

# Supply Monitoring Series SM 501

- Protects against Phase Loss, Phase Reversal and Phase-Phase Unbalance
- Suitable for 3 phase 3 wire systems
- Selectable Over/Under voltage trip level
- Adjustable time delay
- Model for selectable Phase Asymmetry
- LED indications for power and fault conditions

- Voltage sensing principle
- 2 C/O configuration



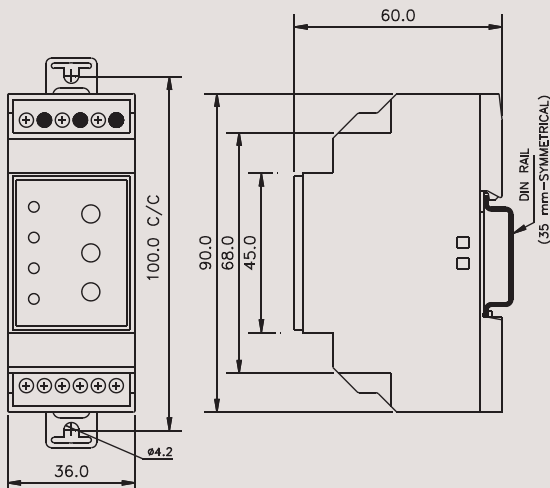
Cat. No.	MG53BH	MG53BF	MG53BI
<b>Parameters</b>			
Supply Voltage (φ)	415 VAC		
Frequency	48 - 63 Hz		
Power Consumption (Max.)	10 VA		
Trip Settings :			
Under Voltage	55% - 95% (of φ)		
Over Voltage	105% - 125% (of φ)		
Phase Reverse Detect	Yes		
Hysteresis	7 V ± 2V of trip voltage		
Phase - Phase Unbalance	10%		94 V
Time Delays			
ON Delay	0.5 - 15 s (adjustable)	5 s (fixed)	5 s (fixed)
OFF Delay	5 s (fixed)	0.5 - 15 s (adjustable)	5 s (fixed)
Setting Accuracy	± 10 % of full scale	± 10 % of full scale	± 10 % of full scale
Relay Output	2 C/O (DPDT)		
Contact Rating	5A (Resistive) @ 250 VAC / 28 VDC		
Electrical Life	1 x 10 <sup>5</sup>		
Mechanical Life	3 x 10 <sup>6</sup>		
Utilization Category	AC - 15 DC - 13	Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3/1.5 A Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A	
Operating Temperature	- 10° C to +55° C		
Storage Temperature	- 25° C to +70° C		
LED Indications	Separate indications for Power ON: UV, OV, ON: Phase Reverse, BLINK: Phase Unbalance		
Enclosure	UL 94V0		
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			
EMI/ EMC			
Radio Interference Suppression	CISPR 14-1	Ed. 5.0 (2005-11) Class B	
ESD	IEC 61000-4-2	Ed. 1.2 (2001-04) Level II	
Electrical Fast Transients	IEC 61000-4-4	Ed. 2.0 (2004-07) Level IV	
Surges	IEC 61000-4-5	Ed. 2.0 (2005-11) Level IV	
Voltage Dips, Interruptions	IEC 61000-4-11	Ed. 2.0 (2004-03) All 7 Levels (AC),	IEC 61000-4-29 Ed. 1.0 (2000-08) All 5 Levels (DC)
Isolation	Test voltage between input & output - IEC 60255-5, 2kV		

Note: 1) In the event of Phase sequence or phase loss, OFF delay is 100 ms

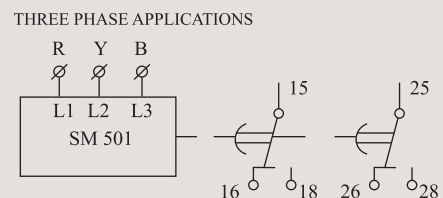
## ORDERING INFORMATION

Cat. No.	Description
MG53BH	415 VAC, adjustable 0.5 - 15 s On & 5 s fixed Off Delay time, 2 C/O
MG53BF	415 VAC, adjustable 0.5 - 15 s Off & 5 s fixed On Delay time, 2 C/O
MG53BI	415 VAC, 94 volt fixed asymmetry, with 5 s fixed Off & On Delay time, 2 C/O
MG53BO	415 VAC, Under/Over Voltage, with fixed 3 m On / 5 s Off Delay time, 2 C/O
MG63BH	220 VAC, adjustable 0.5 - 15 s On & 5 s fixed Off Delay time, 2 C/O
MG63BF	220 VAC, adjustable 0.5 - 15 s Off & 5 s fixed On Delay time, 2 C/O

