

Installation, use and maintenance manual

Calorio Serie

Balanced flues gas heaters

Natural gas / LPG fired



Revision: E

Code: D-LBR701

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INTRODUCTION

This manual is addressed to all installers and users of Robur Calorio M independent gas-fired heaters.

In particular, this manual is intended for the gas engineer who will install the heater, the electrician who will connect it to the mains power supply and the end user who will control it during everyday operation.

The manual is also addressed to service engineers carrying out the main servicing operations.

Summary

The manual has five sections:

Section 1 is addressed to the **user**, to the **gas engineer**, to the **electrician** and to the **service engineer**; it contains general instructions, technical data and information on the construction of Calorio M independent heaters.

Section 2 is addressed to the **user**; it contains all the information necessary for the operation of Calorio M independent heaters.

Section 3 is addressed to the **gas engineer**; it provides instructions for the installation of Calorio M independent heaters.

Section 4 is addressed to the **electrician**; it provides the information required by the electrician for electrical connection of Calorio M independent heaters.

Section 5 is addressed to **service engineers**; it provides the necessary information for adjustment of the gas flow rate and gas type conversion. It also includes maintenance instructions.

Symbol meanings

The symbols used in the manual have the following meanings.



Danger



Warning



Note



Start of operational procedure



Reference to another part of the manual or to a different manual/booklet

Table 1 – Descriptive symbols

List of material supplied with the heater

- installation template
- wall bracket
- 49 mm Ø air intake pipe
- 32 mm Ø flue pipe
- external flue terminal in aluminium alloy
- rear sealing strip
- round combustion air seal
- 3-pin plug for electrical connection
- screws and wall plugs
- documentation

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SECTION 1 OVERVIEW AND TECHNICAL CHARACTERISTICS

This section contains general instructions regarding the installation and use of Calorio M independent gas-fired heaters, and a brief summary of their operation, construction and technical data.

1.1 GENERAL WARNINGS

This manual constitutes an integral and essential part of the product and must be delivered to the user together with the appliance.

The heater must only be used for the purposes for which it has been designed. Any other use must be considered improper and therefore dangerous.

The manufacturer is exempt from any contractual or extra-contractual responsibility for damage caused by errors of installation and use, and by any non-observance of the instructions provided by the manufacturer.

The heater must be installed in accordance with the applicable standards.



Do not obstruct the fan intake or the outlet grille.

Do not obstruct the exterior air intake and flue outlet pipes.



In case of failure and/or bad/poor operation, deactivate the heater (disconnect the electrical power supply and shut off the gas supply); do not attempt any repair or servicing of the appliance.

Any repair to the product must be carried out only by a Technical Assistance Centre authorized by the manufacturer using exclusively original replacement parts.

The non-observance of the foregoing warnings may compromise the safety of the heater.

To ensure the heater continues to operate correctly and efficiently, it must be serviced annually, in accordance with the manufacturer's instructions, by **professionally qualified service personnel**.



"*Professionally qualified personnel*" are defined as persons possessing specific technical competence in the sector of residential heating equipment. For further information, telephone ROBUR S.p.A. Technical Assistance Department (tel. +39 035/888111) or visit our website www.robur.it.

If the heater is sold or transferred to another owner, ensure that this manual is handed over to the new owner and/or installer for their reference.

Before starting up the heater, have the following items checked by **professionally qualified personnel**:

- that the electricity and gas mains specifications correspond to the specifications on the nameplate.
- that the air intake and flue pipes function correctly.
- that the combustion air is drawn in and fumes are exhausted in accordance with the applicable legislation.

- the sealing of the gas supply system, both internal and external.
- the gas flow rate setting is appropriate for the heater's power rating.
- the gas supplied to the heater is of the type with which it is designed to operate.
- the gas supply pressure is within the tolerance range specified on the nameplate.
- the gas supply system is correctly rated for the capacity required by the heater, and that it is equipped with all the safety and control devices prescribed by current regulations.

Do not use gas pipes as an electrical earth.

If the heater is not in use, switch off the electrical power and always close the gas tap.

If the heater is not to be used for a prolonged period, shut off the main gas inlet tap and disconnect the electrical power supply.



IF YOU SMELL GAS

- Do not operate electrical switches, the phone or any other equipment which may generate sparks.
- Close the gas tap.
- Immediately open the doors and windows to allow fresh air to enter the area.
- Seek assistance from professionally qualified personnel

1.2 BRIEF DESCRIPTION OF HEATER OPERATION

The Calorio M gas-fired heater is a forced draft modulating heating unit with a sealed combustion chamber.

It is designed for installation inside the room to be heated.

It can be adapted for use with natural gas (G20) and LPG (G30/G31) (category II_{2H3+} heater according to EN 1266).

Combustion air is drawn into the heater and fumes are exhausted to the outside through two coaxial pipes, assisted by an electric fan in the combustion circuit. The unit must therefore be installed on an external perimeter wall or close to it, observing the maximum permissible length of the coaxial pipes (see SECTION 2).

The operating principle of the Calorio M heater is based on the convection of room air. The air is drawn up through the unit, where it is heated, and then discharged into the room through the outlet grille at the top. The recirculation of room air is assisted by a modulating fan located in the lower part of the unit.



For this reason it is important not to obstruct the air outlet by placing clothing or any other objects over the outlet grille; always keep curtains, chairs or any other furniture at least 30 cm away from the heater.

The operation of the heater is made very simple and fully automatic by the control board and user interface with digital display, fitted as standard; in fact, the only operations required of the user are to start the heater, select the required temperature and the periods of operation.

In winter operating mode (heating), the heating power and air flow are regulated in accordance with the ambient temperature, as measured by the temperature sensor.

For maximum safety, the combustion chamber is sealed from the environment in which the heater is installed; there is no possibility of combustion products leaking into the room or of the oxygen in the room being consumed by combustion.

The heater, installed in accordance with the applicable installation standards, is not necessary to install openings for ventilation of the room.

A flame detection system with an ionization flame sensor shuts off the gas supply if the flame is accidentally extinguished.

In summer, the integral fan can be used independently to provide a pleasant air flow within the room.

1.3 CONSTRUCTION

Calorio M gas-fired heaters are supplied complete with:

- high-performance **combustion chamber and tubular heat exchanger** (patented) made from stainless steel;
- **control board**: controls burner ignition, flame detection and modulation functions;
- **temperature sensor**;
- **user interface board** with backlit digital display;
- **centrifugal fan** with modulating operation;
- **fume exhaust blower**;
- **power modulation**;
- **summer ventilation**;
- **coaxial pipes for combustion air intake and fume exhaust** 49/35 mm Ø;
- **gas and electrical connections** are external to the heater;
- **external anti-draft flue terminal** (patented) with compact dimensions;
- **casing** in epoxy-powder painted metal plate, available in three colours: beige, white and grey.

1.4 TECHNICAL DATA

DESCRIPTION	U.M.	42 M	52 M
TYPE		C ₁₃	
CATEGORY		II _{2H3+}	
NOMINAL HEAT INPUT - MAX. ¹	kW	3.62	5.23
NOMINAL HEAT OUTPUT - MAX.	kW	3.26	4.71
NOMINAL HEAT INPUT - MIN. ¹	kW	2.51	3.60
NOMINAL HEAT OUTPUT - MIN.	kW	2.26	3.18
NOMINAL NO _x VALUES	mg/kWh	97	158
MAX/MIN CONSUMPTION ¹			
NATURAL GAS	m ³ /h	0.383/0.266	0.553/0.381
LPG G30	kg/h	0.285/0.198	0.412/0.284
LPG G31	kg/h	0.280/0.195	0.405/0.278
RATED EFFICIENCY	%	90%	
NATURAL GAS SUPPLY PRESSURE			
MAXIMUM	mbar	25	
NOMINAL	mbar	20	
MINIMUM	mbar	15	
LPG SUPPLY PRESSURE (G30)			
MAXIMUM	mbar	35	
NOMINAL	mbar	30	
MINIMUM	mbar	28	
LPG SUPPLY PRESSURE (G31)			
MAXIMUM	mbar	40	
NOMINAL	mbar	37	
MINIMUM	mbar	30	
NOISE LEVEL IN TYPICAL INSTALLATION (AT 3 METRES)			
MAXIMUM	dB(A)	35	39
MINIMUM		33	35
INJECTOR DIAMETER			
NATURAL GAS	mm	see Table 5 on page 32	
LPG			
PRESSURE AT BURNER AT MAXIMUM POWER			
NATURAL GAS	mbar	10.5	9
LPG G30		28.8	28
LPG G31		36.7	35.5
PRESSURE AT BURNER AT REDUCED POWER			
NATURAL GAS	mbar	6.0	5.0
LPG G30		14.0	14.7
LPG G31		18.0	19.7
GAS CONNECTION (ISO 7/1)		½" M	
HOLE DIAMETER FOR AIR INTAKE/FLUE PIPE	mm	50	
ELECTRICAL POWER SUPPLY		230V 50Hz single-phase	
ELECTRICAL POWER ABSORPTION	W	45	86
MAX. LENGTH OF COAXIAL PIPES	m	1	
WEIGHT	kg	25	26

Table 2 – Technical data

¹ THERMAL OUTPUT AND GAS CONSUMPTION DATA ARE MEASURED IN ACCORDANCE WITH EN437 AT THE FOLLOWING TEST PRESSURES: NATURAL GAS: P.C.I. 34.02 MJ/M³ AT 15°C 1013.25 MBAR; BUTANE (G30): P.C.I. 45.65 MJ/KG; PROPANE (G31): P.C.I. 46.34 MJ/KG

1.5 DIMENSIONS OF CALORIO M HEATERS

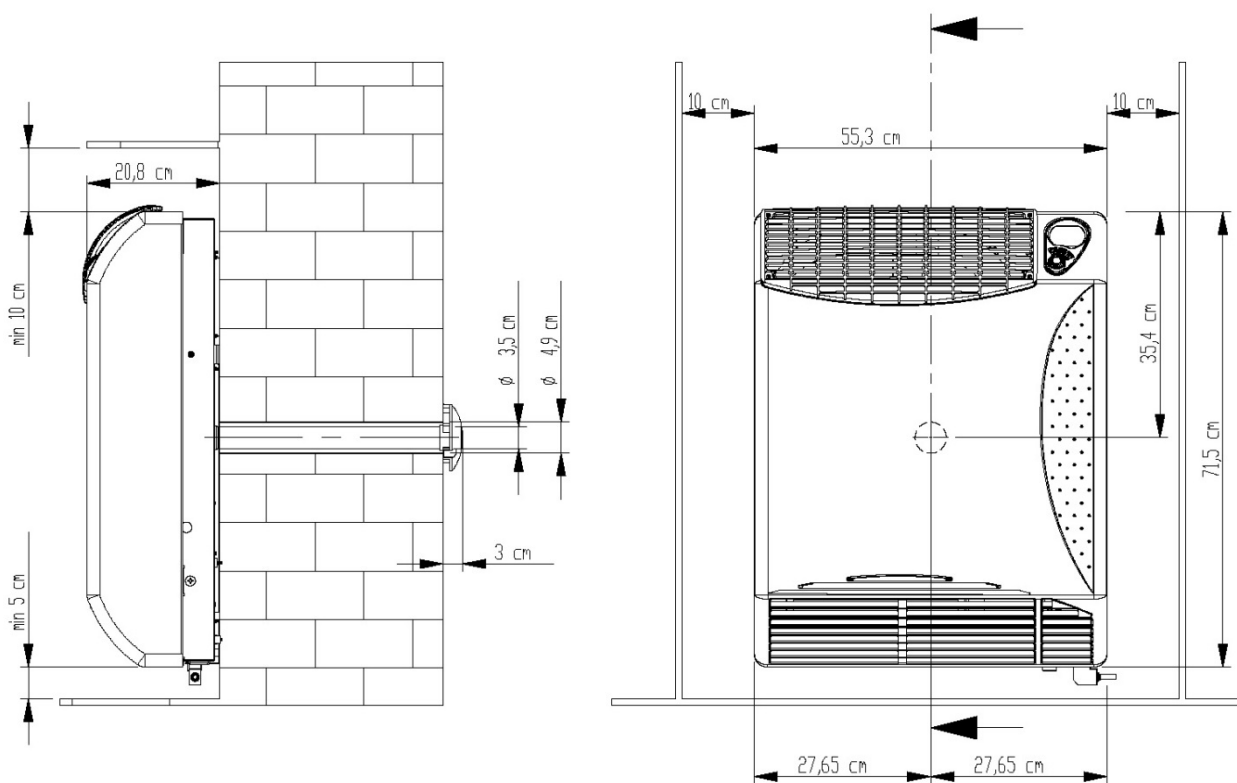



Figure 1 – Dimensions of Calorio heaters




SECTION 2 USER SECTION

This section contains all the necessary information on how to operate the Calorio M gas-fired heater.


