non-original external probes, not supplied by the manufacturer, may affect the operation of the external probe itself and of the boiler.

#### 1.6.11 Operation with (optional) remote control

The boiler can also be connected to a Remote Control (optional - not compulsory, supplied by the manufacturer) so as to manage several boiler parameters, such as:

- · Boiler status selection.
- · Ambient temperature selection.
- · CH system water temperature selection.
- DHW temperature selection.
- · CH system and (optional) external water heater activation time programming.
- · CH system activation time programming.
- Boiler diagnostics display.
- · Boiler reset and other parameters.

To connect the Remote Control, see paragraph Installation and operation with Open Therm Remote Control (optional) in INSTALLA-TION AND MAINTENANCE MANUAL.



WARNING

Only use original Remote Controls supplied by the manufacturer.

The use of non-original remote controls, not supplied by the manufacturer, may affect Remote Control and boiler operation.

#### 1.7 **Boiler shut-down**

The boiler shuts down automatically if a malfunction occurs. To determine the possible causes of malfunction, see *Troubleshooting* on page 29. Below is a list of shut-down types and the procedure to follow in each case.

#### 1.7.1 **Burner shut-down**

Fault code E01 is displayed flashing on the display in the event of burner shut-down due to missing flame.

If this happens, proceed as follows:

- · check that the gas cock is open and light a kitchen gas ring for example to check the gas supply;
- once having checked if the fuel is available, press 🗇 to restore burner operation: if, after two starting attempts, the boiler still fails to start and enters the shut-down mode again, contact a service centre or qualified personnel for maintenance.



If the burner shuts down frequently, there is a recurring malfunction, so contact a service centre or a qualified service engineer to carry out the maintenance.

#### 1.7.2 Shut-down due to overheating

Fault code E02 is shown on the LCD display in the event of flow water temperature overheating. Contact a service centre or a qualified service engineer to carry out the maintenance.

#### Shut-down due to incorrect air/flue gas system draught 1.7.3

The boiler is equipped with a safety device for flue gas exhaustion check.

Should an air intake/flue gas venting system malfunction occur, the control device will shut down the boiler by interrupting the gas supply to the boiler and the LCD will display the code E03.

In this case, contact a Service Centre or a qualified service engineer to carry out the maintenance.

#### 1.7.4 Shut-down due to low water pressure

Fault code **E04** is displayed on the LCD display in the event of shut-down triggered by the water pressure switch. Fill the system by working on filler cock (A) (see Fig. 2 Filler cock).

Water pressure must be 1÷1.3 bars while the boiler is cold.

In order to restore water pressure, proceed as follows:

- · Turn the filler cock anticlockwise to allow water to enter the boiler;
- Keep the filler cock open until the pressure gauge shows a value of 1÷1.3 bar;
- Turn cock clockwise to close it.

Should the boiler shut down frequently, contact qualified personnel or an authorised service centre for maintenance.

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Make sure you close filler cock (A) carefully after filling procedure is completed. If you do not, when the pressure increases, the safety valve may activate and discharge water.



Fig. 2 Filler cock

(\*) optional

#### 1.7.5 Alarm due to temperature probe malfunction

The following fault codes are shown on the display in the event of burner shut-down due to a temperature probe fault:

- E05 for the CH probe; in this case the boiler does not work.
- E06 for the DHW probe (KC model, only); in this case, the boiler works in central heating mode only, and the DHW function is disabled.
- E06 for the water heater probe (KR/KRB models only); in this case, the boiler works in central heating mode only, and the water heater heating function is disabled.
- **E15** for the return probe; in this case the boiler does not work.
- E44 for the ambient probe; in this case the boiler works normally. Operation with ambient probe is disabled.

WARNING

In any case, contact a service centre or qualified personnel for maintenance.

#### 1.7.6 Alarm due to (optional) external temperature probe malfunction

In case of external temperature probe failure, boiler will continue to operate, but the "sliding temperature" operation will be disabled. The temperature shown on the display corresponds to the heating water flow temperature setpoint and not to the set ambient temperature setpoint; the boiler display shows the code **E47**.

Contact a service centre or a qualified service engineer for maintenance.

#### 1.7.7 Alarm due to (optional) Remote Control connection malfunction

The boiler recognises whether or not there is a Remote Control (optional, not compulsory).

