

CONDENSING BOILERS

TAU 35 UNIT

USER MANUAL



RIELLO

GENERAL

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USER

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The following symbols are used in this manual:



= Identifies actions that require caution and adequate preparation



= Identifies actions that you MUST NOT do

This manual, Code 20027522 - Rev. 0 (06/10) is made up of 20 pages.

Dear Customer,

*Thank you for choosing a **TAU 35 UNIT RIELLO**, boiler. You have purchased a modern, quality product that is designed to give dependable and safe service and to provide comfort for many years to come. Arrange for your boiler to be serviced regularly by RIELLO's Technical Assistance Service. Their personnel are specially trained to keep your boiler efficient and cheap to run.*

This instruction manual contains important instructions and precautions that must be observed to ensure the trouble-free installation and efficient functioning of your boiler. Please accept our renewed thanks for your purchase.

Riello S.p.A.

PRECAUTIONS

The operation of any appliance that uses electrical power demands that a number of fundamental safety precautions be respected.

- ❗ Do not allow children or infirm persons to operate the boiler unsupervised.
- ❗ Do not operate any electrical devices or equipment, including switches or domestic appliances, etc., if you can smell fuel or fumes. If you detect any suspicious smells:
 - Ventilate the room by opening all doors and windows;
 - Close the fuel shut-off cock;
 - Report the fault immediately to the **RIELLO** Technical Assistance Service or a professionally qualified heating engineer.
- ❗ Never clean or service the boiler without first disconnecting it from the mains electricity supply by turning the main power switch OFF.



- ❗ Never pull, disconnect, or twist the electrical cables coming from the boiler even if it is disconnected from the mains electricity supply.
- ❗ Do not obstruct or restrict the vents in the room where the appliance is installed. Adequate ventilation is essential for correct combustion.
- ❗ Do not leave flammable substances or containers in the room where the boiler is installed.
- ❗ Do not touch the boiler when bare-foot or wet.
- ❗ Do not switch the boiler off if outside temperature drops below ZERO (risk of freezing).



GENERAL SAFETY INFORMATION

- ⚠ This instruction manual and that for the installer and Technical Assistance Service are integral parts of the boiler. They must be kept safe and must ALWAYS accompany the boiler, even if it is sold to another owner or user or transferred to another installation. If you damage or lose this manual, order a replacement immediately from your local **RIELLO** Technical Assistance Centre.

- ⚠ This system must be installed by a legally qualified heating engineer (in Italy, the law regulating professional heating engineers is Law 46 of the 5th March 1990). On completion of the installation, the installer must issue the owner with a declaration of conformity confirming that the installation has been completed to the highest standards in compliance with the instructions provided by **RIELLO** in this instruction manual, and that it conforms to all applicable laws and standards.

