Heating technology since 1959

User Manual
for model

RK 100

Premix condensing system boiler

CE 0694

RK 100 - RAD - ING - MAN.UT – 1311.1 - DIGITECH CS MIAH4

Technical specification **RADIANT BRUCIATORI S.p.A.** Montelabbate (PU) ITALY

ENGLISH

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BOILER OPERATING INSTRUCTIONS

1. General warning

⚠ **Make sure that the authorised technician who tested the boiler has stamped the guarantee booklet.**

⚠ **The installation, first start-up, regulation and maintenance operations must be carried out exclusively by qualified personnel (e.g. Radiant authorised Service Centres). Incorrect installation can cause damage to property and injury to persons or animals, for which the manufacturer will not be held responsible.**

During the installation, the technician must carry out the following checks:

- *The data on the data plate must correspond to that of the mains supply networks (gas, electricity, water);*
- *The boiler must be regulated according to its designed use and performance;*
- *The flue gas exhaust and combustion air intake system must be correctly installed and operational;*
- *The exhaust gas discharge and ventilation systems must comply with the requirements of national and local standards regardless of whether the boiler is installed indoors, outdoors or in its own cabinet (see section "Reference standards").*

User general warnings:

- ***If there is any doubt as to whether the appliance has been tested by an authorised technician, do not attempt to start it. All maintenance and gas conversion operations MUST BE CARRIED OUT BY PROFESSIONALLY QUALIFIED PERSONNEL.***
- ***Should any part of the boiler freeze-up, do not attempt to light it under any circumstances, but instead call the Service Centre immediately.***
- ***The appliance's combustion system must be checked every two years. This check includes testing the efficiency of the boiler and must be carried out by authorised personnel possessing the qualifications as required by current law.***
- ***Do not obstruct the ventilation openings in rooms where there are gas-burning appliances installed (boiler, cooker, etc.)***
- ***Do not allow the appliance to be used by persons (including children) with reduced physical, sensory, mental capabilities or with lack of experience and knowledge unless they have been viewed or educated on the use of the appliance by the person responsible for its safety or anyone unfamiliar with its operation;***
- ***The installation, operation and maintenance manual forms an integral and essential part of the product and must be kept near the appliance always.***

If you smell gas …

- ***DO NOT ACTIVATE ANY ELECTRIC SWITCHES, TELEPHONES OR ANY OTHER DEVICE THAT MAY GENERATE ELECTRICAL DISCHARGES OR SPARKS.***
- ***OPEN DOORS AND WINDOWS IMMEDIATELY TO CREATE A CURRENT OF AIR THAT WILL RAPIDLY CLEAR THE ROOM.***
- ***CLOSE ALL GAS TAPS AND VALVES.***
- ***CALL FOR PROFESSIONALLY QUALIFIED PERSONNEL.***

2. Control panel

Control panel Key

1. **HEATING TEMPERATURE SETTING BUTTONS**
2. **INFO BUTTON:** PRESS ONCE TO DISPLAY TEMPERATURES AND INFO (see 2.10 “INFO menu display”). KEEP INFO BUTTON PRESSED FOR 5 SECONDS (in OFF MODE) TO DISPLAY THE LAST 5 ERRORS.
3. **MODE SELECTION BUTTON** SUMMER ONLY / WINTER ONLY / SUMMER-WINTER / OFF.
4. **RESET BUTTON:** ERROR RESET – FLUE TEST FUNCTION ACTIVATION (CHIMNEY-SWEEPER - KEEP IT PRESSED FOR 7 SECONDS).
5. **DOMESTIC HOT WATER TEMPERATURE SETTING BUTTONS** *(RS version only - with connection to a remote storage cylinder).* KEEP BUTTONS ‘+’ AND ‘-‘ PRESSED FOR 5 SECONDS TO ACTIVATE THE DISPLAY BACKLIT MODE FOR A CONTINUOUS PERIOD OF 10 MINUTES.
6. TERMINAL BLOCK FOR EXTERNAL WIRING.
7. LCD DISPLAY.

