



TR-7546 Family

(TR-7546 / TR-7546-C / TR-7546-Cx

TR7546-D / TR-7546-DC / TR-7546-DCx)

Transformer Protection Relays

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
- Different variants comes with one 4-20ma Analog output (any one channel or channel with highest temperature programmable) and/or with isolated RS-485 communication with MODBUS RTU slave protocol (please refer table given on page 3 of this catalogue).

TR-7546 family units are 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 nos. of Pt-100 RTD sensors allows the user to monitor the temperatures of windings plus one other critical point on the transformer like core.

These relays are programmed to note and store maximum temperature of the winding. 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 controller fails.

Technical Specifications

General Specifications

Inputs : 4 RTDs (Pt-100, IEC 60751)
No. of Set-points : Three (Fan, Alarm & Trip)
Indication range : - 20 °C to 250 °C
Set point range : 20 to 220 °C
Accuracy : ± 1 °C
Dead Band : Fan & Trip : 8 °C, Alarm : 5 °C
Display Speed : 4 secs
Displays : One 0.3" for channel no,
Three 1/2" for temperature.

LED Indications

- Sensor Fault
- Fan Status
- Alarm Status
- Trip status
- Max temps are being displayed
- Programming mode on
- Fan On manually or because of Auto fan exerciser
- Display hold to single channel

Relay Operation

Fault : Will energize on detecting sensor fault or when in programming mode.
If specifically asked, we can provide units with "Electric fail fault" provision, whereby this relay turns on after few seconds of power-on and de-energizes on detecting sensor fault. In this case, this relay turns off even for electric fail.

Fan : Will energize if any channel's temperature reaches fan set point. This relay will also turn on as per fan exercise 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.

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Mechanical Specifications

Dimensions : 96 (H) x 96 (W) x 150 (D) mm
Cut-out : 92 X 92 mm (+ 1 mm).
Mounting : Flush Panel mounting.
Weight : 550 gms approx. (unpacked)
Enclosure : Noryl.

Electrical Specifications

Supply Voltage: 90-270VAC/DC , 40-400 Hz
(Optionally 20-50VAC/DC)

Outputs :

- Check table given at bottom of this page
- 4-20mA output, corresponding to 0 to 200 °C, max. load 300 ohms, linearity 0.5% w.r.t. local indication
- RS-485 comm. port, 1KVDC isolated, with MODBUS RTU slave protocol.

Terminals: Screw-cage combicon,
- for RTDs, suitable for one 1 mm² wire.
- for All other, suitable for one 2 mm² wire.

Contact ratings: For Resistive load 5A @ 240VAC, 0.2A @ 220VDC

Power consumption: Max. 15VA

Insulation: 100 Mohm or more at 500 VDC between Earth and terminals.
2KV rms at 50 / 60 Hz for 1 minute (port to port).

Environment

Ambient: -20 to 70 °C. R.H.: 95% max non -condensing.

Storage Temp.: -20 to 85 °C.

Test Conditions: Amb. Temp. 27 $\pm$ 5 °C.

Shock: 15g, Half sine, in 3 orthogonal planes

Output Signals	TR-7546	TR-7546-C	TR-7546-Cx	TR-7546-D	TR-7546-DC	TR-7546-DCx
Remote output (4-20mA)	✓	✗	✓	✓	✗	✓
RS-485 (MODBUS protocol)	✗	✓	✓	✗	✓	✓
Contact O/ps	4 C/O	4 C/O	4 C/O	6 N/O	6 N/O	6 N/O
Contact Rating	5A@230VAC, 0.2A@220VDC			5A@230VAC, 0.2A@220VDC		
Aux Power Supply	Default option: 90-270VAC/DC, Option on specific demand: 20-50 VAC/DC					

Terminal Diagrams