Operation of the Calorio M heater is controlled from the digital display fitted as standard.

 The temperature shown on the display is the temperature of the air entering the heater (as read by the temperature sensor located near the lower intake grille). It is NOT the room temperature.

2.1 BUTTON FUNCTIONS

- **Button A**  (ON/OFF):
to turn on the heater press this button for 2 seconds (the display will show "On", the ambient temperature, the time, the data of the week and the function symbols);
to turn off the heater press the button for 2 seconds (the display will show "Off"; the time and the day of the week; the red LED (E) will illuminate).
- **Button B**  (Manual/Automatic/MENU): used to select manual operation (hand icon) or automatic operation (clock icon). Press for more than 5 seconds to access the "information/user settings menu" (see relative paragraph).
- **Button C**  (Heating/Ventilation/RESET): used to select winter mode (radiator icon) or summer mode (fan icon) and to reset the heater in the event of lock out.



Press button A  for at least 2 seconds; this feature is designed to prevent any accidental operation of the button.

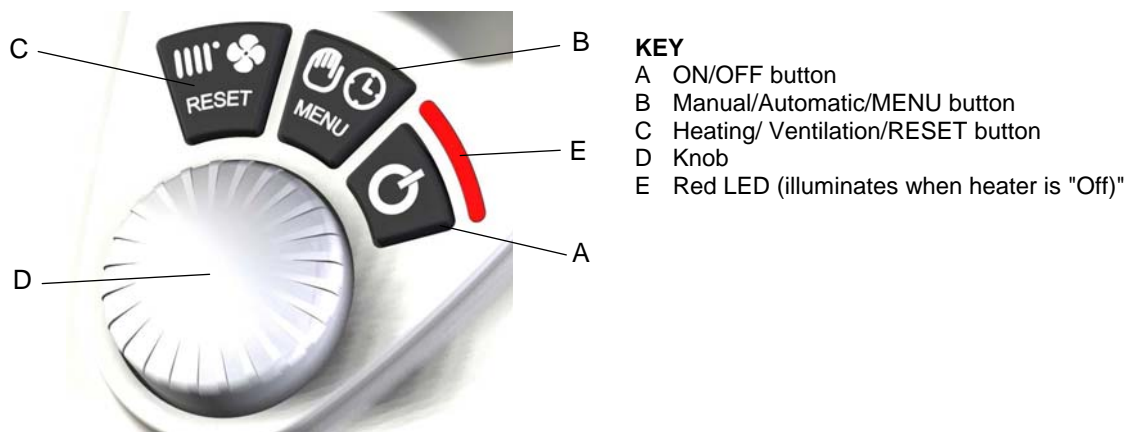


Figure 2

2.2 KEY TO DISPLAY ICONS











ICON	DESCRIPTION	MEANING
	OFF	THE HEATER IS OFF
	HAND	MANUAL OPERATION
	CLOCK	AUTOMATIC OPERATION
	PADLOCK	THE CONTROLS LOCK IS ACTIVE
	SUN	WINTER MODE (COMFORT TEMPERATURE MAINTAINED)
	MOON	WINTER MODE (ECONOMY TEMPERATURE MAINTAINED)
	ALARM	OPERATING FAULT (SEE TABLE 6 ON PAGE 40)
	HEATER	WINTER MODE
	FAN	SUMMER MODE (VENTILATION ON)
	FLAME	BURNER ON (DOUBLE FLAME = MAX POWER, SINGLE FLAME = REDUCED POWER)

Table 3 – Key to display icons

2.3 OPERATION OF THE KNOB

The operation of the knob (D) can be summarised as follows:

- Rotate the knob in a clockwise or anti-clockwise direction to select the menu options shown on the display or to change the value of a numerical field.
- Press the knob to access the menu selected or to confirm an operation in progress.

2.4 FIRST START-UP OF THE HEATER



The first start-up must be done by **professionally qualified personnel**.

Before starting the gas-fired heater, the professionally qualified person must check:

- that the electrical power supply and gas supply correspond to the values specified on the unit's data plate.
- that the calibration is compatible with the heater's rated power;
- that the combustion air intake and flue system function correctly.
- that the combustion air is drawn in and fumes are exhausted are in accordance with the applicable legislation.



START-UP




Preconditions: the heater must be connected to the electrical power supply and to the gas supply.

1. Open the gas tap (for operation in winter mode only).
2. Connect the electrical power supply by inserting the 3-pin plug in the outlet socket.
3. Select the desired operating mode from those described in the relative paragraph (see Paragraph 2.5 on page 16).

4. If there is a call for heat (measured temperature below the required temperature setting) the gas solenoid valve will open and the ignition electrode will start to spark.
5. When a flame is detected, the control board will automatically stop the electrode sparking and will keep the heater in operation.
6. If no flame is detected, the control board will inhibit operation of the heater: the anomaly will be signalled by the flashing of the display backlight, illumination of the red LED E and by the appearance of the ALARM icon with the message "r001 Err" on the display.

 To reset the error, press the reset button C . The error will no longer be displayed, indicating acceptance of the reset command by the control system.


7. The fan starts automatically only when it receives the enabling signal from the fan thermostat or when the heat exchanger warming period has elapsed, so as to prevent cold air being discharged into the room, and switches off automatically when the heat exchanger is cold.


 After 3 consecutive flame lock outs "r001 Err", the error "r091 Err" will be displayed. The heater can be reset by disconnecting the electrical power supply or by waiting at least 1 hour after the most recent flame lock out.

TURNING ON THE HEATER

The heater leaves the factory pre-configured with the standard settings which can be changed after power on.

Once the heater has been installed and connected to the gas and electrical power supplies, the display will show the time with the word OFF and the red LED E will be illuminated.

To power on the heater, press button A  for at least 2 seconds: the following information will appear on the display:


- the time - 12.00- and the day of the week - 1) –
- the preprogrammed ambient temperature - 4 –
- the radiator icon  at the lower left of the display informs the user that the heater is in HEATING mode

The temperature level can be adjusted within the range of 1 to 6.

To adjust the level setting in order to increase or reduce the ambient temperature, proceed as follows:

1. Turn knob D clockwise to increase or anti-clockwise to reduce the required temperature level: the level value will start flashing.
2. Press the knob to confirm the new level and return to normal display mode.


If the ambient temperature is lower than the programmed temperature level, the heater icon will start flashing and after a few seconds the burner will ignite.

The presence of the flame is signalled by the flame icon , which can assume 2 levels: small flame signals that the heater is operating in modulated mode, while the double flame indicates the heater is operating at maximum power.

The fan will start automatically once the heat exchanger has reached the required temperature. The fan speed is proportional to the burner heating output (maximum or modulated).

TURNING OFF THE HEATER

You can turn off the heater in either of the following two ways:





- press button A  for at least 2 seconds: the word OFF will appear on the display and the red LED E will illuminate.
- reduce the required temperature setting by turning the knob anti-clockwise to level 1.0 (which corresponds to an ambient temperature of about 5°C).

The heater can be programmed to operate with different temperature levels (Comfort, Economy, and Frost protection). For programming instructions, refer to the paragraph SETTING THE COMFORT/ECONOMY on page 17.






2.5 OPERATING MODE SELECTION

The different operating modes of the Calorio M heater are described below.




MANUAL OPERATION

1. Press manual operation button B  : the hand icon  appears on the display.
2. In winter mode (heating) the radiator icon  is shown on the display (fixed if the burner is lit or if the heater is in stand-by, flashing if the heater is in the ignition phase).
3. In this operating mode, the heater will continuously maintain the manually set ambient temperature (shown on the display); to change the required ambient temperature level, turn the control knob to the desired level and press the knob to confirm.
4. In summer mode (ventilation) the fan icon  is shown on the display and air circulation is continuous.

AUTOMATIC OPERATION


1. Press automatic operation button B  : the clock icon  appears on the display.
2. The heater will operate in accordance with the programmed time schedules (see the paragraph "Programming heating/ventilation time schedules"), in particular:
 - Winter mode (heating): during periods of operation (ON), the heater maintains the programmed Comfort temperature (sun icon ) , while during OFF periods, the programmed Economy temperature will be maintained (moon icon ) ; if the Economy temperature has been set to OFF, the heating will be turned off (the frost protection function will also not be activated, even if it is enabled).
 - Summer mode (ventilation): air circulation is guaranteed only during ON periods (fan icon  displayed).

TEMPORARY MANUAL OPERATION

1. If the ambient temperature is changed (by turning and pressing the control knob) during "Automatic operation" (see relative paragraph), the operating mode will switch from Automatic to "Temporary Manual".
2. In this operating mode, the manually set ambient temperature (shown on the display) will be maintained until the next change in the automatic time schedule or until the user presses button B .
3. The display shows the fixed auto icon  and the flashing hand icon  to indicate that manual operation is only temporary.

2.6 ACCESSING THE USER MENU

To access the User information/settings menu, press for more than 5 seconds button B

MENU : the various submenus will be displayed in sequence, starting with the first (TIME – hour/minutes/day setting) through to the last (BLOC – Controls lock)(see Table 4).

To move between the submenus, turn the knob to select the desired submenu and confirm by pressing the knob.




FUNCTION	DISPLAY
Time and day setting	12:00
Day setting	1)
Comfort temperature setting	COMF 
Economy temperature setting	ECON 
Frost protection temperature setting	nOFr
Time schedule programming	PrOG
Max. heating power limit	PLim (NOT ACTIVE)
Display backlight setting	TMBL
Temperature level display type	°C
Controls lock function	BLOC

Table 4 – User menu



SETTING THE TIME AND DAY OF THE WEEK

1. Press for 5 seconds button B MENU  and using the knob (press - rotate - press), set the hours and minutes.
2. Select the day of the week using the knob: 1 = Monday...7 = Sunday.






