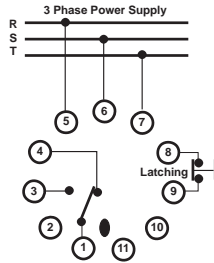




WIRING EXAMPLE (requires optional S3-B base)



Application Examples

- Detection of Phase Failure.
- Detection of balanced over-voltage or under-voltage.
- 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.

ORDERING CODE

TYPE	SUPPLY VOLTAGE	AC/DC	RELAY CONTACTS
SP231	415	AC	S

Note: SP231 supersedes SP230

Note: SP232 acts as SP231 but also detects loss of Neutral

Technical Specification

Power Supply:

Supply voltage (phase-to-phase):
110, 220, 380, 400, 415, 525VAC \pm 20%

Response:

Time delay on trip:
SP 231 - adjustable from 0,1 to 10 seconds.
SP 232 - approx. 1 second fixed.

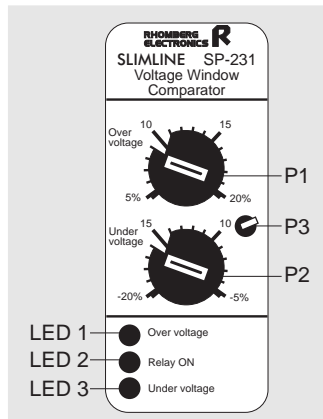
Voltage Sensing:

The unit is calibrated to trip on the RMS value of the supply voltage (assuming no AC waveform distortion)

Repetitive accuracy: 1%
Hysteresis: 2% fixed (relative to its supply voltage)

Latching disabled during power-up: approx. 10 seconds.

Description of Controls



P1: The **Over-voltage Threshold** is adjusted on P1 (+5% to +20%).

P2: The **Under-voltage Threshold** is adjusted on P2 (-5 to -20%).

Note: The scales for over-voltage and under-voltage threshold settings are calibrated in percentage deviation from nominal (ideal) supply voltage.

P3: **Adjustable Time Delay on Trip** is set on P3 from 0,1 to 10 seconds (SP231 only).

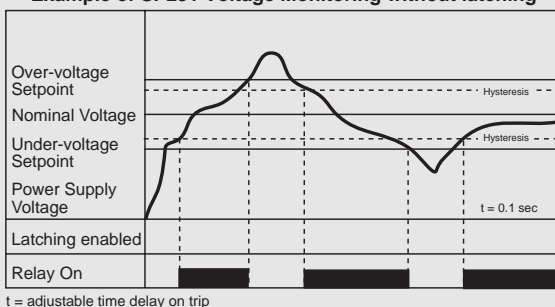
LED1: The red LED marked "**Over voltage**" will illuminate whenever the supply voltage exceeds the set over-voltage threshold.

LED 2: The green LED marked "**Relay ON**" will illuminate when the relay is energised, i.e. under normal supply conditions, and switches off if the unit registers a fault condition, or if the power supply to the unit is interrupted.

LED 3: The red LED marked "**Under voltage**" will illuminate whenever the supply voltage drops below the set under-voltage threshold.

Operational Diagrams

Example of SP231 Voltage Monitoring without latching



Example of SP231 Voltage Monitoring with latching

