



TR-7544 / TR-7544-C Transformer Protection Relay

Temperature Scanner for Resin Cast / Dry Type Transformers

Standard Features:

- ❖ Single scanner unit for three windings and core of the transformer
- ❖ Four output relays for Fan control, Alarm, Trip, & Fault (to warn against open or short circuit condition of sensor connections).
- ❖ Auto fan exerciser
- ❖ Operation test facility
- ❖ Memorizes max. temperature for all channels
- ❖ Combicon terminations for ease of connections
- ❖ Model TR-7544 comes with Analog output (4-20 mA) for remote indication, while model TR-7544-C comes with isolated RS-485 communication with MODBUS RTU slave protocol.

The model TR-7544 is designed for safe operation of medium voltage cast resin / dry type transformer. It is suitable for control room as well as marshalling box installation and is built for long and trouble-free operation under extreme conditions of service associated with transformer.

Three numbers of user settable set-points can be used to control the cooling fan, to warn the user of high temperature and to shut down the transformer in case of excessive heating. Four numbers of Pt-100 RTD sensors type S-02 allows the user to monitor the temperature of all the three phase windings plus one other critical point on the transformer like core. Alternatively, it can be used to check the ambient temperature or can be deleted from scan for normal use.

TR-7544 is programmed to note and store maximum temperature of the windings. Facility extends to recall this information and to clear it for fresh recording. The maximum temperature is saved such that it can be recalled even after the power for the unit fails.

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Technical Specifications

Inputs	:	4 nos. of RTD sensors (Pt-100, IEC 751)
No. of Set-points	:	Three (Alarm, Trip & Fan On.)
Temperature indication range:	:	-20 to 250 °C
Set point range	:	20 to 220 °C
Accuracy	:	± 1 °C
Dead Band (relay differential)	:	Fan & Trip : 8 °C, Alarm : 5 °C (Factory set)
Display Speed	:	4 seconds (Factory set)
Display	:	3 Seven Segment 1/2" displays for displaying Temperature 1 Seven Segment 0.3" displays for displaying channel number

Mechanical

Dimensions	:	Over-all : 96 (H) x 96 (W) x 150 (D) mm. Cut-out : 92 x 92 mm.
Mounting	:	Flush Panel mounting.
Weight	:	550 gms approx. (unpacked)
Enclosure	:	Noryl.

Electrical

Supply Voltage	:	90 - 270 VAC/DC (Optionally 20 - 50 VAC/DC)
Outputs	:	- Four relay contacts (one C/O contact for – Fault, Fan, Alarm & Trip) - One analog 4-20mA output in TR-7544 (corresponding to 0 to 200 °C max. load 300 ohms, linearity 0.5% w.r.t. local indication) - RS-485 communication (1KVDC isoated) with MODBUS RTU slave protocol in model TR-7544-C (in lieu of 4-20mA output signal).
Contact Rating	:	5A/250VAC, 250W at 125VDC (resistive load) 5A/250VAC, 125W at 125VDC (L/R = 7 msec)
Relay operations	:	Fault : Will energize after few seconds of power-on and de-energize on detecting fault condition. Fault relay will remain on in normal conditions. Fan : Will energize if any channel's temperature reaches fan set point . This relay will also turn on as per fan exerciser set timings, if this function is enabled. Alarm : Will energize if any channel's temperature reaches alarm set point. Trip : Will energize if any channel's temperature reaches trip set point.
Terminals	:	Combicon screwed caged, suitable for 2.5 mm ² solid conductors.
Insulation	:	Insulation resistance shall be 100 Mohm or more when 500 VDC is applied between each terminal shorted together and earth. Controller will withstand 2 KV rms at 50/60 Hz. for 1 min., applied between all relays & supply terminals shorted together & earth.
Power consumption	:	Max. 15 VA

Environmental

Operating conditions	:	Amb. Temp. : -20 °C to 70 °C, R.H. : 95% Max non-condensing.
Storage Temp.	:	-20 °C to 85 °C
Test conditions	:	Amb. Temp. : 27 °C ± 5 °C, R.H. : 20 - 80% non-condensing.
Vibration	:	10-150 Hz, 0.004" displacement
Ingress Protection	:	IP-54 for face.

Terminal Details

