



Dry-type Power Transformers Temperature Monitoring

The TR42 has been created as an accessory of main importance for resin or air insulated three-phase MT transformers, to control and monitor temperatures on the insulating coil, on the winding and to manage the intervention of cooling fans. The temperature is detected by 3 or 4 thermal detectors PT 100, three of them located in the transformer coils, the fourth on the core.

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 PT 100 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.

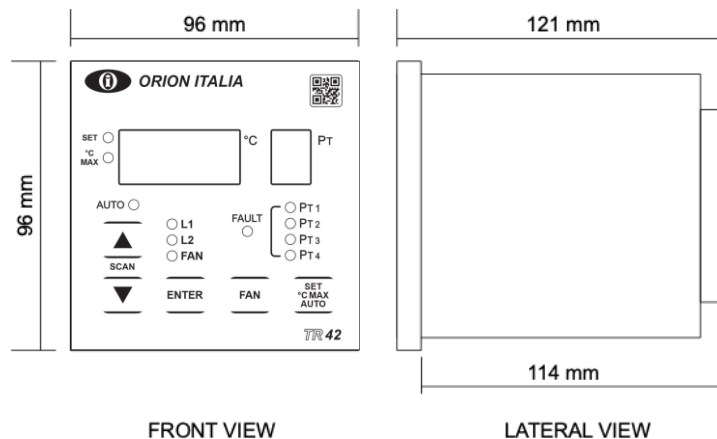
COMMUNICATION

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: ±1% F.S. ± 1 digit

Settings: L1, L2, FAN: 0 ÷ 220 °C

Supply voltage: 24-240 Vcc/Vca (50-60Hz), -15%, +10%

Maximum power consumption: 4VA or 4W

Inputs: 4 platinum sensors PT100 with 3 wires. 500 Ohm max wire impedance.

Outputs:

FAN: normally open, I_{max} 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)

Burn in: 48 hours

Dielectric Withstand Voltage: 2 kVac, 60s

Construction: according to the VDE, UL, CEI standards.

Terminal block: draw-out terminals for 4 mm² cables (12 AWG).

Frame: In ABS self-extinguish with frontal protection (IP54).

Assembly: to be fixed in the structure through stirrups and screws.

Dimensions: 96x96x114 mm **Cutout:** 91-0,5x 91-0,5 mm (±0,5 mm)

Weight: 500 grams

Communication port: Insulated RS-485, insulation 1500 Vdc.

Communication protocol: MODBUS RTU, function: 03h, 04h, 05h, 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.**

Emissions Tests:

Radiated emissions: EN 55011; Port : enclosure.

Conducted emissions: EN 55011; Port: AC mains.

Immunity Tests:

- Conducted disturbances induced by RF field

References: EN 61000-4-6; Port: AC mains and signal lines.

- Radiated electromagnetic field

References: EN 61000-4-3; Port: enclosure.

- Electrostatic discharge

References: EN 61000-4-2; Port: enclosure.

- Fast transients (burst)

References: EN 61000-4-4; Port: AC mains and signal lines.

- Surge

References: EN 61000-4-5; Port: AC mains.

- Voltage dips and short interruptions

References : EN 61000-4-11; Port: AC mains.

OPTIONAL FEATURES

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

ACCESSORIES (Optional)

PT 100:

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

PTBox:

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

ORDER CODE

Model	Description
TR42CM	Communication Port RS485
TR42AD	Communication Port RS485 + 4-20mA output + Buzzer