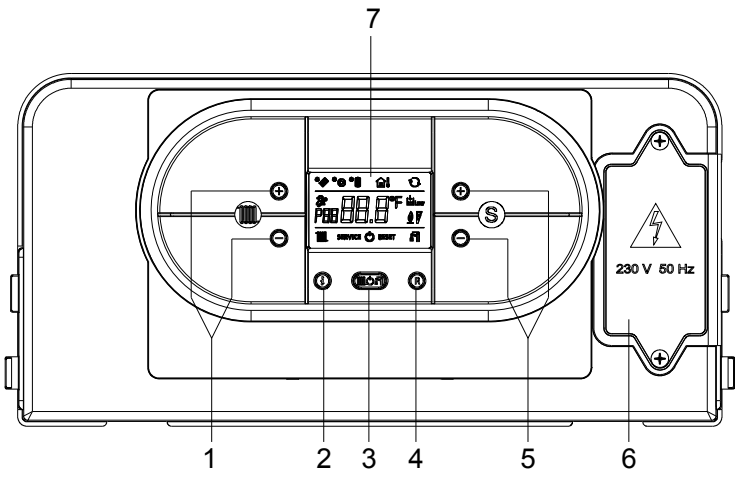

Fig. 1

LCD display icons’ key

1. PARAMETER NUMBER INFORMATION
2. PARAMETERS PROGRAMMING MODE ON
3. SOLAR PCB CONNECTION INFORMATION / SOLAR PANEL TEMPERATURE DISPLAY (d6)
4. SOLAR PUMP ON
5. STORAGE CYLINDER LOW LEVEL TEMPERATURE VISUALIZATION (d7) / STORAGE CYLINDER HIGH LEVEL TEMPERATURE VISUALIZATION (d8) *(RS version only - with connection to a remote storage cylinder)*
6. OUTDOOR TEMPERATURE SENSOR CONNECTED / OUTDOOR SENSOR TEMPERATURE DISPLAY (d2)
7. TEMPERATURE / SET POINT / PARAMETER VALUE INFORMATION
8. OPEN THERM COMPONENTS COMMUNICATION CONNECTED (REMOTE CONTROL / ZONE MANAGEMENT CONTROL BOX)
9. WATER LOW PRESSURE INFORMATION
10. (*) FLAME PRESENCE ON (3 POWER STEPS)
11. D.H.W. MODE ENABLED *(RS version only - with connection to a remote storage cylinder)*
12. RESETTABLE ERROR DISPLAY
13. OFF MODE
14. NOT RESETTABLE ERROR DISPLAY
15. HEATING MODE ENABLED

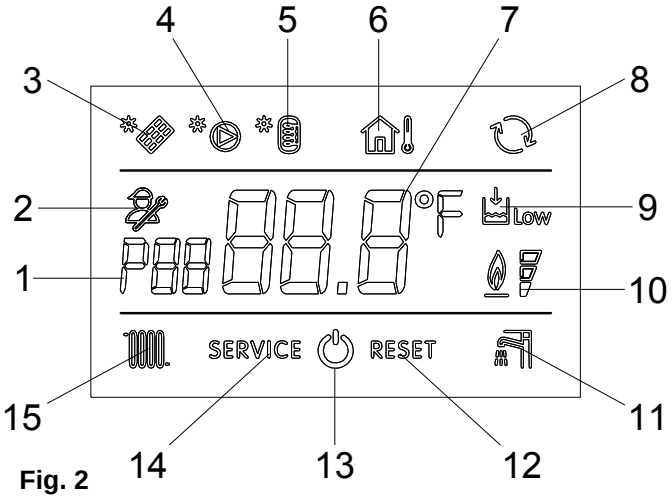

Fig. 2

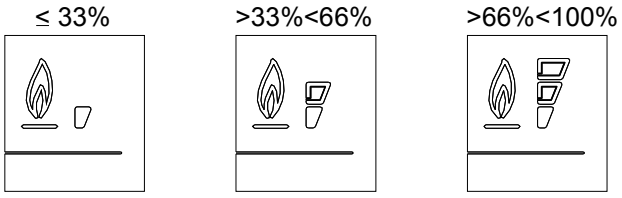

Fig. 3

3. Starting up the boiler

- Check that the boiler is power supplied and that the gas feed valve, placed at the bottom of the boiler, is open.
- Switch on the boiler by using MODE SELECTION BUTTON and select the functioning mode required.

4. INFO Menu display

Press the ‘ ’ INFO Button to display the boiler data.

