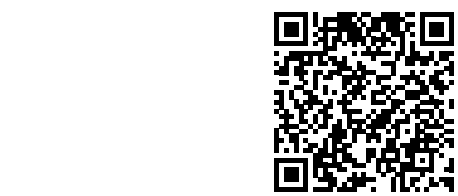
TEMPLARI
THE HEAT PUMP

INSTRUCTION MANUAL

(Translation of the original instructions)

EN

T-Hybrid



FOR SAFE AND CORRECT USE, FOLLOW THESE INSTRUCTIONS.
KEEP THEM FOR FUTURE REFERENCE.

COM.MAN.022AB-01 - rev. 01 - 05/08/2025 - T-HYBRID

⚠ WARNING

OPERATION OF THE T-HYBRID MODULE IS ONLY POSSIBLE WITH THE TEMPLARI HEAT PUMP POWERED, AND PROPERLY CONNECTED TO THE K-TOUCH CONTROL PANEL. THE LATTER MUST BE CONNECTED TO THE INTERNET. T-HYBRID SOFTWARE FUNCTIONALITY CAN ONLY BE ENABLED REMOTELY, BY AUTHORISED TEMPLARI PERSONNEL.

1 T-HYBRID MODULE PRESENTATION

The T-Hybrid module, allows the management of a thermal heating source, alternative to the Templari heat pump, based on the average outdoor temperature, calculated over a configurable time interval.
The system is able to manage the requests of the thermal heating system (ROOM, CMIX, Primary Circuit), and of the domestic hot water (DHW) circuit, transmitting the above-mentioned requests to the alternative generator.
The operation of the T-Hybrid module is conditional on the installation of the management SW and the T-Hybrid module, its enabling by selecting the "Enable" button, and the activation or deactivation of the “Use HP ON/OFF" option, which determines the activation, standby or switching off of the T-Hybrid module based on the general ON/OFF button of the Templari heat pump. See chap. General Request REL1.
In order to inform the alternative generator, and/or part of the thermal system, of the current heat request, and its fulfilment, the T-Hybrid module uses 2 dry contacts, which can assume different functions depending on the activation of the “General Request REL1” option, see chap. ON/OFF Enabling and Configuration.