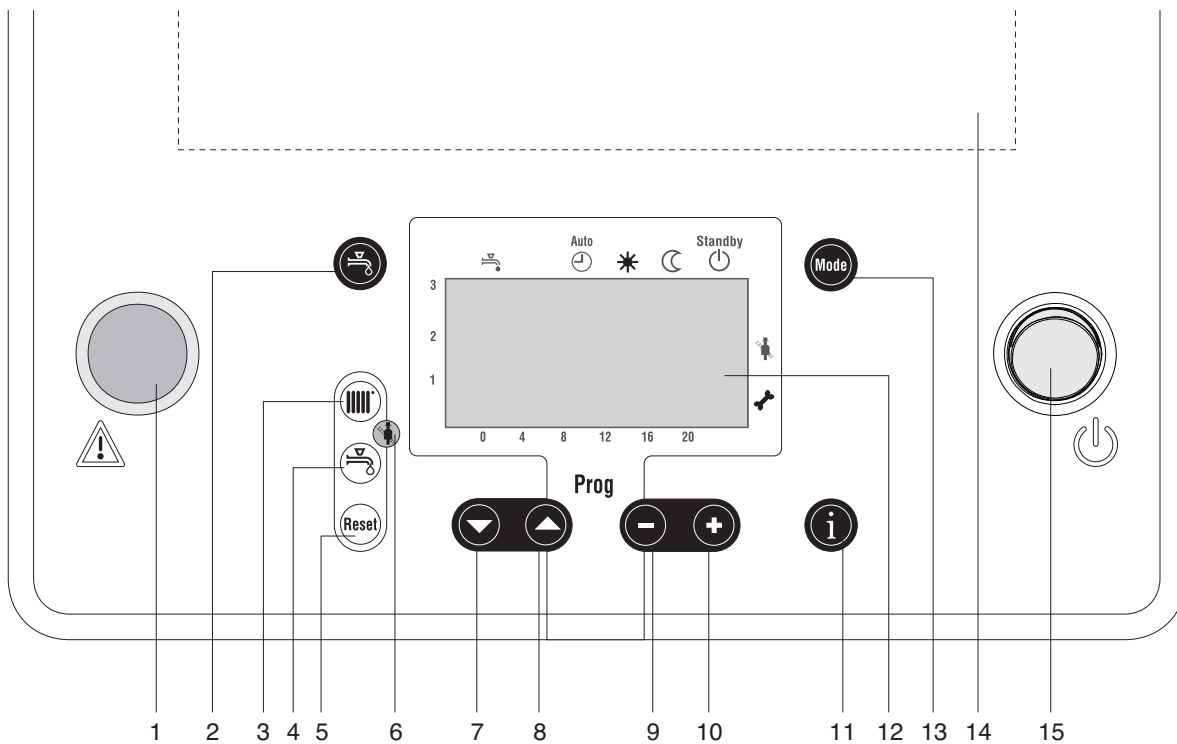


- ⚠ If you notice any water leaking from the boiler, disconnect it immediately from the mains electricity supply, shut off the water supply, and notify your local **RIELLO** Technical Assistance Centre or a qualified heating engineer immediately.

- ⚠ Periodically check that operating pressure in the water circuit is over 1 bar. If water pressure is consistently low, contact **RIELLO**'s Technical Assistance Service or a professionally qualified heating engineer.

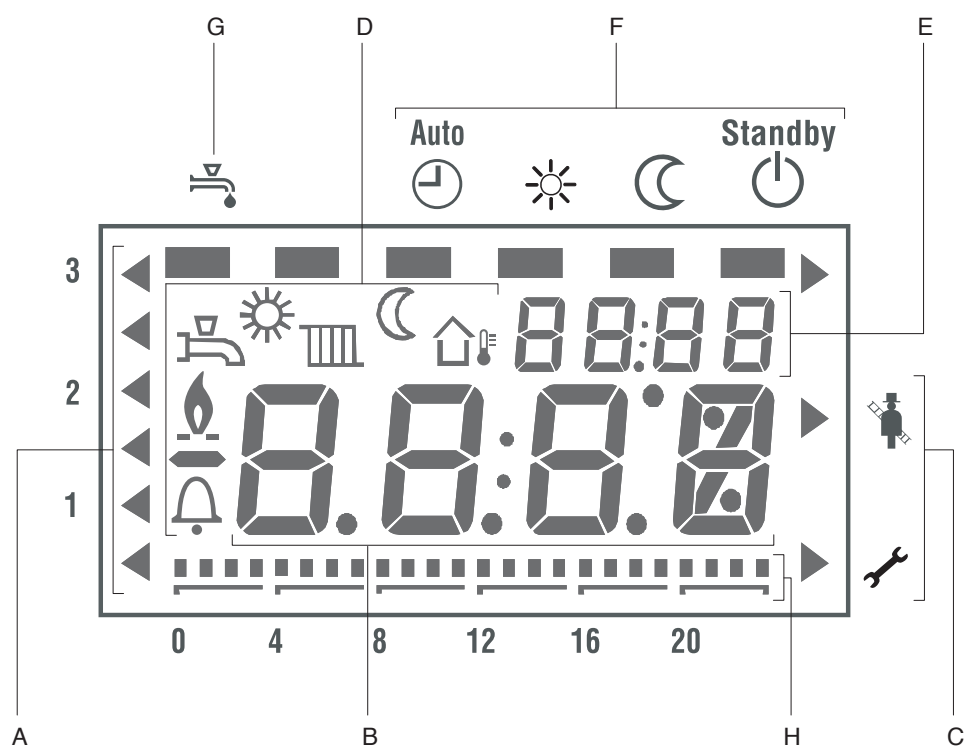


- ⚠ If the boiler is not going to be used for an extended period of time, proceed as follows to prepare it for shut-down:
 - Turn the main power switch OFF
 - Close the boiler's fuel cock and heating circuit water cock
 - Drain the central heating circuit if there is any risk of freezing.
- ⚠ The boiler must only be used for the purpose specified by **RIELLO** and for which it is designed. The manufacturer declines all responsibility, contractual or other, for damage to property or injury to persons or animals caused by improper installation, adjustment, maintenance or use.