The default setting is "12:00" for the time, and "1" (Monday) for the day.


SETTING THE COMFORT/ECONOMY TEMPERATURE LEVELS (for automatic operation)

1. Press for 5 seconds button B MENU  and turn the knob until the display shows COMF and the sun icon ; using the knob (press - rotate - press), set the desired Comfort temperature level (the default setting is level 4.0 or 20° C).


The “Comfort” setting is the temperature maintained by the heater during ON periods in automatic operation.

 The comfort temperature setting must be higher than the Economy temperature setting.

2. Press button B MENU  and turn the knob until the display shows ECON and the moon icon ; using the knob (press - rotate - press), set the desired “Economy” temperature level (the default setting is level 2.0 or 10° C).
The “Economy” setting is the temperature maintained by the heater during OFF periods in automatic operation.


 If the Economy temperature is set to OFF, the heating will be turned off (the frost protection function will also not be activated, even if enabled).

FROST PROTECTION TEMPERATURE SETTING

1. Press for 5 seconds button B MENU  and turn the knob until the display shows “nOFr” (no frost) using the knob (press - rotate - press), set the desired frost protection temperature (the default setting is level 1.0 or 5° C).
The frost protection temperature can be set to any level from OFF to level 2.0 (10°C).

 To disable the frost protection function, set the temperature level to OFF.

PROGRAMMING HEATING/VENTILATION TIME SCHEDULES


1. Press for 5 seconds button B MENU  and turn the knob until the display shows “PrOG”.
2. Using the knob, select the day/period (1 = Monday, ..., 7 = Sunday) or (1-5 from Monday to Friday; 6 and 7 Saturday and Sunday; 1-7 every day) for which you want program automatic operation.
3. Confirm the selection by pressing the knob.
4. Using the knob, select the point for which you want to set the start time (ON1; ON2, ON3) or stop time (OF1; OF2, OF3) for heating/ventilation.
5. Confirm the selection by pressing the knob.
6. Select required the heating/ventilation ON and OFF time by turning the knob.
7. Press the knob to confirm the time setting and move to the next ON/OFF point.

 It is possible to set up to 3 ON/OFF points.

POWER/VENTILATION LIMITING FUNCTION

The power/ventilation limiting function IS NOT ACTIVATED on this version of the Calorio M.

DISPLAY BACKLIGHT FUNCTION

1. Press for 5 seconds button B MENU  and turn the knob until the display shows "TMBL" (time backlight).
2. Using the knob (press - rotate - press) you can set:
 - OFF: backlight always off
 - 5...240: duration in seconds backlight stays on after last press of a button or turn of the knob
 - ON: backlight always on




The default setting is "60" seconds.

TEMPERATURE DISPLAY IN LEVELS / °C

The ambient temperature settings (manual, frost protection, economy and comfort) can be displayed in levels (from 1.0 to 6.0) or in °C (from 5° to 30°).



The default setting is OFF (temperature displayed in levels). To change the factory default, proceed as follows:

1. Press for 5 seconds button B MENU  and turn the knob until the display shows "°C".
2. Using the knob (press - rotate - press) you can set:
 - OFF: temperature displayed in levels
 - ON: temperature displayed in °C



The air temperature in a room depends on the point in which it is measured.

In particular, the height of the point of measurement has a significant effect on the reading. In rooms in thermal equilibrium, this difference may be as small as one or two degrees or even just a fraction of a degree.

When a heater is first turned on in a cold room, the temperature difference between the floor level and the ceiling may initially be as much as ten degrees. Once the heater operation stabilises, the room temperature will tend to become more uniform, with smaller differences between the various points of the room.



The Calorio M temperature sensor, the reading of which appears on the display, is located low down inside the heater and measures the temperature of the air entering the heater near floor level.


The ambient temperature shown on the display should therefore not be considered as the average air temperature in the room, but instead indicative of the air in the area near the heater.


If you wish to measure the temperature in a different point of the room, we suggest positioning a wall-mounted thermostat at the desired point of measurement, connecting it to the terminal specifically provided on the internal circuit board of the Calorio M (in the lower part of the frame there is an access hole for the thermostat wire). For further information see APPENDIX on page 41 (parameter P009).


CONTROLS LOCK FUNCTION

This function allows you to enable the controls lock (buttons and knob disabled) to prevent settings from being changed by unauthorized persons or by accidental operation of the buttons.

1. Press for 5 seconds button B MENU  and turn the knob until the display shows "BLOC".
2. Using the knob (press - rotate - press) you can set:
 - OFF: lock function disabled (controls enabled)
 - 10...240: time in seconds after which the lock will be activated (the display shows the padlock icon )

 The controls lock can only be applied in the normal operation screen (not from the menu or other submenus).

3. When the controls lock is activated, it can be deactivated by holding for 7 seconds the knob and after, simultaneously pressing and holding the knob and button C. .

 The default setting is OFF (controls NOT locked).

2.7 OPERATING FAULTS

Any operating faults are displayed with the message "Err" followed by an error identification code. The display will also show the ALARM icon and the red LED will flash.

If the error is resettable, the letter "r" will appear before the error code; in this case the

error can be reset by a short press of button C : the error message will disappear from the display to indicate that the heater has accepted the reset command.

For further information on error codes, refer to Table 6 on page 40.

SECTION 3 GAS ENGINEER

This section contains all the necessary information for the connection of the Calorio M heater to the gas supply.

3.1 GENERAL INSTRUCTIONS FOR INSTALLATION OF THE HEATER

The heater must be installed in accordance with the manufacturer's instructions by **professionally qualified personnel**.



Professionally qualified personnel are defined as persons possessing specific technical competence in the residential heating equipment sector. For all the necessary information, contact ROBUR S.p.A. Presales department (tel. +39 035/888111) or visit our website www.robur.it.

Incorrect installation may cause injury or damage to persons, animals or objects, for which the manufacturer will not be liable.

The installation must be performed in compliance with the existing European laws, rules and regulations referred to gas and electrical appliances.

In particular, it is essential to observe the regulations governing the minimum distance of the flue outlet terminal from windows, balconies, gutters, as well as the distance from the ground or pavement.

The flue terminal is a safety terminal and does not require any protection.

During the installation, observe the following conditions:

- The heater must be installed in the room to be heated on or near to an external perimeter wall, observing the distances indicated in Figure 1.
- The heater should be installed at a minimum height from the floor of 8 cm (see Figure 1) and, where possible, below the height of 35 cm. If installed higher than this, the heat will not be distributed uniformly throughout the room.
- There should be a minimum clearance of 10 cm at the sides of the heater to allow the removal and refitting of the outer casing.
- If a shelf is to be installed above the heater, leave a minimum clearance of 10 cm. No cover of any type may be installed over the unit.
- Make sure there is a suitable gas supply through suitable gas pipework.
- Make sure there is a suitable electrical power supply (230V 50Hz).
- Do not install the heater on walls or supports made of combustible material without a suitable heat shield.
- Do not install the heater over electrical boxes/switches or distribution cabinets that require periodic inspection.

3.2 FLUE AND COMBUSTION AIR INTAKE

The flue and combustion air intake for Calorio M heaters can be achieved in any of the following ways:

- With coaxial pipes with outlet through the installation wall (max. pipe length: 1 metre) (see Figure 3).
- With coaxial pipes with 90° outlet (max. pipe length: 1 metre) (see Figure 4). In this case, a 90° elbow fitting for coaxial pipes is available as an accessory.

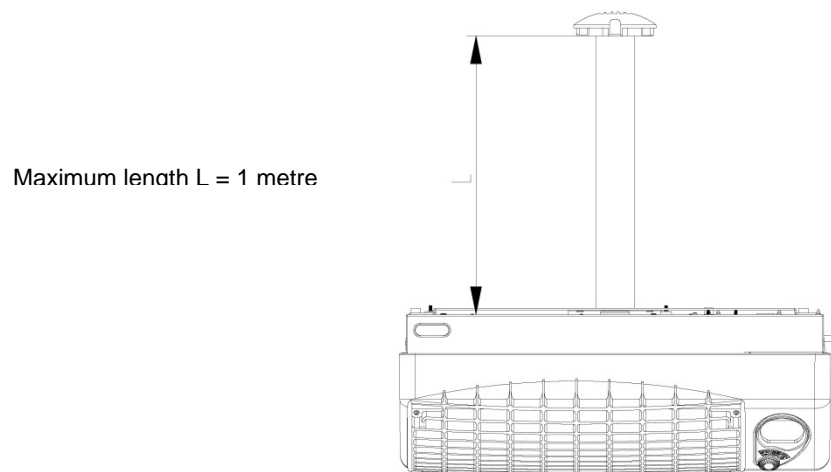


Figure 3 - Installation with coaxial pipes

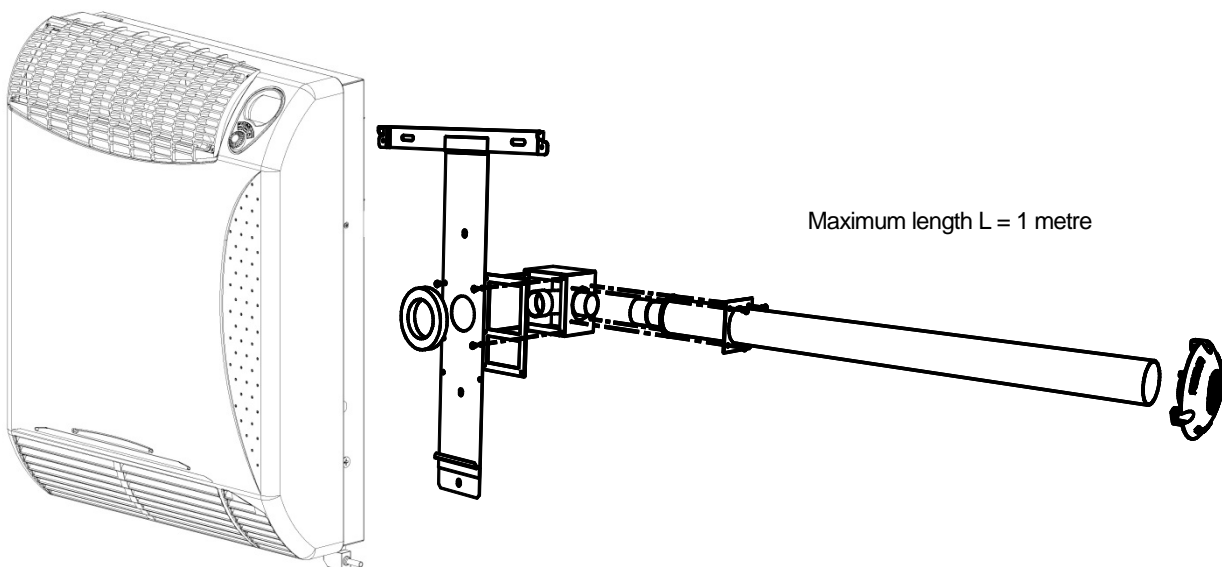


Figure 4 - Example of coaxial pipe installation with 90° elbow fitting

3.3 INSTALLATION PROCEDURES

In accordance with the installation project, prepare the gas and electrical power supplies and make the holes for the flue and combustion air intake pipes.