## MOUNTING DIMENSION (mm)



## CONNECTION DIAGRAM



## TERMINAL TORQUE & CAPACITY

 Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm <sup>2</sup> Solid Wire / single wire ferrule
	2 x 0.2 - 1 mm <sup>2</sup> Insulated with twin ferrule
AWG	1 x 24 to 12



## Cat. No.

**MB53BM**

### Parameters

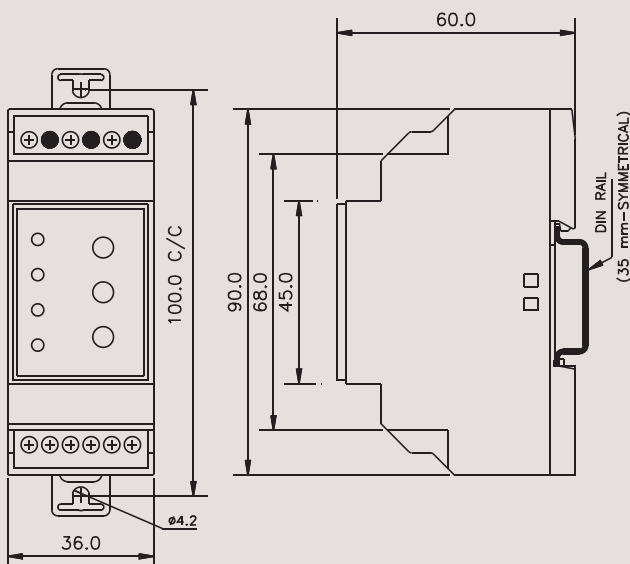
Supply Voltage (Φ)	415 VAC	
Frequency	48 - 63 Hz	
Power Consumption (Max.)	10 VA	
Trip Settings :		
Under Voltage	80% of Φ symmetrical, Hysteresis 7 V ± 2 V of input Voltage	
Phase Reverse Detect	Yes	
Phase- Phase Unbalance	5% - 17 % adjustable, Hysteresis 2%	
Time Delays		
ON Delay	0.5-15 s (adjustable)	
OFF Delay	0.5-15 s (adjustable)	
Setting Accuracy	± 10 % of full scale	
Electrical Life	1 x 10 <sup>5</sup>	
Mechanical Life	3 x 10 <sup>6</sup>	
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
Relay Output	2 C/O (DPDT)	
Contact Rating	5A (Resistive) @ 250 VAC / 28 VDC	
Operating Temperature	- 10° C to + 55° C	
Storage Temperature	- 25° C to + 70° C	
LED Indications	Indications for Power On, Symmetrical UV, Ph. Asymmetry, Reversal of phases.	
Enclosure	UL 94V0	
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		
EMI/ EMC		
Radio Interference Suppression	CISPR 14-1 Ed. 5.0 (2005-11) Class B	
ESD	IEC 61000-4-2 Ed. 1.2 (2001-04) Level II	
Electrical Fast Transients	IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV	
Surges	IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV	
Voltage Dips, Interruptions	IEC 61000-4-11 Ed. 2.0 (2004-03) All 7 Levels (AC), IEC 61000-4-29 Ed. 1.0 (2000-08) All 5 Levels (DC)	
Isolation	Test voltage between input & output - IEC 60255-5, 2kV	

Note: 1) In the event of Phase sequence or phase loss, OFF delay is 100 ms

## ORDERING INFORMATION

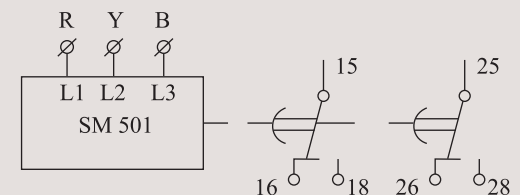
Cat. No.	Description
MB53BM	415 VAC, adjustable Asymmetry 5% - 17% , 2 C/O

## MOUNTING DIMENSION (mm)



## CONNECTION DIAGRAM

THREE PHASE APPLICATIONS



## TERMINAL TORQUE & CAPACITY

 Ø 3.5 mm	Torque 0.54 N.m (5 Lb. in) Terminal Screw - M 2.5
	1 x 0.2 - 3.3 mm <sup>2</sup> Solid Wire / single wire ferrule 2 x 0.2 - 1 mm <sup>2</sup> Insulated with twin ferrule
AWG	1 x 24 to 12