CONTROL PANEL AND SYMBOLS


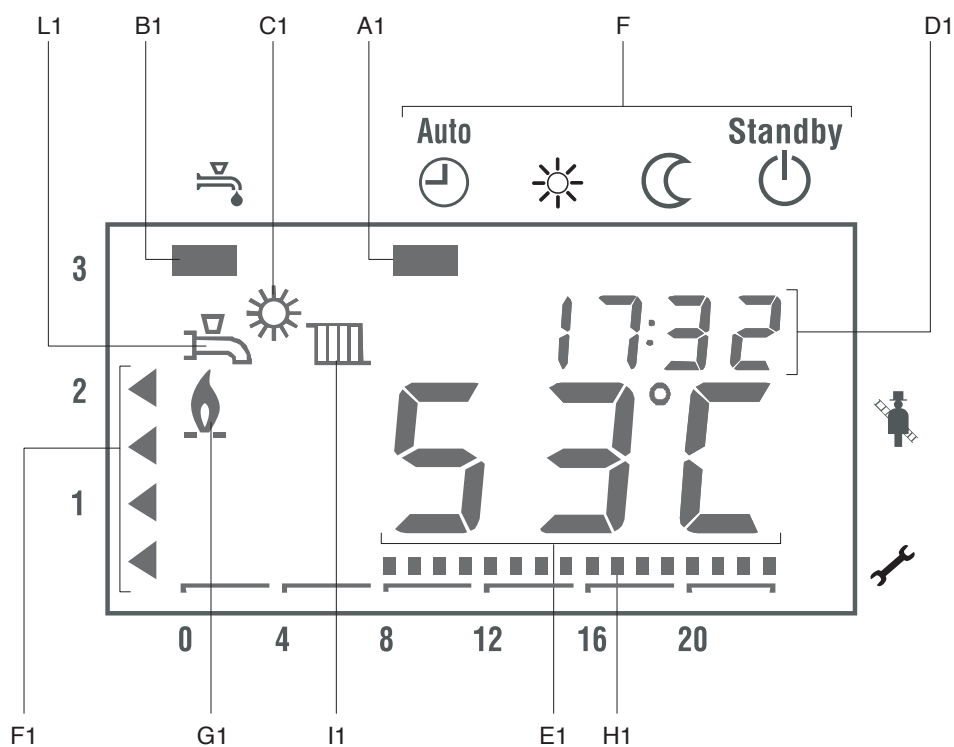
- 1 - Burner lockout indicator
- 2 - DHW mode selector (for use with remote storage cylinder: accessory)
- 3 - Central heating or room temperature setting key
- 4 - DHW temperature setting key (or use with remote storage cylinder: accessory)
- 5 - Reset key. Restores normal functioning after a safety shutdown.
- 6 - Chimney sweep mode selection.
Press and hold keys 3 and 4 (for between 3 and 6 seconds) to enter chimney sweep mode.
- 7-8 - Parameter selection keys
- 9-10 - Value decrement/increment keys
- 11 - Info key
- 12 - Display
- 13 - Functioning mode selection button.
A line appears under the symbols:
 - ☉ Automatic: the boiler functions according to the set program.
 - ☀ Daytime: the boiler operates at daytime (comfort) setpoint
 - ☾ Night-time: the boiler operates at night-time (reduced) setpoint
 - ⏻ Stand-by
- 14 - Housing for controller (accessory)
- 15 - Main switch

DISPLAY



- A -Water pressure reading (not used)
- B -Large numeric display
Displays current value.
- C -Chimney sweep or Service Required symbol
- D -Display symbols:
 - DHW temperature or DHW mode active
 - CH or room temperature setpoint, or CH mode active
 - Outdoor temperature
 - Daytime CH mode
 - Night-time CH mode
 - Flame detected
 - Error
- E -Small numeric display
Displays time, parameters and error codes
- F -Central heating modes:
 - Automatic: the boiler functions according to the set program
 - Daytime: the boiler operates at daytime (comfort) setpoint
 - Night-time: the boiler operates at night-time (reduced) setpoint
 - Stand-by
- G -DHW mode: ON or OFF
- H -Current time display

MAIN SCREEN



A1 -Functioning mode.

Press the mode key **Mode** to activate the various modes, as shown by the line under the corresponding symbol.

B1 -DHW mode.

Press the DHW key **DHW**.

C1 -Daytime CH mode .

D1 -Time of day

E1 -Current boiler temperature

F1 -Water pressure (not used)

G1 -Flame detected

H1 -Current time bar

I1 -CH mode active

L1 -DHW mode active.

Notes on functioning

The control panel on the **TAU UNIT** boiler controls the following functions:

- The DHW priority function. This ensures that the boiler can still serve the central heating circuit even when domestic hot water is drawn off.
- The frost protection function.
This stops water freezing inside the boiler. If boiler temperature falls below 5°C, the burner ignites and runs at full power until temperature reaches 10°C.
The frost protection function is only active if an outdoor temperature sensor is connected. If outside temperature drops below -5°C the pumps are switched on. If outside temperature is between -4° and 1.5°C, the pumps are switched on for 10 minutes at intervals of 6 hours. If outside temperature is above 1.5°C the pumps are switched off.
- Overtemperature dispersal function. If the temperature threshold thermostat trips (86°C) the boiler shuts down and accumulated heat is dispersed by switching on the central heating pump. If boiler temperature rises to 89°C, the fan is switched on too.
- The cascade control function. The addition of a controller (accessory) allows you to connect a number of boilers in cascade, sharing heat output between a number of burners and improving overall system efficiency.
- Boiler switching differential. This establishes a minimum off time for the burner, to stop it igniting and shutting down repeatedly. The boiler will only start up again if the difference between the setpoint and the actual boiler temperature exceeds a predetermined value.

PROGRAMMING LEVELS

There are three programming levels:










- End user
- Installer
- Manufacturer.

You must follow a precise set of instructions to access any of these levels. The relevant instructions, complete with a list of the keys to press, are provided in the tables below.

END USER LEVEL

This level provides the parameters needed by the end user. For example, it contains parameters for setting CH and DHW functioning times and Summer/Winter mode switching temperature.



See the "Complete list of parameters" section for further details.










