PTC Thermistor &
Single Phasing Preventer Series PD225

- 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

Ordering Information

Cat. No.	Description
ML64BS	230 VAC, Three Phase Three Wire PTC Thermistor & SPP, 1 NO + 1 NO
ML67BS	230 VAC, Three Phase Three Wire PTC Thermistor & SPP, 1 NO + 1 NC
MLD4BS	400 VAC, Three Phase Three Wire PTC Thermistor & SPP, 1 NO + 1 NO
MLD7BS	400 VAC, Three Phase Three Wire PTC Thermistor & SPP, 1 NO + 1 NC

UL Approval not applicable for Cat Nos. MJ83BK & MJ93BK.

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Cat. No.			ML64BS	MLD7BS
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.)			15 VA	24 VA
Trip Settings	Trip Level		2.7 kΩ, (± 5%)	
	Reset Level		1.71 kΩ, (± 5%)	
	Sensor Short		<20Ω, (±4Ω)	
	Hysterisis		40Ω, (± 4Ω)	
	Sensor Open		> 20 kΩ, (± 5%)	
Max Cold Res(Ω) of Sensor Chain			< 1.5 kΩ	
Cable Resistance			20Ω	
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)	240 VAC (± 10 VAC)
Restart Voltage			145 VAC (± 10 VAC)	265 VAC (± 10 VAC)
Reset Mode			Auto	
Repeat Accuracy			1%	
Time Delay	Operate Time		< 350 ms	
	Release Time		360 - 550ms for Asymmetrical or Symmetrical Phase Fault & 100ms (max.) for Phase Sequence, Thermistor Trip	
	Reset Time		100 - 750 ms	
Output	Relay Output		1 NO (SPP) + 1 NO (PTC Thermistor)	1 NO (SPP) + 1 NC (PTC Thermistor)
	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	⏚ (Green)	Continuous ON	Power Supply Healthy	
		Continuous OFF	Power Fail	
		Flashing	Sensor Open	
	+t° (Amber)	Continuous ON	Over Temperature Trip	
		Continuous OFF	Thermistor Relay ON	
		Flashing	Sensor Short or Cable Short	
	(Red)	Continuous ON	SPP Relay Trip (For Supply Above Restart Voltage)	
		Continuous OFF	SPP Relay ON (After ensuring the input Voltage of 5V above the Restart Voltage)	
		Flashing	Supply & SPP Fault below restart voltage	
Operating Temperature			- 10° C to +60° C	
Storage Temperature			- 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 83 X 100.5	
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

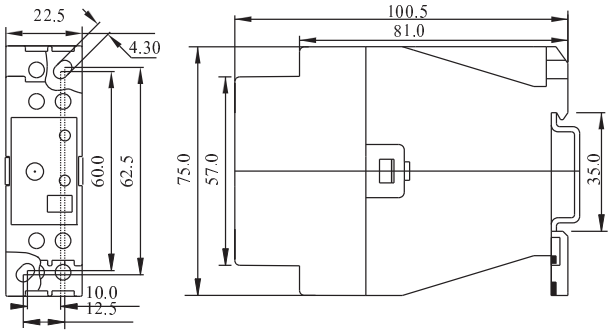
Harmonic Current Emissions	IEC 61000-3-2
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61000-4-11
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR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

Environmental

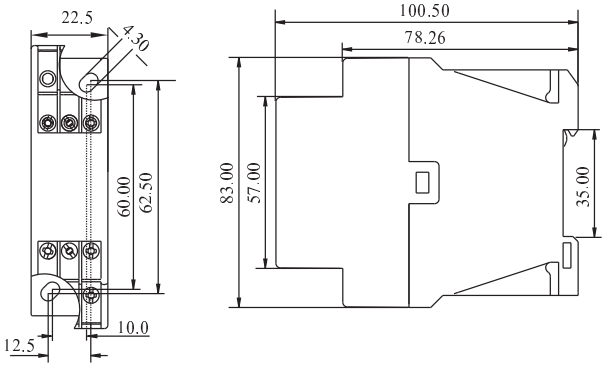
Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6
Repetitive Shock	IEC 60068-2-27
Non-Repetitive Shock	IEC 60068-2-27

Frequency Monitoring &
PTC Thermistor Relay Series PD225

MOUNTING DIMENSION (mm)

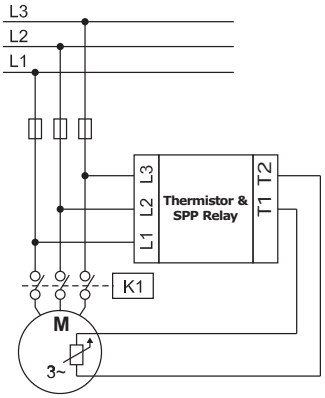


FREQUENCY MONITORING SERIES PD 225



PTC THERMISTOR RELAY SERIES PD 225 &
PTC THERMISTOR & SINGLE PHASING PREVENTER SERIES PD 225

CONNECTION DIAGRAM

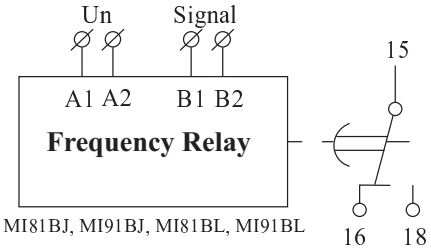


PTC THERMISTOR & SINGLE PHASING PREVENTER SERIES PD 225

CONTACT ARRANGEMENT :

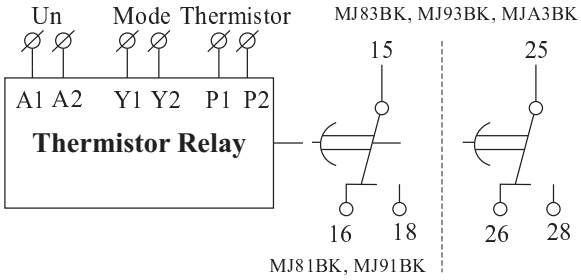
For 1 NO + 1 NO PRODUCT:
ML64BS, MLD4BS

For 1 NO + 1 NC PRODUCT:
ML67BS, MLD7BS



MI81BJ, MI91BJ, MI81BL, MI91BL

FREQUENCY MONITORING SERIES PD 225



MJ81BK, MJ91BK

PTC THERMISTOR RELAY SERIES PD 225

TERMINAL TORQUE & CAPACITY

Ø 3.5 mm....4.0mm	0.60 N.m (6 Lb.in)
	1 x 4.0 mm^2 Solid/Stranded Wire
AWG	1 x 20 to 10

FREQUENCY MONITORING SERIES PD 225
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