PTC Thermistor & Single Phasing Preventer Series PD225

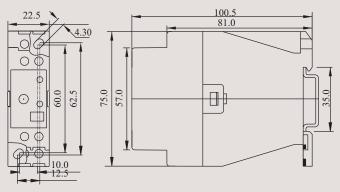
- Thermistor Relay combined with Protection against Phase Sequence, Phase Loss & Phase Asymmetry Faults
- · Monitors and Protects Motors with Integrated PTC Resistor sensors • Protection against Over heating for Heavy Duty Load, High Switching Frequency, High operating temperature & Insufficient cooling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



Cat. No.		ML64BS		MLD7BS			
Parameters							
· · ·	Voltage (🛱)		(3 Phase 3 Wire)	400 VAC (3 Phase 3 Wire)		
· · ·	Variation		-15% to +15% (of中) -15% to +15% (of中)				
Frequency			50/60 Hz 50/60 Hz				
Power Consumption (Max.)		1 VA 2 VA					
Trip Level			1.52 - 3.42 kΩ				
Taia	Reset Le	evel	1.65 k				
Trip Settings	Sensor S	Short	$20\Omega, (\pm 4\Omega)$				
Settings	Hysteris	is	$20\Omega, (\pm 4\Omega)$				
	Sensor (Open	20 kΩ, $(\pm 5\%)$				
Max Co	old $\operatorname{Res}(\Omega)$	of Sensor Chain	$< 1.5 \text{ k}\Omega$				
Cable R	lesistance		20 Ω				
Phase A	symmetry		70 VAC (± 10 VAC) 104 VAC (± 10 VAC)				
Asymm	etrical Pha	ise Loss	110 V/	AC (± 10 VAC)	220 VAC (± 10 VAC)		
•	trical Phas		130 V/	AC (± 10 VAC)	250 VAC (± 10 VAC)		
Restart				AC (± 10 VAC)	265 VAC (± 10 VAC)		
Reset M	U		Auto				
	Accuracy		1%				
Time	Operate	Time	$2s (\pm 200 \text{ ms})$				
Delay	Release		· /	ns max for Thermistor Trip & Pha	se Sequence		
	Reset Ti	me	100 - 500 ms				
	Relay O		1 NO + 1 NO		1 NO + 1 NC		
Output	Contact		5A 'NO' & 3A 'NC' @ 240 VAC / 28 VDC (Resistive)				
	Electrica		1×10^{3}				
	Mechani	AC 15	3 x 10 ⁷ Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A				
Utilizati	ion Catego	ry DC - 13	0 ()	, , , ,			
		Continuous ON	Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A Power Supply Healthy				
	(Groop)	Continuous OFF					
	(Gréen) Continuous ON Flashing Continuous ON Continuous OFF		Sensor Open				
LED			Over Temperature Trip				
Indi-			Thermistor Relay ON				
cations	(Amber)	Flashing	Sensor Short or Cable				
	€7) 🙏	Continuous ON	SPP Relay Trip (For Supply Above Restart Voltage)				
	(Red)	Continuous OFF	SPP Relay ON				
0	. ,	Flashing	Supply & SPP Fault below restart voltage				
	ng Temper Temperati		- 10° C to +60° C				
0	•	ondensing)	- 15° C to +70° C 95% (Rh)				
Enclosu	• •	indensing)	95% (Kh) Flame Retardant UL94-V0				
		I x D) (in mm)	22.5 X 100.5 X 83				
	`	/					
-	(unpacked)	150 g				
Mountii	ng		Base / DIN rail				
Certific	ation						
Degrag	of Protoct	0.12	IP 20 for Terminals, IP 40 for Enclosure				
Degree EMI / H	of Protecti	011	if 20 for ferminals, I	1 40 IOI Eliciosure			
		Emissions	IEC 61000-3-2	Ed. 3.0 (2005-11) Class A			
ESD	Current	21113510113	IEC 61000-3-2 IEC 61000-4-2	Ed. 1.2 (2003-11) Class A Ed. 1.2 (2001-04) Level II			
	d Suscepti	bilty	IEC 61000-4-3	Ed. 3.0 (2006-02) Level III			
Electrical Fast Transients		nsients	IEC 61000-4-4	Ed. 2.0 (2004-07) Level IV			
Surges		IEC 61000-4-5	Ed. 2.0 (2005-11) Level IV				
Conducted Susceptibility		IEC 61000-4-6	Ed. 2.2 (2006-05) Level III Ed. 2.0 (2004-03) All 7 Leve	ale			
Voltage Dips & Interruptions (AC) Conducted Emission		IEC 61000-4-11 CISPR 14-1	Ed. 2.0 (2004-03) All 7 Leve Ed. 5.0 (2005-11) Class A	-15			
Radiated Emission		CISPR 14-1	Ed. 5.0 (2005-11) Class A Ed. 5.0 (2005-11) Class A				
	nmental						
Cold He			IEC 60068-2-1	Ed. 6.0 (2007-03)			
Dry Hea			IEC 60068-2-2	Ed. 5.0 (2007-07)			
Vibration			IEC 60068-2-6	Ed. 7.0 (2007-12) 5g			
Domatic	IVE SHOCK	1	IEC 60068-2-27 IEC 60068-2-27	Ed. 4.0 (2008-02) 40g, 6ms Ed. 4.0 (2008-02) 30g, 15ms			
Repetiti Non-Re	petitive Sh	lock					

