



# T92 series

## Two-Pole, 30 Amp PC Board or Panel Mount Relay

File E22575 (type 2,3,4,5)  
File LR15734 (type 1,2,3,4)

Users should thoroughly review the technical data before selecting a product part number. It is recommended that user also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

### Features

- 30A DPST-NO and DPDT switching capabilities.
- Designed to control compressor loads to 3.5 tons, 25.3 FLA, 110 LRA.
- Extended life – >300,000 operations at 30A, 240VAC (DC coil).  
>100,000 operations at 30A, 240VAC (AC coil).
- Meets requirements of UL873 and UL508 spacings.  
– .315" (8mm) through air, .375" (9.5mm) over surface.
- Meets requirements of VDE 8mm spacing, 4kV dielectric coil-to-contacts.
- Meets requirements of UL Class F construction.
- UL approved for 600VAC switching (1.5HP).
- Conforms to VDE 0435, 0631, and 0700.
- New screw terminal version.

### Contact Ratings @ 25°C with relay properly vented. Remove tape over vent hole after soldering and cleaning.

**Arrangements:** 2 Form A (DPST-NO) and 2 Form C (DPDT).

**Materials:** Silver cadmium oxide.

#### Max. Load Rating:

##### Normally Open Contacts:

- 30A @ 120/277VAC, resistive;
- 10A @ 600VAC, resistive;
- 1 HP @ 120VAC, 3 HP @ 240VAC; 1.5 HP @ 480VAC, 1.5 HP @ 600VAC
- 110 LRA, 25.3 FLA, @ 240VAC with DC coil<sup>(1)</sup>;
- 60 LRA, 14 FLA @ 240VAC with AC coil;
- 3A @ 240VAC pilot duty;
- 20A @ 28VDC;
- TV10 @ 120VAC.

**VDE Rating (Flange Mount):** 25A @ 400VAC, 100K Ops. (30K Ops. for Form C Models).

**VDE Rating (PC Mount):** 30A @ 400VAC, 100K Ops. (30K Ops. for Form C Models).

##### Normally Closed Contacts:

- 3A @ 28VDC or 277VAC, 2A @ 480VAC, 1A @ 600VAC.

**VDE Rating (Flange or PC Mount):** 3A @ 400VAC, 30K Ops.

#### Min. Load Rating:

**Normally Open Contacts:** 500mA @ 12VAC/VDC.

**Normally Closed Contacts:** 100mA @ 6VAC/VDC.

**Expected Mechanical Life:** 5 million operations.

**Expected Electrical Life:** 100,000 operations at rated load.

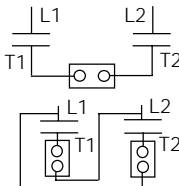
#### ARI 780-86 Endurance Test (section 6.6):

HVAC Definite Purpose Contactor Standard

##### Normally Open Contacts

- Single Phase/Two Pole (Both poles together switching a single load)
- 110 LRA, 25.3 FLA, 200K operations (DC Coil).

- Single Phase Per Pole (Single load per pole)
- 110 LRA, 18 FLA, 200K operations (DC Coil).
- 60 LRA, 14 FLA, 200K operations (AC Coil).



**Notes:** Vent hole tape must be removed to achieve all listed ratings. Consult factory regarding ratings for screw terminal versions.

### Initial Dielectric Strength

**Between Contacts and Coil:** 4,000V rms, 50/60 Hz.

**Between Open Contacts:** 1,500V rms, 50/60 Hz.

**Between Poles:** 2,000V rms, 50/60 Hz.

### Initial Insulation Resistance

**Between Mutually Insulated Elements:** 10<sup>9</sup> ohms, min. @ 500VDC.

### Coil Data

**Voltage:** 12 through 110VDC and 12 through 277VAC.

**Resistance:** See Coil Data table.

**Nom. Power:** AC Coil: 4.0VA; DC Coil: 1.7W.

**Coil Temp. Rise:** 35°C/W.

**Max. Coil Temp.:** 155°C.

**Duty Cycle:** Continuous.

Dimensions are shown for reference purposes only.

Dimensions are in inches over (millimeters) unless otherwise specified.

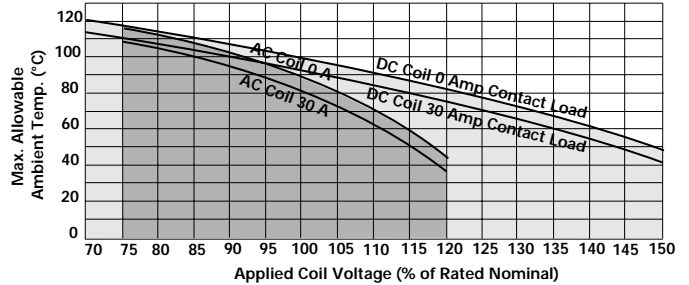
Specifications and availability subject to change.

www.tycoelectronics.com  
Technical support:  
Refer to inside back cover.