Once pressed, the parameter number will appear on the left side of the display and the associated parameter value will appear on the centre of the display. Use ‘ ’ and ‘ ’ buttons of Heating Temperature setting to scroll the list of available data.

Press the ‘ ’ INFO button to exit the display mode.

The list of available display data is the following:

Parameter	Icon	Description
d00		DHW sensor temperature *(RS version only - with connection to a remote storage cylinder)*
d01		Outdoor sensor temperature *(only with outdoor temperature sensor)*
d2		Fan speed
d3		Low temperature circuit sensor *(only with Zone PCB CRAD0 connected)*
d4		Heating return sensor temperature *(only with PWM control electronic circulator)*
d5		Solar panel sensor temperature *(only with Solar PCB connected)*
d6		Solar storage cylinder temperature (low level) (*only with Solar PCB connected)*
d7		Solar storage cylinder temperature (high level) (*only with Solar PCB connected)*
d8		Solar panel sensor temperature 2 *(only with Solar PCB connected)*
d9		Solar storage cylinder temperature (extra) *(only with Solar PCB connected)*

5. Boiler functioning modes

“SUMMER” mode *(RS version only - with connection to a remote storage cylinder)*

To switch boiler operation to “SUMMER” mode, press the MODE SELECTION button (page 2, fig. 1,pos.3). The boiler will only work for the D.H.W system, the heating system is disabled. The “SUMMER” mode setting of the boiler is signalled by the symbol , lit continuously on the control panel.

The automatic ignition system will light the burner every time there is a domestic hot water demand. In this case, the symbol will flash on the control panel.

“WINTER” mode

To switch boiler operation to “WINTER” mode, press the MODE SELECTION button (page 2, fig. 1,pos.3). The boiler will only work for the Heating system. The “WINTER” mode setting of the boiler is signalled by the symbol lit continuously on the control panel.

The automatic ignition system will light the burner every time there is a room heating demand. In this case, the symbol will flash on the control panel.

“SUMMER-WINTER” mode *(RS version only - with connection to a remote storage cylinder)*

To switch boiler operation to “SUMMER-WINTER” mode, press the MODE SELECTION button (page 2, fig. 1,pos.3). The boiler will work for both central heating/D.H.W systems. The “SUMMER-WINTER” mode setting of the boiler is signalled by symbols lit continuously on the control panel.

The automatic ignition system will light the burner every time there is a room heating or domestic hot water demand. The functioning is signalled by the symbols flashing continuously on the control panel.

Regulating the heating temperature

The heating temperature is regulated by using ‘ ⊕ ’ and ‘ ⊖ ’ buttons of Heating temperature setting (page 3, fig. 1,pos.1).

- Pressing ‘ ⊖ ’ button, reduces the temperature.
- Pressing ‘ ⊕ ’ button, increases the temperature.

The range of temperature settings for the central heating runs from a minimum of 30°C to a maximum of 80°C (25 °C – 45 °C for under floor heating systems).

Regulating the D.H.W temperature *(RS version only - with connection to a remote storage cylinder)*

The D.H.W temperature is regulated by using ‘ ⊕ ’ and ‘ ⊖ ’ buttons Ⓢ symbol side (page 2, fig. 1,pos.5).

- Pressing ‘ ⊖ ’ button, reduces the temperature.
- Pressing ‘ ⊕ ’ button, increases the temperature.

The range of temperature settings for the D.H.W temperature runs from a minimum of 35 °C to a maximum of 60 °C.

6. Filling the system

In order to restore the water pressure of the system, open the external filling loop valve and check by means of a pressure gauge**,** that the pressure of the system reaches 1.2 ÷ 1.5 bar.

On completion, close the external filling loop valve.

After the water pressure is restored, a purging cycle of 2 minutes is automatically performed by the boiler. The function code **F33** will appear on the display. The starting of the boiler is enabled only once the purging cycle has been completed.

7. Diagnostics – Error and function codes

This paragraph contains a list of error **Exx** and function **Fxx** codes that the boiler may generate on the display together with the relative indications and the operations that the user can carry out to reset the boiler.

Error codes

Code **E01** Ionisation malfunction. (RESET associated symbol)

- Check that the gas valve on the boiler and gas meter are open. and that there is gas in the mains supply.
- Press Reset button ' ® ' on the control panel to reset the error;
- When the error code on the display disappears, the boiler will restart automatically.