Key	Explanation
1  	Press one of these keys to access the END USER programming level
2  	Press one of these keys until you reach the parameter you require: the example here shows the parameter Pxx
3  	Press these keys to change the current value. To memorise the new value, you need to move on to another parameter.
4  	Press one of these keys to exit the end user programming level. Any new settings are not stored in memory.
5 	Press this key to exit the end user programming level. Any new settings are stored in memory.

Note 1: If no key is pressed for about 8 minutes, the display automatically returns to the main screen. Any new settings made will not be saved.

Note 2: quando si passa a un altro livello, l'impostazione è memorizzata.

BASIC INFORMATION LEVEL

Press the  key to enter the basic information level. Press the  key again to scroll through the values listed below.

Key	Explanation
1 	DHW temperature
2 	Water pressure (not used)
	
	
	
3 X.	Functioning phase (see table 1)
4 	Outdoor temperature
5 Ex	(Accessory) controller error codes (see the “Error codes” section)
6 	Boiler temperature
7  	Press one of these keys to return to the main screen

Functioning phases (table 1)



Number displayed	Description
00	Standby
01	Ignition prevented
02	Fan start
03	Pre-ventilation
04	Wait time
05	Pre-ignition time
06	Safety time, constant
07	Safety time, variable
10	Central heating mode
11	Domestic hot water mode
12	Simultaneous CH and DHW mode
20	Post-ventilation with last control used
21	Post-ventilation at pre-ventilation level
22	Home run (*)
99	Burner lockout (error code displayed)

(*) Home run = Boiler status after reset.

EXTENDED INFORMATION LEVEL 1: temperatures

Press the  key.

Press and hold both   keys for at least 3 seconds.

Press one of the   keys until you reach the required parameter.

Temperature



Nr	Description
b 0	Control board error code
b 1	Boiler return temperature
b 2	Not used
b 3	Flue gas temperature
b 4	Outdoor temperature
b 5	Compound outdoor temperature
b 6	Attenuated outdoor temperature
b 7	Not used
b 8	Reserved
b 9	Reserved

EXTENDED INFORMATION LEVEL 2: process values

Press the  key.

Press and hold both   keys for at least 3 seconds.

Press the  key.

Press one of the   keys until you reach the parameter you require.

Process values



Nr.	Description
C 0	Reserved
C 1	Ionisation current
C 2	Fan speed
C 3	Fan control current (PWM)
C 4	Relative boiler heat output
C 5	Pump setpoint (PWM)
C 6	Differential control
C 7	Reserved
C 8	Reserved
C 9	Reserved

EXTENDED INFORMATION LEVEL 3: assistance

Press the  key.

Press and hold both   keys for at least 3 seconds.

Press the  key twice.

Press one of the   keys until you reach the parameter you require.

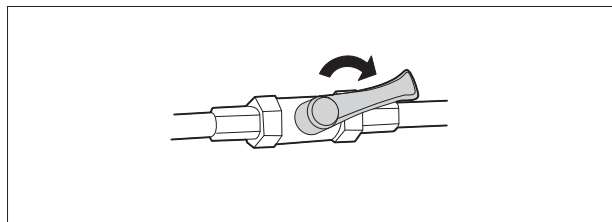
Assistance

Nr.	Description
d 0	Reserved
d 1	Two stage or modulating control setpoint (PID)
d 2	Current boiler setpoint
d 3	Room temperature setpoint
d 4	DHW setpoint
d 5	Maximum modulation in central heating mode
d 6	Maximum fan speed at maximum central heating power
d 7	Reserved
d 8	Reserved
d 9	Reserved

PREPARING FOR FIRST START-UP

It is essential to perform the following checks before starting up or testing the functioning of the boiler.

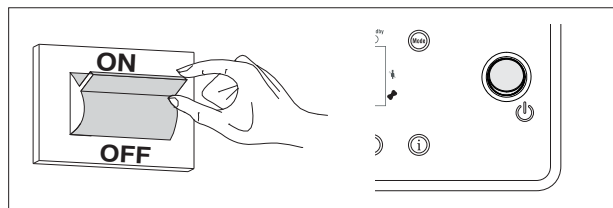
- Check that the water and fuel shut-off cocks are open.
- Check that the water pressure gauge shows a pressure **over 1 bar** with the system cold. Check also that the water circuit is properly de-aerated.
- Check that the expansion vessel is correctly pre-charged.
- Check that the electrical connections have been made correctly.
- Check that the vent and air intake pipes have been correctly installed and connected.



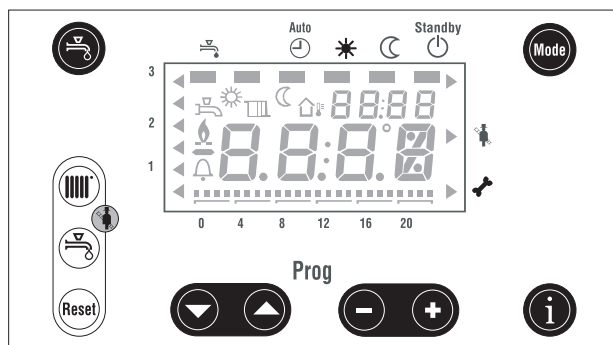
! If you need to convert the boiler from METHANE to LPG, contact **RIELLO's** Technical Assistance Service.

