ORION ITALIA

Protection relays & Metering division

TR42

Temperature Control

Dry-type Power Transformers Temperature Monitoring

The TR42 is a device conceived to digitally measure the temperature of cast resin (dry type) transformers, that are crucial to the mechanical integrity. These devices have the capability of controlling the transformer ventilation (FAN) to maintain a good working temperature, and also the option of instantly removing the power supply due to over temperatures.

FEATURES

- Display of the actual temperature of the 4 PT sensors.
- Display & storage of the highest temperature of each PT sensor.
- 3 programmable output contacts from 0° to 220°C level 1, level 2 and FAN control.
- Automatic and “Always ON” fan mode.
- Alarm of device failure or PT100 disconnection or short circuit.
- Automatic fan start every week (bearing protections).
- Insulated RS-485 communication port.
- Insulated 4-20mA output (Optional).

FUNCTIONS AND SIGNALS

The TR42 is equipped with seven-segment displays, programming and function keys along with signalling LEDs.

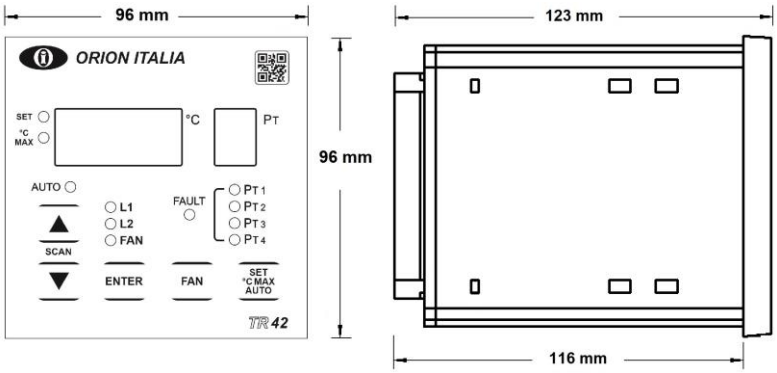
COMMUNICATION

Communication capabilities are available in the TR42, connecting the RS-485 port to a network controlled by a supervisor device (PC). The protocol used is Modbus RTU. The connections have to be made with shielded twisted wires.

4-20mA OUTPUT (*Optional*)

This model version is capable of supplying a 4-20mA current loop for an external gauge or connected to a supervisor device (PLC).

DIMENSIONS



SPECIFICATIONS

Scale: -10 ÷ +240 °C
Accuracy: ±0,5% F.S. ± 1 digit
Settings: L1, L2, FAN: 0 ÷ 220 °C
Supply voltage:
Model W: 85V (115V) ÷ 264V (300V) Vac (Vdc)
Model B: 24Vdc -15%, +10%
Maximum power consumption: 4VA or 4W
Inputs: 4 platinum sensors PT100 with 3 wires. 5 Ohm max wire impedance.
Outputs:
FAN: normally open, Imax 16A 240Vac/24Vdc resistive load (7A continuous) /1HP 240 Vac.
L1, L2: change-over 5A(n.o) res. load 250 Vac.
FAULT: 5A(n.c)
Operational Temperature: 0 ÷ 50 °C
Storage Temperature: −20 ÷ 70 °C
Relative Humidity: 90% (non-condensing)
Test Run in: 48 hours
Dielectric Withstand Voltage: 2 kVac, 60s

Terminal block: draw-out terminals for 2,5 mm² cables (12 AWG).
Frame: plastic self-extinguish UL94V-0.
Assembly: to be fixed in the structure through stirrups and screws.
Dimensions: 96x96x123 (116) mm
Cutout: 91mm (-0,5mm) x 91mm (-0,5 mm)
Weight: 500 grams
Communication port: Insulated RS-485, insulation 1500 Vdc.
Communication protocol: MODBUS RTU, function: 03h, 04h, 06h, 10h.
4-20 mA output: Internal power supply 15 Vdc, max. Voltage drop 10 V, insulation voltage 1500 Vdc. Range: 0 °C÷240 °C. Accuracy: ±1% F.S. **No external power supply needed.**

Directives
Low voltage (2014/35/EU)
EMC (2014/30/UE)

OPTIONAL FEATURES

- 4-20mA Analog Output
- Acoustic signalization on L1 or L2 level

ACCESSORIES *(Optional)*

PT100:
- Inox sensor Class B EN60751 PTFE insulated
- Runner insulation FFP
- Cable in rubber silicon shielded
- Cables length: standard 2 mt (other lengths available)

PTBox:
- Plastic Box ABS Protection degree IP65
- 3 Temperature Sensors PT100 Class B
- Cables length: 2 mt
- Terminal block to connect to the TR42

ORDER CODE

Model	Communication & features	Power Supply
TR42CMW	Communication Port RS485	85÷264Vac (115÷300Vdc)
TR42CMB	Communication Port RS485	24Vdc
TR42ADW	Communication Port RS485 + 4-20mA output + Buzzer	85÷264Vac (115÷300Vdc)
TR42ADB	Communication Port RS485 + 4-20mA output + Buzzer	24Vdc