

Voltage Monitoring Relays

VM500 Series

Three-phase Voltage Monitoring Relay



Description

The VM500 is a three-phase voltage monitor that protects 3-wire and 4-wire 415 Vac 50 Hz systems. The VM500 will detect under-voltage, over-voltage, phase loss, phase sequence, phase asymmetry, and neutral failure conditions. Over-voltage and under-voltage trip thresholds can be configured and LED indicators provide fault visibility. Additionally, the device can be easily mounted on a DIN-rail, making it a versatile choice for various applications.

Features

- Phase loss (failure) detection
- Neutral loss detection
- Phase reverse detection
- Phase asymmetry
- Adjustable Over-voltage and Under-voltage trip levels
- LED indication for all failure conditions
- Automatic recovery on fault removal
- Improved accuracy and high reliability
- Quick visual indicator for causes of trip and relay status

Ordering Information

PART NUMBER	DESCRIPTION
VM500-10-23	415 Vac, Neutral Loss Protection with Phase and Voltage Control, 2 C/O

Voltage Monitoring Relays

VM500 Series

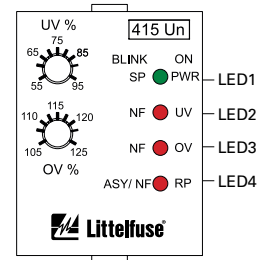
Specifications

Supply Voltage	415 Vac (Ph-Ph); 3 Phase 4 Wire
Frequency	47 to 53 Hz
Trip Settings:	
Phase Loss	Yes
Phase Sequence	Yes
Phase Asymmetry	94V \pm 4V (Ph-Ph)
Under-Voltage	55% to 95% of supply
Over-Voltage	105% to 125% of supply
Hysteresis	7 V \pm 2 V
Time Delay:	
ON Delay	5 s \pm 1 s (fixed)
Trip Time (OFF Delay)	5 s \pm 1 s (fixed) For Phase failure, Phase imbalance Under-voltage / Over-voltage 500 ms to 1 s (For neutral failure)
Output:	
Relay Output	2 C / 0
Contact Rating	5A (Resistive) at 250 Vac / 28 Vdc
Electrical Life	1 x 10 ⁵ operations
Mechanical Life	1 x 10 ⁷ operations
Utilization Category:	
AC - 15	Rated Voltage (Ue): 230 V / 125 V, Rated Current (Ie): 1.3 A / 2.5 A
DC - 13	Rated Voltage (Ue): 250 V / 120 V / 24 V, Rated Current (Ie): 0.1 A / 0.22 A / 2 A

LED Indications on front plate:

Respective fault condition will be indicated by LED immediately and Relay will be tripped after specified trip time only.

	LED1 (GREEN)	LED2 (RED)	LED3 (RED)	LED4 (RED)
Power ON	ON	OFF	OFF	OFF
Phase reverse	ON	OFF	OFF	ON
Asymmetry	ON	OFF	OFF	BLINK
UV	ON	ON	OFF	OFF
OV	ON	OFF	ON	OFF
Phase Fail	BLINK	OFF	OFF	OFF
Phase Fail*	BLINK	ON	OFF	BLINK
Neutral Fail	ON	BLINK	BLINK	BLINK



*Phase fail indications when I/P voltages are below UV set point and below asymmetry

Operating Temperature	-10 °C to + 60 °C
Storage Temperature	-10 °C to + 70 °C
Humidity (Non Condensing)	95% (Rh)
Enclosure	Flame Retardant UL 94-V0
Dimension (L x W x H) (in mm)	90 x 36 x 60
Weight (unpacked)	120 g
Mounting	Base / DIN-rail
Degree of Protection	IP20 for Terminals, IP30 for Housing

Certification & Standards

CE	CE-Low Voltage Directive 2014 / 35 / EU EMC Directive 2014/30/EU
RoHS	RoHS Directive 2011 / 65 /EU Delegated Directive 2015 / 863 /EU

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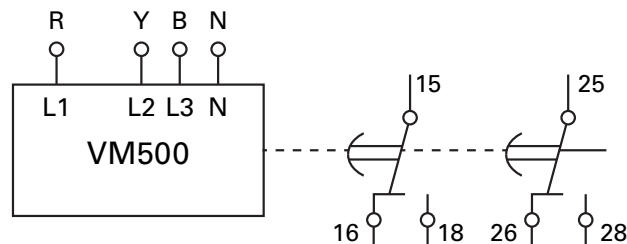
EMI/EMC

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

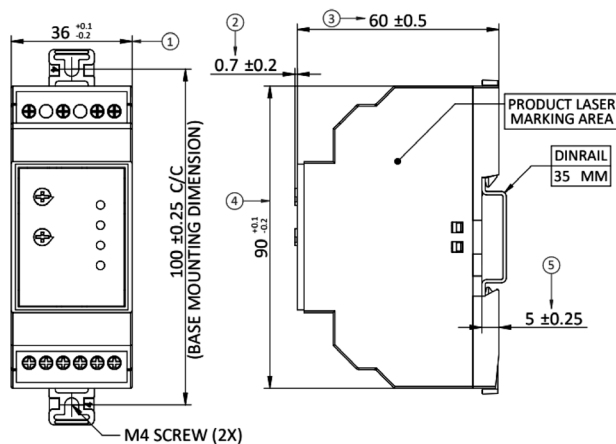
Environmental

Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

Wiring diagram



Dimensions (Millimeters)



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