

User's manual TC 110 24A-32



Marsciano (PG) Italy

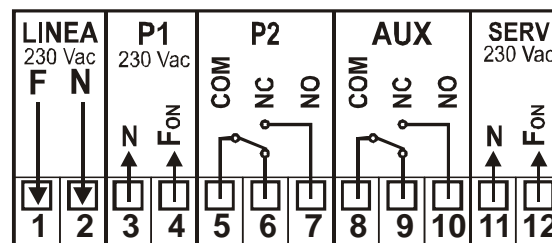
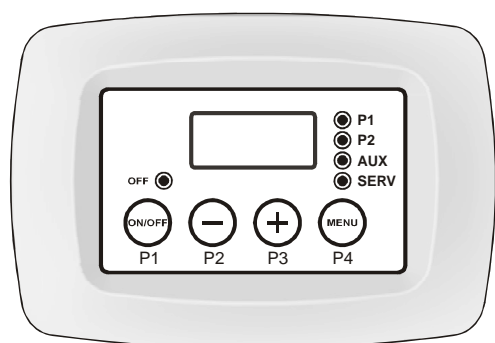


fig. 1 External aspect and connection diagram

Input	S1	Fireplace Probe:	Temperature range 0 – 100 °C
	FL/S2	Boiler Probe: FluxSwitch:	Temperature range 0 – 100 °C Consent ON/OFF
Output	P1	Pump:	230 Vac Connectors 3 - 4
	P2	Valve:	Free contacts Connectors 5 - 6 - 7
	AUX	Auxiliary:	Free contacts Connectors 8 - 9 - 10
	SERV	THERMOSTAT configuration	
Valve 2/3 wires:		230 Vac	Connectors 11 - 12
GRILL configuration			
	Grill:	230 Vac	Connectors 11 - 12

⇒ FUNCTIONALITY

1. ON/OFF:

The ON/OFF of the controller is through the extended pressure of the button **P1 (ON/OFF)**

- The state OFF is signalled with the blinking led **OFF**

2. Visualizations:

DISPLAY Shows:

- always **Probe1(CH)** Temperature
- push **P4** button for some seconds to visualize **Probe2(DHW)**.
- If the Flux is closed, the display visualizes the high hyphen on the first digit of the display.

3. Function ALARM:

If the temperature read by the **PROBE** is over the value Alarm thermostat **A01**

- The acoustic and visual signal is activated
 - Function **SILENCE**: the acoustic signal could be deactivated for 5 minutes pushing a button
- After this time, if the alarm condition is active, the acoustic signal starts again.

4. Function ANTI FREEZING:

If the temperature read by the PROBE is under the value of the Anti freezing thermostat **A03** and **P06=1**

- The exit PUMP is activated
- The display shows **ICE**

5. Function STANDBY:

If the system is **OFF**

in condition of **ALARM** or **ANTI FREEZING**

- The device starts **ON**

6. Function ANTI BLOCK PUMP:

If the PUMP is off for a time over Timer Anti block **T01** (about a week)

- The output PUMP is activated for **T02** seconds
- The display shows **bLP**

The function is ON also in **STANDBY**.

7. Function TEST PUMP:

Pushing the button P3(+)

- The outputs **PUMP** is activated for the time of the button's pushing
- The display shows **tSt**

8. Configuration SYSTEM:

➤ Modality H__ = H0

Production of internal fireplace sanitary WITHOUT Sanitary ElectroValve

- If Input FLUX= **ON: FluxSwitch contact Closed for sanitary water request**
Or Thermostat contact boiler Closed for boiler temperature not
 - The **PUMP** is deactivated
 - The Function is signalled with the blinking led PUMP

➤ Modality H__ = H1

Production of internal sanitary or external boiler WITH Sanitary ElectroValve

- If Input FLUX= **ON: FluxSwitch contact Closed for sanitary water request**
Or Thermostat contact boiler Closed for boiler temperature not
- If Temperature read by the S1 probe is over the **T-P2 Thermostat**
 - The **P2** is activated for the sanitary ElectroValve management
 - The **P1** activation is forced

