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



Description

3 - Phase 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

Power Supply 400V

Range 320 - 400V

Upper Limit 420 - 480V

Lower Limit 320 - 380V

Scale ± 5 - 20%

Voltage Interruption < 40ms

Dielectric Voltage None (supply/electronics)

Rated Impulse Withstand 4kV (1.2/50 s line/line)

Output Specifications

Output Specifications SPDT

Rated Isolation 6000 VAC

Voltage (contact / electric)

1000 VAC

(contact / contact)

Nominal Rate in AC1 1500 VA (Ag-Ni)

Rated Current 10A

Rated Voltage 250V

Mechanical Life 10x10⁶ cycles

Electrical Life 110x10³ cycles (at max load)

Operation Frequency ≤ 1800 cycles/h

Supply Specifications

Power Supply AC Type 110, 230, 400V \pm 10%

(Galvanic) 50 Hz ± 5Hz

Isolation 4kV

Consumption ± 3VA

± 6VA 525 V

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

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Mode of Operations

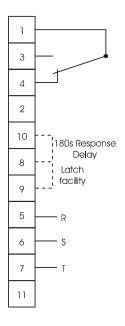
Voltage Monitoring

Connected to 3 phases, the V3E measures sinusoidal voltages as well as the phase failure sequence. The relay operates as long as all 3 phase to phase 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 phase voltages rises above the upper limit or drops below the lower limit, or if one phase is disconnected or out of sequence, the relay releases immediately. The relay operates again when all 3 phase to phase voltages are within set limits. Hysteresis on operate is 5% (e.g. If the unit has tripped at 440VAC it will recover at 418VAC).

Example

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

Wiring Diagram



Operations Diagram

