Transformer Protection Relay (TPR-702)

For Oil Cooled Transformers - OTI & WTI

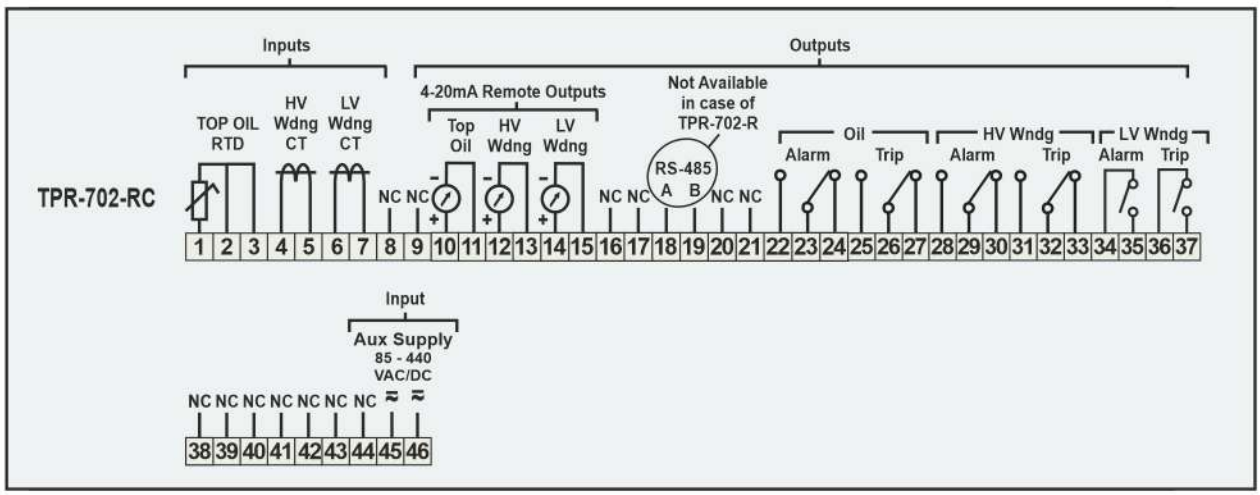
Standard Features :

- 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-702 performs well in phase imbalance condition.
- Display Top Oil and 2 Windings (HV & LV) temperatures simultaneously.
- CT and dT(Gradient) are site selectable
- Fully user porgrammable
- 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 Sersor open, short, over or under temperature conditions

TPR-702 Variants :

Models →	TPR-702-R	TPR-702-RC
4-20 mA Analog Outputs	1 - Top Oil 1 - HV Winding 1 - LV Winding	1 - Top Oil 1 - HV Winding 1 - LV Winding
RS-485 MODBUS Protocol	No	Yes
No. of Relay Outputs	4 (C/O) 2 (NO)	4 (C/O) 2 (NO)

Terminal Details :



Doc no. : E L 2 2 1 0 1 9 0 1

EMBELINK TECHNOLOGIES

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Technical Specifications :

Sensors : - **For Oil Temperature :** RTD PT-100 (IEC-60751) three wire (Simplex or Duplex)
- **For winding temperature simulation :** 2 nos. CT for one winding from HV & LV each (CT rating - Any CT with secondary current 1 to 5 Amps & capacity 2VA or more)

Settable parameters : - CT ratio configurable on site
- dt (Delta T / Top oil to winding hotspot gradient) : 1 to 50 ^{0}C settable on site
- tc (Thermal time constant) : 1 to 60 minutes settable on site

No of Switch Contacts : 4 C/O (each for Oil Alarm, Oil Trip, HV Winding Alarm, HV Winding Trip)
2 NO (each for LV Winding Alarm & LV Winding Trip)

Temperature Indication range : - For Top oil temperature : -50 to 150 ^{0}C
- For HV & LV windings temperatures : -50 to 200 ^{0}C

Resolution : 1 ^{0}C

Accuracy : - Top oil temperature : +/-2 ^{0}C (Excluding RTD sensor accuracy)
- HV & LV Windings temperatures : +/- 3^{0}C (Excluding CT accuracy)
- Maximum temperature recording : in step of 2 ^{0}C (only temperature above 60 ^{0}C are saved)
- Remote ouputs : +/- 1 ^{0}C (with respect to local indication)

Mechanical Specifications :

- Overall Dimensions	:	190 (H) x 280 (W) x 110 (D) mm
- Mounting	:	Wall mounting by 4 nos. M5 Screws
- Weight	:	3.5 kg approx. *(unpacked)*
- Enclosure	:	Industrial grade UV stabilized Poly Carbonate
- Ingress Protection	:	IP-55

Electrical Specifications :

- Supply Voltage	:	85 - 440 VAC/DC
- Outputs	:	- Six potential free contacts (one C/O contact each for OT Alarm, OT Trip, HV Winding Alarm & HV Winding Trip and 2 NO each for LV Winding Alarm & LV Winding Tirp) - 3 nos Analog 4-20mA outputs each for Top Oil, HV & LV Winding (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.
- Contact Racting	:	For resistive load, 5A @ 230VAC/24VDC/48VDC & 0.5A @ 125VDC For inductive load, 5A @ 230VAC/24VDC/48VDC (cosΦ = 0.4) & 0.3A @ 125VDC (L/R=7msec).
- 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 2.5 KV rms at 50/60 Hz. for 1 min., applied between all relays & supply terminals shorted together & earth.
- Power consumption	:	Max. 15VA

Environmental Specifications :

- Operating Temperature	:	-20 to 70 ^{0}C
- Relative Humidity (RH)	:	max. 95% non-condensing
- Storage Temperature	:	-20 to 85 ^{0}C

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