250 Series DIN-rail and Wall Mounted Relays

DC Transducer Trip

DC transducer protectors provide continuous surveillance of the dc process voltage or current signal. When the standard process signals move outside the set point limit the relay will operate. Combining the protection relay with a measuring transducer such as the Crompton Paladin measuring transducers range can form specialised control products whenever self-contained relays are not available.

Operation

The dc transducer protector relay offers 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. The 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 Voltage 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 fail safe, but the relays can be customised to energise or de-energise on trip.

Product Codes

Relay	Protection	ANSI no.	Cat. no.
DC transducer	Low trip 0 to 80%	74	252-PBA
DC transducer	High trip 40 to 120%	74	252-PBB
DC transducer	High and low trip	74	253-PBV

Please specify input current/voltage, auxiliary voltage and required options at time of ordering.

see 2nd page for selection

SEE ATTACHED FOR PART NUMBERS

Features

High and low trip models
Adjustable set point
Adjustable time delay
Internal differential
LED trip indication
Automatic reset
Double-pole relay contacts

Benefits

Accepts standard process voltage or current signals
Monitors forward/reverse Watts, VAr and VA
Monitors under/over Watts, VAr and VA
Power factor monitoring and control
Nuisance tripping avoidance
Customised options

Applications

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

Approvals

CSA File Number 052592
(monitoring voltage 50V DC, monitoring current 20mA DC)

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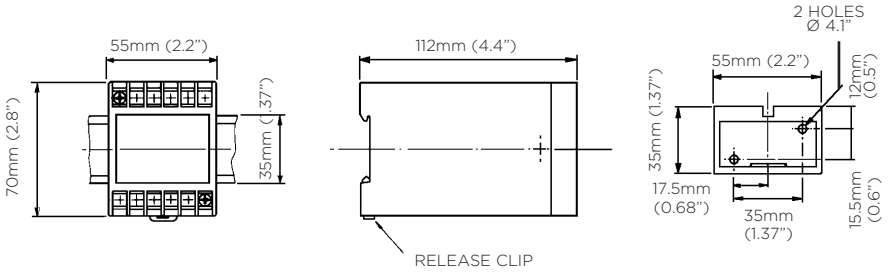
Specification – DC Transducer Trip

Nominal input current dc	0-1mA, 0-5mA, 0-10mA, 0-20mA, 4-20mA volt drop 1V
Nominal input voltage dc	1 V to 250 V DC, input resistance 10Kilo-ohm/V
Voltage burden	3VA maximum
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
Model 252 dimensions	55mm (2.2") wide x 70mm (2.8") high x 112mm (4.4") deep
Model 253 dimensions	75mm (2.9") wide x 70mm (2.8") high x 112mm (4.4") deep
Weight	Model 252: 0.4Kg approx. Model 253: 0.6Kg approx.

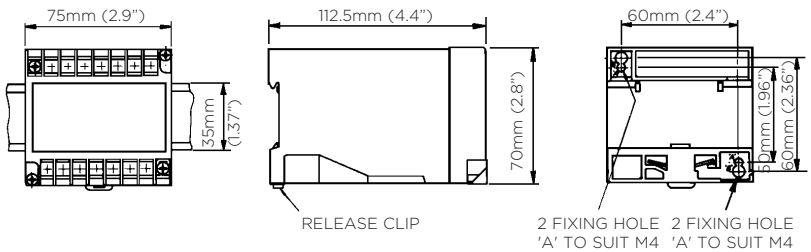
SEE ATTACHED FOR PART NUMBERS

Dimensions

Model 252

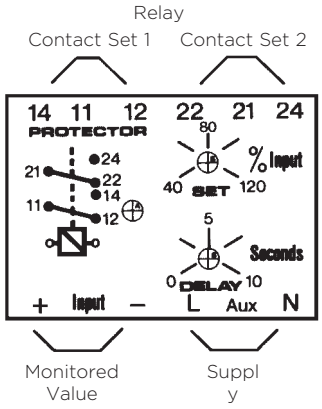


Model 253

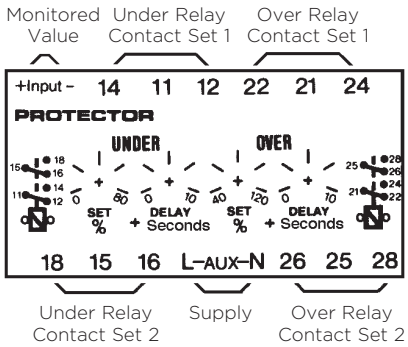


Connections

252-PBB
252-PBA



253-PBV



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DC Transducer Trip

PROTECTION	INPUT	AUXILIARY	PART NUMBER
Low trip 0 to 80%	0-1 MA DC	120 V AC	252-PBAU-FABX-DG-T1-EB
Low trip 0 to 80%	4-20 MA DC	24 V DC	252-PBAU-HGBX-BD-T1-EB
Low trip 0 to 80%	4-20 MA DC	120 V AC	252-PBAU-HGBX-DG-T1-EB
Low trip 0 to 80%	0-30 V DC	120 V AC	252-PBAU-NLBX-DG-T1-EB
High trip 40 to 120%	0-1 MA DC	120 V AC	252-PBBU-FABX-DG-T1-EA
High trip 40 to 120%	4-20 MA DC	24 V DC	252-PBBU-HGBX-BD-T1-EA
High trip 40 to 120%	4-20 MA DC	120 V AC	252-PBBU-HGBX-DG-T1-EA
High trip 40 to 120%	0-10 V DC	24 V DC	252-PBBU-MSBX-BD-T1-EA
High and low trip	0-1 MA DC	120 V AC	253-PBVU-FABX-DG-T1-EC
High and low trip	4-20 MA DC	24 V DC	253-PBVU-HGBX-BD-T1-EC
High and low trip	4-20 MA DC	120 V AC	253-PBVU-HGBX-DG-T1-EC
High and low trip	0-10 V DC	120 V AC	253-PBVU-MSBX-DG-T1-EC
High and low trip	0-12 V DC	12 V DC	253-PBVU-MUBX-BC-T1-EC
High and low trip	0-12 V DC	120 V AC	253-PBVU-MUBX-DG-T1-EC
High and low trip	0-24 V DC	24 V DC	253-PBVU-BDBX-BD-T1-EC
High and low trip	0-24 V DC	120 V AC	253-PBVU-BDBX-DG-T1-EC