

Power Electronics & Control

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TR-7551 / TR-7552 Transformer Protection Relays

WTIs for Oil Cooled Transformers

Standard Features:

- ❖ Displays both Oil and Winding temperature simultaneously.
- ❖ Auto Fan Exerciser & Anticipatory Fan Control.
- ❖ Fully user programmable.
- ❖ Bright digital display suitable for outdoor conditions.
- ❖ Memorizes max. temperature (recordings available even after power fail conditions).
- ❖ Die cast aluminium weather-proof enclosure (IP-65).
- ❖ RS-485 communication with MODBUS RTU Slave protocol (in models TR-7551-C & TR-7552-C).

WTIs TR-7551 / TR-7552 are designed for safe operation of oil cooled power transformers. 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.

Five numbers of user settable set-points can be used to control the cooling fan, to warn the user of high temperature of oil and winding and to shut down the transformer in case of excessive heating (trip). RTD sensor allows the user to monitor the oil temperature, while the C.T. signal is used to calculate and indicate the winding temperature.

TR-7551/52 is programmed to note and store maximum temperature of oil and winding. The maximum temperature reading is stored and saved permanently.

Auto Fan Exerciser feature helps in preventing jamming of fans after no operation for long periods of time. Anticipated Fan control feature turns on the Fan much before the winding temperature reaches the actual fan set point ensuring less thermal shocks and better thermal management of the transformer.

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Technical Specifications

Sensors: For oil temperature: RTD Pt-100 (IEC-60751) three wire

For winding temp simulation: C.T.

(C.T. can be of 1 to 5 Amp. secondary current rating & with min. 5VA capacity)

Programming / Settable parameters:

- C.T. parameterization.
- dt (top oil to winding hot spot temp. gradient) : 1 to 50 °C settable
- Thermal Time Constant: 1 to 60 minutes settable

Setpoints : 5 for TR-7551 : Oil Alarm, Winding Alarm, Oil Trip, Winding Trip and Fan on

6 for TR-7552 : Oil Alarm, Winding Alarm, Oil Trip, Winding Trip, Fan 1 on and Fan 2 on

Temperature indication range: Oil: -40 to 150 °C Winding: -40 to 200 °C (Resolution 1 °C)

Accuracy (Test Conditions : Amb. Temp. : 27 °C \pm 10 °C, R.H. : 20 - 80% non-condensing):

Oil temperature: \pm 1 °C

Winding temperature: \pm 2 °C (Excluding C.T. accuracy)

Maximum recording: in steps of 2 °C (Temperatures above 60 °C are only saved)

Remote outputs: \pm 1 °C (with respect to local indication)

Mechanical

Overall Dimensions: 215 (H) x 265 (W) x 130 (D) mm

Mounting: Wall mounting by 3 nos. M6 Screws

Weight: 3.0 kg approx. (unpacked)

Enclosure: Aluminium cast, with polycarbonate viewing window (IP-65)

Electrical

- Outputs:
- Five (1 C/O) switch contacts rated - For resistive load, 5A @ 230VAC & 0.5A @ 125VDC
For inductive load, 5A @ 230VAC ($\cos\phi = 0.4$) & 0.3A @ 125VDC (L/R=7msec).
 - Two analog outputs : 4-20mA signals for remote indication of OTI & WTI.
(Correspondence to 0 to 200 °C, max. load 300 ohms, linearity \pm 0.5%)
 - RS-485 output (1KVDC isolated) provided additionally on TR-7551-C / TR-7552-C

Supply Voltage: 90-270VAC/DC (Optionally 20-50VAC/DC), AC 40-400 Hz, Max. 15VA

Terminals: Screwed Caged suitable for one 2.5 mm² wire.

Insulation: 100 Mohm or more at 500 VDC between Earth and terminals.
2KV rms at 50 / 60 Hz for one minute applied between all terminals shorted together and earth.

Environmental

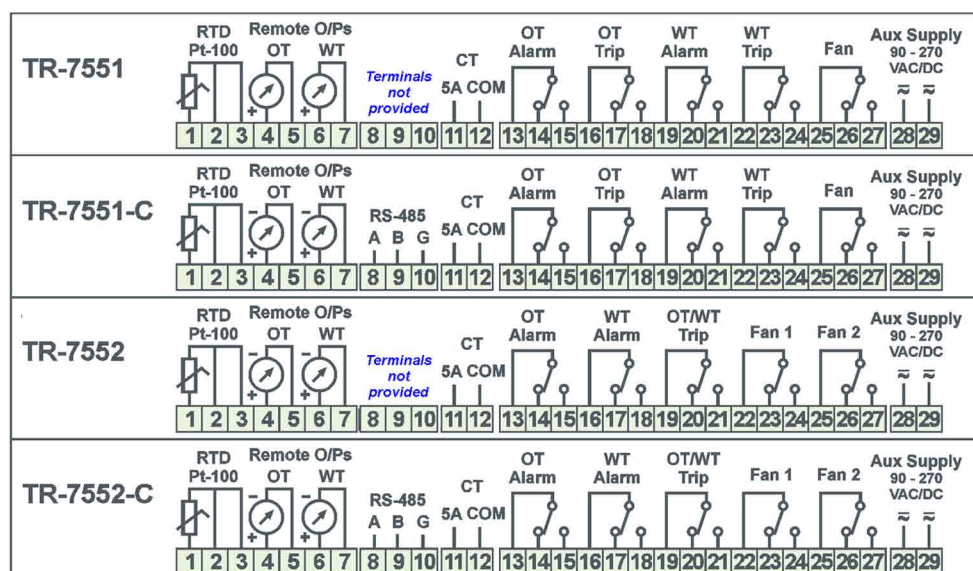
Operating Conditions : Amb. Temp.: -20 °C to 70 °C R.H. : 95% Max non-condensing.