INITIAL START-UP

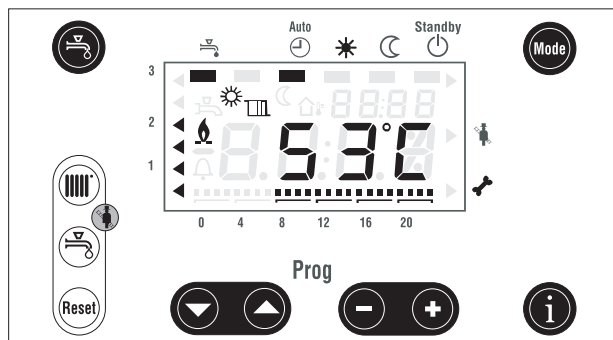
- Switch the electricity supply ON at the system's main switch and at the control panel.



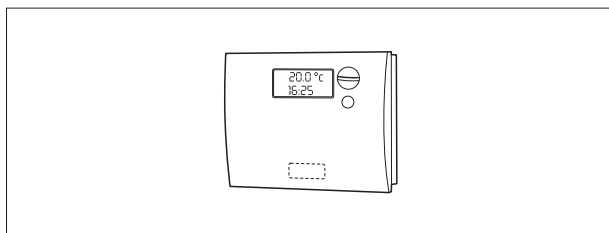
- The boiler switches on and the display shows the software version of the main control board.






- The display shows the system status and the temperature measured by the boiler temperature sensor.



- Set the room thermostat to the desired temperature (20°C).



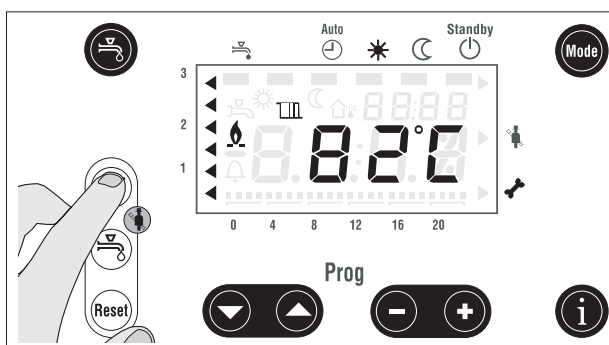
- Press the  key:
 - If an outdoor temperature sensor is connected, set the room temperature setpoint
 - If no outdoor temperature sensor is connected, set the central heating circuit temperature setpoint.

Press the   keys to adjust the setpoint.

Press any of the keys to exit



The new setting is stored in memory.



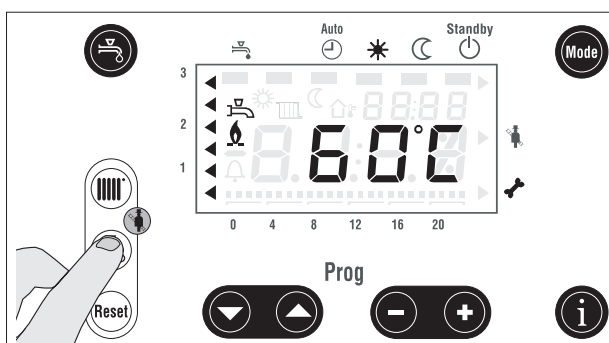
If a remote storage cylinder (accessory) is present, connect the storage cylinder temperature sensor to the control panel and set the manufacturer level parameter "558b2"=0 (see the "Manufacturer level" section).

- Press the  key.
- Press the   keys to adjust the setpoint.

Press any of the keys to exit



The new setting is stored in memory.




If the remote storage cylinder has its own thermostat, leave the manufacturer level parameter "558b2" = 1 (see the "Manufacturer level" section).

- If an outdoor temperature sensor is installed, set installer parameter "532 Heating curve slope heating circuit 1" as instructed in the section "Setting functioning parameters".

If any boiler ignition or functioning errors are detected, the display shows the type of error.

Errors can be of two types:

- PERMANENT errors are those that can only be cancelled by pressing the  key.
- TRANSIENT errors are those that are automatically cancelled as soon as the cause is rectified (see "Error codes" on page 15).

TEMPORARY SHUTDOWN

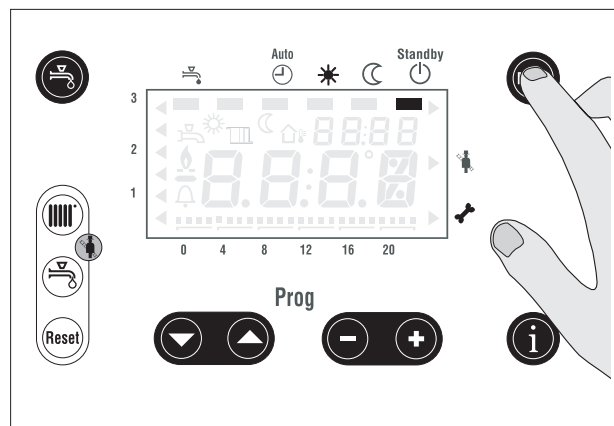
If you are going to be away for a short period of time like a weekend or a short holiday, etc. proceed as follows:

- Press and hold the **Mode** key until the bar (1) appears under "Stand-by" mode.