MOUNTING THE HEATER ON THE WALL

1. Before unpacking the unit, check the condition of the external packaging for signs of damage; if damage is found, inform the carrier immediately.
2. Remove the heater from its protective wrapping, withdrawing first the air intake and flue pipes. **DO NOT DAMAGE OR DISCARD THE "TEMPLATE"** as it provides a drilling guide for the correct installation of the heater.
3. Fix the template to the wall where the heater is to be installed, making sure it is perpendicular to the floor.
4. Drill a hole (\varnothing 50 mm) for the larger diameter pipe and holes "A" holes (see Figure 6) for the support bracket fixings (6 mm holes for the wall plugs provided). The 50 mm \varnothing hole for the pipe must be drilled using a suitable core drill or by drilling a series of small diameter holes around the perimeter of the large hole.
5. Cut the air intake and flue pipes to length taking into account the thickness of the installation wall: to determine the exact length see the diagram in Figure 5.



DO NOT cut off the flanged end of the 49 mm \varnothing pipe, as this will be used to fix the pipe.

DO NOT cut off the socketed end of the 35 mm \varnothing pipe, as this will be used to connect the pipe to the heater.

6. Remove the template from the wall.

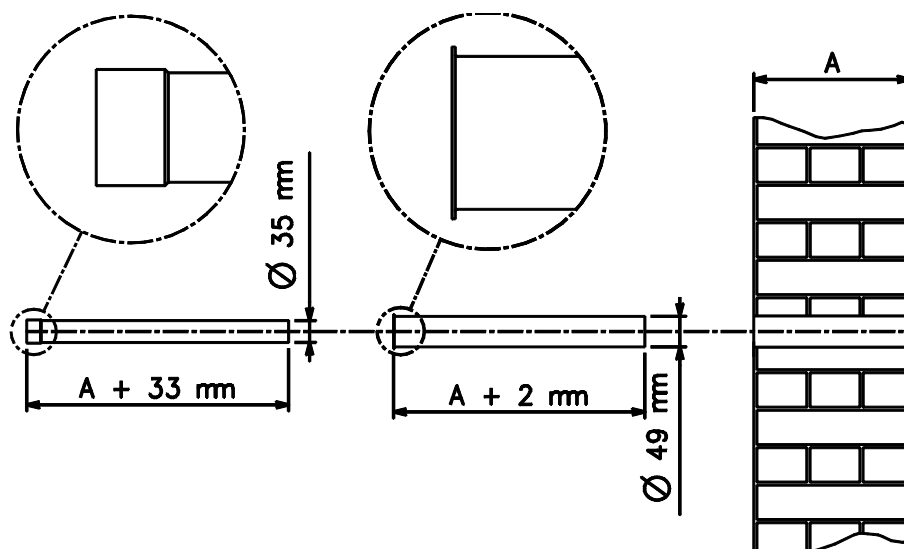


Figure 5 – Instructions for cutting the combustion air/flue pipes

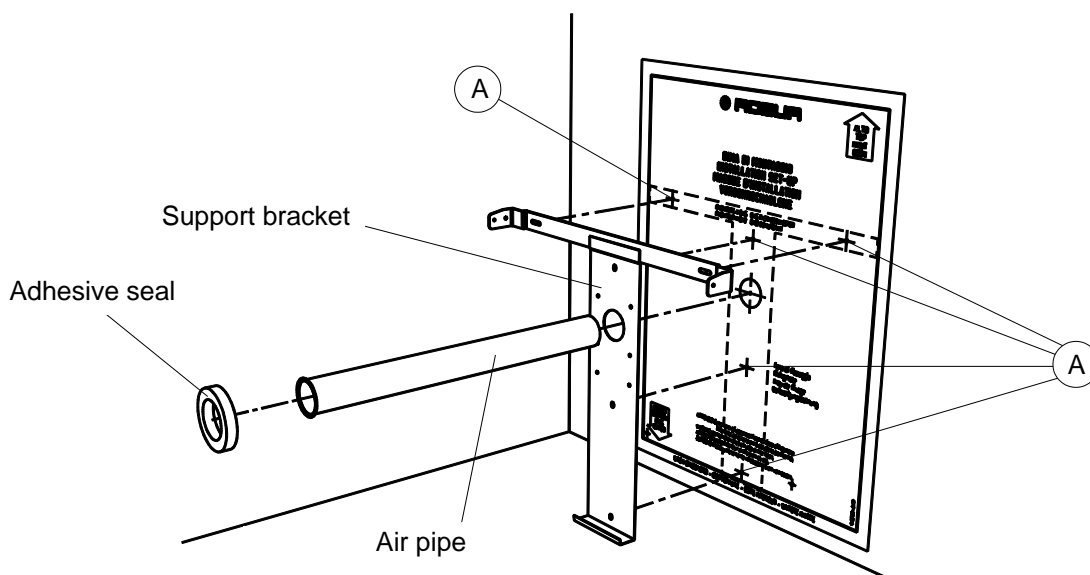


Figure 6 – Positioning the support bracket and drilling the holes for models 41, 42, 51 and 52

7. Position the support bracket and the 49 mm Ø air intake pipe, making sure that the pipe flange seats against the support bracket (see Figure 6).
8. Fix the support bracket with the screws and position the round adhesive seal around the hole in the bracket (see Figure 6).
9. Position the adhesive foam sealing strip on the support frame (at the rear of the heater) as shown in Figure 7. Try to position seal correctly at the first attempt as it may prove difficult to reposition once stuck.
10. Fit the socketed end of the flue pipe (35 mm Ø) on the heater outlet pipe (Figure 8).
11. Mount the unit on the wall, locating the slot C on the lower edge of the frame on the support bracket, as shown in Figure 9).

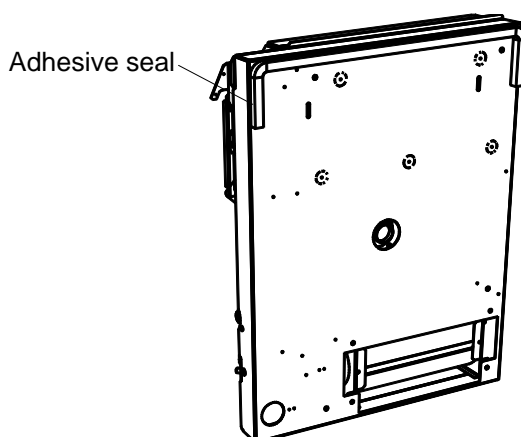
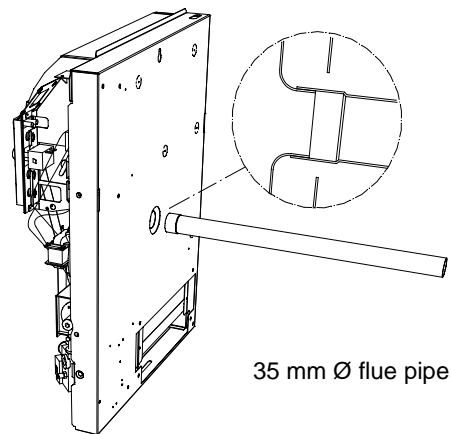


Figure 7 – Positioning the seal



35 mm Ø flue pipe

Figure 8 – Positioning the flue pipe

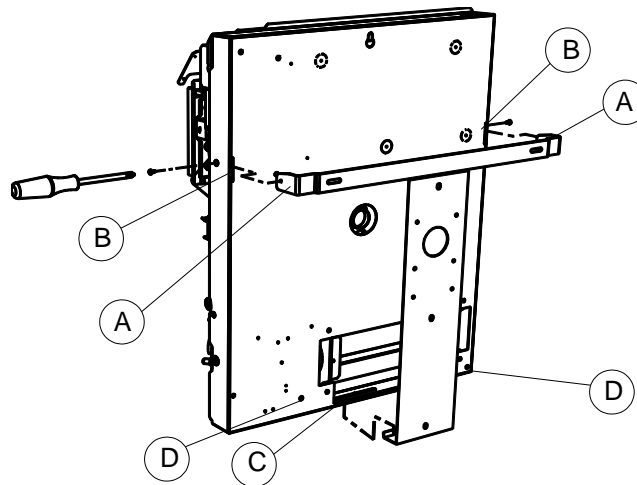


Figure 9 – Attachment to the support bracket

12. Locate slots B on the ends A of the support bracket and push the heater towards the wall so that it seats against the support bracket (see Figure 10).
13. Fix the heater to the support bracket with the two lateral screws as shown in Figure 10.

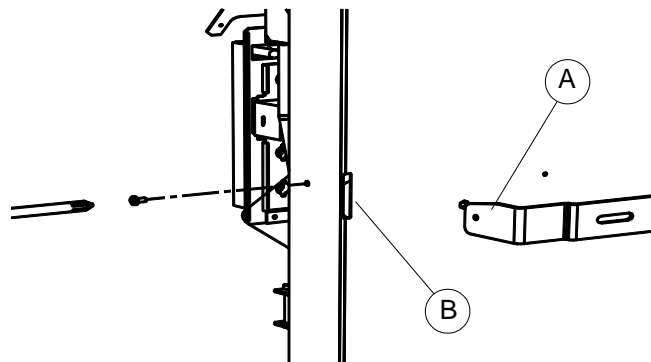


Figure 10 – Attachment detail

CONNECT THE HEATER TO THE GAS SUPPLY

1. The connection to the gas supply must be made using a rigid metal pipe in copper or steel; alternatively a flexible stainless steel pipe conforming to UNI CIG 9891 may be used.
2. Connect the gas pipe to the threaded union on the lower right of the heater frame (see reference A in Figure 11).



The gas pipe connection must be sealed using a sealant conforming to EN 751-1 and EN 751-2.

The connection must be made in such a way that no strain is exerted on either the pipe or the heater components.



The gas supply must be equipped with a shut-off tap located in a position where it is easily visible and accessible, as prescribed by gas equipment standards.

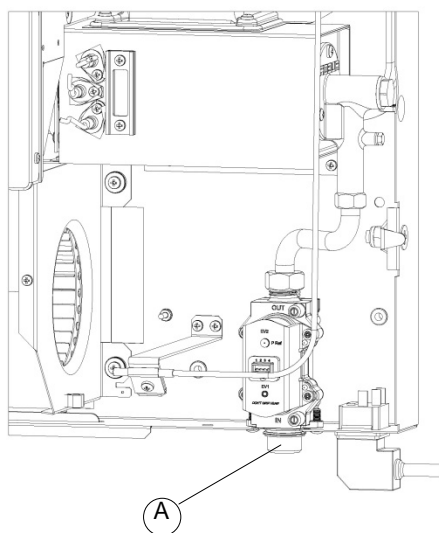


Figure 11 – Gas supply position

INSTALL THE ANTI-DRAFT FLUE TERMINAL

1. Attach the aluminium anti-draft flue terminal to the end of the flue pipe and mark the positions of the three fixing holes (see Figure 12). The terminal should be fitted so that vanes of the outlet grille are vertical.
2. Remove the terminal and drill the fixing holes (6 mm Ø for the wall plugs supplied).
3. Refit the terminal and secure in place by screwing the fixing screws into the wall plugs (see Figure 12).