Storage Temp. : -20 °C to 85 °C.

Vibration : 10-150 Hz, 0.004" displacement

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

Terminal Details

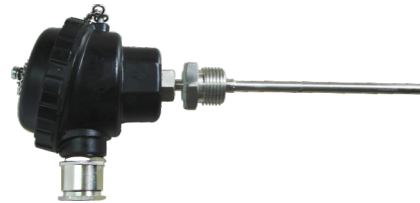


Due to continual development & change in technology, specifications are subject to change.

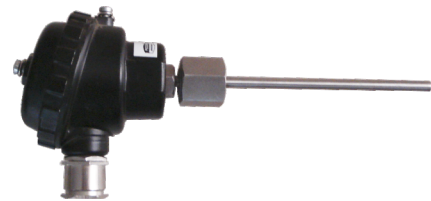
RTD sensor S-07

Salient features & Specifications:

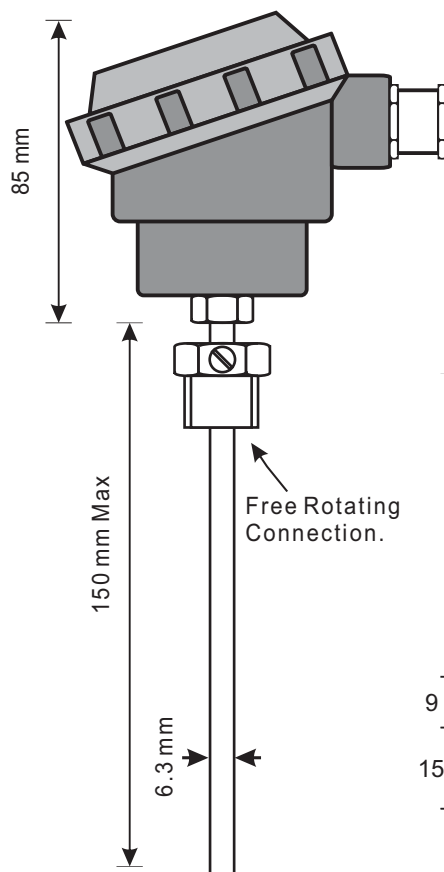
- Suitable for all our OTI & WTI.
- 3 wire, Pt-100 type sensor (IEC-60751, Class B).
- Temperature range : – 50 to 200 °C.
- Mounting :
Male & Female BSP
(Other threads are available on demand).
- Available in duplex style (S-07MD & S-07FD) also.
- Dielectric strength : 2K VAC rms, 50 / 60 Hz for 1 min.



S-07M / S-07MD

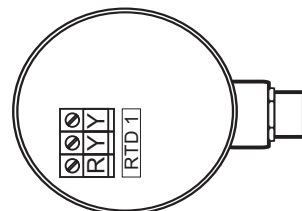


S-07F / S-07FD

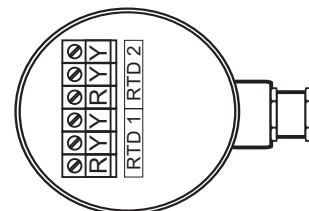


Material :
Head - Cast Aluminum
Weather Proof Head
Tube - SS 304

Terminals



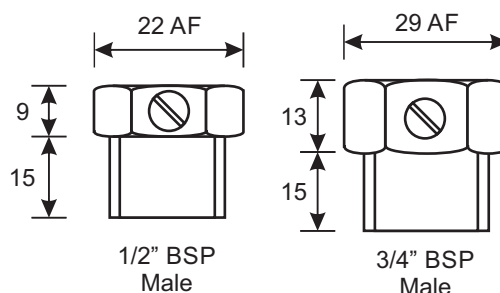
Simplex
S-07M / S-07F



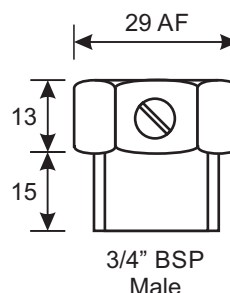
Duplex
S-07MD / S-07MF

Mounting Connection

S-07M / S-07MD



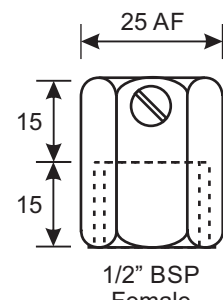
1/2" BSP
Male



3/4" BSP
Male

All Dimensions are in mm

S-07F / S-07FD



1/2" BSP
Female



**Power Electronics
& Control,
Ahmedabad**

Title		Details of RTD sensor type S-07MS & S-07MD.			
Drwn. by	MPM	Drg. No.	16022001		
Chk. by	MBA	Rev. No.	00	Rev. Date	20th Feb, 2016