### Coil Data (@ 25°C Coil Temperature)

DC Coils (1.7W)					
Nom. Voltage (VDC)	DC Resist. ±10% (Ohms)	Nom. Voltage (VDC)	DC Resist. ±10% (Ohms)		
12	86	48	1,390		
24	350	110	7,255		
AC Coils (4.0VA)					
Nom. Voltage (VAC)	Freq.	DC Resist. ±10% (Ohms)	Nom. Voltage (VAC)	Freq.	DC Resist. ±10% (Ohms)
12	60	9.1	110/120	50/60	950
24	60	36.6	220/240	50/60	3800
			250/277	50/60	5485

### Ambient Temperature vs. Coil Voltage



### Assumptions:

1. Thermal resistance = 35°C per Watt (DC only).
2. Still air.
3. Nominal coil resistance.
4. Max. mean coil temperature = 155°C (change of resistance method).
5. Coil temperature rise due to load = 6.3°C @ 30 amps.
6. Curves are based on 1.7W at 25°C (DC only).

### Operate Data

**Must Operate Voltage:** AC Coil: 80% of nominal voltage or less.

DC Coil: 75% of nominal voltage or less.

**Must Release Voltage:** 10% of nominal voltage or more.

**Initial Operate Time<sup>(2)</sup>:** 15 ms typical, (25 ms max. w/bounce).

**Initial Release Time<sup>(2)</sup>:** 10 ms typical, (25 ms max. w/bounce).

**Max Operating Frequency:** 14 operations per minute.

### Environmental Data

**Temperature Range:** Storage: -55°C to +155°C.

Operating: AC Coil: -40°C to +65°C.

DC Coil: -40°C to +85°C.

**Vibration:** 0.065" (1.65mm) double amplitude for 10-55 Hz., functional.

**Shock, Operational:** 10g for 11 ms, 1/2 sine wave pulse with no contact opening > 100µs.

**Shock, Mechanical:** 100g for 11 ms, 1/2 sine wave pulse.

**Flammability:** UL 94V-0.

### Mechanical Data

**Termination:** Printed circuit terminals; .250" (6.35mm) quick connects for coil and contacts; .187" (4.75mm) quick connects for coil and .250" (6.35mm) quick connects for contacts; or M4 screws with captive pressure plates for coil and contacts.

**Enclosure:** Unsealed, plastic dust cover or immersion cleanable, tape sealed plastic cover.

**Weight:** 3 oz. (86g) approximately.

### Conditions

All parametric, environmental and life tests are performed according to EIA Standard RS-407-A at standard test conditions (25°C ambient, 20-50% RH, 29.5 ± 1" Hg.) unless otherwise noted.

### Notes

(1) FLA, LRA ratings are compatible with 3.5 ton compressor applications.

(2) Nominal voltage, no coil suppression, excluding bounce.

**Ordering Information**

<b>Typical Part Number</b> ▶	<b>T92</b>	<b>S</b>	<b>11</b>	<b>D</b>	<b>2</b>	<b>2</b>	<b>-24</b>															
<p><b>1. Basic Series:</b> T92 = Printed circuit board / panel mount power relay.</p> <p><b>2. Enclosure:</b> P = Plastic dust cover (unsealed).      S = Immersion cleanable, tape sealed plastic case (code 1). Top sealed, not immersion cleanable, not tape sealed on bottom (codes 2, 3 &amp; 4).</p> <p><b>3. Contact Arrangement:</b> 7 = 2 form A (DPST-NO).      11 = 2 form C (DPDT).</p> <p><b>4. Coil Input:</b> A = AC voltage, 60 Hz. or 50/60 Hz. (See Coil Data Table)      D = DC voltage.</p> <p><b>5. Mounting &amp; Termination:</b> 1 = Printed circuit board mount; printed circuit board terminals. 2 = Panel mount via flanged cover; .250" (6.35mm) x .032" (.81mm) quick connect terminals. 3 = Panel mount via flanged cover; .187" (4.75mm) x .032" (.81mm) quick connect terminals for coil and .250" (6.35mm) for contacts. 4 = Panel mount via flanged cover; .187" (4.75mm) x .020" (.51mm) quick connect terminals for coil and .250" (6.35mm) for contacts. 5 = Panel mount via flanged cover, M4 screw terminals w/ captive pressure plates. Requires Enclosure P and Contact Arrangement 7. ‡</p> <p><b>6. Contact Material:</b> 2 = Silver cadmium oxide.</p> <p><b>7. Coil Voltage: (See Coil Data Table)</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>(DC)</td> <td>12 = 12VDC</td> <td>24 = 24VDC</td> <td>48 = 48VDC</td> <td>110 = 110VDC</td> </tr> <tr> <td>(60Hz.)</td> <td>12 = 12VAC</td> <td>24 = 24VAC</td> <td></td> <td></td> </tr> <tr> <td>(50/60Hz.)</td> <td>110 = 100/110VAC</td> <td>120 = 110/120VAC</td> <td>240 = 220/240VAC</td> <td>277 = 250/277VAC</td> </tr> </table>								(DC)	12 = 12VDC	24 = 24VDC	48 = 48VDC	110 = 110VDC	(60Hz.)	12 = 12VAC	24 = 24VAC			(50/60Hz.)	110 = 100/110VAC	120 = 110/120VAC	240 = 220/240VAC	277 = 250/277VAC
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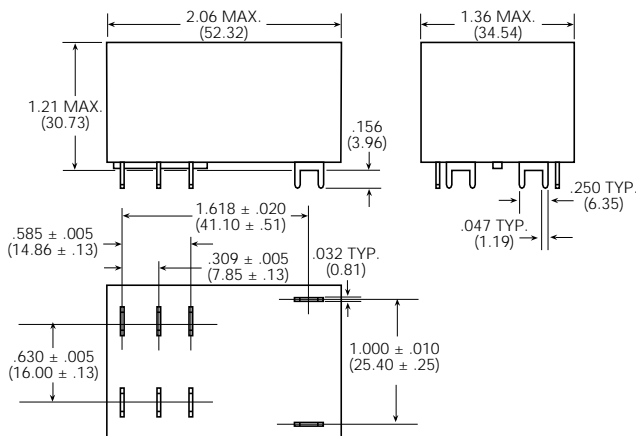
‡ New option. Consult factory for availability.

