

## TECHNICAL SPECIFICATIONS

		VMR01	VMR02	VMR03	
<b>Function</b>		Phase and Voltage Control		Phase Control	
<b>Supply Voltage</b> (⏏)		208 to 480 VAC, 3P3W (-12% to +10% of ⏏)			
<b>Frequency</b>		47 to 63 Hz			
<b>Power Consumption</b>		4.5 VA (Max.)			
<b>Adjustable Nominal Voltage</b> (⏏)		208 - 220 - 380 - 400 - 415 - 440 - 480 VAC	N/A		
<b>Trip Levels</b>	<b>Under Voltage</b>	-5 to -25% of ⏏	N/A		
	<b>Over Voltage</b>	5 to 25% of ⏏	N/A		
	<b>Asymmetry</b>	10% fixed	N/A	5 to 15%	
<b>Setting Accuracy</b>		±/- 5% of full scale			
<b>Setting Accuracy</b> (±10% of full scale)	<b>Power ON Delay</b>	5 s fixed	<1.5 sec	5 s fixed	
	<b>Operate Time</b>	5 s fixed	<750 ms	5 s fixed	
	<b>Release Time</b>	<b>UV, OV and Asymmetry</b>	<0.55 to 100 s	~ 550 ms	<0.55 to 15 s
		<b>Phase reverse</b>	<65 ms.		
<b>Phase Loss</b>		For Phase Loss Fault in the absence of Motor load Release Time is <65 ms.			
<b>LED Indications</b>	<b>R/⏏</b>	<b>Healthy</b>	⏏ Continuous ON	R Continuous ON	
		<b>Ph Reverse</b>	⏏ Flashing	R Flashing	
		<b>Asymmetry</b>	N.A.	R OFF	
	<b>OV</b>	Over Voltage	N/A		
	<b>UV</b>	Under Voltage	N/A		
	<b>AS</b>	Asymmetry	N/A		
	<b>ALL LEADS</b>	<b>OFF</b>	Phase Fail or Higher Cut OFF(> 560 VAC) or lower cut off (<175 VAC) (for VMR02 Lower Cut Off is < 138 VAC)		
<b>Relay Output</b>	<b>Flashing</b>	⏏ Ref. Pot changed during running conditions	N/A		
	<b>Contact Rating</b>		1 C/O, 5A (Res.) @ 250 VAC / 30 VDC		
	<b>Utilization</b>	<b>AC - 15</b>	Rated Voltage (Ue): 120/240 V; Rated Current (Ie): 3.0/1.5 A		
	<b>Category</b>	<b>DC - 13</b>	Rated Voltage (Ue): 24/125/250 V; Rated Current (Ie): 2.0/0.22/0.1 A		
<b>Contact Material</b>		Ag Alloy			
<b>Mechanical Life Expectancy</b>		3 x 10 <sup>6</sup> Operations			
<b>Electrical Life Expectancy</b>		1 x 10 <sup>6</sup> Operations			
<b>Operating Temperature</b>		-15°C to +60°C			
<b>Storage Temperature</b>		-20°C to +80°C			
<b>Humidity (Non-Condensing)</b>		5 to 95% (Non-Condensing)			
<b>Max. Operating Altitude</b>		2000 m			
<b>Degree of Protection</b>		IP-20 for Terminals; IP-30 for Housing			
<b>Pollution Degree</b>		II			
<b>Housing</b>		Flame Retardant UL 94-V0			
<b>Mounting</b>		Base / Din-Rail (35 mm Symmetrical)			
<b>Dimensions in mm (W x H x L)</b>		18 x 59 x 90			
<b>Weight (Unpacked)</b>		70 g Approx.			
<b>Certifications</b>		CE, ROHS, UL			



### VMR01, VMR02, VMR03 SUPPLY MONITORING DEVICE SERIES



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#### ⚠ Caution:

1. Do not touch the terminals while power is being supplied.
2. Tighten terminal screws with the specified torque.
3. Always follow instructions stated in product leaflet.
4. Before installation, check to ensure that specifications agree with intended application.
5. Installation to be done by skilled electrician
6. Suitable dampers should be provided in the event of excessive vibrations.

#### Suitability for use:

These are products with Auto reset and Auto Switch On, hence never use the products for an application involving significant risk to life without ensuring that the system as a whole has been designed to address the risks and that our products are properly rated and installed for the intended use within the entire system or equipment.

#### Notice:

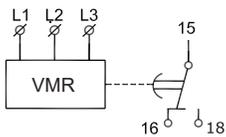
Product innovation being a continuous process, we reserve the right to alter specifications without any prior notice.