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2 EXAMPLE WIRING DIAGRAM WITH T-SPLIT MODULE

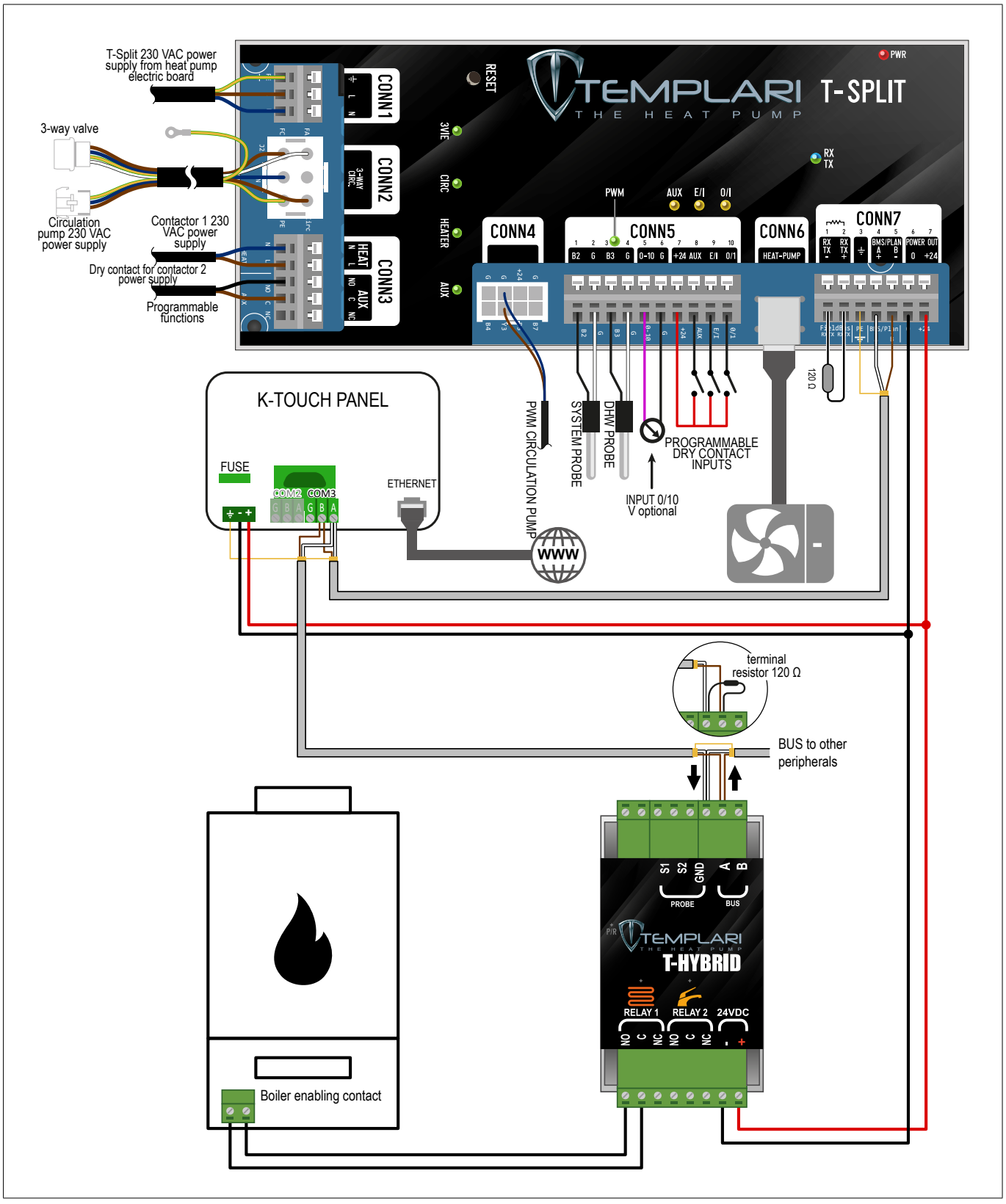
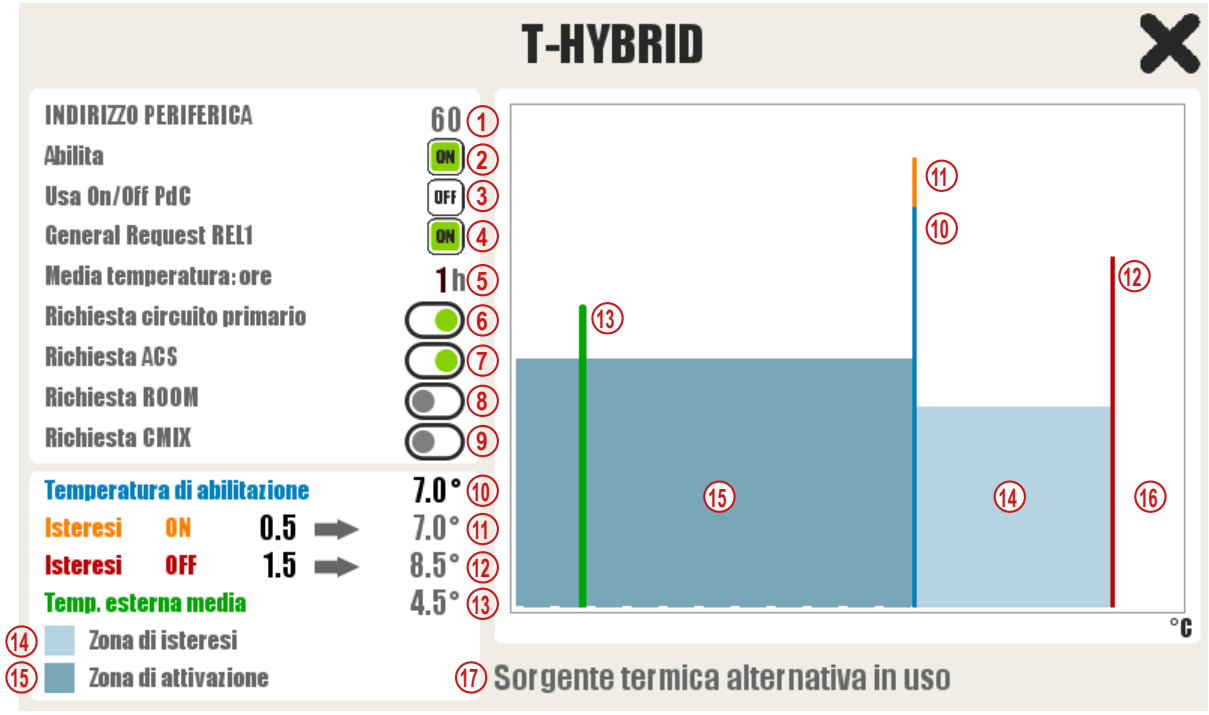