If the boiler does not receive information from the Remote Control after the Remote Control itself is connected, the boiler attempts to re-establish communication for 60 seconds, after which the fault code **E31** is shown on the remote control display.

The boiler will continue to operate according to the settings on the touch screen and ignore the Remote Control settings.



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#### Contact a service centre or a qualified service engineer to carry out the maintenance.

The remote control can indicate faults or shut-down conditions and can also restore boiler operation after shut-down up to a maximum of 3 times in a 24 hour period.

If the maximum number of attempts is reached, fault code E99 is shown on the boiler display.

To reset error **E99**, disconnect and reconnect the boiler from the mains power.

#### 1.7.8 Shut-down for fan malfunction

The fan operation is constantly monitored and in case of malfunction the burner goes off; the code **E40** flashes on the display. This mode is maintained until the fan recovers normal working parameters.

If the boiler does not start and remains in this mode, contact a service centre or a qualified service engineer to carry out the maintenance.

#### 1.8 Maintenance



The boiler must be serviced periodically as indicated in the relevant section of INSTALLATION AND MAINTENANCE MAN-UAL.

Appropriate boiler maintenance ensures efficient operation, environment preservation, and safety for people, animals and objects.

Boilers must be maintained by qualified personnel only, under the requirements set forth by the prevailing rules.

#### 1.9 Notes for the user



## WARNING

The user may only clean the external casing of the boiler, employing common household products. Do not use water!



## WARNING

The user may only access parts of the boiler that can be reached without using special equipment or tools. The user is not authorised to remove the boiler casing or to operate on any internal parts.

No one, including qualified personnel, is authorised to modify the boiler.

The manufacturer shall not be held responsible in case of damage to people, animals, or property due to failure to follow the above mentioned instructions.



The condensate drain must not be plugged or modified.

## 2. Decommissioning, disassembly and disposal

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Gas boilers are electrical and electronic equipment (EEE) and when decommissioned they become waste electrical and electronic equipment (WEEE), therefore, they must be disposed of in compliance with the legislation in force in the country of installation.

Gas boilers are classified as domestic appliances and must be disposed of in the same way as washing machines, dish washers and tumble dryers (R4 WEEE waste).

The disassembly of gas boilers and their disposal is therefore forbidden through channels not specifically provided for by law.

Decommissioning, disassembly and disposal operations must be performed with boiler cold and disconnected from gas and power mains.



WARNING The user is not authorised to carry out such operations.

## 3. Malfunctions, possible causes and solutions

## 3.1 Troubleshooting

BOILER STA- TUS	MALFUNCTION	PROBABLE CAUSE	User's tasks	Qualified personnel's tasks
	Burner does not ignite.	Gas supply failure.	Check gas supply. Check gas supply cock opening or gas network safety valve intervention.	
		Gas valve is disconnect- ed.	Contact qualified personnel	Reconnect it.
		Gas valve is faulty.	Contact qualified personnel	Replace it.
		The electronic board is faulty.	Contact qualified personnel	Replace it.
		Ignition electrode is faulty.	Contact qualified personnel	Replace the electrode.
	Burner does not ignite: no spark.	Ignition transformer is faulty	Contact qualified personnel	Replace the ignition transformer.
E01*		Electronic board does not ignite. It is faulty.	Contact qualified personnel	Replace electronic board.
		Electronic board does not detect flame: inverted phase and neutral.	Contact qualified personnel	Verify correct neutral and phase connection.
	Burner ignites for a few	Detection electrode cable is interrupted.	Contact qualified personnel	Reconnect or replace cable.
		Detection electrode is faulty.	Contact qualified personnel	Replace the electrode.
	seconds and goes on.	Electronic board does not detect flame: it is faulty.	Contact qualified personnel	Replace electronic board.
		Ignition heat input setting is too low.	Contact qualified personnel	Increase it
		Minimum heat input is not set correctly.	Contact qualified personnel	Check burner setting.
	Flow temperature ex-	Circulation pump is faulty.	Contact qualified personnel	Replace it.
E02*	ceeded the max. allowed value.	Circulation pump is seized.	Contact qualified personnel	Check pump electrical connection.
<b>5</b> 001	Flue thermostat trigger- ing.	Poor flue draught.	Contact qualified personnel	Check air intake or flue gas venting system and vent grilles in the boiler room.
E03^		Flue vent/air intake duct is obstructed.	Contact qualified personnel	Check for any duct ob- struction, and eliminate it.
		Flue gas thermostat is faulty.	Contact qualified personnel	Replace it.

