Power Electronics & Control

Since 1973 *An ISO 9001:2008 Company*

TR-7576 / TR-7576-C

Transformer Protection Relay

Temperature Scanner for Resin Cast / Dry Type Transformers

Standard Features:

- Single scanner unit to measure six temperatures.
- Four output relays for Alarm (High), Trip (V.High), Fan & Fault (to warn against sensor open or short circuit condition of sensor connection).
- Auto fan exerciser
- Memorizes max. temperature even after power fail conditions.
- TR-7576, comes with Analog output (4-20mA) for remote indication, while TR-7576-C comes with Isolated RS-485 communication with MODBUS RTU slave protocol.

The model **TR-7576** is designed for safe operation of medium voltage cast resin / dry type transformer. It is suitable for control room as well as marshalling box installations 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. Six nos. of Pt-100 RTD sensors allow the user to monitor the temperatures of six windings located suitably in transformer.

TR-7576 is programmed to note and store maximum temperature of the winding. Facility extends to recall this information and to clear it for fresh recording.

TR-7576 has one analog output signal (4-20mA). This can be configured to represent the temperature of any of the six channels or the temperature of the hottest channel.

TR-7576-C is provided with facility for computer communication using RS-485 with MODBUS RTU slave protocol, in lieu of 4-20mA signal.

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Technical Specifications

Inputs	:	6 nos. of RTD sensors (Pt-100, IEC-60751)
No. of Set-points	:	Three (Alarm, Trip & Fan On.)
Temperature indication range:		-20 to 250 ^{0}C
Set point range	:	20 to 220 ^{0}C
Accuracy	:	$\pm$1 ^{0}C
Dead Band (relay differential) :		Fan & Trip : 8 ^{0}C, Alarm : 5 ^{0}C (Factory set)
Display Speed	:	4 seconds (Factory set)
Display	:	1 Seven Segment 1/2" displays for displaying channel number 3 Seven Segment 1/2" displays for displaying Temperature

Mechanical

Overall Dimensions	:	215 (H) x 265 (W) x 130 (D) mm
Mounting	:	Wall mounting by 3 nos. M6 Screws
Weight	:	3.5 kg approx. *(unpacked)*
Enclosure	:	M.S. Sheet Box, powder coated, with acrylic viewing window (IP-52)

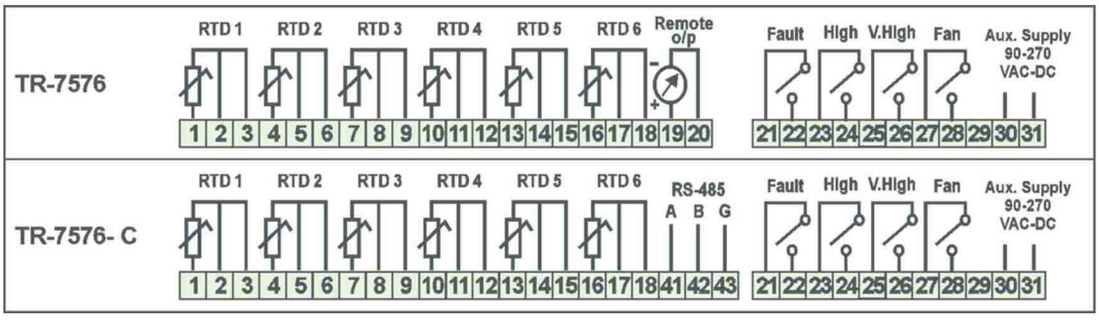
Electrical

Supply Voltage	:	90 - 270 VAC/DC (Optionally 20 - 50 VAC/DC)
Outputs	:	- Four relay contacts (N/O contact) - Fault, Fan, Alarm & Trip - One analog 4-20mA output in TR-7576 (corresponding to 0 to 200 ^{0}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-7576-C.
Contact Racting	:	For resistive load, 5A @ 230VAC & 0.5A @ 125VDC For inductive load, 5A @ 230VAC (cosΦ = 0.4) & 0.3A @ 125VDC (L/R=7msec).
Relay operations	: Fault :	Will energize after few seconds of power-on and de-energinze on de-tecting fault condition. Fault relay will remain on in normal conditions.
	Fan :	Will energize if any channel's tmeperature 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 temperatrure reaches alarm set point.
	Trip :	Will energize if any channel's temperature reaches trip set point.
Terminals	:	Screwed Caged suitable for 2.5 sq. mm 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 relay & supply terminals shorted together & earth.
Power consumption	:	Max. 15VA

Environmental

Operating conditions	:	Amb. Temp. : -20 ^{0}C to 70 ^{0}C,	R.H. : 95% Max non-condensing.
Storage Temp.	:	-20 ^{0}C to 85 ^{0}C	
Test conditions	:	Amb. Temp. : 27 ^{0}C $\pm$ 5 ^{0}C,	R.H. : 20 - 80% non-condensing.
Vibration	:	10-150 Hz, 0.004" displacement	

Terminal Details



Due to continual development & change in technology, specifications are subject to change.