FIG. 1 *(Example wiring diagram with T-Split module)*

Basic connection example, for the management of the heating system request only, or in case of a cumulative heating system + domestic hot water request “General Request REL1” **activated** (ON).

3 ENABLING AND CONFIGURATION OF THE T-HYBRID MODULE

Once the T-Hybrid management SW has been installed by Templari authorised personnel, follow the path below to reach the configuration screen:
Settings -> Advanced -> Manufacturer (PASSWORD X) -> Other -> T-Hybrid.



1) Peripheral device address, indicates the presence of the T-Hybrid peripheral device and correct communication with it.
2) Enabling the T-Hybrid peripheral device.
3) Option to use the Templari Heat Pump ON/OFF button, also for the T-Hybrid module.
4) General Request REL1 option. Allows the definition of the output configurations based on the “Heating system request” and “DHW heat request”. See the relevant paragraph for more details.

5) Indicates the time interval, expressed in hours, for calculating the average outdoor temperature. The sampling rate is set at 5 min.
6) Primary circuit request activation. If the function is active, it enables the alternative heat source to keep the system storage tank at temperature, according to the setpoint set on the primary circuit for heating mode. The outputs of the T-Hybrid module are activated, according to the “Heating system request” mode, defined by the option “General Request REL1” in point 4 and can be found in the paragraph with the same name.
7) DHW circuit demand activation. If the function is active, it enables the alternative heat source to keep the DHW storage tank at temperature, according to the setpoint set for DHW mode. The outputs of the T-Hybrid module are activated, according to the “DHW demand” mode, defined by the option in point 4 “General Request REL1” and can be found in the paragraph with the same name.
8) ROOM request activation. If the function is active, it enables the alternative heat source in the system configuration, as long as at least one of the ROOM or DOME sensors is making a request for heating, thus enabling the heat demand to the secondary circuit to be met using the alternative heat source. The outputs of the T-Hybrid module are activated, according to the “Heating system request” mode, defined by the option "General Request REL1” in point 4 and can be found in the paragraph with the same name.
9) CMIX request activation. If the function is active, it enables the alternative heat source in the system configuration, as long as at least one of the CMIX sensors is in heat demand conditions, thus enabling the heat demand to the secondary circuit to be met using the alternative heat source. The outputs of the T-Hybrid module are activated, according to the “Heating system request” mode, defined by the option "General Request REL1” in point 4 and can be found in the paragraph with the same name.
10) Enabling temperature, at which the T-Hybrid module adds the switch-on and switch-off hysteresis to terminate the operating regions, exclusively enabling the Templari heat pump or the alternative heat source.
11) Activation hysteresis and relative average outdoor switch-on temperature of the alternative heat source. The latter may or may not consider the switch-on hysteresis depending on the activation situation (heat pump operating or not).
12) Deactivation hysteresis and relative average outdoor switch-off temperature of the alternative heat source.
13) Average value of the outdoor temperature, calculated over the range set in point 5.
14) Hysteresis zone.
15) Alternative heat source activation zone.
16) Alternative heat source deactivation zone.
17) Message concerning the activation/deactivation status of the alternative heat source, notifications for failed communication or centralised shutdown of the heating system.

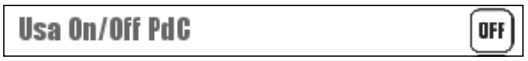
4 ON/OFF ENABLING AND CONFIGURATION

4.1 ENABLING

	Using the button, the previously installed and addressed T-Hybrid module can be enabled. This operation is essential in order to make the module itself operational.