➤ Modality H__ = H1b

Production of internal sanitary or external boiler WITH Sanitary PUMP

Nel caso in cui:

- If Input FLUX= **ON: FluxSwitch contact Closed for sanitary water request**
Or Thermostat contact boiler Closed for boiler temperature not
- If Temperature read by the S1 probe is over the **T-P2 Thermostat**
 - The **P1** is activated for the Sanitary Pump management
 - The **P2** is deactivated

➤ Modality H__ = H2

Production of internal sanitary or external boiler WITH Sanitary ElectroValve

- If Temperature read by the S1 probe is under the **T-P2 Thermostat**
- If **S1probe - S2 probe** is over the **A31 Thermostat**
 - The **P2** is activated for the sanitary ElectroValve management
 - The **P1** activation is forced

➤ Modality H__ = H2b

Production of internal sanitary or external boiler WITH Sanitary PUMP

Nel caso in cui:

- If Temperature read by the S1 probe is under the **T-P2 Thermostat**
- If **S1probe - S2 probe** is over the **A31 Thermostat**
 - The **P2** is activated for the Sanitary Pump management
 - The **P1** is deactivated

➤ Safety

The Functions are **NOT ACTIVE** when S1 probe temperature is over the value **Safety Thermostat A02**

➤ Modality H__ = H3

PUFFER management

- If Temperature read by the S1 probe is over the **T-P1 Thermostat**
- If **S1probe - S2 probe** is over the **A31 Thermostat**
 - The **P1** is activated

⇒ Menu CONFIGURATION 'SERV'

It allows the functioning of the output **SERV**

- Function **GRILL**: button **P2(-)** Output= **OFF** button **P3(+)** = **ON**
- Function **THERMOSTAT** programmable
- To enter the **Menu** push **together** buttons **P2(-)** and **P3(+)** for about 5 seconds
- The display shows the configuration: **Gri** or **tEr**
- Modify through buttons **P2(-)** and **P3(+)** **together to** button **P4(MENU)**
- To exit and memorise wait about 5 seconds.

The product standard is with configuration Function GRILL= Gri

⇒ MAIN MENU

❖ **Setting out of the functioning THERMOSTAT of the controlled outputs:**

T-P1: for the control of the system pump functioning

T-P2: for the controller of Electro Valve/ Sanitary Pump

T-AUX: for integration of the gas boiler, ElectroValve or other application

T-SERV: for the controller of Electro Valve or other application

- Through the **click** of the button **P4(MENU)** is visualised the values of the setted thermostats signalled by the correspondent blinking led P1 / P2 / AUX / SERV

- **To modify:**

- Chose the value to modify

- Through buttons **P3(+)** e **P2(-)** increase/decrease the value

- To memorise wait about 5 seconds or push button **P4(MENU)**

The Thermostat SERV is not available in case of configuration SERV = GRILL

See Menu CONFIGURATION 'SERV'

Main menu Parameters	U.m.	Min	Default	Max	Set values
T-P1 Thermostat	°C	20	40	85	
T-P2 Thermostat	°C	20	45	85	
T-AUX Thermostat	°C	20	50	85	
T-SERV Thermostat	°C	20	60	85	

⇒ INSTALLER MENU

The admission to this Menu is only for INSTALLERS or EXPERT PERSONNEL, because modified parameters could damage the product or could make the product not fit for the applications.

- To enter the MENU push **together** buttons **P4(MENU)** and **P1 (ON/OFF)** for about 5 seconds.
- To visualise the parameters use buttons **P3(+)** and **P2(-)**
- To Visualise the parameter push button **P4(MENU)**
- To modify the value push buttons **P3(+)** or **P2(-)** **together with** **P4(MENU)**
- To see the list of the parameters and memorise push button **P4(MENU)**
- To exit and memorise wait about 5 seconds.