⚠ If the problem persists, **Call the Service Centre**.

Code **E02** Safety Thermostat tripped. (RESET associated symbol)

- Press Reset button ' ® ' on the control panel to reset the error;
- When the error code on the display disappears, the boiler will restart automatically.

⚠ If the problem persists, **Call the Service Centre**.

Code **E03** Thermo fuse 102 °C tripped. (RESET associated symbol). **Call the Service Centre.**

Code **E04** Water Pressure Switch Tripped (Low associated symbol).

- Check the water pressure in the central heating circuit. The reading on the pressure gauge **M** (see fig. 2), located on the lower part of the boiler, must not be less than 1,2 bar.
- If the pressure is less than 1,2 bar, top-up the system as described in paragraph "Filling the system".
- When the error code on the display disappears, the boiler will restart automatically.

⚠ If the problem persists, **Call the Service Centre**.

Code **E05** Heating Sensor malfunction. (SERVICE associated symbol). **Call the Service Centre.**

Code **E06** D.H.W sensor malfunction. (SERVICE associated symbol). *(RS version only - with connection to a remote storage cylinder).* **Call the Service Centre.**

Code **E16** Fan malfunction. (SERVICE associated symbol). **Call the Service Centre.**

Code **E18** Inadequate circulation. (SERVICE associated symbol). **Call the Service Centre.**

Code **E21** General malfunction inside the printed circuit board. (SERVICE associated symbol).

- Switch off the power supply at the main switch and then switch it on again;
- When the error code on the display disappears, the boiler will restart automatically.

⚠ If the problem persists, **Call the Service Centre**.

Code **E22** Parameter programming request. (SERVICE associated symbol).

- Switch off the power supply at the main switch and then switch it on again;
- When the error code on the display disappears, the boiler will restart automatically.

⚠ If the problem persists, **Call the Service Centre.**

Code **E35** Flame detection malfunction. (RESET associated symbol).

- Press Reset button ' Ⓡ ' on the control panel to reset the error;
- When the error code on the display disappears, the boiler will restart automatically.

⚠ If the problem persists, **Call the Service Centre.**

Code **E40** Electric power supply out of the operation range. (RESET associated symbol).**Call the Service Centre.**

Function codes

Code **F08** Frost protection function (central heating circuit) ON. **Wait for the completion of the operation.**

Code **F09** Frost protection function (D.H.W circuit) ON. *(RS version only - with connection to a remote storage cylinder).* **Wait for the completion of the operation.**

Code **F28** Legionella Prevention Function. (*RS version only - with connection to a remote storage cylinder).* **Wait for the completion of the operation.**

Code **F33** System purging function ON. **Wait for the completion of the operation.**

8. Switching OFF the boiler

➔ ***To switch the boiler OFF, press*** ***INFO button, the symbol*** ***appears on the display. The frost protection system, the circulating pump inactivity protection and 3-way valve inactivity protection functions remain enabled*** *(RS version only - with connection to a remote storage cylinder)**.***

➔ ***If the boiler was previously ON, it is switched OFF and the fan overrun and pump overrun functions are enabled.***

N.B. If the boiler is to be left unused for a long period of time, the user must do one of the following:

- *Make the boiler safe* by disconnecting all the power supplies (electricity and gas), and draining the heating system;
- Leave the boiler in *OFF position,* leaving the electricity and gas supplies connected and, consequently the frost protection function.

9. Frost Protection

The boiler is protected from freezing by electronic board settings and special functions that provide the starting of the burner to heat all the interested parts, when their temperature drops below the minimum preset values.

This function is enabled if:

- the boiler is electrically power supplied;
- the gas supply is open;
- the system pressure is that required;
- the boiler is not locked out.

⚠ **In case of boiler parts locked out because of freezing, do not switch the boiler ON and immediately call the Service Centre.**

10. Maintenance

In order to ensure that the boiler operates efficiently and safely, it is recommended that the appliance is inspected by a suitably competent technician at least once a year.
A regular maintenance is always source in management system savings.

11. Recycling

The appliance packaging is mainly made of recyclable materials.

The appliance and all its accessories must be disposed of appropriately differentiated in compliance with the relevant standards.

The symbol indicates the inability to dispose of this product as domestic waste.
The correct disposal of this product will help to prevent potential negative consequences for the environment and people health.

Heating technology since 1959

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