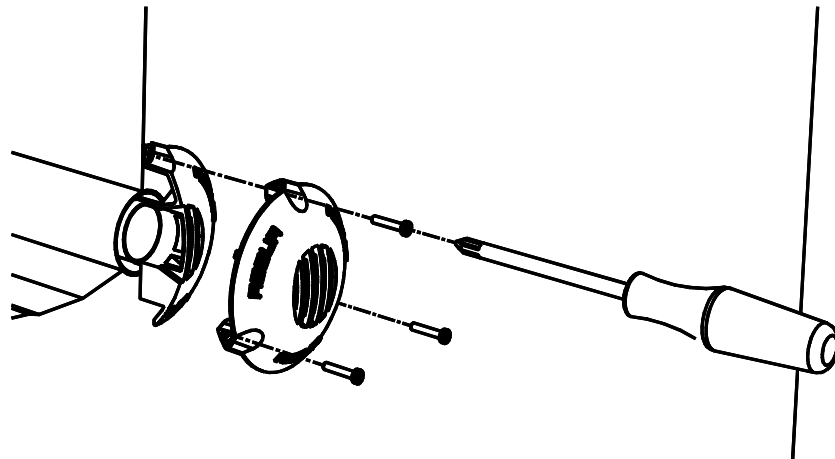


Figure 12 - Fixing the flue terminal

SECTION 4 ELECTRICIAN

This section contains all the necessary information for the electrical connection of the Calorio M heater.



Preconditions: the heater must be installed.



The electrical connection of the heater must be carried out by **professionally qualified personnel**. Before making the electrical connections, always make sure that the wires are not live.

1. Check that the electrical power supply is single-phase 230V 50Hz.
2. To connect the heater to the mains power supply, simply wire up the 3-pin plug provided as shown Figure 13 using 3x0.75 mm² cable.
3. Insert the previously wired 3-pin plug into the socket located on the lower right of the heater frame.



The electrical safety of the heater is guaranteed only when it is correctly connected to an efficient earthing system, executed in accordance with current safety regulations. Do not use gas pipes to earth electrical appliances.

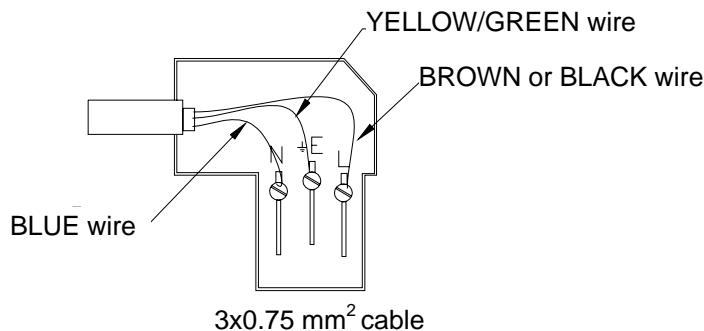
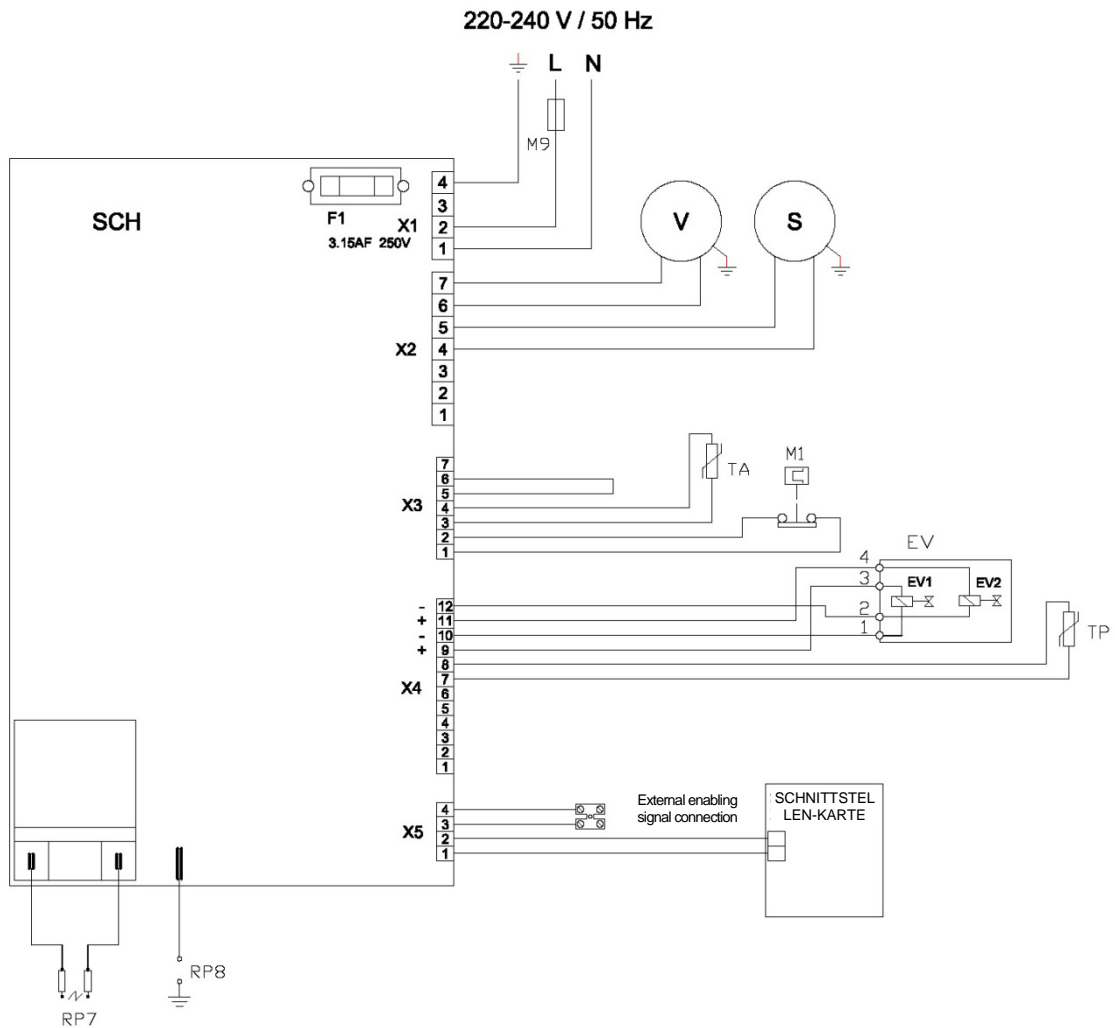


Figure 13 – 3-pin plug wiring



If required, the electrical socket on the heater frame can be rotated through 180° in cases where the cable is required to enter on the left instead of on the right.

4.1 WIRING DIAGRAM



SCH - Electronic circuit board
 EV Gas valve
 L Line
 N Neutral
 M1 Manual reset limit thermostat
 M9 2A fuse

RP7 Ignition electrodes
 RP8. Detector electrode
 S Combustion air blower
 V Room fan
 TP Prelimit temperature sensor
 TA Ambient air temperature sensor
 X Electrical connectors