INSTALLER Menu Parameters	U.m.	Symbol	Min	Default	Max	Set Values
Thermostat of activation Function ALARM	°C	A 01	85	90	99	
Thermostat of SECURITY	°C	A 02	20	85	90	
Thermostat of activation ANTI FREEZING	°C	A 03	4	6	8	
S1-S2 thermostat	°C	A 31	2	5	15	
Hysteresis thermostat T-P1	°C	i 04	1	2	15	
Hysteresis thermostat T-P2	°C	i 05	1	2	15	
Hysteresis thermostat T-AUX	°C	i 06	1	2	15	
Hysteresis thermostat T-SERV	°C	i 07	1	2	15	
Hysteresis thermostat A31	°C	i 31	1	2	15	
Timer of ANTI BLOCK	h	T 01	0	168	255	
Time of activation pump ANTI BLOCK	sec	T 02	0	20	99	
Set Modality SYSTEM	-	H	0	2	3	

⇒ FAILURE SIGNALLING OR ALARMS

The controller could signal the damage of the probe.

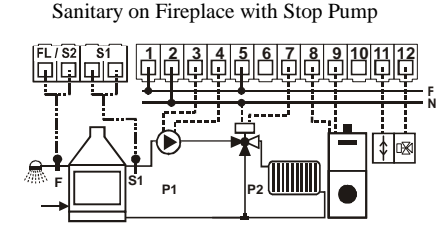
Blinking damage messages:

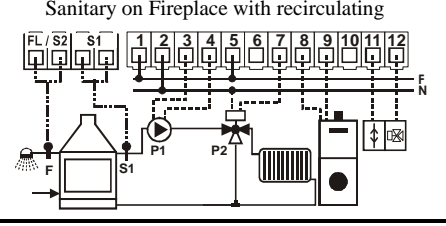
- **Lo:** out of range to the low temperature (under 0°C): **Probe broken**
- **Hi:** out of range to the high temperature (over 100°C): **Probe in short circuit**

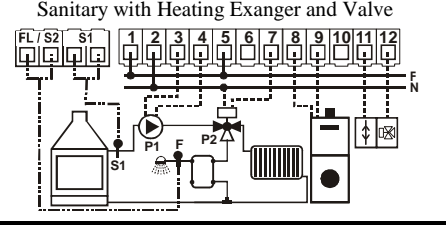
Applied rules EN 60730-1 50081-1 EN 60730-1 A1 50081-2		
Applied rules EN 60730-1 50081-1 EN 60730-1 A1 50081-2	TiEmme elettronica 06055 Marsciano (PG) Italy Tel: +39.075.874.3905 Fax: +39. 075.8742.239 info@tiemmeelettronica.it	

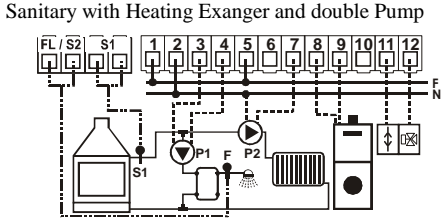
DIMOSTRATION DIAGRAMS

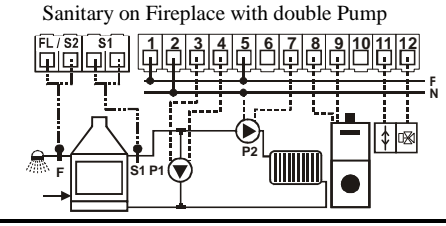
Here are some examples of demonstrative systems and the configuration of the parameters: thermostats, **H**, **SERV**, for the management of the Heating and Sanitary circuit.