4.2 ON/OFF AND STANDBY OF THE T-HYBRID MODULE

	The activation of the T-Hybrid module, and therefore of the hybrid heat generation system, can be conditional upon the general ON/OFF button of the heat pump, in order to maintain centralised switching on/off of the heat generator, regardless if it is the Templari heat pump, or the alternative heat source managed by the T-Hybrid module. In the event of prolonged maintenance or special site requirements, it is possible to switch off the Templari heat pump and use the alternative generator as the sole heating source.

	The deactivation of the “Use HP On/Off" option will determine the activation of the alternative heat source also if the general On/Off button of the heat pump is in the Off state.

⚠ WARNING

THE ACTIVATION OF THE ALTERNATIVE HEAT SOURCE, WILL ALWAYS BE CONDITIONAL ON THE PRESENCE OF THE TEMPLARI HEAT PUMP, WITHOUT WHICH THE HYBRID SYSTEM AND THE T-HYBRID MODULE WILL NOT BE ABLE TO OPERATE.

THE TEMPLARI HEAT PUMP MUST ALWAYS BE POWERED AND CORRECTLY CONNECTED TO ITS K-TOUCH CONTROL PANEL. THE ACTIVATION OF THE ALTERNATIVE HEAT SOURCE WILL ALWAYS BE CONDITIONAL ON THE RELEVANT OUTDOOR TEMPERATURE SETTINGS. SEE CHAP. OPERATION OF THE HEAT SOURCE.