Figure 14 – Wiring digram

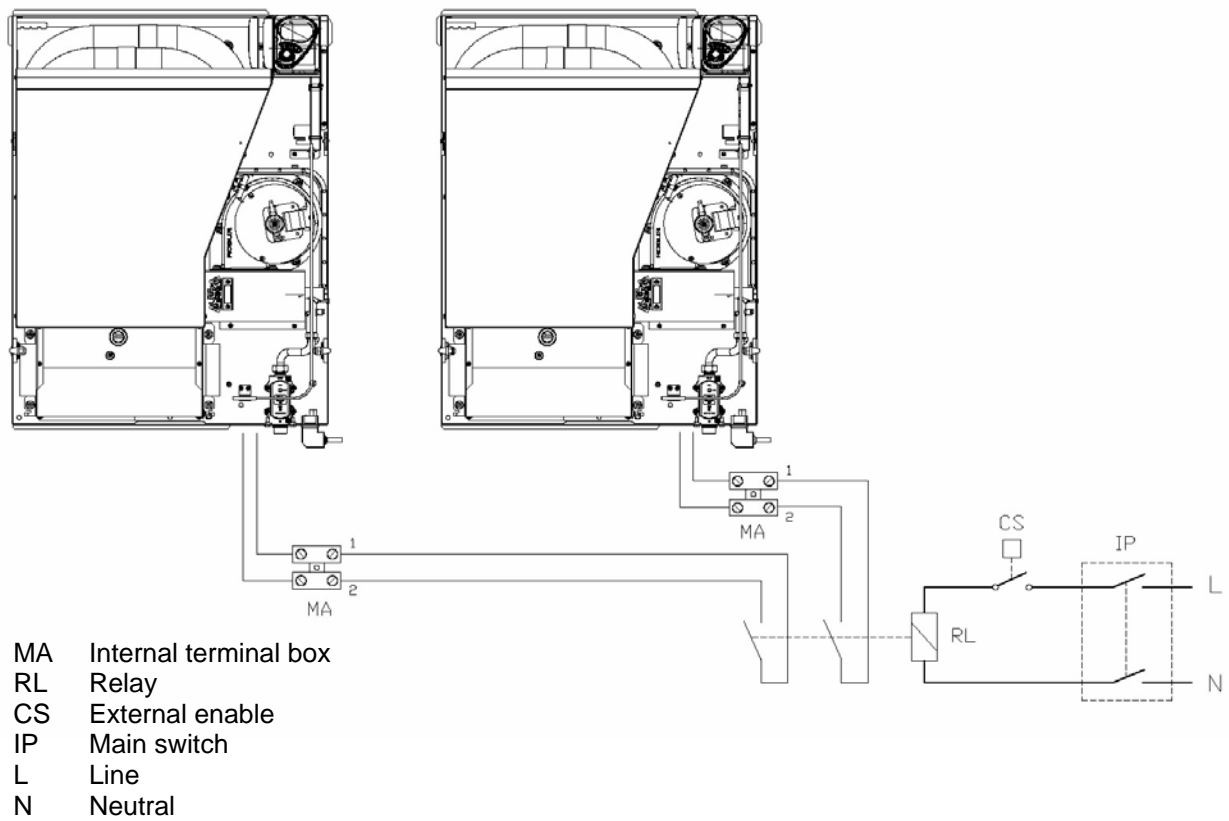


Figura 15

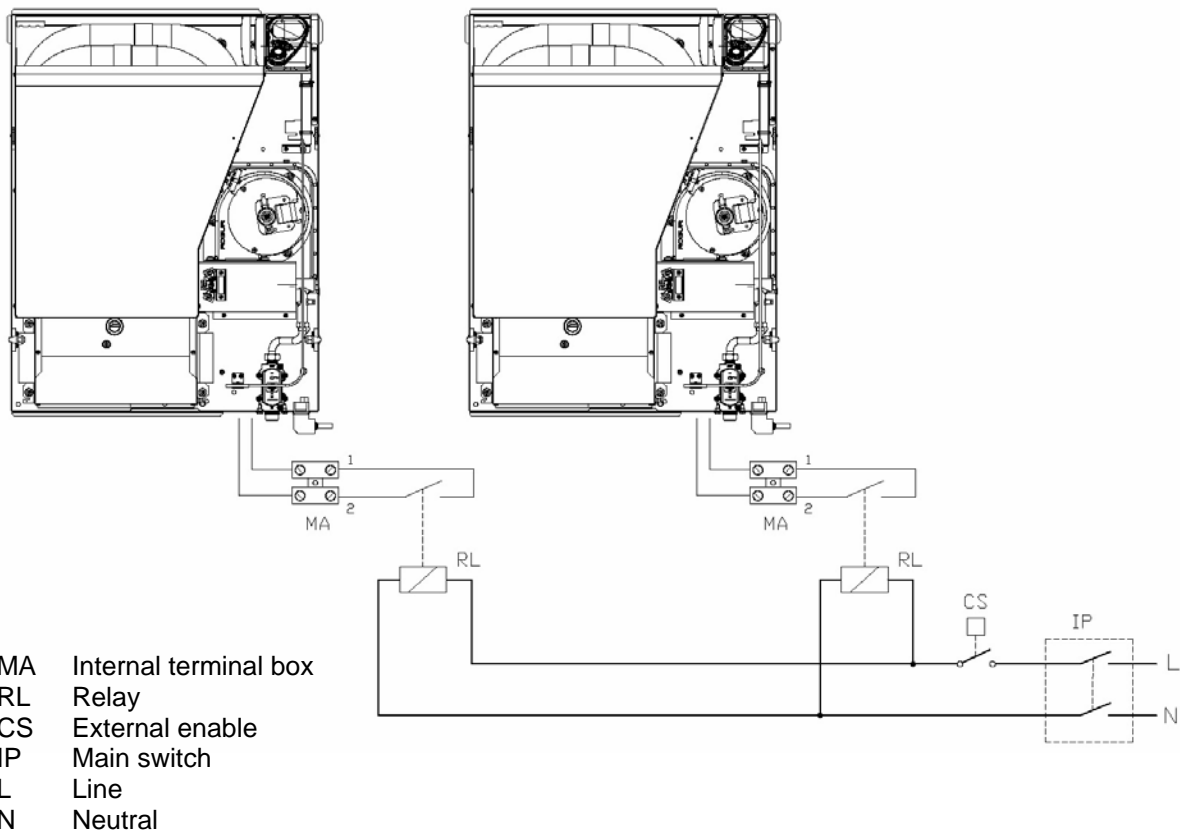


Figura 16


SECTION 5 SERVICING AND MAINTENANCE

This section contains the necessary information for service engineers to regulate the gas valve and change the gas type, along with indications for servicing the heater.

5.1 ACCESS TO THE ADVANCED SETTINGS MENU

The heater's electronic control system provides a number of advanced settings and functions which can only be enabled by *professionally qualified personnel*.

Access to the advanced settings menu (INST) is protected by a code; to access the menu, proceed as follows:

1. Press for more than 5 seconds button B MENU ; release the button and press the MENU button for a further 5 seconds: the display will show "CODE".
2. Turn the knob anti-clockwise until the code "987" is displayed; press the knob to confirm.
3. The first submenu displayed is the "errors log"; briefly press the MENU button to access the second submenu "transparent control parameters".



Access to the "transparent control parameters" and their modification is restricted to *professionally qualified personnel*.

"ERRORS LOG" SUBMENU

On accessing this menu, the display shows the letter "H" at the top, followed by a progressive number (from H001) and the error code in the centre (see Table 6 on page 40).

The display shows the errors codes that have occurred on the heater from the most recent (H001) to the least recent (H0010).

To select the next/previous error, turn the knob anti-clockwise/clockwise. A maximum of 10 errors can be displayed.

"TRANSPARENT CONTROL PARAMETERS" SUBMENU

On accessing this menu the display shows at the top the parameter number (e.g. P001) and in the centre the associated value.

The various parameters can be displayed by turning the knob.

To modify the value of a parameter, use the knob (press – rotate to change the value – press to confirm the value).



For information about other advanced functions see APPENDIX on page 41.

5.2 GAS TYPE CONVERSION



This operation must only be carried out by **professionally qualified personnel**. Incorrect or careless assembly of the gas circuit can result in hazardous gas leaks in the circuit, especially in the areas directly affected. Use suitable sealants on all gas fittings.

If the gas type indicated on the label does not correspond to the gas supply to be used, the heater must be converted for operation with the new gas type.

To do this, proceed as described below.

CONVERSION FROM NATURAL GAS TO LPG.



Preconditions: the heater must be installed and connected to the electrical power supply and to the gas supply.

1. Disconnect the electrical power supply and shut-off the gas supply.
2. Remove the outer casing from the frame and disconnect the casing earth cable.
3. Using a no.19 wrench, unscrew plug "B" (see Figure 17).
4. Using a no.10 socket wrench introduced in the opening, unscrew the injector holder "A" (see Figure 17).
5. Unscrew the calibrated injector C from the injector holder A and fit the replacement injector (see Figure 17).
6. Screw the injector holder/injector assembly into the burner.
7. Refit plug B.
8. Reconnect the electrical power supply and access the "advanced settings menu" as described in the relative paragraph on page 31.
9. Turn the knob until the parameter P001 is displayed (gas type selection); set the parameter value to "1" (LPG).
10. Turn on the heater and check that the seal at plug B is gas tight.
11. Regulate the gas valve as described in the paragraph LPG OPERATION on page 35.
12. Remove the "NATURAL GAS" adhesive label and replace it with an "LPG" label.
13. Connect the earth cable to the outer casing and refit the casing.

MODEL		42	52
NATURAL GAS (G20)	DIAMETER (mm)	1.85	2.30
	STAMPED CODE	055	057
GPL (G30-G31)	DIAMETER (mm)	0.95/1.25	1.2/1.35
	STAMPED CODE	059	061

Table 5 – Injectors for natural gas and LPG

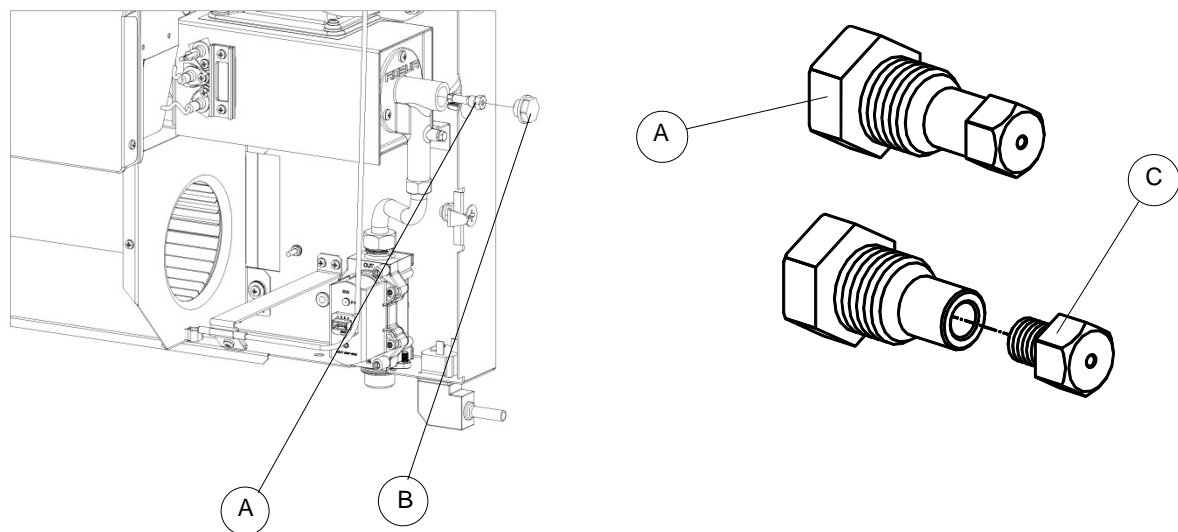


Figure 17 – Detail of burner assembly and detail of the injector holder and calibrated injector

CONVERSION FROM LPG TO NATURAL GAS



Preconditions: the heater must be installed and connected to the electrical power supply and the gas supply.

1. Disconnect the electrical power supply and shut-off the gas supply.
2. Remove the outer casing from the frame and disconnect the casing earth cable.
3. Using a no.19 wrench, unscrew plug "B" (see Figure 17).
4. Using a no.10 socket wrench introduced in the opening, unscrew the injector holder "A" (see Figure 17).
5. Unscrew the calibrated injector C from the injector holder A and fit the replacement injector (see Figure 17).
6. Screw the injector holder/injector assembly into the burner.
7. Refit plug B.
8. Reconnect the electrical power supply and access the "advanced settings menu" as described in the relative paragraph on page 31.
9. Turn the knob until the parameter P001 is displayed (gas type selection); set the parameter value to "0" (natural gas).
10. Turn on the heater and check that the seal at plug B is gas tight.
11. Regulate the gas valve as described in the paragraph NATURAL GAS OPERATION on page 34.
12. Remove the "LPG" adhesive label and replace it with a "NATURAL GAS" label.
13. Connect the earth cable to the outer casing and refit the casing.

5.3 HOW TO REGULATE THE GAS VALVE

The gas supply circuit is equipped with a two-stage safety valve and pressure regulator to control the incoming gas flow. All models are factory-set to operate with natural gas and are supplied with an LPG conversion kit (see paragraph "GAS TYPE CONVERSION"). Each heater is calibrated during factory testing for operation with natural gas. On completion of the installation, check that the gas pressure at the burner is as indicated in the following paragraph.



Regulation of the gas valve must be carried out by **professionally qualified personnel**. ROBUR S.p.A. has a network of Assistance Centres which can be contacted via your dealer or area agent, or by telephoning directly ROBUR S.p.A. Customer Assistance tel.+39 035/888111.

NATURAL GAS OPERATION



Preconditions: the heater must be installed and connected to the electrical power supply and the gas supply.

1. Remove the outer casing.
2. Connect a pressure gauge to pressure test fitting A (see Figure 18), after having first removed the sealing screw.
3. To regulate the gas pressure, first ensure the heater is off; then access the "advanced settings menu" and the submenu "transparent control parameters" as described in the relative paragraph on page 31.
4. Activate the function "valve calibration" by turning the knob until the parameter P002 is displayed; then, using the knob (press – rotate – press), change the parameter value to 15: previous valve settings will be deleted.
5. Wait until the value 20 appears on the display (the heater will turn on).
6. Turn the knob to display the parameter P03 "gas pressure at maximum power calibration".
7. Press the knob and increase the value displayed by 1 to 5 points at a time (this operation may be repeated a number of times), until the pressure gauge shows a reading of 8 mbar; then proceed in small increments (+1) up to the required maximum pressure value (see Table 2 on page 11).



Be careful not exceed the required gas pressure! If this happens, you must repeat the calibration procedure (starting from step 4).

8. Turn the knob to display the parameter P04 "gas pressure at minimum power calibration".
9. Press the knob and change the value displayed, starting with minimal decrements (-1); press the knob to confirm and wait for the pressure gauge reading. Proceed in this way (with minimal decrements) down to the required minimum pressure value (see Table 2 on page 11).

10. Save the new parameter settings by turning the knob to display parameter P002 and then pressing it to confirm.
11. Deactivate the "valve calibration" function by turning the knob and pressing it to set parameter P002 to "0": the heater will turn off.
12. Disconnect the pressure gauge and refit the sealing screw.
13. Replace the outer casing.