BOILER STA- TUS	MALFUNCTION	PROBABLE CAUSE	User's tasks	Qualified personnel's tasks
			Fill the system (see sectio	n Boiler shut-down).
		The system has been recently bled.	If the error occurs again several times, contact a qualified Service Centre or qualified personnel.	
E0.4**	CH system water pres-	The system is leaking.	Check sy	stem.
E04***	sure is low.	Pressure transducer is disconnected.	Contact qualified personnel	Reconnect it.
		Pressure transducer is faulty.	Contact qualified personnel	Replace it.
E05**	Flow probe failure.	Flow probe is electrically disconnected.	Contact qualified personnel	Reconnect it.
		Flow probe faulty.	Contact qualified personnel	Replace it.
E06**	DHW probe failure (CTFS)	DHW probe is electrically disconnected.	Contact qualified personnel	Reconnect it.
	(KC only).	DHW probe faulty.	Contact qualified personnel	Replace it.
	Water heater probe	Probe is disconnected.	Contact qualified personnel	Reconnect it.
E06**	failure (KR/KRB with optional external water heater fitted with NTC probe).	Probe is faulty.	Contact qualified personnel	Replace it.
E07**	Flue gas probe failure.	Flue probe is electrically disconnected.	Contact qualified personnel	Reconnect it.
		Flue probe is faulty.	Contact qualified personnel	Replace it.
<b>E1/</b> **	Faulty separator probe	Disconnected or short-cir-	Contact qualified personnel	Reconnect it or replace it.
		cuited probe.	Contact qualified personnel	Check parameter P89.
F15**	Return probe failure	Probe is disconnected.	Contact qualified personnel	Reconnect it.
2.0		Probe is faulty.	Contact qualified personnel	Replace it.
	SCS solar collector probe	Disconnected or faulty probe.	Contact qualified personnel	Reconnect it or replace it.
E24**	fault	Probe detects a value lying outside the admissi- ble range.	Contact qualified personnel	Make sure the probe is of PT1000 type.
E28**	SBS solar water heater probe fault	Disconnected or faulty probe.	Contact qualified personnel	Reconnect it or replace it.
		Probe detects a value lying outside the admissi- ble range.	Contact qualified personnel	Make sure the probe is of PT1000 type.
E31**	Remote Control connec- tion failure (only shown	The Remote Control is not connected to boiler board.	Contact qualified personnel	Reconnect it.
	display/)	Remote control faulty.	Contact qualified personnel	Replace it.
	aispiay).	Boiler board is faulty.	Contact qualified personnel	Replace it.

BOILER STA- TUS	MALFUNCTION	PROBABLE CAUSE	User's tasks	Qualified personnel's tasks
		Boiler flow temperature not properly set.	Contact qualified personnel	Check curve parameters.
	Triggering of boiler	Thermostat is discon- nected.	Contact qualified personnel	Reconnect it.
E35**	low-temperature safety	Thermostat is faulty.	Contact qualified personnel	Replace it.
	thermostat.	Flow sensors discon- nected or not properly attached to the pipe.	Contact qualified personnel	Reconnect or reposition them.
		Faulty board.	Contact qualified personnel	Replace it.
	Flow probe failure in	Probe is disconnected.	Contact qualified personnel	Reconnect it or replace it.
E36**	mixed zone 2. (with zone kit installed, only).	Probe is faulty.	Contact qualified personnel	Make sure the probe is of NTC type.
	Flow probe failure in	Probe is disconnected.	Contact qualified personnel	Reconnect it or replace it.
E37**	mixed zone 3. (with zone kit installed, only).	Probe is faulty.	Contact qualified personnel	Make sure the probe is of NTC type.
	Triggering of low-temper- ature safety thermostat in mixed zone 2.	Boiler flow temperature not properly set.	Contact qualified personnel	Check curve parameters.
		Thermostat is discon- nected.	Contact qualified personnel	Reconnect it.
E38**		Thermostat is faulty.	Contact qualified personnel	Reconnect it.
		Flow sensors discon- nected or not properly attached to the pipe.	Contact qualified personnel	Reconnect or reposition them.
		Faulty board.	Contact qualified personnel	Replace it.
		Boiler flow temperature not properly set.	Contact qualified personnel	Check curve parameters.
	Triggering of low-temper- ature safety thermostat in mixed zone 3.	Thermostat is discon- nected.	Contact qualified personnel	Reconnect it.
E39**		Thermostat is faulty.	Contact qualified personnel	Reconnect it.
		Flow sensors discon- nected or not properly attached to the pipe.	Contact qualified personnel	Reconnect or reposition them.
		Faulty board.	Contact qualified personnel	Replace it.
E40*	Fan failure	Fan disconnected.	Contact qualified personnel	Reconnect it.
E40"		Fan faulty.	Contact qualified personnel	Replace it.
F41**	No communication between board and	Zone boards are not connected.	Contact qualified personnel	Reconnect them.
E41^^	peripheral devices (zone/ interface boards).	Zone boards are faulty.	Contact qualified personnel	Replace them.