Provided power to the boiler remains switched on, as shown by the green LED, and the fuel supply remains open, the boiler remains protected by the frost protection function.

Boiler frost protection: If boiler temperature falls below 5°C, the burner ignites and runs at full power until temperature reaches 10°C.

CH frost protection: This function is only active if an outside temperature sensor is connected. If outside temperature drops below -5°C the pumps are switched on. If outside temperature is between -4° and 1.5°C, the pumps are switched on for 10 minutes at intervals of 6 hours. If outside temperature is above 1.5°C the pumps are switched off.

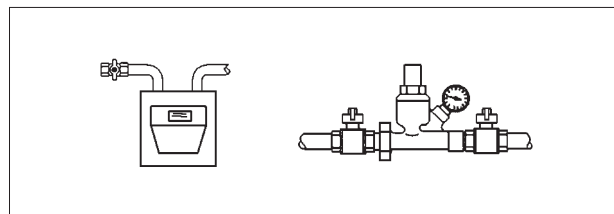
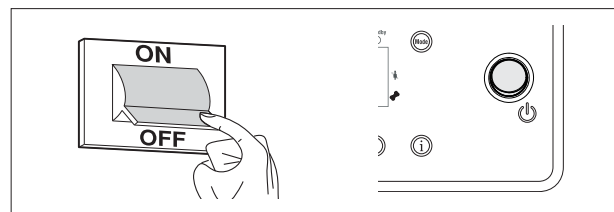


PREPARING FOR EXTENDED PERIODS OF DISUSE

If the boiler is not going to be used for an extended period of time, proceed as follows to prepare it for shut-down.

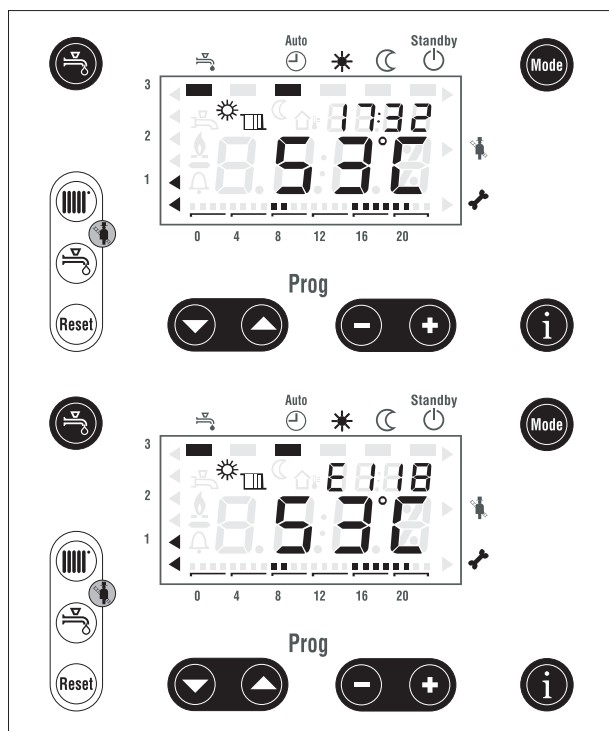
- Turn the control panel power switch OFF and make sure that the display goes out
- Turn the system's mains power switch OFF
- Close the fuel shut-off cock and the central heating and DHW circuit shut-off cocks.

⚠ Under these conditions the system is not protected against frost. Drain the central heating circuit and domestic hot water circuit if there is any risk of freezing.

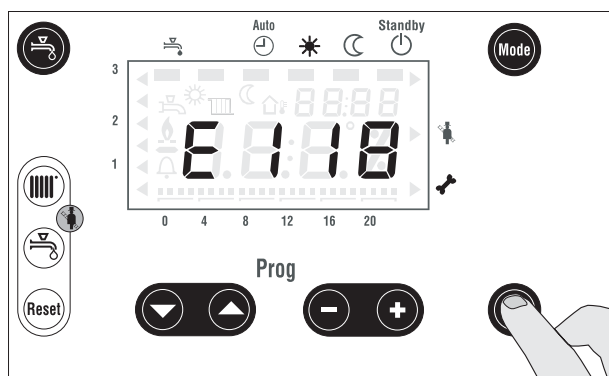


TEMPORARY ERROR DISPLAY

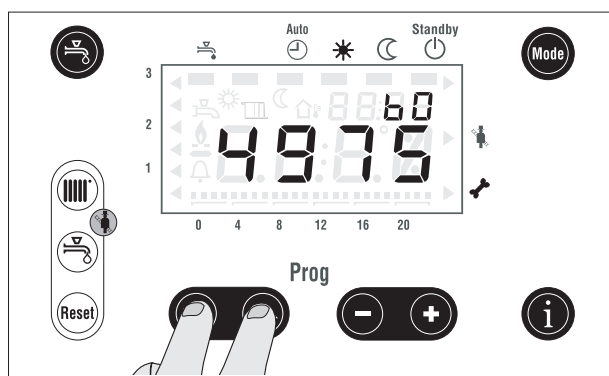
- If a temporary error occurs, the display alternates between displaying the time display and the error code.