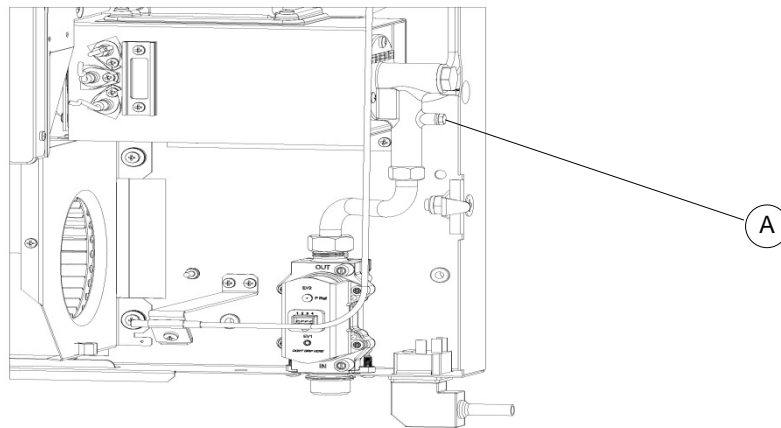


Figure 18 .

LPG OPERATION

In order to use the heater with an LPG supply, it must be converted from operation with natural gas to LPG using the gas type conversion kit supplied and following the instructions in the paragraph "GAS TYPE CONVERSION".

In the case of operation with LPG, the maximum operating pressure depends only on the supply pressure, which should be calibrated to 30 mbar (for G30 gas) or to 37 mbar (for G31 gas). The supply pressure can be reduced using a suitable first-stage pressure reducer, located near the liquid gas tank, to reduce the pressure to 1.5 bar, followed by a second-stage pressure reducer, located near the heater, to reduce the pressure from 1.5 to 0.03 or 0.037 bar (pressure reducers must always be installed outside the building).

To adjust the heater for operation with LPG, proceed as described below.



Preconditions: the heater must be installed and connected to the electrical power supply and to the gas supply.

1. Remove the outer casing.
2. Connect a pressure gauge to pressure test fitting A (see Figure 18), after having first removed the sealing screw.
3. To regulate the gas pressure, first ensure the heater is off; then access the "advanced settings menu" and the submenu "transparent control parameters" as described in the relative paragraph on page 31.
4. Turn the knob until the parameter P002 is displayed; then, using the knob (press – rotate – press), change the parameter value to 15: this activates the "valve" calibration" function (previous valve settings will be deleted).
5. Wait until the value 20 appears on the display (the heater will turn on).

6. Turn the knob to display the parameter P03 "gas pressure at maximum power calibration".
7. Press the knob and increase the value displayed from 1 to 5 (this operation may be repeated a number of times), until the pressure gauge shows a reading of 25 mbar; then proceed in small increments (+1) up to the required maximum pressure value (see Table 2 on page 11).



Be careful not exceed the required gas pressure! If this happens, you must repeat the calibration procedure (starting from step 4).

8. Turn the knob to display the parameter P04 "gas pressure at minimum power calibration".
9. Press the knob and change the value displayed, starting with minimal decrements (-1); press the knob to confirm and wait for the pressure gauge reading. Proceed in this way (with minimal decrements) down to the required minimum pressure value (see Table 2 on page 11).
10. Turn the knob until parameter P002 is displayed and press it; this saves the new calibration settings.
11. Deactivate the "valve calibration" function by turning the knob and pressing it to set parameter P002 to "0" (the heater will turn off).



On completion of the calibration procedure, turn the heater off and then on again and check that the pressure at the burner has stabilised. If necessary, recalibrate the valve.

12. Disconnect the pressure gauge and refit the sealing screw.
13. Replace the outer casing.

5.4 SAFETY DEVICES

A) **If the electrical power supply is interrupted:** the heater will turn off and close the gas valve. When electrical power is restored, the heater will automatically turn back on.


B) **In the event of a loss of gas supply or other problem causing the flame to be extinguished:** the heater will automatically attempt to reignite the flame for a period of 10 seconds, after which, if the attempt fails, the control unit will lock out the heater and stop the fan. (the alarm is shown on the display).

C) **Temporary overheating:** if the upper or lower grille is partially obstructed during operation, causing the heater to overheat, the pre-limit thermostat will trip automatically, forcing the heater to operate at reduced power.

When the temperature of the heat exchanger falls, the heater will

automatically return to normal operation. If the overheating continues as a result of the grille being obstructed, the pre-limit thermostat (reference B in Figure 18), turn off the heater; the display will show the error E010, which will reset automatically when the temperature of the heat exchanger falls.

D) **Continuous overheating:** if the fan stops during operation of the heater, the safety thermostat will trip to disconnect the electrical power supply to the solenoid valve, thereby interrupting the flow of gas to the burner (the display will show the error r002). To restore heater operation, wait for about ten minutes for the temperature to fall, **disconnect the electrical power supply** to the heater, remove the outer casing and reset the safety thermostat by pressing the reset button located on the safety thermostat itself inside the heater (see reference A in Figure 18). Then reset

the heater by pressing button C . Should a similar failure occur again in a short period of time, contact a qualified service engineer.

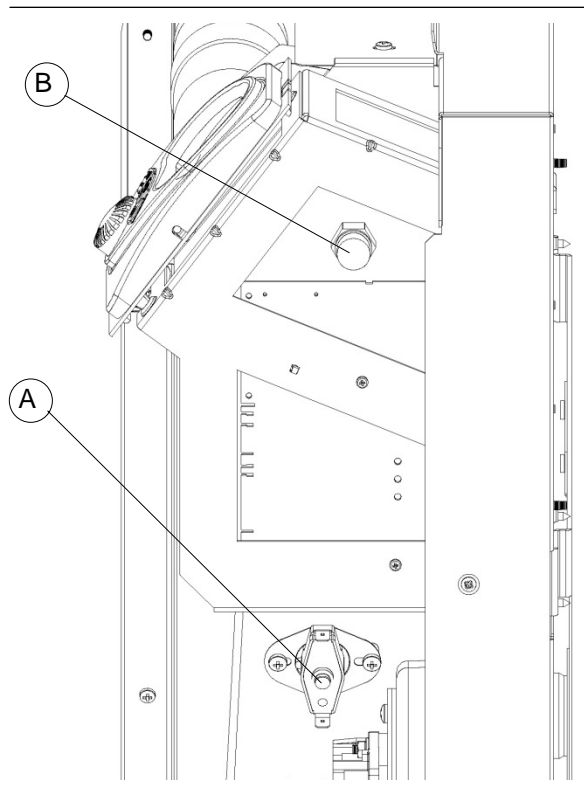


Figure 19 –safety and pre-limit thermostat

5.5 MALFUNCTIONS

Before checking for faults, always check that:

- The electrical power supply is present.
- The gas supply is present
- The supply pressure at the burner is within the specified tolerance range.

Only after all the above checks have been carried out should you start troubleshooting the specific fault.



Before removing the casing, **DISCONNECT THE HEATER FROM THE POWER SUPPLY** by turning off the isolator switch upstream of the heater or by removing the plug from the socket.

CASE 1: THE UNIT LOCKS OUT DURING THE FIRST IGNITION PROCEDURE

A) The gas flow to the heater is insufficient. Check that all the manually-operated valves and gas taps are open. If the heater has not been used for a long period, it could be due to the presence of air in the pipe. Reset the heater and make repeated attempts (if necessary) to ignite the burner.



If the heater is reset from error r001 more than 3 times, error r091 will be displayed. Disconnect and then reconnect the electrical power supply to allow further attempts at ignition.

B) One of the ignition electrodes is damaged or incorrectly positioned: replace it or reposition it.



For correct ignition, the two ignition electrodes should be approximately 3-5 mm apart.

C) The flame detector electrode is damaged or incorrectly positioned: replace it or reposition it.

D) One of the ignition electrodes or the relative wire is making contact with the casing or another metal part: remove the casing and eliminate the contact.

E) Igniter failure: replace the igniter.

CASE 2: THE HEATER LOCKS OUT DURING NORMAL OPERATION

F) The safety thermostat has tripped (error r002) to limit overheating caused by:

- Obstruction over the upper warm air outlet: remove obstruction
- Fan malfunction; replace fan.

G) Gas valve fault; replace gas valve.



If it is necessary to replace the gas valve, seal the injector holder with a sealant conforming to EN 751-1 and EN 751-2 (i.e. suitable for sealing gas fittings), as required by the applicable standards. Recalibrate the gas valve.

E) Faulty connection of safety thermostat: check wires and connections.

**CASE 3:
FAILURE IN COMMUNICATION BETWEEN MAIN CIRCUIT BOARD AND USER
INTERFACE (error Ncom).**

A) Malfunction of the user interface or the main circuit board.



Before removing the casing, DISCONNECT THE HEATER FROM THE POWER SUPPLY by turning off the isolator switch upstream of the heater or by removing the plug from the socket.



Be very careful not to allow any metal parts (e.g. tools or the casing) to come into contact with the pins or circuits of the user interface PCB, which is normally protected by a plastic cover (Figure 20).



Figure 20

- Restore the electrical power supply to the heater and, using a multimeter, check for 28 Vdc on the pins of the user interface power supply connector.
- The presence of voltage indicates that the user interface is faulty; replace the user interface.
- The absence of voltage indicates that the main circuit board is faulty; replace the main circuit board.

FAULT	CODE	ACTION
LOCK OUT CAUSED BY FAILED IGNITION	01	MANUAL RESET
LOCK OUT CAUSED BY TRIPPING OF TEMPERATURE LIMIT FUNCTION	02	MANUAL RESET
LOCK OUT CAUSED BY GENERIC INTERNAL ERROR	03	MANUAL RESET
AIR PRESSURE SWITCH/BLOWER FAULT	05	CONTACT TAC ²
AMBIENT SENSOR FAULT	06	CONTACT TAC ²
PRE-LIMIT SENSOR FAULT	07	CONTACT TAC ²
HEATER BODY OVERHEATING	10	AUTOMATIC RESET
LOCK OUT CAUSED BY FAULT FLAME	11	AUTOMATIC RESET
LOCK OUT CAUSED BY FAULT IN VALVE PILOT HARDWARE	20	AUTOMATIC RESET
LOCK OUT CAUSED BY VALVE CONTROL RELAY FAULT	21	AUTOMATIC RESET
FLAME LOCK OUT AFTER VALVE SHUT OFF	22	MANUAL RESET
LOCK OUT CAUSED BY WIRING FAULTS	23	MANUAL RESET
LOCK OUT DUE TO FAILED IGNITION ATTEMPTS >3	91	MANUAL RESET ¹
MAINS FREQUENCY SYNCHRONISM ERROR	96	CONTACT TAC ²
LOW SUPPLY VOLTAGE	97	CONTACT TAC ²
FAILURE IN COMMUNICATION BETWEEN MAIN CIRCUIT BOARD AND USER INTERFACE	NCOM	CONTACT TAC ²

Table 6 – Faults

¹ RESETTABLE AFTER WAITING 1 HOUR OR DISCONNECTING ELECTRICAL POWER SUPPLY

² TAC: ROBUR AUTHORIZED TECHNICAL ASSISTANCE CENTRE

5.6 CLEANING AND MAINTENANCE

The only maintenance required is cleaning of the outer casing (to be carried out when the unit is cold and without the use of solvents). and removal of any dust that accumulates on the heat exchanger and fan.

We recommend an annual service and clean carried out by a qualified service engineer; contact your authorized Technical Assistance Centre (TAC).

As regards periodic maintenance of the heater, follow the indications of the applicable standards.


