

## Features

- Single and 3 phase models
- Adjustable setpoint
- Adjustable differential
- Internal time delay
- LED trip indication
- Double pole relay contacts
- Automatic reset

## Benefits

- Over and under voltage monitoring
- Start standby generators
- Operation of mains failure units
- Switching standby supplies
- Monitors genset AVR and excitation systems
- Nuisance tripping avoidance
- Customized options

## Applications

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

## Approvals

UL , CSA , BV and ABS

## A.C. Voltage with Adjustable Differential

The A.C. voltage protectors provide continuous surveillance of the monitored circuit. When the measured voltage moves outside the setpoint limit, the relay will operate giving an alarm or initiation signal. The protector can be used for under and over voltage detection, start standby generators, operation of mains failure units, and switching standby supplies. An illuminated LED indicates when the relay is energized. The 3 phase, 3 or 4 wire models, protect each phase independently.

## Operation

A.C. voltage protectors offer user adjustable trip point (setpoint) and differential (hysteresis) settings. The setpoint adjustment range is 25%, operating between 75% and 100% of the nominal supply for under voltage units, and between 100% and 125% for the over voltage units. The differential setting adjustment range is 1% to 15%, and it can be used to reduce nuisance tripping if the measured signal is noisy or unstable. When the measured voltage moves outside the setpoint limit, the relay will operate, giving an alarm or initiation signal.

As soon as the monitored signal moves outside of the setpoint limit, a trip will occur. A fixed time delay is available as a factory option, preventing the relay from tripping for a predetermined period to prevent nuisance tripping. The units draw their operating power from the measuring inputs, although a separate auxiliary supply input option is available on some models. Three phase products monitor the voltage level for each phase, and are not phase sequence sensitive. Combined units offer under and over voltage trips in one compact unit. Single function units are also available.

## Over Voltage Models

When the monitored voltage exceeds the setpoint, the relay will energize and the red LED will illuminate to indicate the trip condition. The relay will automatically reset once the monitored voltage falls below the setpoint minus the differential. When reset, the LED will extinguish and the relay de-energizes.

## Under Voltage Models

When the monitored voltage falls below the setpoint, the relay will de-energize and the red LED will extinguish to indicate the trip condition. The relay will automatically reset once the monitored voltage rises above the setpoint plus the differential. When reset, the LED will illuminate and the relay energizes.

## Options

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

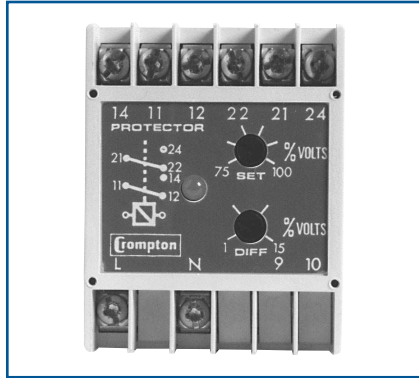
- Time delay - internal fixed time delay before a trip occurs.
- Separate auxiliary supply - sometimes required to maintain a time delay or energized relay when the monitored signal fails.
- Adjustment ranges - different adjustment ranges are possible for the setpoint and differential controls.
- Relay operation - standard models are fail safe, but the relays can be customized to energize or de-energize on trip.

## Product Codes

Relay	Protection	ANSI No.	Catalog No.
Single phase	Under voltage 75-100%	27	252-PVU
Single phase	Over voltage 100-125%	59	252-PVO
Single phase	Under and over voltage	27/59	253-PVB
3 phase 3 wire	Under voltage 75-100%	27	252-PVK
3 phase 3 wire	Over voltage 100-125%	59	252-PVA
3 phase 3 wire	Under and over voltage	27/59	253-PVM
3 phase 4 wire	Under voltage 75-100%	27	252-PVV
3 phase 4 wire	Over voltage 100-125%	59	252-PVP
3 phase 4 wire	Under and over voltage	27/59	253-PVE

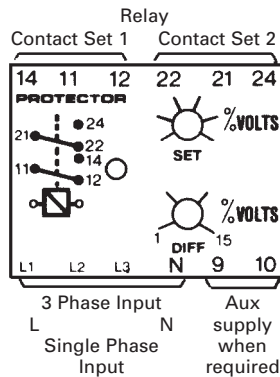
Specify system voltage, frequency, and required options at time of ordering.

# 250 Series DIN Rail and Wall Mounted Relays

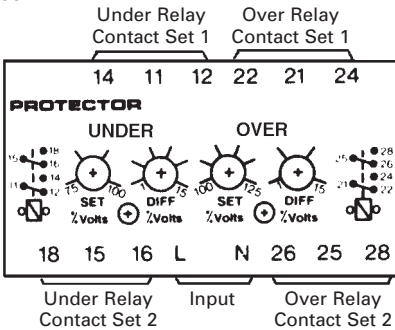


## Connections

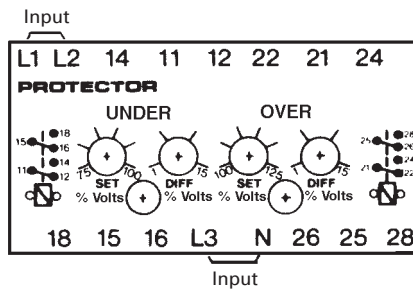
252-PVU  
252-PVO  
252-PVV  
252-PVP  
252-PVK  
252-PVA



253-PVB



253-PVE  
253-PVM



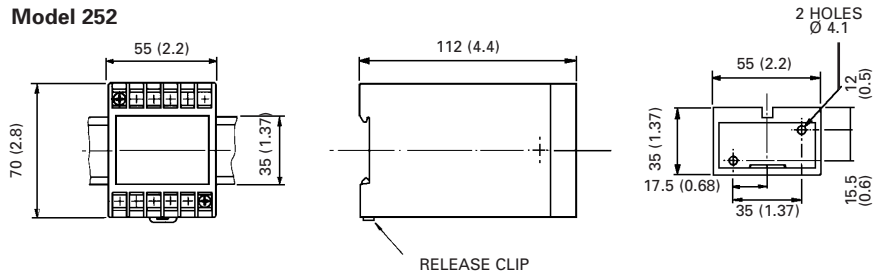
Note: The neutral connection is always used on 4 wire systems.

## Specification – AC Voltage with Adjustable Differential

Nominal Voltage	100V, 110V, 120V, 208V, 220V, 270V, 280V, 400V, 415V or 440V
System Frequency	45/65Hz or 360/440Hz
Voltage Burden	0.3VA approx
Overload	1.2 x rating continuously, 1.5 x rating for 10 x seconds
Set Point Repeatability	>0.5% of full span
Differential (Hysteresis)	Adjustable range 1 to 15%
Trip Level Adjustment	Under Voltage: 75 to 100% Over Voltage: 100 to 125% of nominal input voltage
Time Delay	Factory preset up to 30 seconds
AC Auxiliary Supply Voltage	100V, 110V, 120V, 208V, 220V, 240V, 480V, ±20%
DC Auxiliary Supply Voltage	12V, 24V, 48V, 110V or 125V, ±15%. Max ripple 15%
Auxiliary Voltage Burden	4VA (max)
Output Relay	Double 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
Compliant With	EMC, LVD, Safety Standard IEC 414 UL File No: E113067 recognized up to 600V CSA File No: LR52592 up to 300V BV File No: 2650H-07427-AO PRSO BV (Model 253 only) ABS File No: 93-LD 17806-X (Model 253 only)
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

## Dimensions

### Model 252



### Model 253