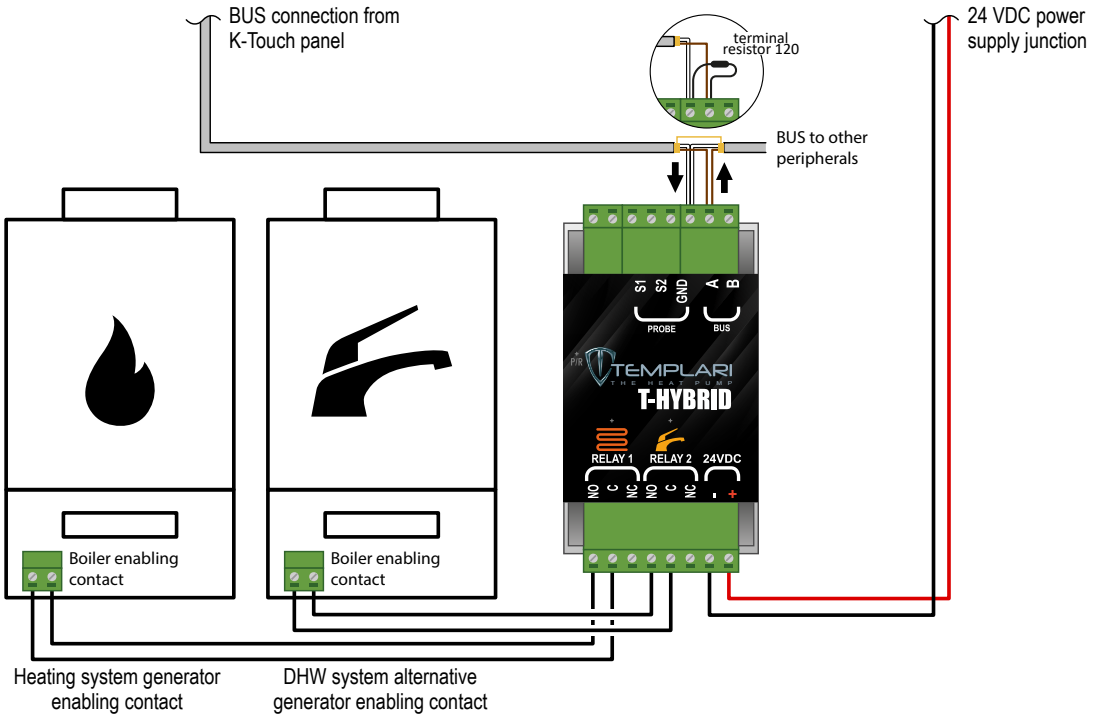
5 GENERAL REQUEST REL1

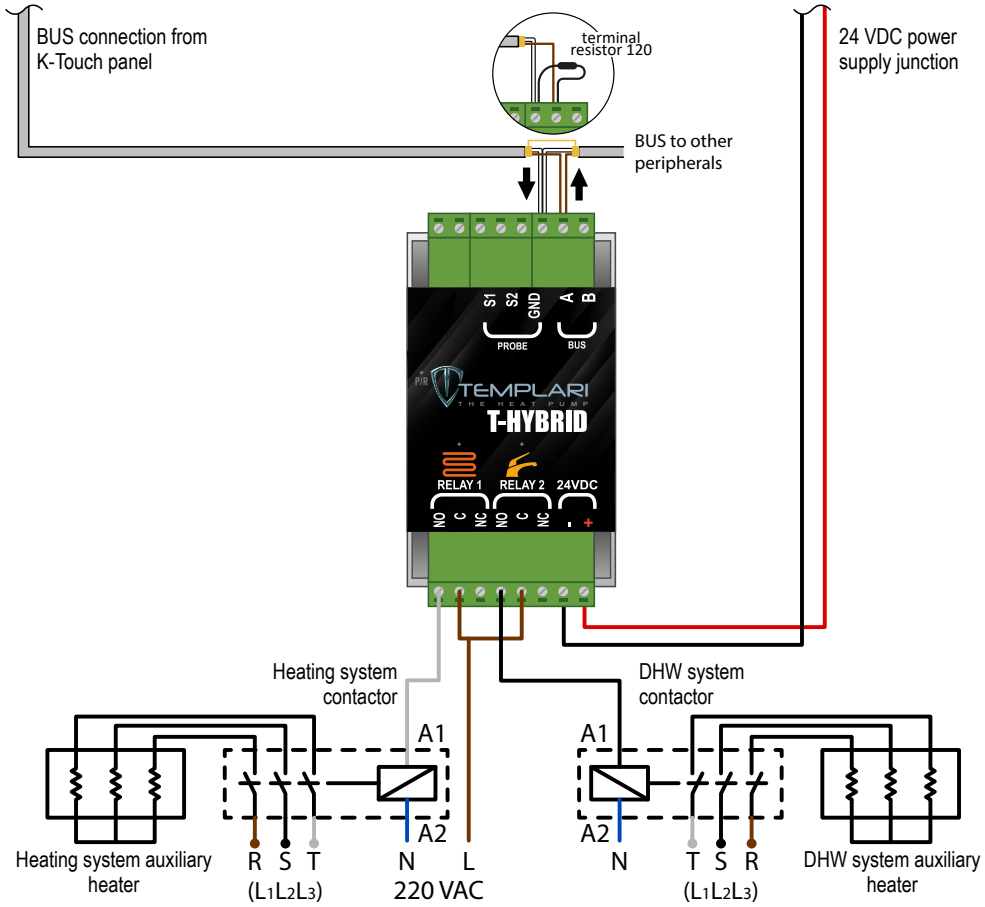
5.1 GENERAL REQUEST REL1: OFF

General Request REL1 OFF	With the “General Request REL1” function deactivated (OFF), heat demands are transmitted to the generator as follows:

Demand conditions	**Status of RELAY 1 output T-Hybrid**	**Status of RELAY 2 output T-Hybrid**
- No active thermal heating system request. - DHW demand not active	Deactivated (0)	Deactivated (0)
- At least one active thermal heating system request (ROOM, CMIX, Primary Circuit). - DHW demand not active	Active (1)	Deactivated (0)
- No active thermal heating system request. - DHW demand active	Deactivated (0)	Active (1)
- At least one active thermal heating system request (ROOM, CMIX, Primary Circuit). - DHW demand active	Active (1)	Active (1)