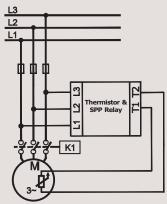
ML64BS	230 VAC, PTC Thermistor & Single Phasing Preventer, 1 NO + 1 NO
ML67BS	230 VAC, PTC Thermistor & Single Phasing Preventer, 1 NO + 1 NC
MLD4BS	400 VAC, PTC Thermistor & Single Phasing Preventer, 1 NO + 1 NO
MLD7BS	400 VAC, PTC Thermistor & Single Phasing Preventer, 1 NO + 1 NC

MOUNTING DIMENSION (mm)

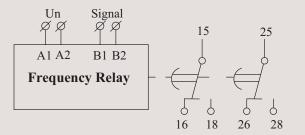


FREQUENCY MONITORING SERIES PD 225 PTC THERMISTOR & SINGLE PHASING PREVENTER SERIES PD 225

CONNECTION DIAGRAM



PTC THERMISTOR & SINGLE PHASING PREVENTER SERIES PD 225

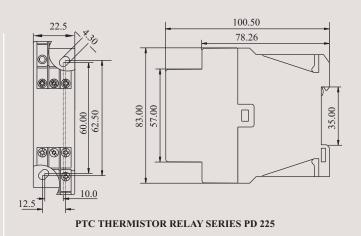


FREQUENCY MONITORING SERIES PD 225

TERMINAL TORQUE & CAPACITY



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



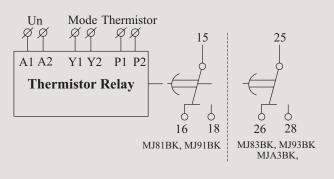
CONTACT ARRANGEMENT :

For 1 NO + 1 NO PRODUCT: ML64BS, MLD4BS

18 ▲(73) 15 SP/RP → 28 +t°

For 1 NO + 1 NC PRODUCT: ML67BS, MLD7BS





Ø 3.5 mm	Torque - 0.54 N.m (5 Lb.in) Terminal screw - M2.6
	Solid Wire - 1 X 0.23.3 mm ²
AWG	1 X 24 to 12

PTC THERMISTOR & PHASE SEQUENCE RELAY

PTC Thermistor Relay Series PD 225

- 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
- Wide Auxiliary Supply Voltage: 24 VAC/DC, 110 240 VAC & 220 415 VAC
- LED Indications for Healthy, Unhealthy, Sensor Open/Short conditions
- 1 C/O & 2 C/O Configuration
- Reset Options: Auto, Manual and Remote



