Combined Phase Failure & Thermistor (PTC) Relay

- Thermistor Relay combined with Protection against Phase Sequence, Phase Loss & Phase Asymmetry Faults
- Monitors and Protects Motors with Integrated PTC Resistor sensors
- Protection against Over heating for Heavy Duty Load, High Switching Frequency, High operating temperature & Insufficient cooling conditions
- LED indications for Healthy, Unhealthy, Sensor Open/Short and Phase Sequence fault conditions



Cat. No.		ML64BS	MLD4BS
Parameters			
Supply Voltage (⏚)		230 VAC (3 Phase 3 Wire)	400 VAC (3 Phase 3 Wire)
Supply Variation		-15% to + 15% (of ⏚)	-15% to + 15% (of ⏚)
Frequency		50/60 Hz	50/60 Hz
Power Consumption (Max.)		1 VA	2 VA
Trip Settings	Trip Level	1.52 - 3.42 kΩ	
	Reset Level	1.65 k	
	Sensor Short	20Ω, (± 4Ω)	
	Hysterisis	20Ω, (± 4Ω)	
	Sensor Open	20 kΩ, (± 5%)	
Max Cold Res(Ω) of Sensor Chain		< 1.5 kΩ	
Cable Resistance		20 Ω	
Phase Asymmetry		70 VAC (± 10 VAC)	104 VAC (± 10 VAC)
Asymmetrical Phase Loss		110 VAC (± 10 VAC)	220 VAC (± 10 VAC)
Symmetrical Phase Loss		130 VAC (± 10 VAC)	250 VAC (± 10 VAC)
Restart Voltage		145 VAC (± 10 VAC)	265 VAC (± 10 VAC)
Reset Mode		Auto	
Repeat Accuracy		1%	
Time Delay	Operate Time	2s (± 200 ms)	
	Release Time	360 - 550 ms & 100 ms max for Thermistor Trip & Phase Sequence	
	Reset Time	100 - 500 ms	
Output	Relay Output	1 NO + 1 NO 1 NO + 1 NO	1 NO + 1 N|O
	Contact Rating	5A 'NO' & 3A 'NC' @ 240 VAC / 28 VDC (Resistive)	
	Electrical Life	1 x 10^5	
	Mechanical Life	3 x 10^7	
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	⏚ LED	Continuous ON → Power Supply Healthy, Continuous OFF → Supply Fail, Flashing → Sensor Open	
	LED	Continuous ON → Over Temperature Trip, Continuous OFF → Thermistor Trip, Flashing → Sensor Short	
	LED	Continuous ON → SPP Relay Trip, Continuous OFF → SPP Relay ON, Flashing → Supply below restart voltage	
Operating Temperature Storage Temperature		- 10° C to +60° C - 15° C to +70° C	
Humidity (Non Condensing)		95% (Rh)	
Enclosure		Flame Retardant UL94-V0	
Dimension (W x H x D) (in mm)		22.5 X 100.5 X 83	
Weight (unpacked)		150 g	
Mounting		Base / DIN rail	
Certification		CE RoHS Compliant	
Degree of Protection		IP 20 for Terminals, IP 40 for Enclosure	
EMI / EMC			
Harmonic Current Emissions		IEC 61000-3-2	Ed. 3.0 (2005-11) Class A
ESD		IEC 61000-4-2	Ed. 1.2 (2001-04) Level II
Radiated Susceptibilty		IEC 61000-4-3	Ed. 3.0 (2006-02) Level III
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
Conducted Susceptibilty		IEC 61000-4-6	Ed. 2.2 (2006-05) Level III
Voltage Dips & Interruptions (AC)		IEC 61000-4-11	Ed. 2.0 (2004-03) All 7 Levels
Conducted Emission		CISPR 14-1	Ed. 5.0 (2005-11) Class A
Radiated Emission		CISPR 14-1	Ed. 5.0 (2005-11) Class A
Environmental			
Cold Heat		IEC 60068-2-1	Ed. 6.0 (2007-03)
Dry Heat		IEC 60068-2-2	Ed. 5.0 (2007-07)
Vibration		IEC 60068-2-6	Ed. 7.0 (2007-12) 5g
Repetitive Shock		IEC 60068-2-27	Ed. 4.0 (2008-02) 40g, 6ms
Non-Repetitive Shock		IEC 60068-2-27	Ed. 4.0 (2008-02) 30g, 15ms

ORDERING INFORMATION

Cat. No.	Description
ML64BS	230 VAC, PTC Thermistor & Single Phasing Preventer, 1 NO + 1 NO
ML67BS	230 VAC, PTC Thermistor & Single Phasing Preventer, 1 NO + 1 NC
MLD4BS	400 VAC, PTC Thermistor & Single Phasing Preventer, 1 NO + 1 NO
MLD7BS	400 VAC, PTC Thermistor & Single Phasing Preventer, 1 NO + 1 NC