

## 250 Series DIN Rail and Wall Mounted - A.C. Voltage with Adjustable Differential

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### Features

- » Adjustable setpoint
- » Adjustable differential
- » Internal time delay
- » LED trip indication
- » 2 pole relay contacts

### Application

- » **Gensets - to monitor correct operation of the AVR (Automatic Voltage Regulator) and excitation system**
- » **Motors - some electric motors are voltage sensitive, and can overheat and burn out when operated at low voltages**
- » **UPS supplies - when the main A.C. supply falls outside the acceptable operating voltage window, the relay can initiate a change over to an alternate or standby supply**



*The Crompton 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.*

*An illuminated LED indicates when the relay is energized. The 3 phase, 3 or 4 wire models, protect each phase independently. The Protector can be used to protect for:*

- Under and Over voltage detection
- Start standby generators
- Operation of mains failure units
- Switching standby supplies

### Introduction

Crompton A.C. Voltage Protectors provide continuous surveillance of the monitored voltage circuit. These products 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 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. Single phase and three phase products are available. 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.

### Product Function

**Over voltage models:** When the monitored voltage exceeds the setpoint, the time delay is started. When the time has elapsed, 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. The time delay is not active when resetting.

**Under voltage models:** When the monitored voltage falls below the setpoint, the time delay is started. When the time has elapsed, 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. The time delay is not active when resetting.

### Product customisation options

Please contact the factory.

- **Time delay** - internal fixed time delay before a trip occurs
- **Separate auxiliary supply** - sometimes required to maintain a time delay or energised 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 customised to energise or de-energise on trip

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## 250 Series DIN Rail and Wall Mounted - A.C. Voltage with Adjustable Differential

### Specification

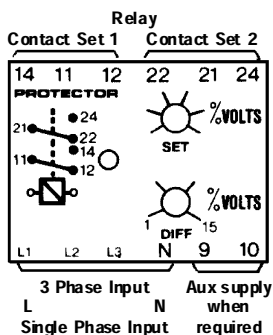
<b>Approvals:</b>	U.L. recognized up to 300V CSA approved up to 240V	<b>Differential:</b>	Adjustable range 1-15%
<b>Nominal Voltage:</b>	100, 110, 120, 208, 220, 280, 270, 400, 415, 440V	<b>Range Adjustment:</b>	Under Voltage: 75 to 100% Over Voltage: 100 to 125% of nominal input voltage
<b>System Frequency:</b>	45/65Hz or 360/440Hz	<b>Time Delay Option:</b>	Factory preset internal delay up to 30 seconds. Specify at time of ordering
<b>Overload:</b>	1.2 x continuously 1.5 x for 10 x 10 seconds	<b>Burden:</b>	3VA approx.
<b>Setpoint Repeatability:</b>	Better than 0.5%		

### Product Code Examples

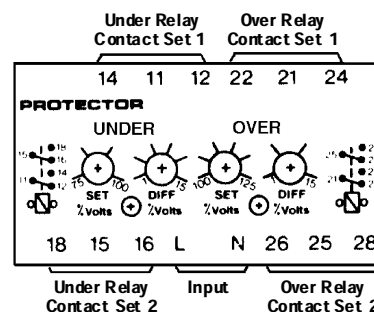
A.C. Voltage	Protection	ANSI No.	Catalogue No.
Single Phase 120V L-N	Under Voltage 75-100%	27	252-PVUU-PQBX-C6-EB
	Over Voltage 100-125%	59	252-PVOU-PQBX-C6-EA
	Over and Under Voltage (2 output relays)	27/ 59	253-PVBU-PQBX-C6-EC
3 Phase 3 Wire 120V LL	Under Voltage 75-100%	27	252-PVKU-PQBX-C6-EB
	Over Voltage 100-125%	59	252-PVAU-PQBX-C6-EA
	Over and Under Voltage (2 output relays)	27/ 59	253-PVMU-PQBX-C6-EC
3 Phase 4 Wire 120V L-N	Under Voltage 75-100%	27	252-PWU-PQBX-C6-EB
	Over Voltage 100-125%	59	252-PVPU-PQBX-C6-EA
	Over and Under Voltage (2 output relays)	27/ 59	253-PVEU-PQBX-C6-EC

### Connection Diagrams

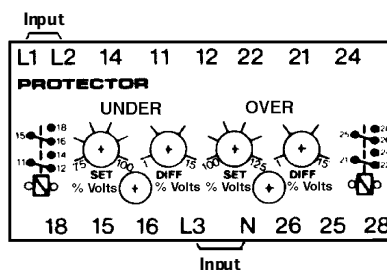
252-PVU  
252-PVO  
252-PW  
252-PVP  
252-PVK  
252-PVA



