

50 Amp Power PCB Relay

PTRE



1.5 Watt coil with braided copper wire

FEATURES

- Popular Power PCB Relay Footprint - T90
- 50 Amp 240 VAC Resistive UL Rating
- 2 HP 250 VAC Rating
- UL Class F Insulation Standard
- Meets UL 508 and UL 873 Spacing with Pin 6 Omitted⁽¹⁾
- RoHS Compliant

FACTORY RATINGS

Load Type	Voltage	1 Form A (SPST-NO)	1 Form B (SPST-NC)	1 Form C (SPDT)	
				NO	NC
Lamp 3,000 Cycles	240 VAC	TV-5	—	TV-5	—
Electric Ballast 6,000 Cycles	280 VAC	5 A	—	5 A	—
Motor Load 3,000 Cycles	250 VAC	2 HP	1.5 HP	2 HP	1.5 HP

cULus E93379 at 40°C 1.5 Watt Version Only⁽³⁾

Load Type	Cycles	Voltage	1 Form C	
			NO	NC
Resistive	10,000 @ 40°C ⁽²⁾	240 VAC/30 VDC	50 A	35 A
	50,000 @ 40°C	240 VAC/30 VDC	40 A	30 A
	250,000 @ 70°C	277 VAC	13 A	—
	50,000 @ 40°C	125 VAC	1 HP	1/4 HP

(1) With Pin 6 Omitted (-1) Meets UL 508 and UL 873 Spacing - 3.18 mm through Air,
6.36 mm Over Surface

(1)With Pin 6 Meets UL508

(2) TUV Pending

CHARACTERISTICS

Operate Time	15 ms Max.
Release Time	10 ms Max
Insulation Resistance	1,000 MΩ min, at 500 VDC
Dielectric Strength	50 Hz 2,500 V 1 Min Between Coil and Contacts
	4,000 V without Pin 6
	50 Hz 1,500 V 1 min. Between Contacts
Shock Resistance	200 m/s ² , 11 ms
Vibration Resistance	10 - 55 Hz Double Amplitude

CHARACTERISTICS Continued

Terminal Strength	10N
Power Consumption	1.5 W, 2.25 W
Solderability	260°C for 5 seconds
Operating Temperature Range	-45°C to 105°C
Relative Humidity	85% (at 40°C)
Weight	27 g
Material Compliant To	EU RoHS V2, EU REACH V3

ORDERING INFORMATION

Example:	PTRE	-1C	-12	S	T	-1	-X
Model:	PTRE						
Contact Form:	1A, 1C						
Coil Voltage:	5, 6, 9, 12, 15, 24, 48, 110						
Configuration:	S: Sealed						
Contact Material:	T: AgSnO ₂ In ₂ O ₃ (AgSnO ₂)						
Spacing:	Nil: UL508; 1: UL 508 and UL 873 (Pin #6 Omitted)						
RoHS Compliant:	-X						

Box Quantity: 600; Inner Box 300

COIL DATA

Coil Voltage		Resistance (Ohms $\pm 10\%$)	Must Operate Voltage Max (VDC)	Must Release Voltage Min. (VDC)	Coil Power (W)
Rated	Max				
5	6.5	16.7	3.75	0.5	1.5
6	7.8	24.0	4.5	0.6	
9	11.7	54.0	6.75	0.9	
12	15.6	96.0	9.0	1.2	
15	19.5	150	10.25	1.5	
18	23.4	216	13.5	1.8	
24	31.2	384	18.0	2.4	
48	62.4	1,536	36.0	4.8	
110	143	8,067	82.5	11.0	

NOTES:

The use of any coil voltage less than the rated voltage will compromise the operation of the relays.

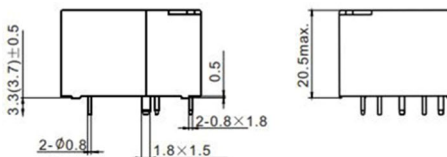
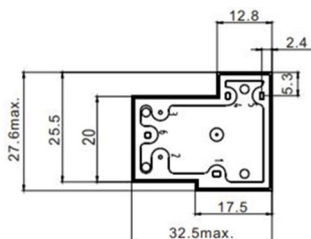
Must Operate Voltage and Must Release Voltages are for test purposes only and are not to be used as design criteria.

