SP-230/SP-231/ SP-232
Voltage Window Comparator Three Phase

NEW

Slimline®

ORDERING CODE

TYPE	SUPPLY VOLTAGE	AC/DC	RELAY CONTACTS
SP 230	400 V	AC	SPDT

Application Examples

- Detection of Phase Failure.
- Phase monitoring of voltage transformers to ensure the voltage integrity of control circuits in high voltage panels.
- Monitoring of the line supply in rural areas for over- and under-voltage protection.
- Monitoring of supply voltage from standby generator sets to ensure a constant voltage supply.
- Monitoring the voltage output of UPS systems.

Features

- Failsafe feature.
- Combined over voltage and under voltage detection.
- Monitoring of own supply voltage.
- Adjustable response delay on SP-231.
- SP-232 available with neutral.
- High precision and repetitive accuracy.
- Independent setting of over- and under-voltage tripping points.
- LED indication for type of fault and status of the relay
- Latching facility.
- 10 A SPDT relay output.

Description of Operation

The SP-230, SP-231 and SP-232 are precision voltage window comparators for three phase AC applications, monitoring phase-to-phase voltage. They respond to both over-voltage as well as under-voltage conditions. Power supply to the unit is tapped off the voltage sensing inputs.

Voltage Sensing: The relay is energised when the voltage is maintained between the set over-voltage and under-voltage thresholds. If the voltage between any two phases rises above the over-voltage setpoint or drops below the under-voltage setpoint, the relay de-energises and the appropriate LED indicates "over-voltage" or "under-voltage" respectively. The relay energises again if the voltage recovers to within the set voltage window band width.

Note: The SP-230 is calibrated to respond to the RMS of a sinusoidal waveform. In exceptional circumstances where voltages are not sinusoidal in nature, scale inaccuracies may be experienced.

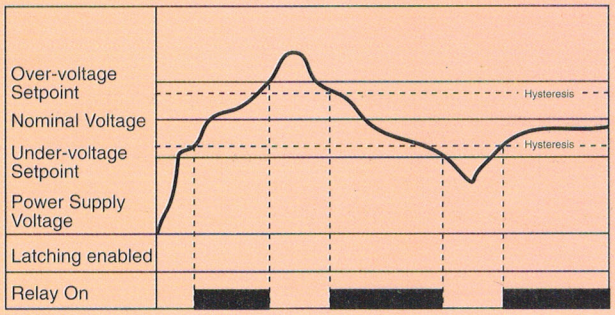
Hysteresis: Hysteresis represents the difference between the tripping point and the recovery point of the unit. The hysteresis is fixed to 2% to prevent relay chatter when the voltage fluctuates around the set limits.

Latching: When latching is armed, the relay will not recover from a tripped condition, but will remain de-energised until reset. The appropriate LED will indicate the type of fault responsible for the tripped condition. The unit can be reset by either breaking and re-applying power supply to the unit, or by momentarily disabling the latching circuit, (eg. push-to-open button). On power-up of the module, the latching is inactive for approximately 10 seconds.

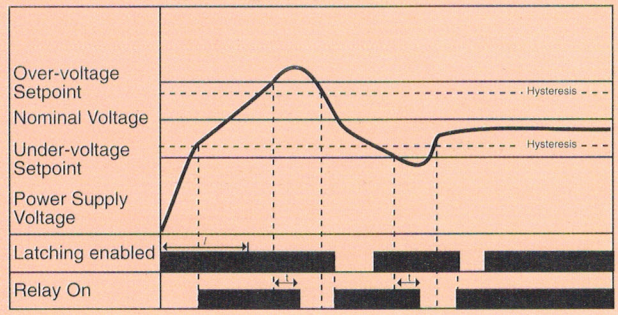
Adjustable Response: response can be adjusted from 1 to 10 seconds. When a trip condition is detected, the relay will only de-energise after the set response time (a delayed recovery is also available on special order).

Operational Diagrams

Voltage sensing without latching (SP-230)



Voltage sensing with latching (SP-231)



l = Latching disabled for approximately 10 seconds at power up.

t = Response delay set on P3.