250 Series DIN-rail and Wall Mounted Relays

DC Millivolts/Thermocouple

The 250 series millivolt protectors provide continuous surveillance of high dc currents when used with current shunts, or can be used to monitor temperatures in conjunction with thermocouples. The protector incorporates a user adjustable trip and time delay which can be set to initiate an alarm when the input exceeds the desired level.

Features

High and low trip models
Adjustable set point
Adjustable time delay
Internal differential
LED trip indication
Automatic reset
Double-pole relay contacts
Supports all industry standard shunts and popular thermocouples

Benefits

Under/over-temperature monitoring
Under/over-current monitoring
Monitoring of battery charging currents and current drain
Detection of hotspots
Nuisance tripping avoidance
Customised options

Applications

Switchgear
Distribution systems
Generator sets
Control panels
Process control
Motor protection
Transformers
Overload protection

Operation

When used in conjunction with current shunts the millivolt protector can be used to monitor battery charging currents, current drain or under/over-current. Monitoring of under/over-temperature and detection of hotspots can be achieved in applications using thermocouples. All industry standard shunts and all popular thermocouples are supported.

The millivolt protector relays offer user adjustable trip point (set point) and time delay settings. The time delay setting adjustment range is typically 0 to 10 seconds, although longer delays are available. As soon as the monitored signal moves outside of the set point limit, the time delay is activated, after which a trip will occur. The time delay prevents the relay from tripping for a predetermined period to prevent nuisance tripping. These products also feature an internal differential (hysteresis) setting of 1% to reduce nuisance tripping if the measured signal is noisy or unstable. These units require an auxiliary power supply.

Over High Trip Models

When the monitored signal exceeds the set point, the time delay is started. When the time has elapsed, the relay will energise and the red LED will illuminate to indicate the trip condition. The relay will automatically reset once the monitored signal falls below the set point minus the differential. When reset, the LED will extinguish and the relay de-energises. The time delay is not active when resetting.

Under Low Trip Models

When the monitored signal falls below the set point, the time delay is started. When the time has elapsed, the relay will de-energise and the red LED will extinguish to indicate the trip condition. The relay will automatically reset once the monitored signal rises above the set point plus the differential. When reset, the LED will illuminate and the relay energises. The time delay is not active when resetting.

Options

250 series protector relays offer various customised options to suit individual requirements. Please consult factory.

- Adjustment ranges – different adjustment ranges are possible for the set point and time delay controls.
- Differential – internally fixed value between 1% and 15%.
- Relay operation – standard models are failsafe, but the relays can be customised to energise or de-energise on trip.
- Cold junction compensation available on request.

Product Codes

Relay	Protection	ANSI no.	Cat. no.
DC millivolt	High trip 40 to 120%	74	252-PBT
DC millivolt	Low trip 0 to 80%	74	252-PBS
Thermocouple	Type J, K, R, S and T. High trip 40 to 120%	49	252-PTO
Thermocouple	Type J, K, R, S and T. Low trip 0 to 80%	49	252-PTU

For models 252-PBS and 252-PBT please specify millivolt input, auxiliary voltage and required options at time of ordering.

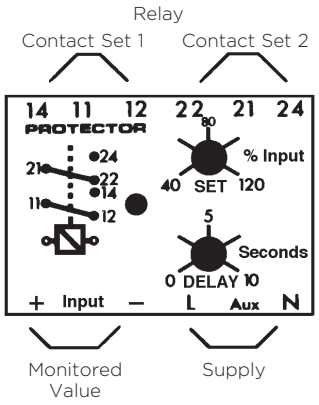
For models 252-PTO and 252-PTU please specify thermocouple type, nominal temperature, auxiliary voltage and required options at time of ordering.

Specification – DC Millivolts/Thermocouple

DC input	10mV, 50mV, 60mV, 75mV, 100mV, 150mV
Input impedance	50KΩ
Source impedance	100Ω maximum
Thermocouple	Types J, K, R, S, T 10 to 50mV
Thermocouple TBP	Thermocouple break protection upscale drive as standard
Thermocouple CJC	Cold junction compensation available on request
Thermocouple overload	10 x rating continuously
Nominal frequency	50/60Hz
Voltage burden	3VA maximum
Voltage overload	1.2 x rating continuously, 1.5 x rating for 10 seconds
Set point repeatability	>0.5% of full span
Differential (hysteresis)	Pre-set at 1% Values 1 to 15% available on request
Trip level adjustment	Low trip: 0 to 80% High trip: 40 to 120%
Time delay adjustable	0 to 10 seconds
AC auxiliary supply voltage	100V, 110V, 120V, 208V, 220V, 240V, 480V, ±20%
DC auxiliary supply voltage	12V, 24V, 48V, 110V or 125V, ±20%. Including ripple
Auxiliary voltage burden	4VA (max)
Output relay	2-pole change over
Relay contact rating	AC: 240V 5A non inductive DC: 24V 5A resistive
Relay mechanical life	0.2 million operations at rated loads
Relay reset	Automatic
Operating temperature	0°C to +60°C (0°C to +40°C for UL models)
Storage temperature	–20°C to +70°C
Temperature co-efficient	0.05% per °C
Interference immunity	Electrical stress surge withstand and non-function to ANSI/IEEE C37 90a
Enclosure style	DIN-rail with wall mounting facility
Material	Flame retardant polycarbonate/ABS
Enclosure integrity	IP50
Dimensions	55mm (2.2") wide x 70mm (2.8") high x 112mm (4.4") deep
Weight	0.4Kg approx.

Connections

252-PBT
252-PBS
252-PTU
252-PTO



Dimensions

Model 252