BOILER STA- TUS	MALFUNCTION	PROBABLE CAUSE	User's tasks	Qualified personnel's tasks
E43**	Input configuration error.	Presence of a remote control instead of a room thermostat.	Contact qualified personnel	Check parameters P61, P77 and P89.
F11**	The ambient probe does	Probe is disconnected.	Contact qualified personnel	Reconnect it.
E44***	not work.	Probe is faulty.	Contact qualified personnel	Replace it.
E17**	The external probe does	Probe is disconnected.	Contact qualified personnel	Reconnect it.
E47	not work.	Probe is faulty.	Contact qualified personnel	Replace it.
	Faulty zone 1 ambient	Disconnected or short-cir-	Contact qualified personnel	Reconnect it or replace it.
E61**	probe. (only with zone board connected).	cuited probe.	Contact qualified personnel	Check parameter P61.
	Faulty zone 2 ambient	Disconnected or short-cir-	Contact qualified personnel	Reconnect it or replace it.
E62**	probe. (only with zone board connected).	cuited probe.	Contact qualified personnel	Check parameter P61.
	Faulty zone 3 ambient	Disconnected or short-cir-	Contact qualified personnel	Reconnect it or replace it.
E63**	probe. (only with zone board connected).	cuited probe.	Contact qualified personnel	Check parameter P61.
	Too high flow derivative.	Any cut-off valves are closed.	Contact qualified personnel	Check system.
		Circulation pump is blocked.	Contact qualified personnel	Check the circulation pump.
E78**		Low water flow rate.	Contact qualified personnel	Check system pressure or for any exchanger clogging.
		Faulty or clogged by- pass.	Contact qualified personnel	Check the by-pass.
F05*	Detum meho > 105°C	No circulation in the boiler.	Contact qualified personnel	Check the pump or the by-pass.
E00	Return probe > 105 C.	Return probe incorrectly calibrated or faulty.	Contact qualified personnel	Replace the probe.
E88**	Power reduction for flue gas high temperature.	Primary exchanger clogged.	Contact qualified personnel	Clean or replace the primary exchanger.
E99	The max. number of resets from the Remote Control or interface has been reached.	The user has reached the max. number of error reset attempts from the Remote Control or interface.	Press key ∜⊃	Press key 🏐
E151*	GV_CURR_LOCKOUT	Gas valve disconnected or faulty.	Contact qualified personnel	Check the gas valve.
		Faulty boiler board.	Contact qualified personnel	Replace the board.

BOILER STA- TUS	MALFUNCTION	PROBABLE CAUSE	User's tasks	Qualified personnel's tasks
E150*		Fan disconnected.	Contact qualified personnel	Check the fan.
E158	APS_LUCKUUT	Faulty boiler board.	Contact qualified personnel	Replace the board.
E160*	MAX_TRIALS_LOCK- OUT	See indications for E01.	See indications for E01.	See indications for E01.
		Water does not circulate inside heating system.	Contact qualified personnel	Check system status.
E162**	E162** Flow probe > 95 °C.	Circulation pump is blocked or faulty.	Contact qualified personnel	Check the circulation pump.
		One of the two flow probes is faulty.	Contact qualified personnel	Check flow probes.

\* errors that can be reset by the user by keeping pressed the button  $\bigcirc$ 

\*\* self-resettable errors, they automatically reset as soon as the failure is fixed

\*\*\* errors that can be reset only by the Technical Service personnel

In case errors **E90** and **E91** shall occur, please contact a service centre or qualified personnel for maintenance.

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The manufacturer reserves the right to modify his/her products as deemed necessary, without altering the basic characteristics of the products themselves.

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