6 ELECTRICAL CONNECTION OF REFERENCE WITH THE "GENERAL REQUEST REL1" FUNCTION DEACTIVATED (OFF)



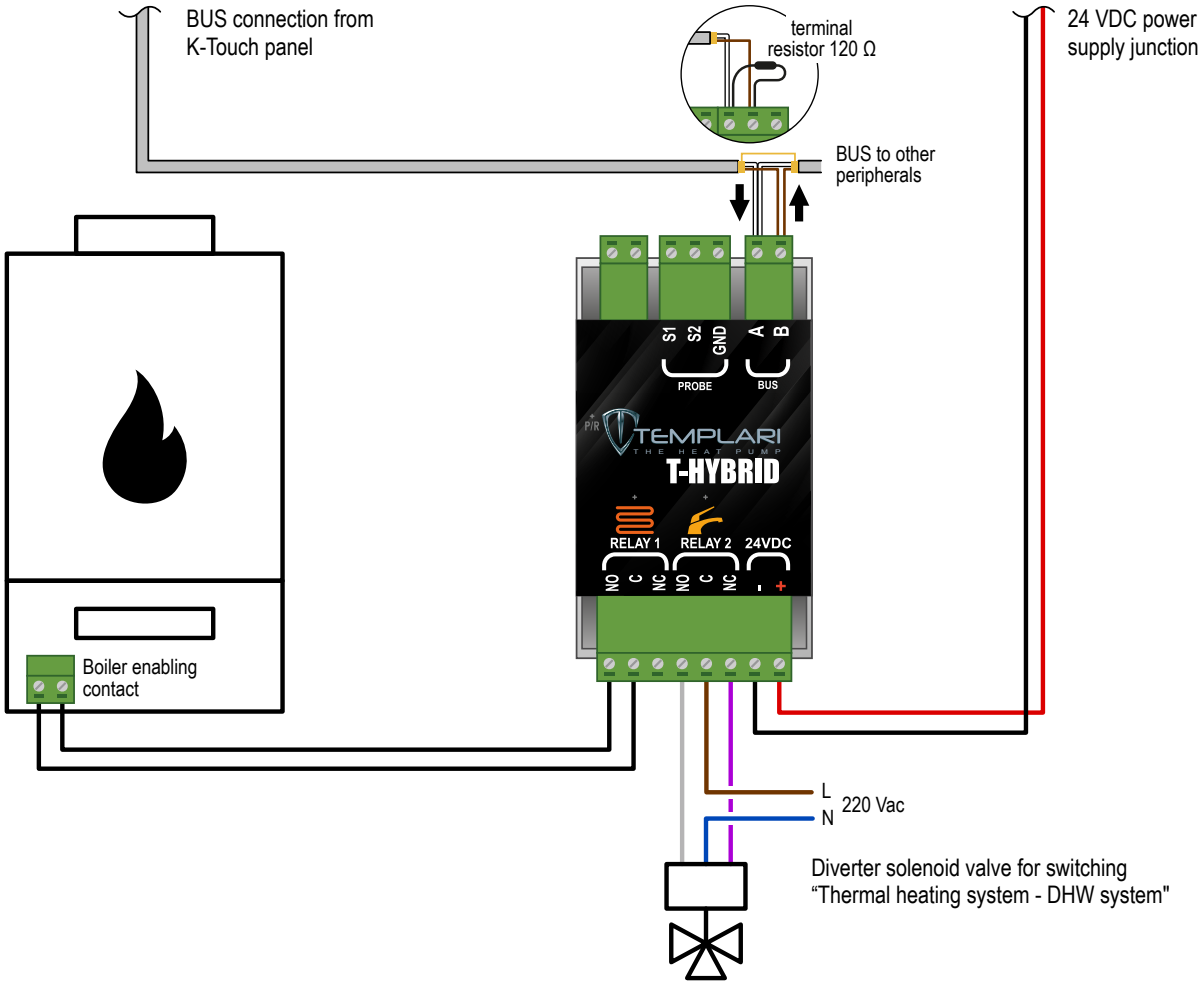


6.1 GENERAL REQUEST REL1: ON

	With the “General Request REL1” function activated (ON), heat demands are transmitted to the generator as follows:

Demand conditions	**Status of RELAY 1 output T-Hybrid**	**Status of RELAY 2 output T-Hybrid**
- No active thermal heating system request. - DHW demand not active	Deactivated (0)	Deactivated (0)
- At least one active thermal heating system request (ROOM, CMIX, Primary Circuit). - DHW demand not active	Active (1)	Deactivated (0)
- No active thermal heating system request. - DHW demand active	Active (1)	Active (1)
- At least one active thermal heating system request (ROOM, CMIX, Primary Circuit). - DHW demand active	Active (1)	Active (1)

