



# T92 series

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

File E22575 (type 2,3,4,5)  
File LR15734 File No. 5386 (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.

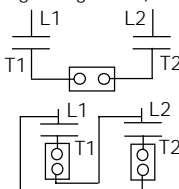
#### ARI 780-86 Endurance Test (section 6.6):

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.

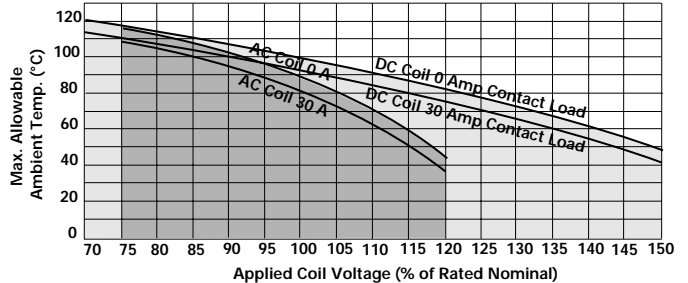
**Max. Coil Temp.:** 155°C.

**Duty Cycle:** Continuous.

### 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

Typical Part Number ▶

T92 S 11 D 2 2 -24

1. Basic Series:

T92 = Printed circuit board / panel mount power relay.

2. Enclosure:

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 & 4).

3. Contact Arrangement:

7 = 2 form A (DPST-NO). 11 = 2 form C (DPDT).

4. Coil Input:

A = AC voltage, 60 Hz. or 50/60 Hz. (See Coil Data Table) D = DC voltage.

5. Mounting & Termination:

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. ‡

6. Contact Material:

2 = Silver cadmium oxide.

7. Coil Voltage: (See Coil Data 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

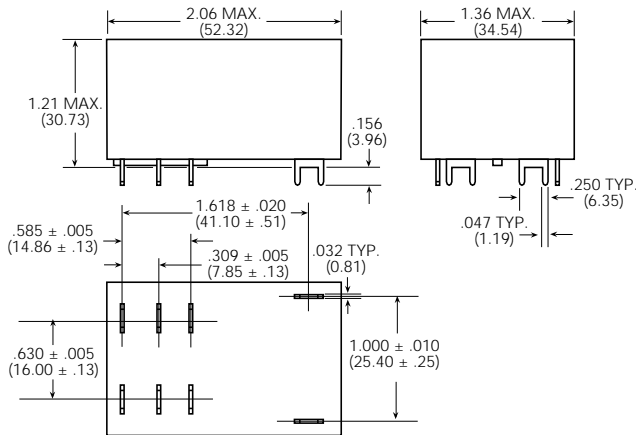
‡ New option. Consult factory for availability.

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

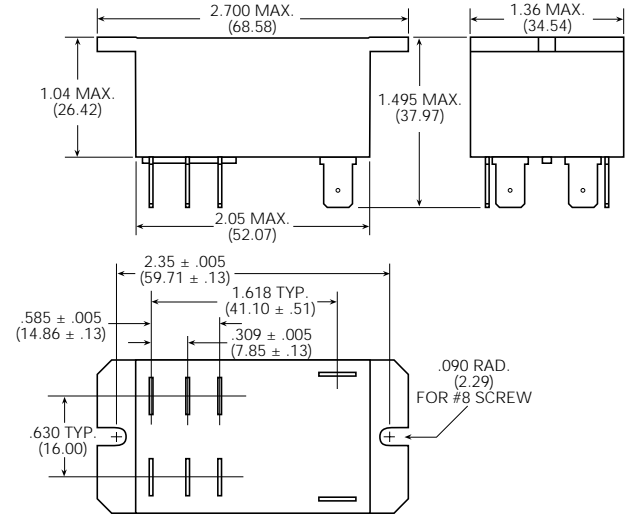
T92P7A22-24 T92P7A22-240 T92P7D12-24 T92P7D22-24 T92P11A22-120 T92P11D22-12 T92S7D12-12 T92S11D22-12  
T92P7A22-120 T92P7D12-12 T92P7D22-12 T92P11A22-24 T92P11A22-240 T92P11D22-24 T92S7D12-24 T92S11D22-24

Outline Dimensions

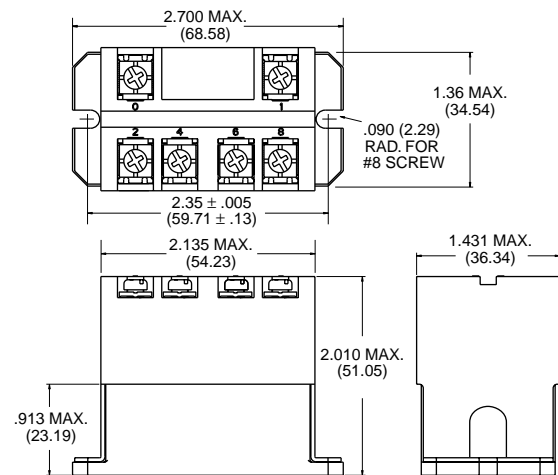
Mounting & Termination Type 1



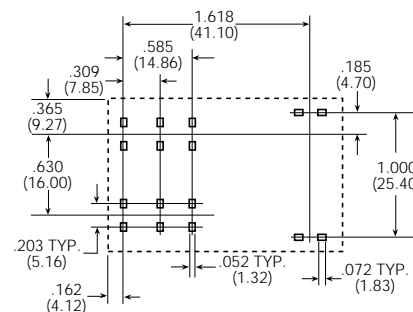
Mounting & Termination Types 2, 3 & 4



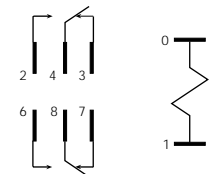
Mounting & Termination Type 5



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.