

3 Phase + Neutral Over / Under Voltage Monitor (Incorporating Phase Reversal Detection)

Description

3 - Phase + Neutral monitoring plug-in relay for separate upper and lower voltage control as well as phase failure / sequence. Often used where the generated electrical power is unstable (or incorrect) in order to secure the equipment.

FEATURES

- Monitoring relay and 3 - phase measuring relay for upper / lower phase to phase voltage control
- Measures if all 3 phase to phase voltages are within set limits, present and in sequence
- Measures on own power supply
- Upper and lower limits separately adjustable
- LED indication for over / under volts
- Latch facility incorporated
- 10 second start-up delay
- 180 second response delay
- Output 10A SPDT



Input Specifications

Pin 5	Phase L1
Pin 6	Phase L2
Pin 7	Phase L3
Pin 11	Neutral
Power Supply	(phase neutral) 230V
Range	184 - 276V
Upper Limit	241.5 - 276V
Lower Limit	281.5 - 184V
Scale	± 5 - 20%
Voltage Interruption	< 40ms
Dielectric Voltage	None (supply/electronics)
Rated Impulse Withstand	4kV (1.2/50 s line/line)

Supply Specifications

Power Supply AC Type	110, 230, 400V ± 10%
(Galvanic)	50 Hz ± 5Hz
Isolation	4kV
Consumption	± 3VA
	± 6VA 525 V

Output Specifications

Output Specifications	SPDT
Rated Isolation	6000 VAC (contact / electric)
Voltage	1000 VAC (contact / contact)
Nominal Rate in AC1	1500 VA (Ag-Ni)
Rated Current	10A
Rated Voltage	250V
Mechanical Life	10x10 ⁶ cycles
Electrical Life	110x10 ³ cycles (at max load)
Operation Frequency	≤ 1800 cycles/h

General Specifications

Power ON Delay	≤ 300 ms
Power OFF Delay	≤ 200 ms
Indication for	
Power Supply ON	LED red
Over Voltage	LED yellow
Under Voltage	LED yellow
Environment	
Degree Of Protection	IP 20
Operating Temperature	-10 to + 50°C
Storage Temperature	-50 to + 85°C
Weight	200g

V3E/N

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Mode of Operations

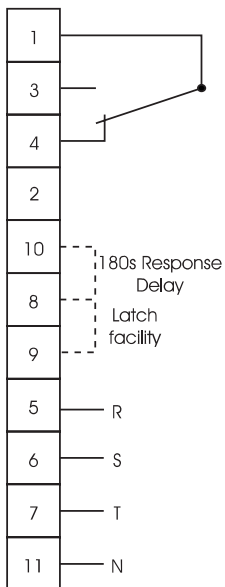
Voltage Monitoring

Connected to 3 phases and neutral, the V3E measures sinusoidal voltages as well as the phase failure sequence. The relay operates as long as all 3 phase to neutral voltages are within the set upper and lower limits and if all phases are present and in proper sequence. The two limits can be adjusted separately. If one or more of the phase to neutral voltages rises above the upper limit or drops below the lower limit, or if one phase or neutral is disconnected or out of sequence, the relay releases immediately. The relay operates again when all 3 phase to neutral voltages are within set limits. Hysteresis on operate is 5% (e.g. If the unit has tripped at 260VAC it will recover at 247VAC).

Example

- Protects motors from single phasing and subsequently burning out.
- Protects motors from reverse phase sequence on forward and reverse operating machines.
- Protects against neutral loss.

Wiring Diagram



Operations Diagram