6.2 SUGGESTED WIRING DIAGRAM WITH THE "GENERAL REQUEST REL1" FUNCTION ACTIVATED (ON)



7 OPERATION OF THE HEAT SOURCE

7.1 DESCRIPTION OF THE OPERATION FOR ACTIVATION OF THE ALTERNATIVE HEAT SOURCE ACTIVATION BASED ON THE OUTDOOR TEMPERATURE

The system calculates the average outdoor temperature (13), over the set time interval (5), and compares it with the function-enabling temperature (10), taking into account the switch-on (11) and switch-off (12) hysteresis.
If the average outdoor temperature (13), is in the deactivation zone (16), the RELAY 1 and RELAY 2 outputs of the T-Hybrid module switch to the standby state.
If the average outdoor temperature (13) goes from the deactivation zone (16) to the hysteresis zone (14), the outputs of the T-Hybrid module are maintained in the standby state. This state is maintained if the average outdoor temperature moves from the hysteresis zone (14) to the deactivation zone (16).
If the average external temperature (13) goes from the hysteresis zone (14) to the activation zone (15), the outputs of the T-Hybrid module will be energised in accordance with the selected activation options (4, 6, 7, 8, 9), keeping pole C and pole NO of the relative RELAY 1 and/or RELAY 2 outputs in contact.
If the average external temperature (13) passes from the activation zone (15) to the hysteresis zone (14), the outputs of the T-Hybrid module will remain energised, keeping pole C and pole NO of the RELAY 1 and/or RELAY 2 output in contact.
This condition persists as long as the average outdoor temperature (13) remains within the activation (15) and hysteresis (14) zones.
As soon as the average outdoor temperature (13), reaches the deactivation zone (16), the outputs of the T-Hybrid module will switch to the standby condition, opening contact C and NO of RELAY 1 and/or RELAY 2.

The message in Fig. 2 and Fig. 3 is displayed to indicate whether or not the RELAY 1 and/or RELAY 2 output of the T-Hybrid module is activated. In the event of a communication failure between the K-Touch panel and the Templari heat pump, the authorisation to the alternative heat source is disabled, switching the RELAY 1 and RELAY 2 outputs of the T-Hybrid module to the standby state and displaying the error message in Fig. 4.