Cat. No.		MJ81BK	<u> </u>	MJ93BK	MJA3BK			
Paramete	ers							
Supply Voltage (中)		110 - 240 VA	С	220 - 440 VAC	24 VAC/DC			
Supply Variation			-20% to $+10%$ (of $=$)				
Frequency			50/60 Hz					
	onsumption (N	/lax.)	3 VA			2 VA		
Trip Level			$3.6 \text{ k}\Omega, (\pm 5\%)$					
Trip	Reset Level		$1.6 \text{ k}\Omega, (\pm 5\%)$					
Settings -	Sensor Short		$<20\Omega, (\pm 4\Omega)$					
	Hysterisis		$20\Omega, (\pm 4\Omega)$					
	Sensor Open			$> 10 \text{ k}\Omega, (\pm 5\%)$				
	$\operatorname{Res}(\Omega)$ of S	ensor Chain	$< 1.5 \text{ k}\Omega$					
Reset Mo			Auto, Manual, Remote					
Repeat Ac	•		1%					
Time	ON Delay		500 ms					
Delay	OFF Delay		100 ms					
	Reset Time		150 ms					
	Relay Output		1 C/O		2 C/O	2 C/O		
Output	Contact Ratin	C	6A (Resistive) @ 250	VAC / 28 VI	DC			
	Electrical Lif		$1 \ge 10^5$					
	Mechanical I		3 x 10 ⁶					
Utilization	n Category	AC - 15	• • • •		ted Current (Ie): 3.0/1.5 A			
		DC - 13			Rated Current (Ie): 2.0/0.22/0.1 A			
LED	Green Ll		Continuous ON \rightarrow H		Flashing \rightarrow Sensor Open			
Indication	Red LED		Continuous $ON \rightarrow Relay ON$ Flashing \rightarrow Sensor Short					
.	All LED		Power Supply Fail					
	g Temperature emperature	;	- 15° C to +60° C - 25° C to +80° C					
Humidity	(Non Conder	nsing)	95% (Rh)					
Enclosure	e		Flame Retardant UL94-V0					
Dimensio	on (W x H x D) (in mm)	22.5 X 83 X 100.5					
Weight (u	inpacked)		120 g					
Mounting	5		Base / DIN rail					
Certificat	ion			mpliant				
Degree of	f Protection		IP 20 for Terminals, I	P 40 for Encl	osure			
EMI / EMC Harmonic Current Emissions		ssions	IEC 61000-3-2 IEC 61000-4-2	Ed. 3.0	(2005-11) Class A (2001-04) Level II			
ESD Radiated Susceptibilty Electrical Fast Transients		IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5	Ed. 3.0 Ed. 2.0	(2006-02) Level III (2004-07) Level IV (2005-11) Level IV				
Surges Conducted Susceptibilty Voltage Dips & Interruptions (AC) Voltage Dips & Interruptions (DC)		IEC 61000-4-6 IEC 61000-4-11 IEC 61000-4-29	Ed. 2.2 Ed. 2.0	(2006-05) Level III (2004-03) All 7 Levels (2004-03) All 5 Levels				
Conducted Emission Radiated Emission		CISPR 14-1 CISPR 14-1	Ed. 5.0	(2005-11) Class B (2005-11) Class B				
Environmental				(2007.02)				
Cold Heat		IEC 60068-2-1 IEC 60068-2-2		(2007-03) (2007-07)				
Dry Heat Vibration		IEC 60068-2-2 IEC 60068-2-6		(2007-12) 5g				
Repetitive Shock Non-Repetitive Shock		IEC 60068-2-27 IEC 60068-2-27	Ed. 4.0	(2008-02) 40g, 6ms (2008-02) 30g, 15ms				
	RING INF	ORMATI						
Cat. No.			Description	Them	-1 1 C/O			
MJ81BK MJ91BK			110 - 240 VAC, PTC 220 - 440 VAC, PTC					
MJ91BK			220 - 440 VAC, FIC	Thermistor R	Ciay, 1 C/O			

Cat. No.	Description
MJ81BK	110 - 240 VAC, PTC Thermistor Relay, 1 C/O
MJ91BK	220 - 440 VAC, PTC Thermistor Relay, 1 C/O
MJ83BK	110 - 240 VAC, PTC Thermistor Relay, 2 C/O
MJ93BK	220 - 440 VAC, PTC Thermistor Relay, 2 C/O
MJA3BK	24 VAC/DC, PTC Thermistor Relay, 2 C/O

Equipment Room Temperature Control Relay

- Provides protection against variations of the ambient temperature (min/max) in equipment or lift rooms
- Suitable for use in Traction and Hydraulic Lift Types
- Supports an External sensor module
- LED Indication for Relay Trip & Power ON



