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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.

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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		5% to 15%
	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	$3x10^6$		
Utlization 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		c UL us LISTED CE		
Degree of Protection		IP 20 for terminals, IP30 for enclosure		

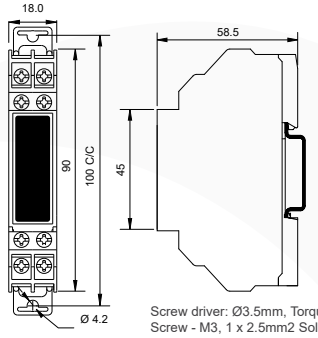
EMI / EMC

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

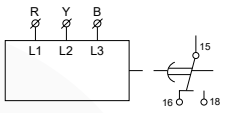
Environmental

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