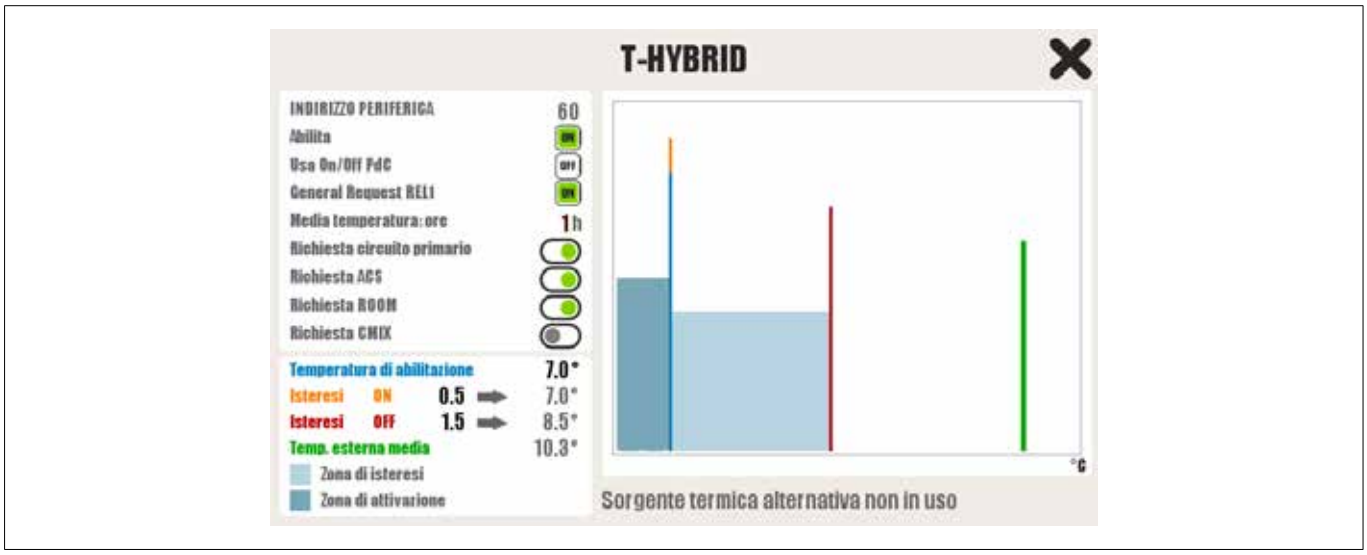


FIG. 2

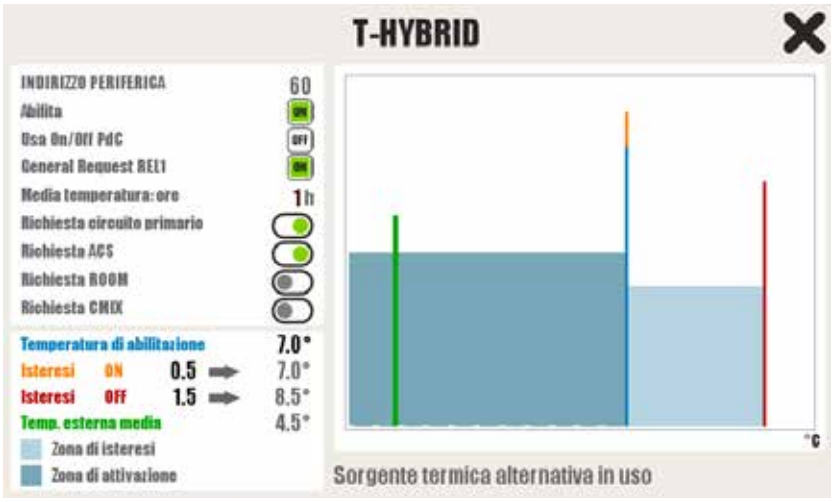

T-HYBRID
INDIRIZZO PERIFERICA 60
Abilita ON
Usa On/Off PdC OFF
General Request REL1 ON
Media temperatura: ore 1h
Richiesta circuito primario
Richiesta ACS
Richiesta ROOM
Richiesta CMIX
Temperatura di abilitazione 7.0°
Isteresi ON 0.5 7.0°
Isteresi OFF 1.5 8.5°
Temp. esterna media 4.5°
Zona di isteresi
Zona di attivazione
°C
Sorgente termica alternativa in uso

FIG. 3

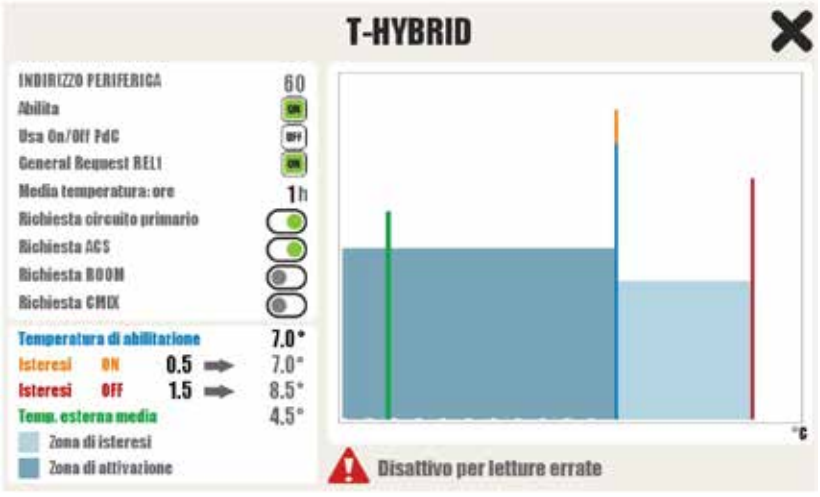

T-HYBRID
INDIRIZZO PERIFERICA 60
Abilita ON
Usa On/Off PdC OFF
General Request REL1 ON
Media temperatura: ore 1h
Richiesta circuito primario
Richiesta ACS
Richiesta ROOM
Richiesta CMIX
Temperatura di abilitazione 7.0°
Isteresi ON 0.5 7.0°
Isteresi OFF 1.5 8.5°
Temp. esterna media 4.5°
Zona di isteresi
Zona di attivazione
°C
Disattivo per letture errate

FIG. 4

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