

Voltage Monitoring Series SM 301

- Protects against Phase Loss, Phase Reversal & Phase Asymmetry
- No Auxiliary Supply needed
- Voltage Sensing principle
- 1 C/O & 2 C/O Configurations
- Designed to meet Industrial and Agricultural segment applications





Ordering Information

Cat. No.	Description
MA51BC	415 VAC, Single Phasing Preventor with 65 VAC Asymmetry, 1 C/O
MA51BK	415 VAC, Single Phasing Preventor with 40 VAC Asymmetry, 1 C/O
MC21B5	415 VAC, Single Phasing Preventor with 65 VAC Asymmetry, 2 C/O
MA59B5	415 VAC, Phase Loss Monitoring with Non Fail Safe Type, 1 C/O

Voltage Monitoring Series SM 301



Cat. No.		MA51BC	MA51BK	MC21B5
Parameters				
Supply Voltage (±)		415 VAC		
Frequency		50/60 Hz		
Power Consumption (Max.)		15 VA		
Trip Settings	Phase Loss	Yes	Yes	Yes
	Phase Sequence	Yes	Yes	Yes
	Phase Asymmetry	65 V (± 10V)	40 V (± 10 V)	65 V (± 10V)
	Hysteresis	10 to 18 V	10 to 18 V	10 to 18 V
Time Delay	ON Delay	2 s (± 2 s)	2 s (± 2 s)	< 550 ms
	Trip Time (OFF Delay)	7 s (± 2 s)	7 s (± 2 s)	< 550 ms
Output	Relay Output	1 C/O	1 C/O	2 C/O
	Contact Rating	5A (For 'NO') & 3A (For 'NC') @ 250 VAC / 28 VDC (Resistive)		5A @ 250 VAC / 28 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		Red → Relay ON (Healthy), See Note 1		
Operating Temperature		- 15° C to + 50° C		
Storage Temperature		- 20° C to + 65° C		
Humidity (Non Condensing)		95% (Rh)		
Enclosure		Flame Retardant UL 94-V0		
Dimension (W x H x D) (in mm)		36 X 90 X 60		
Weight (unpacked)		120 g		
Mounting		Base / DIN rail		
Degree of Protection		IP20 for Terminals, IP 40 for Enclosure		
Certification		 		

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

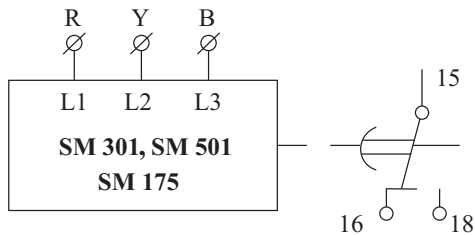
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

Note 1:- ON: Relay ON, OFF: Phase Loss, Blinking: Asymmetry (200 ms, On/Off), Flashing: Phase Sequence (1 s, On/Off)

