

RoHS
Ready

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 and silver tin indium oxide.

Max. Load Rating, Silver Cadmium Oxide Contacts:

Normally Open Contacts:

- 40A @ 277VAC, resistive; 6K Ops. (Flange Mount);
- 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⁽¹⁾;
- 60 LRA, 14 FLA @ 240VAC with AC coil;
- 3A @ 240VAC pilot duty;
- 20A @ 28VDC;
- TV10 @ 120VAC.

VDE Rating (Flange Mount): 20A @ 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.

Max. Load Rating, Silver Tin Indium Oxide Contacts

Normally Open Contacts Only:

- 30A @ 120/277VAC, resistive; 200K Ops., DC Coil; 100K Ops, AC Coil
- 20A @ 480VAC, resistive;
- 1.5 HP @ 120VAC, 2 poles making/breaking (see Fig. 1)
- 3 HP @ 240VAC, 3 phase, DC coil only;
- 3 HP @ 480VAC, 3 phase, DC coil only;
- 2 HP @ 600VAC, 3 phase, DC coil only.

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, except as specifically noted otherwise.

**T92 series
Two-Pole, 30 Amp
PC Board or Panel Mount Relay**

File E22575

File LR15734

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

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.

Contact Ratings (continued)

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)

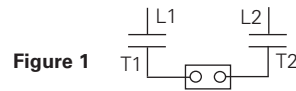


Figure 1

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

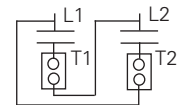


Figure 2

Notes: Vent hole tape must be removed to achieve all listed ratings.

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: 10⁹ 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.

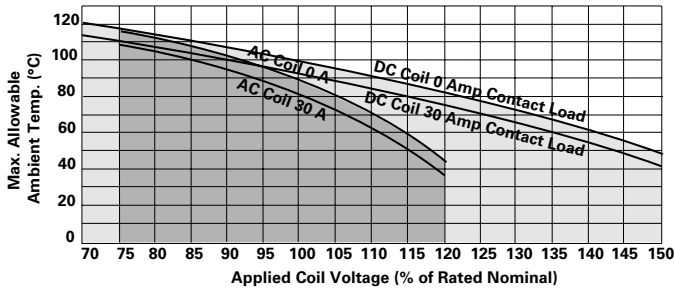
Coil Data (@ 25°C Coil Temperature)

| 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 | 200/208 | 50/60 | 2,841 |
| | | | 220/240 | 50/60 | 3,800 |
| | | | 250/277 | 50/60 | 5,485 |

Notes

- (1) FLA, LRA ratings are compatible with 3.5 ton compressor applications.
- (2) Nominal voltage, no coil suppression, excluding bounce.

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⁽²⁾:** 15 ms typical, (25 ms max. w/bounce).
- Initial Release Time⁽²⁾:** 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: Silver cadmium oxide contacts: -40°C to +85°C.
Silver tin indium oxide contacts: -40°C to +70°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.

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:** Dust protected plastic case or wash-tight, tape sealed, (washable) plastic case.
- 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 = Dust protected plastic case. S = Wash-tight, tape sealed, plastic case (Mounting & Termination Type 1). Top sealed, not wash-tight, not tape sealed on bottom (Mounting & Termination Types 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. 4 = Silver tin indium 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 | 208 = 200/208VAC | 240 = 220/240VAC | 277 = 250/277VAC | | | |

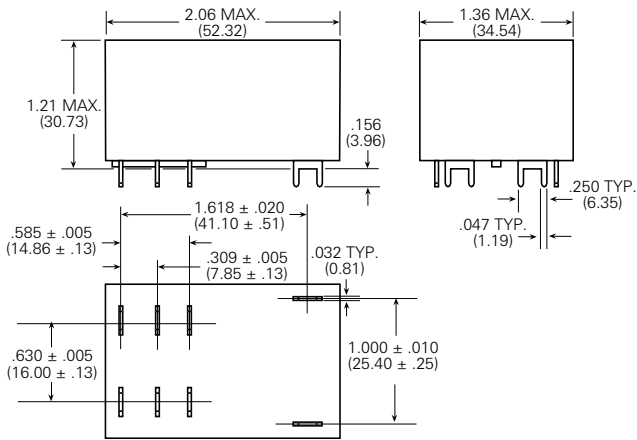
NOTE: All part numbers are RoHS compliant.

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

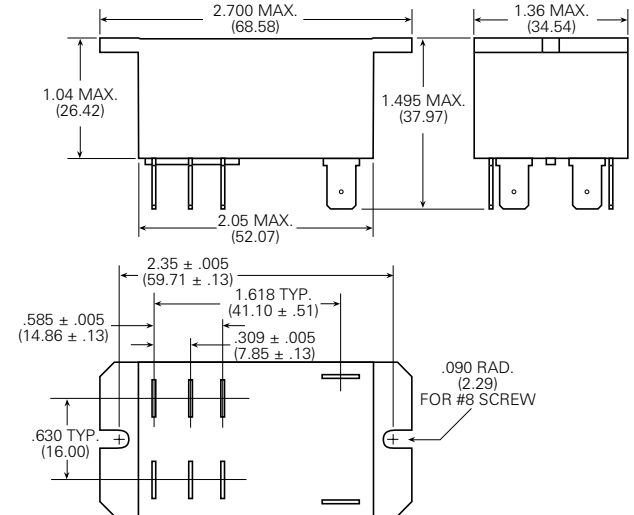
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|--------------|--------------|-------------|--------------|---------------|--------------|-------------|--------------|
| T92P7A22-24 | T92P7A22-240 | T92P7D12-24 | T92P7D22-24 | T92P11A22-120 | T92P11D22-12 | T92S7D12-12 | T92S11D22-12 |
| T92P7A22-120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

Outline Dimensions

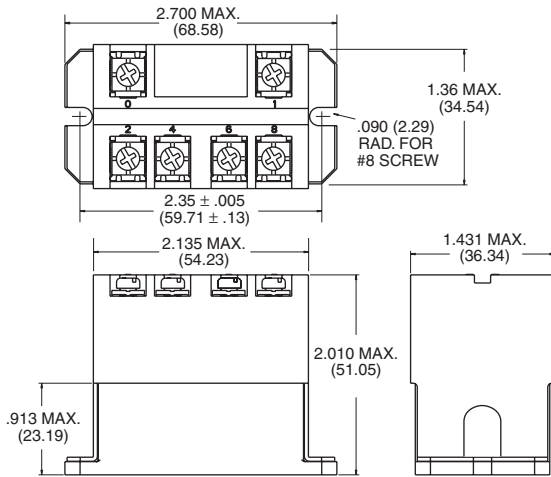
Mounting & Termination Type 1



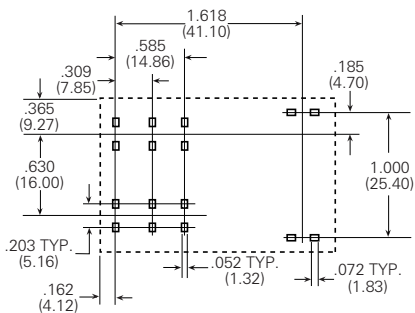
Mounting & Termination Types 2, 3 & 4



Mounting & Termination Type 5

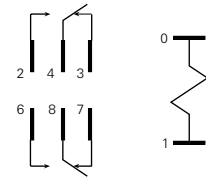


Suggested PC Board Layout (Bottom View)



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.

Wiring Diagram



Only necessary terminals are present on single throw models.