5.7 ASSISTANCE

All installation, commissioning, maintenance operations etc. should be carried out by professional qualified personnel. ROBUR S.p.A. has a network of authorized Technical Assistance Centres (TAC) which can be contacted via your area agent, or by telephoning ROBUR S.p.A. directly (Tel.: +39 035/888111).

Before telephoning Robur S.p.A. Technical Service, make sure you have the heater documentation to hand and if possible: the serial number and model of heater (which can be found on the data plate and in the warranty booklet), the gas type and a brief description of the type of installation.

APPENDIX ADVANCED HEATER ADJUSTMENT AND CONTROL FUNCTIONS

The "transparent control parameters" are listed in the table below.

 Access to the "transparent control parameters" is restricted to *professionally qualified personnel*.

N.	FUNCTION	DEFAULT VALUE	PERMITTED SETTINGS	USER LEVEL
1	Gas type selection	0	0 = methane 1 = LPG	installer
2 (*)	Activation of gas valve calibration/ fixed power function ("chimney sweep")		0 = off 1 = operation at fixed min. power 4 = operation at fixed max. power 15 = calibration function ON	installer
3	Maximum gas pressure calibration			installer
4	Minimum gas pressure calibration			installer
5	Heater modulation	0	0= modulating 1 = fixed max. power 2 = fixed min. power	installer
6	Heater power output	100	from 0 to 100 % within permitted modulation range	installer
7	Ambient hysteresis modulation	30	from 0 to 30 (=03°K)	installer
8	External enabling signal	0	0 = disabled 1 = external enabling enabled	installer
9	External room thermostat function	0	0 = disabled 1 = external enabling enabled	installer
10 (**)	Service parameters access code	0	0...255	assistance
11	Room fan activation temperature setting	40	from 0 to 60°C	assistance
12	Offset (correction) for room temperature sensor reading	15	0 = - 7.5°K 15 = 0°C 30 = + 7.5 °K	assistance
13	Room fan start timing	60	from 0 to 240 secs.	assistance
14 (****)	Room fan stop timing	120	from 0 to 240 secs.	assistance
15	Blower post operation timing	15	from 0 to 240 secs.	assistance
16	Operation with fume pressure switch	1	0 = pressure switch present 1 = pressure switch absent	assistance
17	Start-up power (ramp start)	50	from 0 to 100% power	assistance
18	Overheating trip level	90	from 40 to 90°C	assistance
19 (***)	Heat exchanger temperature	--		assistance

Table 7 – List of "transparent control parameters"

(*) AFTER ENABLING CALIBRATION WITH PARAMETER 2 = 15 WAIT UNTIL THE PARAMETER ASSUMES THE VALUE 20, THEN PROCEED WITH THE NEXT STEPS IN THE CALIBRATION PROCEDURE.

(**) THE PARAMETER "SERVICE ACCESS PARAMETERS CODE" IS USED AS A PASSWORD FOR ACCESS TO THE SUBSEQUENT PARAMETERS. IF NOT SET CORRECTLY (VALUE = 27) ACCESS WILL NOT BE PERMITTED TO THE SUBSEQUENT PARAMETERS. REMAINS ACTIVE UNTIL POWER OFF OR MAX OF 24H IF THE POWER SUPPLY IS NOT DISCONNECTED.

(***) DISPLAY ONLY. THE SYSTEM ALLOWS MODIFICATION OF THE VALUE, BUT THEN RETURNS TO THE READ VALUE.

(****) IF THE HEATER REMAINS ON FOR MORE THAN 60 MINUTES, THE TIME IS DOUBLED.

DESCRIPTION OF ADVANCED FUNCTIONS

P001 - Gas type selection

Regulates the gas valve in accordance with the gas used (methane or LPG).

P002 – Activation of the gas valve calibration procedure

Allows activation of the gas valve calibration procedure at maximum and minimum operating pressure.

P003 – Maximum gas pressure calibration

Allows calibration of the maximum gas pressure.

P004 – Minimum gas pressure calibration

Allows calibration of the minimum gas pressure.

P005 - Heater modulation

Allows operation in automatic modulation, or fixed at minimum or at maximum power.

P006 – Heater power output

Determines the maximum power output of the heater; used in situations where a lower maximum power than the nominal value is required.

P007 – Ambient hysteresis modulation

Indicates the temperature value (increasing) from which heater operation will be modulated. The default value is 10, which corresponds to 1°C. This means, for example, that if the desired temperature set-point is 20°C, when the ambient temperature sensor reading is below 19°C, the heater will operate at maximum power and when the ambient temperature is 19°C (1°C below the set-point), the heater will start modulated operation (indicated with the small flame on the display).

P008 – External enabling signal

Allows the heater to be controlled by an external enabling signal, such as, for example, an automatic dialler, centralised enabler, etc..

To activate the function, Parameter 008 must be set to 01, while Parameter 009 must be set to 00.

The external enabling signal must be connected to the free terminal block on the electrical panel inside the heater.

In this way, the heater will only operate when the external enabling signal closes the contact. When the contact on the terminal block is open, the burner will not start.

The heater's own ambient thermostat function will remain activated.

P009 – External room thermostat function

This allows the heater to be controlled from an external room thermostat, located in the position chosen by the user.

For activation of this function, Parameters 008 and 009 must both be set to 01.

The external room thermostat must be connected to free terminal block on the electrical panel inside the heater.

When activated, this function overrides the heater's own ambient thermostat function.

When the contact is closed the burner will start, regardless of the reading from the temperature sensor mounted on the heater.

The burner will always operate at maximum power and cannot be modulated.
When the contact on the terminal block is open, the burner will not start.

P010 – Service parameters access code

Allows access to advanced functions, the use of which is restricted to authorized Technical Assistance Centres.

P011 – Room fan activation temperature setting

Determines the temperature (as detected by the pre-limit sensor) at which the room fan starts. This is a parallel function to that of parameter 013.

P012 – Offset (correction) for ambient temperature sensor reading

Allows you to adjust the ambient temperature sensor reading. If a value below the default value (15) is set, the ambient sensor reading will be shifted downwards; likewise, if the set value is higher than the default value, the reading will be shifted upwards. Heater operation will therefore be determined by the corrected value and not the actual sensor reading.

P013 – Room fan start timing

Determines the delay in seconds between burner ignition and the room fan starting.

P014 – Room fan stop timing

Determines the delay in seconds between burner turning off and the room fan stopping. If the burner has been in operation for more than 60 minutes, the timing period will be doubled (for example, if the parameter is set to 120 seconds., if the burner remains on for more than 60 minutes, the fan will turn off after 240 seconds.

P015 – Blower post-operation timing

Determines the delay in seconds between burner turning off and the blower stopping. If the limit thermostat (error 001) or the pre-limit thermostat (error 010) is tripped, the blower will remain in forced operation for 180 seconds.

P016 – Operation with fume pressure switch

This function is not used on used on Calorio 42 M and Calorio 52 M models.

P017 – Start-up power

Determines the power level at which the burner ignition ramp starts.

P018 – Overheating trip level

Determines the temperature at which the heater enters forced modulation and/or is turned off. Depending on the set temperature (for example, 90°C) if the temperature reading from the pre-limit sensor reaches the set point –10°C (in our example: 90- 10 = 80°C), the heater stays on but operates in forced modulation mode. If the temperature reading reaches the set point (90°C), the heater is turned off and the display will show the error 010 (automatic reset error). When the temperature sensor reading is equal to the set-point –15°C (in our example: 90 – 15 = 75°C), the heater will restart automatically.

P019 - Heat exchanger temperature

Indicates the temperature reading of the pre-limit sensor. This parameter value must not be modified.

Table 1
COMMISSION REGULATION (EU) 2015/1188
Information requirements for gaseous/liquid fuel local space heaters

Model identifier(s):				Calorio 42 M				
Indirect heating functionality: [yes/no]				no				
Direct heat output: [kW]				3,26				
Indirect heat output: [kW]								
Fuel				Space heating emissions (*)				
				NO _x				
Select fuel type [gaseous/liquid]				gaseous		97		[mg/kWh _{input}] (GCV)
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit	
Heat output				Useful efficiency (NCV)				
Nominal heat output	P _{nom}	3,26	kW	Useful efficiency at nominal heat output	η _{th,nom}	90,0	%	
Minimum heat output (indicative)	P _{min}	2,26	kW	Useful efficiency at minimum heat output (indicative)	η _{th,min}	90,0	%	
Auxiliary electricity consumption				Type of heat output/room temperature control (select one)				
At nominal heat output	e _{l,max}	0,045	kW	single stage heat output, no room temperature control			no	
At minimum heat output	e _{l,min}	0,035	kW	two or more manual stages, no room temperature control			no	
In standby mode	e _{l,SB}	0,002	kW	with mechanic thermostat room temperature control			no	
				with electronic room temperature control			no	
				with electronic room temperature control plus day timer			no	
				with electronic room temperature control plus week timer			yes	
				Other control options (multiple selections possible)				
				room temperature control, with presence detection			no	
				room temperature control, with open window detection			no	
				with distance control option			yes	
				with adaptive start control			yes	
				with working time limitation			no	
				with black bulb sensor			no	
Permanent pilot flame power requirement								
Pilot flame power requirement (if applicable)	P _{pilot}	N.A.	kW					
Contact details	Robur SPA Via Parigi 4/6 I-24040 Zingonia (BG)							
(*) NO _x = nitrogen oxides								

Table 1
COMMISSION REGULATION (EU) 2015/1188
Information requirements for gaseous/liquid fuel local space heaters

Model identifier(s):				Calorio 52 M					
Indirect heating functionality: [yes/no]				no					
Direct heat output: [kW]				4,71					
Indirect heat output: [kW]									
Fuel				Space heating emissions (*)					
				NO _x					
Select fuel type [gaseous/liquid]				gaseous		116		[mg/kWh _{input}] (GCV)	
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit		
Heat output				Useful efficiency (NCV)					
Nominal heat output	P _{nom}	4,71	kW	Useful efficiency at nominal heat output	η _{th, nom}	90,0	%		
Minimum heat output (indicative)	P _{min}	3,18	kW	Useful efficiency at minimum heat output (indicative)	η _{th, min}	90,0	%		
Auxiliary electricity consumption				Type of heat output/room temperature control (select one)					
At nominal heat output	e _{l, max}	0,086	kW	single stage heat output, no room temperature control				no	
At minimum heat output	e _{l, min}	0,050	kW	two or more manual stages, no room temperature control				no	
In standby mode	e _{l, SB}	0,002	kW	with mechanic thermostat room temperature control				no	
				with electronic room temperature control				no	
				with electronic room temperature control plus day timer				no	
				with electronic room temperature control plus week timer				yes	
				Other control options (multiple selections possible)					
				room temperature control, with presence detection				no	
				room temperature control, with open window detection				no	
				with distance control option				yes	
				with adaptive start control				yes	
				with working time limitation				no	
				with black bulb sensor				no	
Permanent pilot flame power requirement									
Pilot flame power requirement (if applicable)	P _{pilot}	N.A.	kW						
Contact details	Robur SPA Via Parigi 4/6 I-24040 Zingonia (BG)								
(*) NO _x = nitrogen oxides									

Robur is dedicated to dynamic progression in research, development and promotion of safe, environmentally-friendly, energy-efficiency products, through the commitment and caring of its employees and partners.

Robur Mission



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