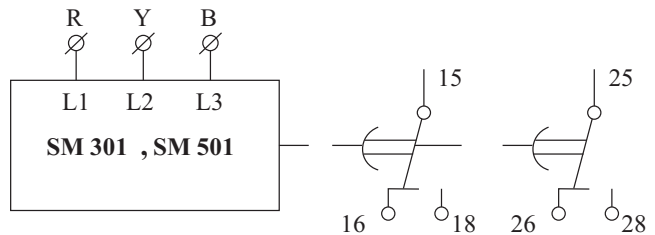
Voltage Monitoring Series



CONNECTION DIAGRAM

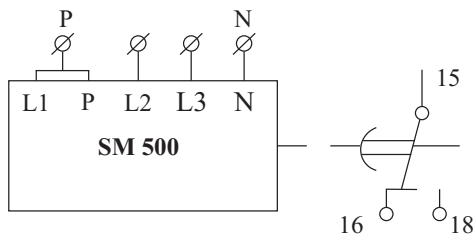


MA51BC, MA51BK, MN21D5, MK21D5, MC21D5
MA21DN, MD21DF, MG21DH, MG21DF, MGD1DR

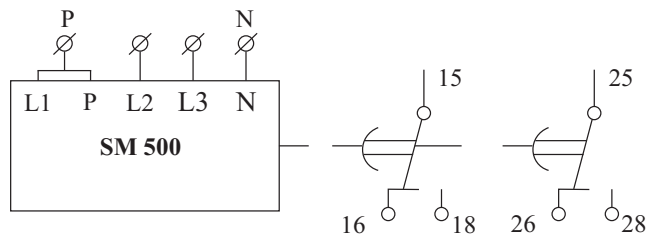


MG53BH, MG53BF, MG63BH, MG63BF
MG53BI, MG53BO, MB53BM, MC21B5

SINGLE PHASE

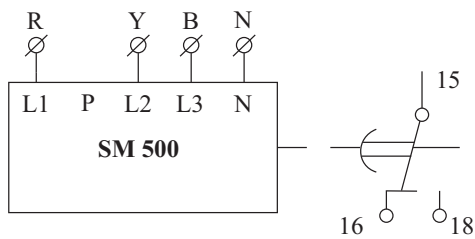


MD71BH, MD71BF, MD71B9

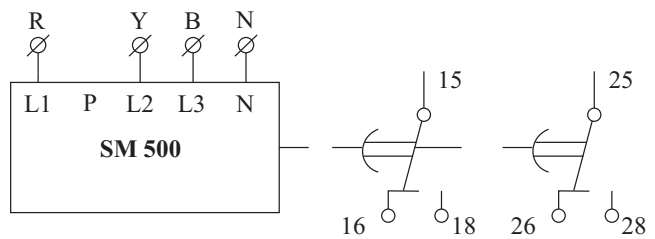


MG73BH, MG73BF, MG73B9

THREE PHASE

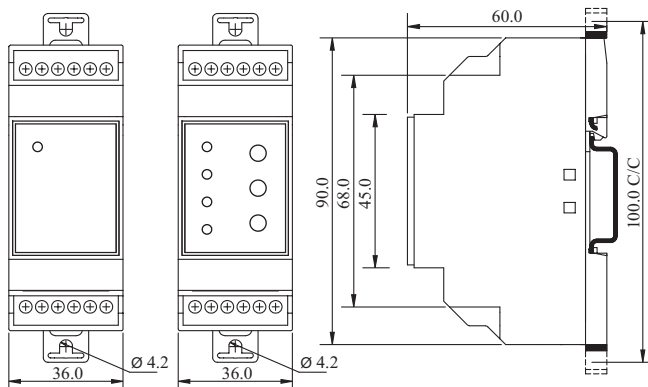


MD71BH, MD71BF, MD71B9



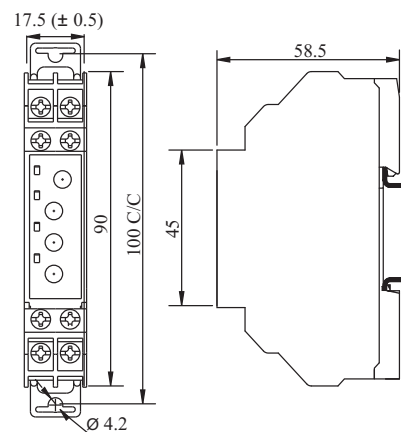
MG73BH, MG73BF, MG73B9, MAC04D0100 (P is not applicable in neutral loss)

MOUNTING DIMENSION (mm)





SM 301

SM 500, SM 501





SM 175

TERMINAL TORQUE & CAPACITY

 Ø 3.5	0.54 N.m (6 Lb.in)
	1 x 2.5 mm ² Solid Wire/Stranded
AWG	1 x 24 to 12

SM 301, SM 500, SM 501

 Ø 3.5 mm.....5.0mm	0.80 N.m (7.1 Lb.in)
	2 x 2.5 mm ² Solid/Stranded Wire
AWG	2 x 20 to 14

SM 175