



Thermistor Protection Unit TPU03



The brain that provides round the clock protection for your electric motor



It is Insta Control Pvt. Ltd. endeavor to give better products to customers. Through our continuous efforts, Insta Control Pvt. Ltd. has developed a new model of Thermistor Protection Relay viz. TPU 03. With the possibility of providing various features time delay, manual reset facility etc. This Thermistor Protection Relay is truly versatile and user-friendly.

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 Relay 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 critical temperature. The response time of thermistor is very less, to the tune of < 10 sec. It operates within $\pm 1^\circ\text{C}$ of the rated temperature. The tamper proof Thermistor Relay trips the motor before it reaches the damaging high temperature.

Functional Description

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 Relay TPU03.

Under normal temperature conditions, the TPU03 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.

Upto 6 thermistors can be wired in series and be used with the Thermistor Protection Relay TPU03.

Special Features

The following special features can be provided on request. Please contact our factory for more details.

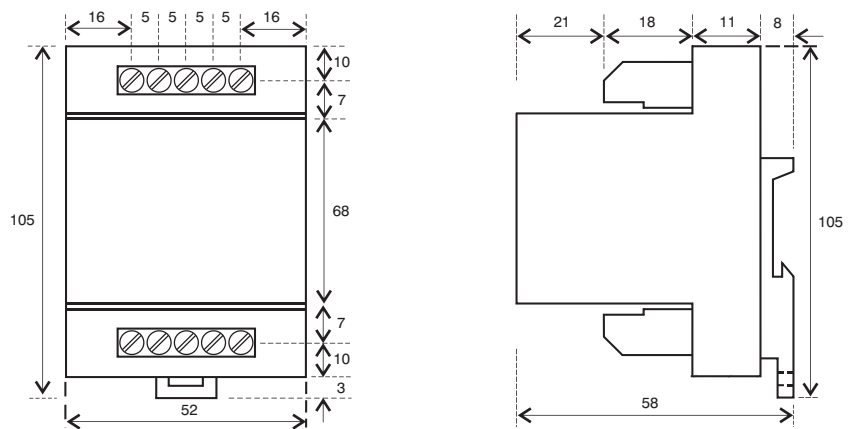
- Time Delay for reset
- Manual Reset
- Options for supply voltage

Unrivalled Economy

The price of any other protection system is in proportion to the horsepower of the motor but TEMPSENSE's price is same for all motors and is much lower than that of other systems. TEMPSENSE reduces maintenance costs and repair cost of machine failures due to overloading. TEMPSENSE, in short, provides complete safety to your motor.

TEMPSENSE permits operation of your motor only at safe and rated loads. It cuts down inventory and repair costs and eliminates blocking of capital. It is the most efficient & most economical way to provide complete protection & safety to your motor.

DIMENSIONAL DETAILS OF TPU03



All dimensions in mm.

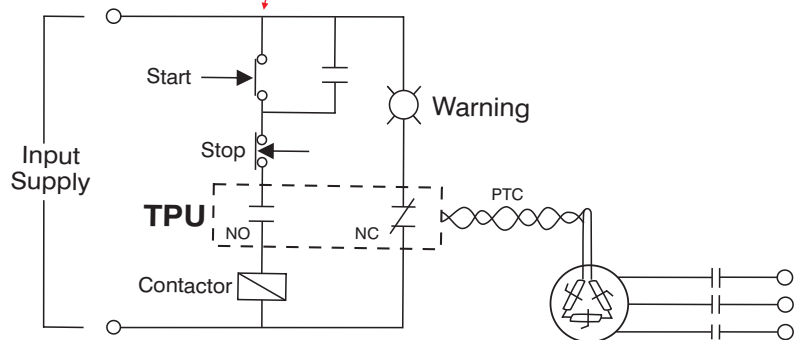
Figure not to scale

Specifications subject to change without prior notice.

TPU Characteristics

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

Typical electrical wiring diagram



Technical Data

- Supply Voltage : 110/ 230/ 380/ 415 VAC \pm 10 % 50 Hz
- Output contacts : 2 Changeover (2 NO + 2NC) Potential Free
- Input : Max. 6 numbers PTC Thermistors
- Rated at : 4 Amps 230 Volts.
- Ambient Temp. : -5 °C to +55 °C
- Operational Life : 1 million on /off Operations.

Other products : PTC Thermistors, Dual TPU, Pt-100 RTDs, Pt-100 BTDs, Slot RTDs & Thermal Switches (TOPs)

ISO 9001 : 2008 Certified Company



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