



250 Series DIN-rail and Wall Mounted Relays

Combined Under/Over-Voltage and Frequency

The 250 series combined voltage and frequency protectors provide continuous surveillance of the monitored circuit. When the voltage or frequency moves outside the set point limit for longer than the time delay, the respective relay will operate giving an alarm, control or tripping signal. An illuminated LED indicates when the relay is energised. This protector can be used to protect against over and under-speed and over and under-voltage.

Operation

Combined voltage and frequency protectors provide the most popular relay functions in one convenient package. The products offer user adjustable trip point (set point) for voltage and frequency, plus adjustable time delay settings. The set point adjustment range is 25%, operating between 75% and 100% of the nominal supply for under-voltage and between 100% and 125% for over-voltage. The frequency set point adjustment range is centred around the nominal 50Hz, 60Hz or 400Hz system frequency. 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. The product is available for single-phase systems only and draws its operating power from the measuring input.

Over-Voltage and Frequency

When the monitored value exceeds the set point and the time delay has elapsed, the relay will energise and the red LED will illuminate to indicate the trip condition.

Under-Voltage and Frequency

The relay will de-energise after the time delay has elapsed and the red LED will extinguish to indicate the trip condition.

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.
1-phase	Over and under-voltage, over and under-frequency	27/59, 81O/U	256-PHV

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

Features

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

Benefits

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

Applications

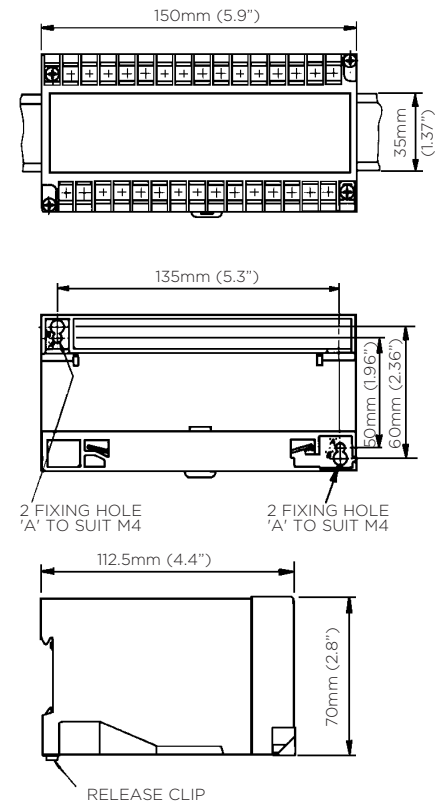
- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Process control
- Motor protection
- Transformers
- Overload protection

Specification – Combined Under/Over and Frequency

Nominal voltage	100V, 110V, 120V, 208V, 220V, 270V, 280V, 400V, 415V or 440V
System frequency	40/60Hz, 50/70Hz or 360/440Hz
Frequency differential	Pre-set at 0.1Hz (10Hz for 400Hz unit)
Voltage burden	3VA
Overloads	1.2 x rating continuously, 1.5 x rating for 10 x seconds
Set point repeatability	>0.5% of full span
Differential (hysteresis)	Fixed internally at 1%
Trip level adjustment	Over-voltage: 100 to 125% Under-voltage: 75 to 100% of nominal input voltage
Time delay	Adjustable 1 to 30 seconds
Output relay	4 independent 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	150mm (5.9") wide x 70mm (2.8") high x 112mm (4.4") deep
Weight	1.0Kg approx.

Dimensions

Model 256



Connections

256-PHV