**Stock Items – We recommend that our authorized distributors stock the following items for immediate delivery.**

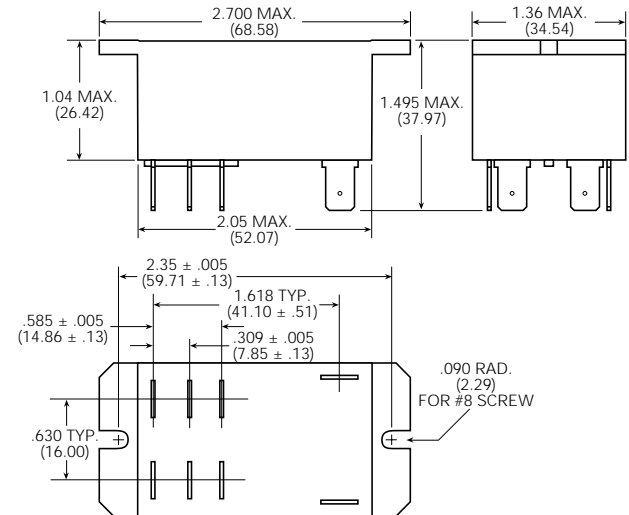
T92P7A22-24	T92P7A22-240	T92P7D12-24	T92P7D22-24	T92P11A22-120	T92P11D22-12	T92S7D12-12	T92S11D22-12
T92P7A22-120	T92P7D12-12	T92P7D22-12	T92P11A22-24	T92P11A22-240	T92P11D22-24	T92S7D12-24	T92S11D22-24

**Outline Dimensions**

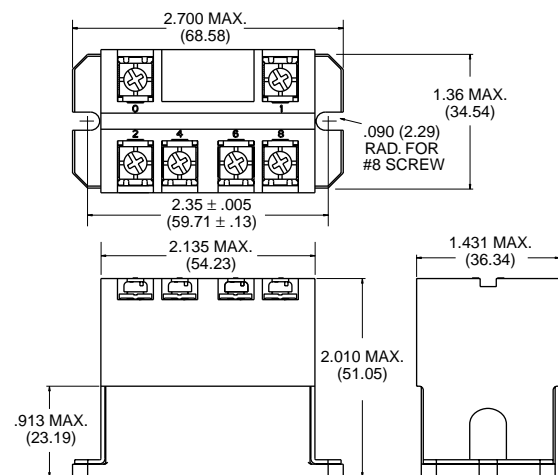
**Mounting & Termination Type 1**



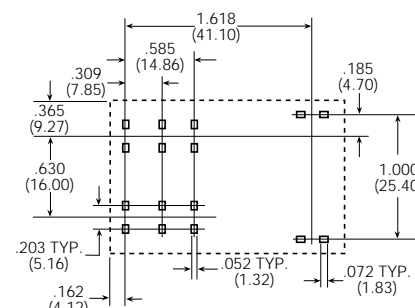
**Mounting & Termination Types 2, 3 & 4**



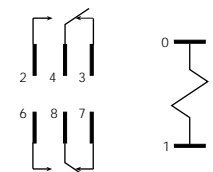
**Mounting & Termination Type 5**



**Suggested PC Board Layout (Bottom View)**



**Wiring Diagram**



Only necessary terminals are present on single throw models.

**Note:** An alternate PC board layout utilizes .076 ± .003 (1.93 ± .076) diameter holes on the same center-to-center spacing shown above. Use of the rectangular holes is recommended for improved solderability.