**VMR01, VMR02, VMR03**  
SUPPLY MONITORING DEVICE SERIES

**Features**

- Controls own supply voltage.
- Multi-voltage from 3x208 to 3x480 V
- LED status indication.
- SPDT Relay output (5A resistive).
- 30 to 40ms instant tripping for 2 & 3-phase interruption.
- Din Rail & Base mounting.

**Connection Diagram**



**Functional Description**

**VMR01**

Controls:-

1. Correct sequence of the three phases.
2. Failure of any of the three phases.
3. Under & Over Voltage adjustable from 5 to 25% of Un
  - Up to - 12% across 3x220 V Range;
  - Up to - 16% across 3x220 V Range;
  - Up to +20% across 3x440 V Range;
  - Up to + 10% across 3x480 V Range
4. Failure due to Asymmetry fixed at 10%.

**VMR02**

Controls:-

1. Correct sequence of three phases.
2. Failure of any of three phases when voltage falls below rated minimum of threshold.

**VMR03**

Controls:-

1. Correct sequence of the three phases.
2. Failure of any of the three phases.
3. Failure due to Asymmetry adjustable from 5% to 15%.

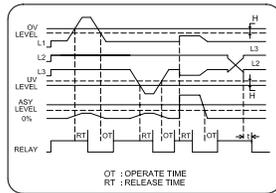
**Note**

In case of VMR01, phase imbalance levels are fixed. So, for very large motors with excessive back EMF relay suitability to be checked by the user.

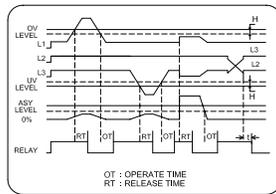
Minimum threshold supply voltage of tripping is 140 VAC for VMR02.

**Functional Diagram**

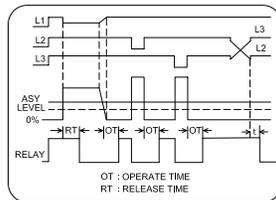
**VMR01**



**VMR02**



**VMR03**



**Terminal Details :**

 Ø4.....5.0mm Combi Head Bit/Flat	0.5 N.m (4.4lb.in) to 0.7N.m (6.2lb.in)
	2 x 2.5 mm <sup>2</sup> Solid / Standard Wire
AWG	20 to 12

**Certification**

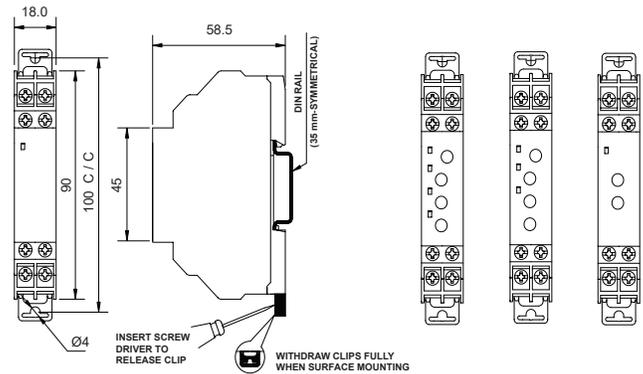
EMI/EMC		
Harmonic Current Emissions	IEC 61000-3-2	Class A
ESD	IEC 61000-4-2	Level II
Radiated Susceptibility	IEC 61000-4-3	Level III
Electrical Fast Transient	IEC 61000-4-4	Level IV
Surge	IEC 61000-4-5	Level III
Conducted Susceptibility	IEC 61000-4-6	Level III
Voltage Dips & Interruptions(AC)	IEC 61000-4-11	
Radiated Emission	CISPR 11	Class A
Conducted Emission	CISPR 11	Class A
Safety		
Test Voltage between I/P and O/P	IEC 60947-5-1	2KV
Impulse voltage between I/P and O/P	IEC 60947-5-1	2.5KV
Single Fault	IEC 61010-1	Level IV
Insulation Resistance	UL508	> 50k Ω
Leakage Current	UL508	< 3.5 mA
Environmental		
Cold Heat	IEC 60068-2-1	
Dry Heat	IEC 60068-2-2	



**E-Waste Regulatory notice:**

Kindly treat, recycle or dispose of this equipment in an environmentally sound manner after End of Life, as per WEEE (Waste Electrical and Electronic Equipment) regulations or as per local norms.

**Overall Product Dimensions**



All dimensions are in mm