253-PVB



253-PVE  
253-PVM



**Note:** The neutral connection is always required on 4 wire products.



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## 250 Series DIN Rail and Wall Mounted - A.C. Voltage with Adjustable Time Delay

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### Features

- » Adjustable setpoint
- » Adjustable time delay
- » Internal differential
- » LED trip indication
- » 2 pole relay contacts

### Application

- » **Gensets - to monitor correct operation of the AVR (Automatic Voltage Regulator) and excitation system**
- » **Motors - some electric motors are voltage sensitive, and can overheat and burn out when operated at low voltages**
- » **UPS supplies - when the main A.C. supply falls outside the acceptable operating voltage window, the relay can initiate a change over to an alternate or standby supply**



*The Crompton A.C. Voltage Protectors provide continuous surveillance of the monitored circuit.*

*When the measured voltage moves outside the setpoint limit, the relay will operate after the selected time delay, giving an alarm or initiation signal. Relays normally energize on overvolts and de-energize on undervolts. An illuminated LED indicates when the relay is energized. The Protector can be used to protect for:*

- Under and Over voltage
- Start up standby generators
- To operate mains failure units
- Switching standby supplies
- Protecting computer supplies
- Where close voltage control is required

### Introduction

Crompton A.C. Voltage Protectors provide continuous surveillance of the monitored voltage circuit. These products offer user adjustable trip point (setpoint) and time delay 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 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 setpoint 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.

The units draw their operating power from the measuring inputs, although a separate auxiliary supply input option is available on some models. Single phase and three phase products are available. Three phase products monitor the voltage level for each phase, and are not phase sequence sensitive.

### Product Function

**Over voltage models:** When the monitored voltage exceeds the setpoint, the time delay is started. When the time has elapsed, 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. The time delay is not active when resetting.

**Under voltage models:** When the monitored voltage falls below the setpoint, the time delay is started. When the time has elapsed, 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. The time delay is not active when resetting.

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### Product customisation options

Please contact the factory.

- **Adjustment ranges** - different adjustment ranges are possible for the setpoint and differential controls
- **Separate auxiliary supply** - sometimes required to maintain a time delay or energised relay when the monitored signal fails
- **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

### Specification

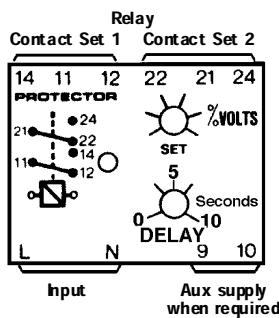
<b>Nominal Voltage:</b>	100, 110, 208, 220, 240, 277, 400, 415, 440, 480V	<b>Differential:</b>	Preset at 1% Other values 1% to 10% order
<b>System Frequency:</b>	45/65Hz or 360/440Hz	<b>Range:</b>	Adjustable Under Voltage 75 to 100% Over Voltage 100 to 125% of nominal input voltage
<b>Overload:</b>	1.2 x continuously 1.5 x for 10 x 10 seconds	<b>Time Delay:</b>	Adjustable up to 10 seconds
<b>Burden:</b>	3 VA		
<b>Setpoint Repeatability:</b>	Better than 0.5%		

### Product Code Examples

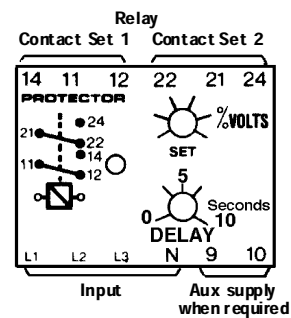
A.C. Voltage	Input	Protection	ANSI No.	Catalogue No.
Single Phase	120V L-N	Under voltage 75-100%	27	252-PVZUP-QBX-C6-EB-T1
Single Phase	120V L-N	Over voltage 100-125%	59	252-PVHU-PQBX-C6-EA-T1
3 Phase 3 Wire	120V L-L	Under voltage 75-100%	27	252-PVJU-PQBX-C6-EB-T1
3 Phase 3 Wire	120V L-L	Over voltage 100-125%	59	252-PVCU-PQBX-C6-EA-T1
3 Phase 4 Wire	120V L-N	Under voltage 75-100%	27	252-PVXUP-QBX-C6-EB-T1
3 Phase 4 Wire	120V L-N	Over voltage 100-125%	59	252-PVSU-PQBX-C6-EA-T1

### Connection Diagrams

252-PVZ  
 252-PVH



252-PVX  
 252-PVS  
 252-PVC  
 252-PVJ



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