CONTACT DATA

Material		AgSnO ₂ In ₂ O ₃ (AgSnO ₂)
Initial Contact Resistance		$\leq 30 \text{ m}\Omega$
Maximum Switching Voltage		110 VDC, 300 VAC
Maximum Switching Current		50 A
Maximum Switching Power		700 W, 12,000 VA
Service Life	Mechanical	1 X 10 ⁶ Operations
	Electrical	1 X 10 ⁴ Operations (50A/240VAC 40°C)
		1 X 10 ⁵ Operations (50A/240VAC 105°C)

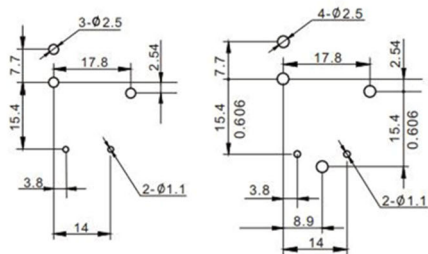
DIMENSIONS (mm)

Knock off nib on top corner for ventilation after soldering and water wash.

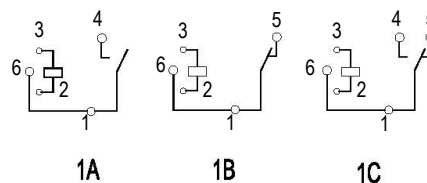


Pin 1 is 1.5 x 1.8 mm

Pin 4 is 0.8 x 1.8 mm

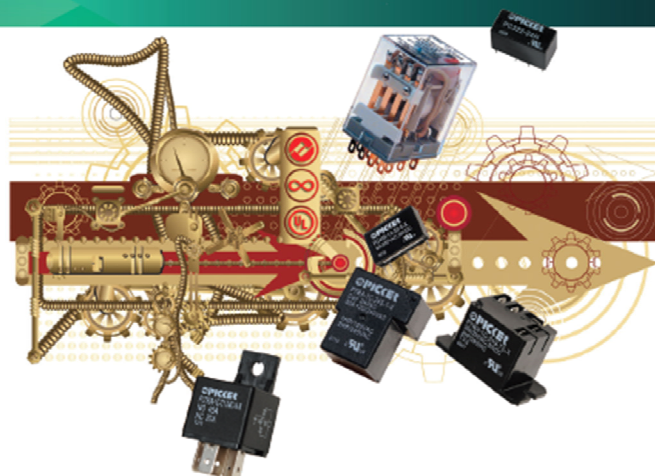


Wiring Diagrams





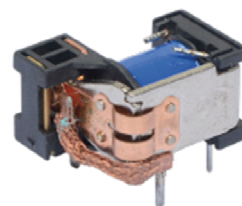
T90 Style Relays



50 Amp

PTRE 50/35 Amp 1,500 W, 12,000 VA

- Larger Contacts than PTRD
- *Braided Copper Wire Added to Dissipate Heat from Contacts to the Coil Frame and PCB Pins*
- 50 Amp 240 VAC 10,000 Cycle UL Resistive Rating
- Class F Material -40° to 125° C Standard



45 Amp

New

PTRV 45 Amp 277 VAC 12,500 VA

- >1.8 mm Contact Gap
- 2.25 Watt Coil for Vibration Tolerance
- Class F Material -40° to 85° C Standard
- Designed for PV Inverter & Motor Control Applications



40 Amp

PTRD 40/30 Amp 1,200 W, 10,000 VA **PTRA AC Coil Options from 12 to 277 VAC**

- Larger Contacts than PTRH
- 40 Amp 240 VAC UL Resistive Rating
- 25 Amp 277 VAC 100K Cycles UL Resistive Rating
- Class F Material -40° to 125° C Standard



30 Amp

PTRH 30/20 Amp 900 W, 7,500 VA

- 30 Amp 277 VAC UL General Purpose Rating
- 30 Amp 250 VAC 100K Cycle UL Resistive Rating
- Class B -40° to 100° C Standard, Optional Class F

Packaging Options (i.e. PTRH-T)



Dust Cover or Sealed
with Scratch off Nib



-T (T2 & T3) with PC
Pins and Contact QC



-T (T4 & T5) w/QC Tabs
& Mounting Ears



-OT (OT2 & OT3) with PC
Pins and Contact QC



-OT (OT4 & OT5) w/QC
Tabs & Mounting Ears

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