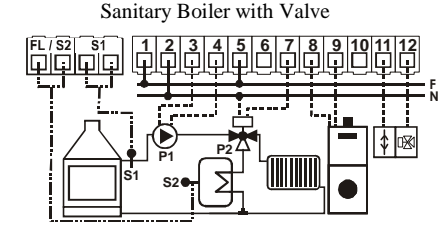
H 0	S1 between 30 and 45 °C:	P1=ON and P2= OFF	 <p>Sanitary on Fireplace with Stop Pump</p>
T-P1	30°C	S1 > di 45 °C:	
T-P2	45°C	if FL=closed:	
A02	85°C	S1 > 85 °C:	
T-AUX	45°C	S1 > 45°C:	Boiler=OFF

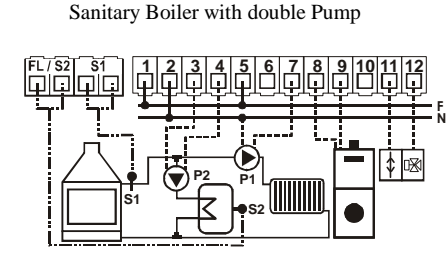
H 1	S1 between 30 and 45 °C	P1 and P2 = ON	 <p>Sanitary on Fireplace with recirculating</p>
T-P1	30°C	S1 > 45 °C:	
T-P2	45°C	if FL=closed:	
A02	85°C	if S1 > 85 °C:	
T-AUX	45°C	S1 > 45°C:	Boiler=OFF

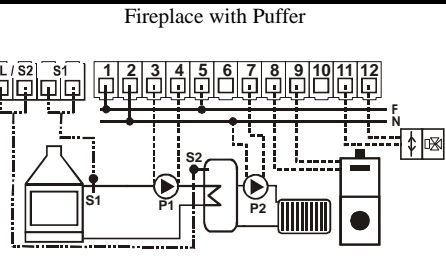
H 1	S1 between 30 and 45 °C:	P1 and P2 = ON	 <p>Sanitary with Heating Exchanger and Valve</p>
T-P1	30°C	S1 > 45 °C:	
T-P2	45°C	if FL=closed:	
A02	85°C	if S1 > 85 °C:	
T-AUX	45°C	S1 > di 45°C:	Boiler=OFF

H 1b	S1 between 30 and 45 °C:	P1=ON and P2=OFF	 <p>Sanitary with Heating Exchanger and double Pump</p>
T-P1	30°C	S1 > 45 °C:	
T-P2	45°C	if FL=closed:	
A02	85°C	if > 85 °C:	
T-AUX	45°C	S1 > 45°C:	Boiler=OFF

H 1b	S1 between 30 and 45 °C:	P1=ON and P2=OFF	 <p>Sanitary on Fireplace with double Pump</p>
T-P1	30°C	S1 > 45 °C:	
T-P2	45°C	if FL=closed:	
A02	85°C	if > 85 °C:	
T-AUX	45°C	S1 > 45°C:	Boiler=OFF

H 2	S2 < 50°C	<p>P1 e P2=ON</p> <p>P1=ON and P2=OFF</p> <p>P1=ON</p>	 <p>Sanitary Boiler with Valve</p>	
T-P2	50°C			S1-S2 (A31) > 5°C
A31	5°C			If S1 > 85 °C:
A02	85°C			
T-P1	40°C	S1 > 40°C		
		S2 > 50°C:		

H 2b	S2 < 50°C and S1-S2 > 5°C	<p>P1=OFF and P2=ON</p> <p>P1 and P2=ON</p> <p>Boiler=OFF</p> <p>P1=ON and P2=OFF</p>	 <p>Sanitary Boiler with double Pump</p>	
T-P2	50°C			
A02	85°C			S1 > 85 °C:
A31	5°C			
T-AUX	45°C	S1 > 45°C:		
T-P1	40°C	S1 > 40°C		
		S2 > 50°C:		

H 3	S1 > 30°C	<p>P1=ON</p> <p>P2=ON</p> <p>Boiler=OFF</p>	 <p>Fireplace with Puffer</p>	
T-P1	30°C			S1-S2 (A31) > 5°C
A31	5°C			
T-P2	50°C			S2 > 50°C:
T-AUX	45°C	S2 > 45°C:		