

VMR Series

Voltage Monitoring Relays

For 3P3W systems at 208-480V





THE VMR series of voltage monitoring relays are designed to meet the demands of both general engineering and the white goods industry, enhancing the reliability and efficiency of equipment. These relays support multi-voltage inputs, operating on three-phase 3-wire systems at 208-480V, with true RMS measurement for accurate monitoring.

They are capable of monitoring their own power supply and detecting fault conditions across one or more phases, providing comprehensive protection against under-voltage (UV), over-voltage (OV), phase asymmetry, incorrect phase sequence, phase loss, and three-phase interruptions. With selectable supply voltage and adjustable trip settings for UV, OV, or phase asymmetry, they offer flexible configuration options to suit various application needs.

These relays also feature selectable ON or OFF time delays with adjustable settings, ensuring optimal performance and system protection. A single change-over relay [Form C] allows for reliable switching. Housed in a compact 17.5 mm-wide DIN-rail enclosure, they are designed for easy integration. LED indicators provide clear status updates for all faults and alert users to changes in dip switch settings during runtime, enhancing security.

Specifications:

| | | VMR01 | VMR02 | VMR03 |
|-------------------------------|-----------------------|--|----------------------------|--------------------------|
| Supply Voltage | | 208 - 480 VAC, (3 Phase 3 Wire) | | |
| Supply Variation | | -12% to +10% of Supply Voltage | | |
| Frequency | | 50/60Hz | | |
| Power Consumption (Max.) | | 3VA | | |
| Settable Nominal Voltage | | 208 - 220 - 380 - 400 - 415 - 440 - 480 VAC | | |
| Trip Levels | Phase Loss | Yes | Yes | Yes |
| | Phase Sequence | Yes | Yes | Yes |
| | Phase Asymmetry | 10% Fixed | | |
| | Under Voltage | -5% to -25% (of Power Supply) | | |
| | Over Voltage | +5% to +25% (of Power Supply) | | |
| Time Delay | ON Delay | 5s | < 750 ms | 5s |
| | Trip Time (OFF Delay) | 0.5 to 100 s (Selectable) | 100 ms | 0.5 to 15 s (Selectable) |
| Ouput | Relay Output | 1x C/O (Form C) | | |
| | Contact Rating | 5A @ 240 VAC / 30 VDC (Resistive) | | |
| | Electrical Life | 1x10 ⁵ | | |
| | Mechanical Life | 3x10 ⁶ | | |
| Utilization Category | AC - 15 | Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A | | |
| | DC - 13 | Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A | | |
| LED Indication | Healthy | Relay LED: Continuous ON | | |
| | Phase Reverse | Relay LED: Flashing | | |
| | Asymmetry | AS LED: Continuous ON | Relay LED: OFF (Red Color) | |
| | UV | UV LED: Continuous ON | | |
| | OV | OV LED: Continuous ON | | |
| | ALL LEDs | Phase Fail or Higher Cut OFF (>560 VAC) or lower cut off (<175 VAC) Blinking ➡ Pot changed during running conditions | | |
| Operating Temperature | | -15C to +60C | | |
| Storage Temperature | | -20C to +80C | | |
| Humidity (Non Condensing) | | 95% (Rh) | | |
| Enclosure | | Flame Retardant UL 94-V0 | | |
| Dimension (W x H x D) (in mm) | | 18 x 58.5 x 90 | | |
| Weight (unpacked) Approx. | | 70g | | |
| Mounting | | Base / DIN Rail | | |
| Certification | |   | | |
| Degree of Protection | | IP 20 for terminals. IP30 for enclosure | | |

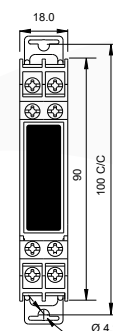
EMI / EMC

| | |
|-----------------------------------|----------------|
| Harmonic Current Emissions | IEC 61000-3-2 |
| ESD | IEC 61000-4-2 |
| Radiated Susceptibility | IEC 61000-4-3 |
| Electrical Fast Transients | IEC 61000-4-4 |
| Surges | IEC 61000-4-5 |
| Conducted Susceptibility | IEC 61000-4-6 |
| Voltage Dips & Interruptions (AC) | IEC 61000-4-11 |
| Conducted Emission | CISPR 14-1 |
| Radiated Emission | CISPR 14-1 |

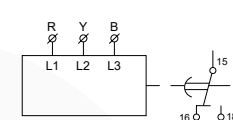
Environmental

| | |
|----------------------|----------------|
| Cold Heat | IEC 61068-2-1 |
| Dry Heat | IEC 61068-2-2 |
| Vibration | IEC 61068-2-6 |
| Repetitive Shock | IEC 61068-2-27 |
| Non-Repetitive Shock | IEC 61068-2-27 |

Dimensions



Wiring Diagram



Screw driver: Ø3.5mm, Torque-0.4 N.m (3.6Lb.in), Terminal Screw - M3, 1 x 2.5mm² Solid/Stranded Wire, AWG: 1 x 24 to 12

Part Numbers

| | |
|--------------|---|
| VMR01 | Voltage Monitor Relay, 5 s ON delay, 0.5 to 100 s trip time |
| VMR02 | Voltage Monitor Relay, < 750 ms ON delay, 100 ms time delay |

| | |
|--------------|---|
| VMR03 | Voltage Monitor Relay, 5 s ON delay, 0.5 to 15 s time delay |
|--------------|---|



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