



Dual Thermistor Protection Unit TPU02

CE
RoHS

The root cause of motor failures

The basic cause of motor burnout is overheating up to unacceptable temperatures. Excessive temperature leads to insulation breakdown and ultimately to the burning of stator windings. Normally class B and class F motors are used in industries, & they are operated close to limiting temperatures, hence following conditions lead to motor failure:

- Single phasing
- Under/ over voltage
- Continuous overloading
- Intermittent duty or excessive start/stops
- Insufficient ventilation or excessive ambient temp.
- Mechanical jamming/overloading
- Bearing failure

All these causes lead to excessive heating and ultimate burning of the winding. TEMPSense Thermistor Protection Unit offers protection for your motor against all the above causes of failures. Its superiority lies in the fact that it eliminates the root cause of failure.

The TEMPSense way of protection

The TEMPSense unit utilises Positive Temperature Coefficient Thermistors. These are temperature sensors having low resistance under normal conditions and whose resistance increases to a very high value at tripping temperature. The response time of thermistor is very less, to the tune of ≤ 5 sec.

It operates within $\pm 1^\circ\text{C}$ of the rated temperature. The tamper proof Thermistor Unit trips the motor before it reaches the damaging high temperature.

Installation instructions

The PTC thermistors are normally embedded in the motor/ generator/ transformer windings. Normally 1 set of thermistor consists of 3 thermistors connected in series (1 thermistor per phase). These thermistors are to be connected to the respective terminals on the Thermistor Protection Unit TPU02. Three thermistors can be wired in series and 1 set is connected to alarming terminal and other set is connected to the tripping terminal.



INSTA CONTROL™

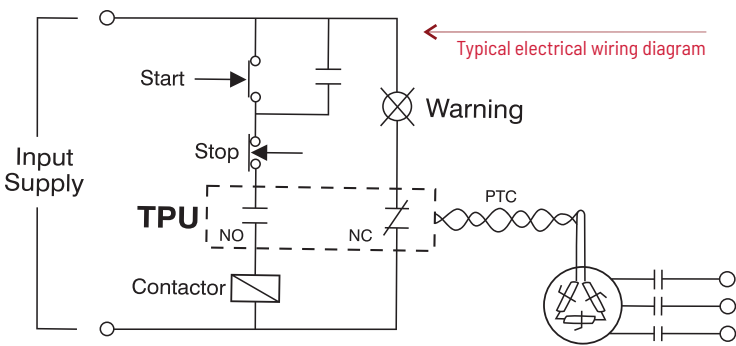
EXPERTISE OVER 4 DECADES IN WINDING PROTECTION AT YOUR SERVICE

Functional Description

Under normal temperature conditions, the TPU02 permits supply to the starter coil of motor, generator etc. Whenever the tripping temperature is attained it cuts off the supply to the starter coil & trips the motor. When the winding temperature reduces below a safe level, the TPU03 resets and restores the supply to starter coil. Thus the winding of motor, generator etc. is protected from overheating and burning.

Unrivalled Economy

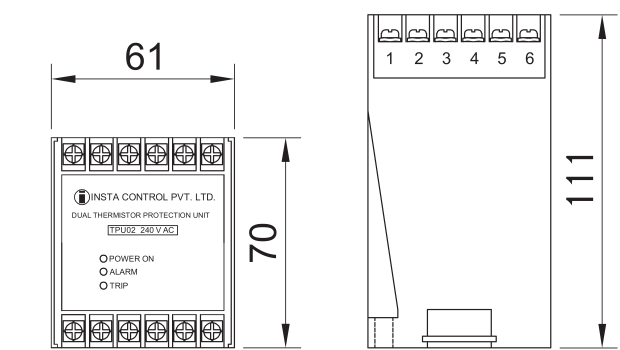
- 1 The Dual Thermistor Protection Unit's price is constant for all motors and is much lower than that of the other systems.
- 2 The Dual type Unit reduces maintenance costs and repair cost of the machine.
- 3 Inventory costs are cut down and blocking of capital is eliminated.
- 4 Machine down-time is reduced.



Applications

The Dual type Thermistor Protection Unit is mainly used for motors/generators in,
• Paper Mills • Steel Industries • Sugar Mills • Cement Factories
• Rubber Factories
Apart from the above fields, Insta Controls has supplied the DUAL type Unit for Compressor Motors, Printing Machine motors etc.

Dimensional Details of TPU02



TPU Characteristics

FUNCTION	RESISTANCE
Pick-up	60 Ω
Trip	3.7 K Ω
Reset	1.6 K Ω
Re-drop	40 Ω

Specifications subject to change without prior notice.

Special Features

Time Delay for reset, Manual Reset, and Different supply voltage can be provided on request. Please contact us for more details.

Technical Data	Supply Voltage : 110/ 240/ 380/ 415 VAC ± 10, 50 Hz 24 VDC ± 10 %	Ambient Temp. -5°C to +55°C	Rated at : 4 Amps 240 Volts.
	Input : Max. 6 numbers PTC Thermistors	Output contacts : 2 Changeover (2 NO + 2NC) Potential Free	Operational Life: 1 million on /off Operations.

Other products from Insta Control

PTC Thermistor, Dual TPU, PT-100 RTDs, PT-100 BTds, Slot RTDs, KTY Sensor, Space Heater & Thermal Switches (TOPs), ATEX & IEC Ex'e' approved PT-100 Slot RTDs, Bead type PT-100 RTDs & Bearing RTDs are available on request.

ISO 9001 : 2015 Certified Company



Prop No. 1372, Pune-Satara NH4,
At post Khandala 412 802, Tal-Khandala,
Dis- Satara, Maharashtra, INDIA. Tel: +91-2169-228900
www.instacontrols.com | info@instacontrols.com

Revision Date: May 2025