- Press the **i** key to display the error code on the main display.



- Press and hold the **▲** and **▼** keys simultaneously for 3 seconds. The internal error code is displayed.
- Press the **i** key to access the information level.
- Press the **⏮** or **Mode** key to return to the main screen.

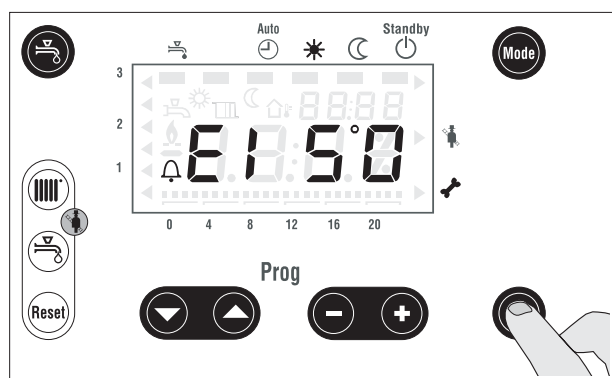


PERMANENT ERROR DISPLAY

- If a permanent error occurs, the error code flashes on the main display. The controller performs a safety shutdown. Example: E150.



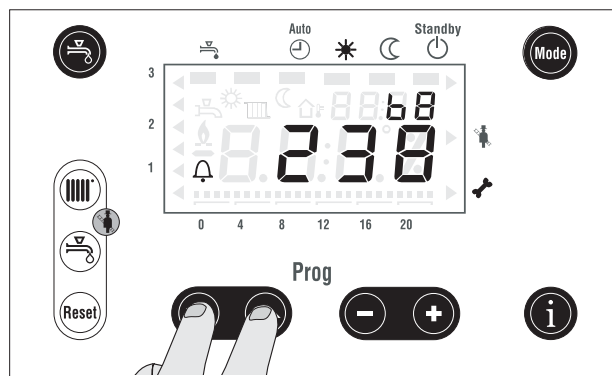
- Press the **i** key to display the error code on the main display.



- Press and hold the **▲** and **▼** keys simultaneously for 3 seconds.

The internal error code is displayed. Example: 238.

- Press the **i** key to access the information level.
- Press the **Reset** or **Mode** key to return to the main screen.





Note: Once you have eliminated the cause of the error, press **Reset** to reset the boiler.

Error	Type	Description
0		No input code
10		Outdoor temperature sensor error
20		Boiler sensor 1 error
28		Flue gas sensor error
32		CH flow sensor 2 error
40		CH return sensor 1 error
50		DHW 1 temperature sensor error
52		DHW 2 sensor error
61		Room unit 1 error
62		Room unit 1 or timer connection error
73		Solar collector sensor error (if solar clip-in option is installed - accessory)
77		Air pressure switch error
78		Water pressure switch error
81		LPB communication error
82		LPB address error
91		EEPROM data loss
92		Electronic device errors
95		Invalid date
100		Two master clocks found
105		Maintenance message
110	Permanent	Safety thermostat tripped (SLT)
111	Safety shutdown	Threshold thermostat tripped
113	Permanent	Flue gas thermostat tripped
117		Water pressure too high
118		Water pressure too low
119	Permanent	Flue gas thermostat tripped
128		No flame during functioning
129		Comburent air system error
130	Safety shutdown	Flue gas temperature threshold exceeded
132	Safety shutdown	Gas feed pressure switch (GPS) tripped
133		No flame
140		Illegal LPB address
148		Interface/base unit LPB incompatibility
151		Internal control board error
152		Parameter setting error
153		Lockout caused by unit
154		Generic error
160		Fan speed threshold not reached
161		Maximum fan speed exceeded
162		Air pressure switch contacts not closed
164		Water pressure switch/CH circuit flow switch error
166		Air pressure switch does not open
180		Chimney sweep function active
181		Service request function active
183		Control board in parameter setting mode
184		Modem function active
185		Floor curing function active