Cat. No.	45A131 A	R	45A231AR	45D331AR		
Parameters						
Supply Voltage (中)			110 VAC	24 VDC		
Supply Variation	± 15%					
Frequency	47Hz - 63Hz			NA		
Power Consumption (Max.)	10 VA		5 VA	1.2 W		
Device Characteristics						
Accuracy	$\pm 1^{\circ}C$					
Output Control Mode	Relay ON/OFF					
Relay ON Delay	10 sec (Fixed), ± 1 sec	ec				
Relay OFF Delay	10 sec (Fixed), ± 1 sec	ec				
Hysteresis	1°C					
Trip Level						
High Trip Level	+ 40°C					
Low Trip Level	+ 5°C					
LED Indication	ON - Power ON con ON - Relay ON con					
LED indications for errors observe						
Error Condition	Red LED	Green LED				
Sensor Break / Sensor Open	Blink @500ms	OFF				
Model Selection	OFF	Blink @500	ms			
Flash Read Error	Blink @500ms Blink @500ms					
Contact Ratings	Terminal 15 – Pole,	Terminal 16 – N	NC, Terminal 18 – NO, 8 Amp at 250V	/AC,		
Max Power Output Rating of Relay	1Amp at 30VDC 3 KV Isolation between coil and contact 1840 VA for AC / 30W for DC approx					
Operating Temperature Storage Temperature	- 15° C to +60° C - 20° C to +70° C					
Humidity (Non Condensing)	95% (Rh)					
Enclosure	· · /	94-V0				
Dimension (W x H x D) (in mm)	Flame Retardant UL94-V0 22.5 X 75 X 100.5					
Weight (unpacked)	100 g					
Mounting	Base / DIN rail					
Certification						
Degree of Protection	IP 20 for Terminals,	IP 40 for Enclo	sure			
EMI / EMC Harmonic Current Emissions ESD Radiated Susceptibility Electrical Fast Transients Surge Conducted Susceptibility Voltage Dips & Interruptions (AC) Conducted Emission Radiated Emission	IEC 61000-3-2 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-11 CISPR 14-1 CISPR 14-1	IEC 61000-4-2 Ed. 1.2 (2001-04) Level II IEC 61000-4-3 Ed. 3.0 (2006-02) Level III IEC 61000-4-4 Ed. 2.0 (2004-07) Level IV IEC 61000-4-5 Ed. 2.0 (2005-11) Level IV for AC Model IEC 61000-4-6 Ed. 2.2 (2006-05) Level III IEC 61000-4-11 Ed. 2.0 (2004-03) CISPR 14-1 Ed. 5.0 (2005-11) Class B				
Environmental Cold Heat Dry Heat Vibration Repetitive Shock Non-Repetitive Shock	IEC 60068-2-1 IEC 60068-2-2 IEC 60068-2-6 IEC 60068-2-27 IEC 60068-2-27	Ed. 5.0 (Ed. 7.0 (Ed. 4.0 (2007-03) 2007-07) 2007-12) 5g 2008-02) 40g, 6ms 2008-02) 30g, 15ms			

ORDERING INFORMATION

Cat. No.Description45A131AR5°C to 40°C (Traction lift type), 230V AC, 1NO, External NTC two wire sensor. Base/DIN45A231AR5°C to 40°C (Traction lift type), 110V AC, 1NO, External NTC two wire sensor. Base/DIN45D331AR5°C to 40°C (Traction Lift Type), 24V DC, 1NO, External NTC two wire sensor. Base/DIN45A131BR15°C to 35°C (Hydraulic Lift Type), 230V AC, 1NO, External NTC two wire sensor. Base/DIN45A231BR15°C to 35°C (Hydraulic Lift Type), 110V AC, 1NO, External NTC two wire sensor. Base/DIN45D331BR15°C to 35°C (Hydraulic Lift Type), 24V DC, 1NO, External NTC two wire sensor. Base/DIN

Equipment Room Temperature Control Relay

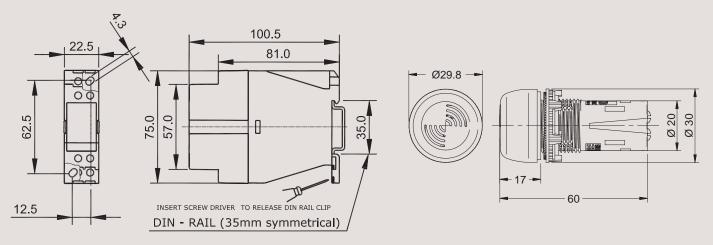


TRACTION LIFT : +5°C to +40°C Temperature HYDRAULIC LIFT : +15°C to +35°C +40°C/+35°C +39°C/+34°C Hysteresis +6°C/+16°C +5°C/+15°C Aux. Supply Т Т Т Т Т Т **Relay Contact** 15-18 T = RELAY ON/OFF Delay = 10 sec

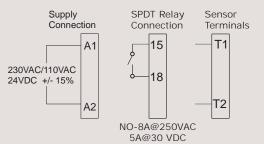
Tripped	18	Normal	18
or U(n)=0	1		7
	15		15

MOUNTING DIMENSIONS (mm)

FUNCTION DIAGRAM



CONNECTION DIAGRAM



TERMINAL TORQUE & CAPACITY

For 8 and 12 terminal 225

Ø3.54.0mm	0.6 Nm(7 lb.in)	
	1 x 14mm ²	solid wire/single wire ferrule
	2 x 0.5 2.5 mm ²	insulated twin type ferrule
AWG	1 x 17 to 11	