Voltage Monitoring Series SM500 - Neutral Loss Protection

- Phase loss (failure) detection
- Neutral loss detection
- Phase reverse detection
- Phase asymmetry
- Adjustable Over & Under voltage trip level
- LED indication for all failure conditions
- Automatic recovery on fault removal

Ordering Information

Cat. No.	Description
MAC04D0100	415 VAC, Neutral Loss Protection with Phase and Voltage Control, 2 C/O
MAC04D0119	380 VAC, Neutral Loss Protection with Phase and Voltage Control, 2 C/O

Voltage Monitoring Series SM500 - Neutral Loss Protection

Cat. No.			MAC04D0100	
Parameters				
Supply Voltage (⏚)			415 VAC (Ph-Ph); 3 Phase, 4 Wire	
Frequency			47 to 53 Hz	
Power Consumption (Max.)			10 VA (max)	
Trip Settings	Phase Loss		Yes	
	Phase Sequence		Yes	
	Phase Asymmetry		94V ± 4V (Ph-Ph)	
	Under Voltage		55% to 95% (of ⏚)	
	Over Voltage		105% to 125% (of ⏚)	
	Hysterisis		7 V (± 2 V)	
Time Delay	ON Delay		5 s ±1 s (Fixed)	
	Trip Time (OFF Delay)		For Phase failure phase Imbalance Under voltage / Over Voltage	5 s ±1 s (Fixed)
			For Neutral Fail	500 ms -1s
Output	Relay Output		2 C/O	
	Contact Rating		5A @ 250 VAC / 28 VDC (Resistive)	
	Electrical Life		$1X10^5$	
	Mechanical Life		$1X10^7$	
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 Indications on front plate			Respective fault condition will be indicated by LED immediately & Relay will be tripped after specified trip time only.	

	GREEN	UV	OV	Blink: ASY, ON: REV
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 Storage Temperature	-10° C To + 60° C -10° C To + 70° 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	IP 20 for Terminals, IP 40 for Enclosure
Certification	CE RoHS Compliant

EMI / EMC

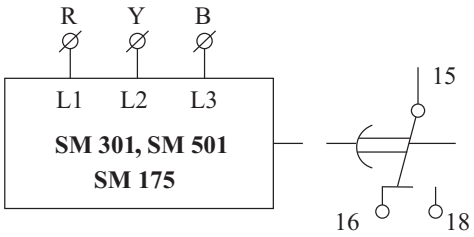
Harmonic Current Emissions	IEC 61000-3-2
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR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

Environmental

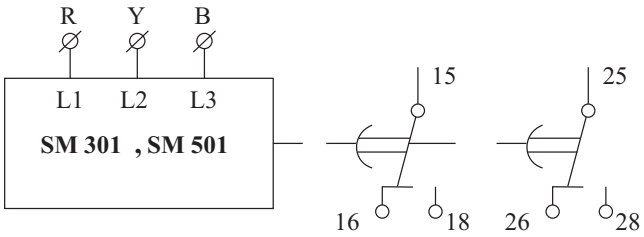
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

Voltage Monitoring Series

CONNECTION DIAGRAM

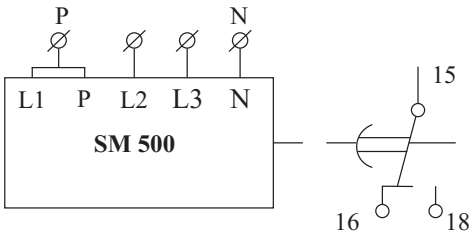


MA51BC, MA51BK, MN21D5, MK21D5, MC21D5
MA21DN, MD21DF, MG21DH, MG21DF, MGD1DR

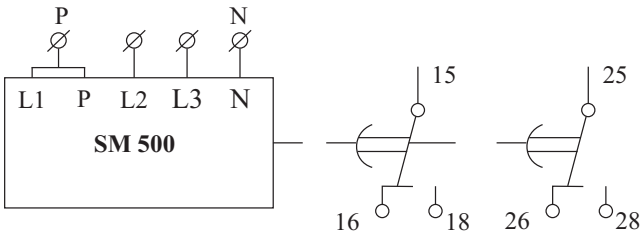


MG53BH, MG53BF, MG63BH, MG63BF
MG53BI, MG53BO, MB53BM, MC21B5

SINGLE PHASE

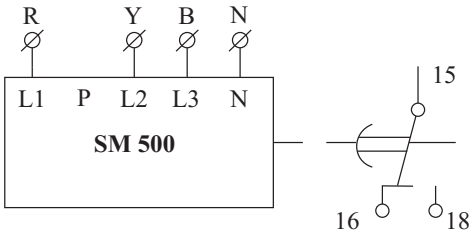


MD71BH, MD71BF, MD71B9

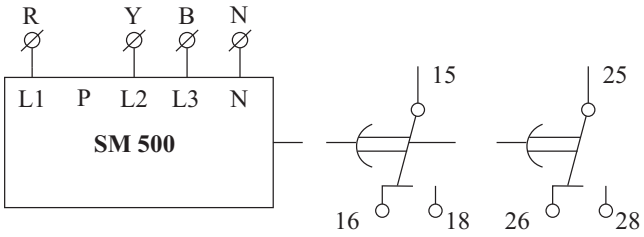


MG73BH, MG73BF, MG73B9

THREE PHASE

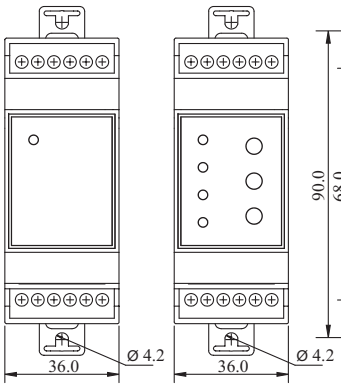


MD71BH, MD71BF, MD71B9

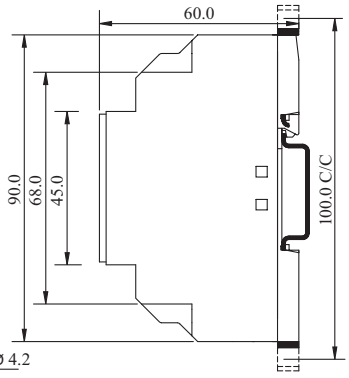


MG73BH, MG73BF, MG73B9, MAC04D0100 (P is not applicable in neutral loss)

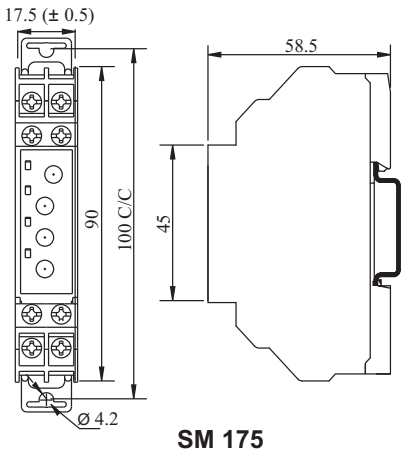
MOUNTING DIMENSION (mm)



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 mm² 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 mm² Solid/Stranded Wire
AWG	2 x 20 to 14

SM 175