LIST OF END USER LEVEL PARAMETERS

LIST OF END USER LEVEL PARAMETERS

Nr.	Description	Range	U/M	Default setting
1	Time of day	0...23.59	h/min	---
Setpoints				
5 (*)	Parameter not used if a room unit is connected:			
	Room temperature reduced setpoint	10...30	°C	20
	Boiler temperature reduced setpoint	30...Boiler temperature setpoint		
CH circuit 1 program				
11	Start of heating period 1	00:00...24:00	hh:mm	06:00
12	End of heating period 1	00:00...24:00	hh:mm	22:00
13	Start of heating period 2	00:00...24:00	hh:mm	24:00
14	End of heating period 2	00:00...24:00	hh:mm	24:00
15	Start of heating period 3	00:00...24:00	hh:mm	24:00
16	End of heating period 3	00:00...24:00	hh:mm	24:00
DHW program (only used in conjunction with a storage cylinder)				
31	Start of preparation for DHW period 1	00:00...24:00	hh:mm	06:00
32	End of preparation for DHW period 1	00:00...24:00	hh:mm	22:00
33	Start of preparation for DHW period 2	00:00...24:00	hh:mm	24:00
34	End of preparation for DHW period 2	00:00...24:00	hh:mm	24:00
35	Start of preparation for DHW period 3	00:00...24:00	hh:mm	24:00
36	End of preparation for DHW period 3	00:00...24:00	hh:mm	24:00
45	Standard programs for central heating and domestic hot water (Press and hold the  and  keys simultaneously for 3 seconds)	No/Yes	---	No
516	Summer / Winter switching temperature	8...30 (30=switching disabled)	°C	20
520	PARAMETER FIXED IN THIS MODEL. DO NOT CHANGE SETTING			10
629	Maintenance alarm display	(0/1=disabled/enabled)		0
726	Maintenance code: a numeric value that identifies the cause of the error	0...255		0

(*) Outdoor temperature sensor connected: set the room temperature reduced setpoint.
 Outdoor temperature sensor not connected: set the boiler temperature reduced setpoint.

Use a cloth dampened in soapy water to clean the boiler's external casing. To remove stubborn marks, use a cloth dampened in a 50% mix of water and denatured alcohol or a suitable cleaning product.

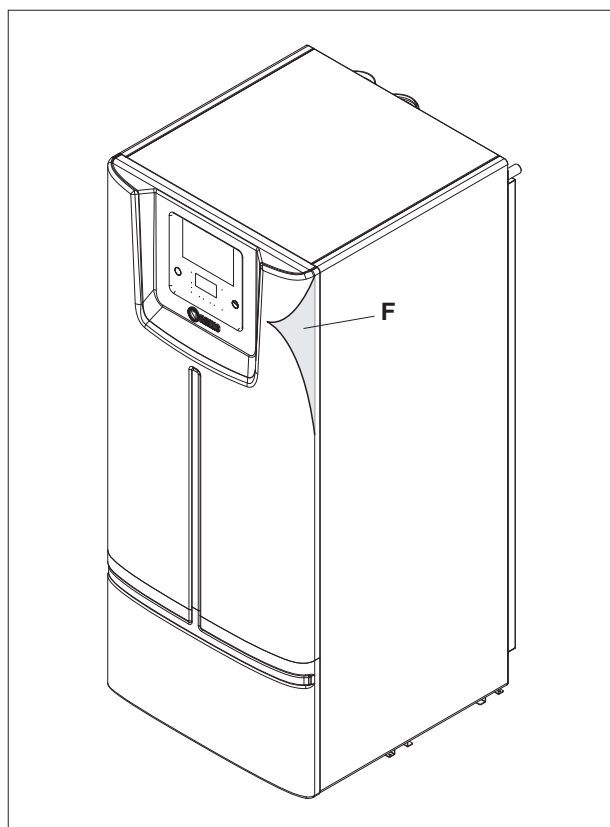
Wipe the boiler dry after cleaning it.

⚠ Remove the protective film (F) from the front panel and control panel before you start cleaning the boiler's casing panels.

⚠ The combustion chamber and flues must be cleaned periodically by **RIELLO's** Technical Assistance Service or by a qualified heating engineer.

⊘ Do not use abrasive products, petrol or triethylene.

⊘ Never clean or service the boiler without first disconnecting it from the mains electricity supply by turning the main power switch OFF.



MAINTENANCE

Please remember that in compliance with Italian Presidential Decree n. 412 of the 26th August 1993, THE PERSON RESPONSIBLE FOR SYSTEM MANAGEMENT MUST ENSURE THAT PROFESSIONALLY QUALIFIED PERSONNEL UNDERTAKE PERIODIC MAINTENANCE AND COMBUSTION EFFICIENCY MEASUREMENTS.

RIELLO's Technical Assistance Service is qualified to satisfy these legal requirements and can also provide useful information on MAINTENANCE PROGRAMMES designed to guarantee:

- greater safety
- compliance with applicable legislation
- freedom from the risk of fines in the event of spot checks.



**Instructions for the correct disposal of the product
pursuant to European Directive 2002/96/EC**

At the end of its working life, the product cannot be disposed of as municipal waste. It can be delivered to separate waste collection centres operated by local councils, if such exist, or to the resellers that provide this service. Separate disposal of appliances avoids possible negative consequences for the environment and the health due to unsuitable disposal and allows the recovery of the components, with significant savings in terms of energy and resources. The symbol (crossed-out wheeled bin) shown on the product indicates that the appliance must be disposed of separately.



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As part of the company's ongoing commitment to perfecting its range of products, the appearance, dimensions, technical data, equipment and accessories may be subject to variation.