

Transformer Protection Relay (TPR-501)

For Oil Cooled Transformers - OTI & WTI



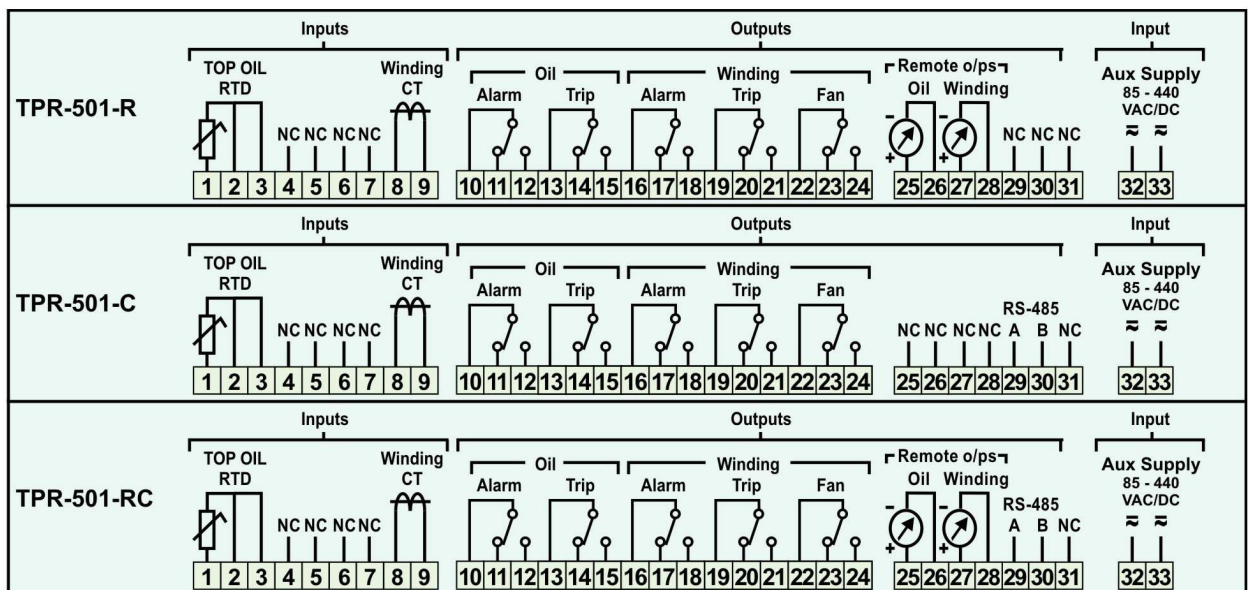
Standard Features :

- Enclosure is designed for IP-55 protection.
- Isolated 4-20mA and RS-485 remote outputs
- 85 - 440 VAC/DC Universal power supply. Due to this wide range supply TPR-201 performs well in phase imbalance condition.
- Display Oil and Winding temperature simultaneously.
- CT and dT(Gradient) are site selectable
- Fully user porgrammable
- Advanced Anticipatory fan control for long life of transformer
- Fan Exerciser facility ensures operations of fan for long life with less maintenance
- Maximum temperature storage capacity and reading can be recalled after power fails.
- Facility is provided to reset maximum temperature for fresh recordings.
- Fault indication is provided for Sensor open, short, over or under temperature conditions

TPR-501 Variants :

Models →	TPR-501-R	TPR-501-C	TPR-501-RC
4-20 mA Analog Outputs	1 - Oil 1 - Winding	No	1 - Oil 1 - Winding
RS-485 MODBUS Protocol	No	Yes	Yes
No. of Relay Outputs	5 (1 C/O)	5 (1 C/O)	5 (1 C/O)

Terminal Details :



Doc no.: E L 2 0 0 2 2 8 0 1



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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 : 1 to 5A site settable

dT (top oil to winding hot spot temp. gradient) : 1 to 50 °C site settable

Thermal Time Constant: 1 to 60 minutes site settable

Setpoints : Five : Oil Alarm, Winding Alarm, Oil Trip, Winding Trip and Fan

Temperature indication range: Oil: -50 to 150 °C Winding: -50 to 200 °C (Resolution 1 °C)

Accuracy (Test Conditions : Amb. Temp. : 27 °C +/- 10 °C, R.H. : 20 - 95% non-condensing):

Oil temperature: +/- 1 °C

Winding temperature: +/- 2 °C (Excluding C.T. accuracy)

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

Remote outputs: +/- 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: M.S. Box with powder coated. It is designed for IP-65.

Electrical

Outputs: - Five (1 C/O) switch contacts

For resistive load, 5A @ 230VAC & 0.5A @ 125VDC

For inductive load, 5A @ 230VAC (cosΦ = 0.4) & 0.3A @ 125VDC (L/R=7msec).

- Two analog outputs : Isolated 4-20mA signals for remote indication of OTI & WTI.

(Correspondence to 0 to 200 °C, max. load 300 ohms, linearity +/- 0.5%)

- RS-485 output (1KVDC isolated) provided in TPR-501-C and TPR-501-RC

Supply Voltage: 85-440VAC/DC (Optionally 20-270VAC/DC), AC 40-400 Hz

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.

Power Consumption : Max. 15VA

Environmental

Operating Conditions : Amb. Temp.: -20 °C to 70 °C

R.H.: 95% Max non-condensing.

Storage Temp. : -20 °C to 85 °C.

