



**THIS DATA IS FOR REFERENCE PURPOSES ONLY**  
**This product's status is: PENDING OBSOLESCENCE.**  
**The 491 Series should not be designed into new applications.**

### Features

- Up to 20 amp switching in SPST-NO and 13.3 amp in SPDT arrangements.
- Washable, plastic sealed case available.
- Meets UL 873 and UL 508 spacing – 1/8" through air, 1/4" over surface.
- Load connections made via 1/4" Q. C. terminals.
- Choice of UL Class B or F insulation system.
- Well suited for various industrial, commercial and residential applications.

### Contact Ratings @ 23°C

**Arrangements:** 1 Form A (SPST-NO), 1 Form B (SPST-NC) and 1 Form C (SPDT).

**Material:** Silver-cadmium oxide.

**Mechanical Life:** 10 million operations, at 300 ops/minute.

**Electrical Life:** 100,000 operations at factory rated load, 6 ops/minute.

**Minimum Contact Load:** 1A @ 5VDC or 12VAC.

**Initial Contact Resistance:** 50 milliohms @ 100mA, 6VDC.

**Contact Ratings @ 23°C with relay properly vented. Remove tape from vent hole after soldering and cleaning.**

### Factory Contact Ratings

| Voltage | 1 Form A | 1 Form B | 1 Form C |      |
|---------|----------|----------|----------|------|
|         |          |          | (NO)     | (NC) |
| 240VAC  | 20A      | 10A      | 13.3A    | 6.7A |
| 28VDC   | 20A      | 6.7A     | 13.3A    | 6.7A |

### UL/CSA Contact Ratings

| Voltage | Load Type       | 1 Form A | 1 Form B | 1 Form C |        |
|---------|-----------------|----------|----------|----------|--------|
|         |                 |          |          | (NO)     | (NC)   |
| 240VAC  | General Purpose | 30A      | 15A      | 20A      | 10A    |
| 240VAC  | Resistive *     | 30A      | 15A      | 20A      | 10A    |
| 240VAC  | Motor           | 2 HP     | 1/2 HP   | 2 HP     | 1/2 HP |
| 120VAC  | Motor           | 1 HP     | 1/4 HP   | 1 HP     | 1/4 HP |
| 240VAC  | LRA/FLA **      | 80/30    | 30/10    | 50/20    | 20/7   |
| 120VAC  | LRA/FLA         | 98/22    | –        | –        | –      |
| 120VAC  | Tungsten *      | TV5      | TV3      | TV5      | TV3    |
| 277VAC  | Ballast         | 10A      | 3A       | 10A      | 3A     |
| 28VDC   | Resistive       | 20A      | 10A      | 20A      | 10A    |

### Initial Dielectric Strength

**Between Open Contacts:** 1,500V rms, 1 minute.

**Between Contacts and Coil:** 1,500V rms, 1 minute.

### Initial Insulation Resistance

**Between Mutually Insulated Elements:** 10<sup>9</sup> ohms, min., @ 500VDC, 23°C and 50% R.H.

### Coil Data @ 23°C

**Voltage:** 12 to 220VAC.

**Nominal Coil Power:** 2.0VA, (approx.).

**Maximum Coil Temperature<sup>(4)</sup>:** **Class B:** 130°C.

**Class F:** 155°C.

**Duty Cycle:** Continuous.

# 491 series

## AC Coil 20 Amp PC Board or Panel Mount Relay

File E38802

File LR75282

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.

### Coil Data

| Nominal Voltage | DC Resistance ± 10% (Ohms) | Must Operate Voltage (Max.) | Must Release Voltage (Min.) |
|-----------------|----------------------------|-----------------------------|-----------------------------|
| 12              | 26                         | 10.2                        | 1.8                         |
| 24              | 106                        | 20.4                        | 3.6                         |
| 110             | 2,750                      | 93.5                        | 16                          |
| 220             | 11,000                     | 187                         | 33                          |

### Operate Data @ 25°C

**Must Operate Voltage:** 85% of nominal voltage or less.

**Must Release Voltage:** 15% of nominal voltage or more.

**Operate Time (Including Bounce):** 20 ms, max.

**Release Time (Including Bounce):** 15 ms, max.

§ At or From Nominal Coil Voltage

### Environmental Data

**Storage Temperature Range:** -40°C to 130°C.

**Operating Temperature Range<sup>(1)</sup>:** -55°C to +85°C.

**Vibration, Operational:** 0.065" (1.5mm) max. excursions from 10-55 Hz.

**Shock, Operational:** 10g for 11 ms.

**Shock, Mechanical:** 100g.

### Mechanical Data

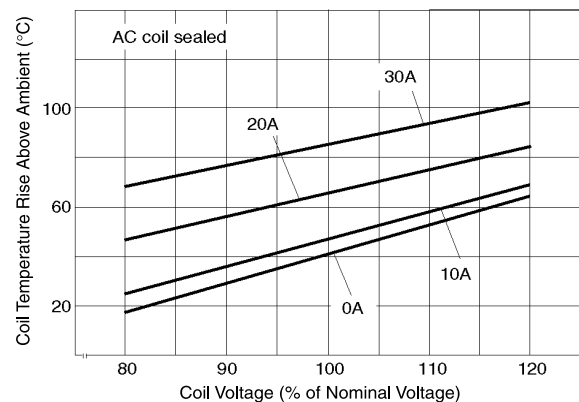
**Termination:** Printed circuit and quick connect terminals <sup>(4)</sup>.

**Enclosures (all have 94V-0 flammability rating):**

Open, unsealed dust cover or sealed case.

**Weight:** 1.2 oz. (33g) approx.

### Coil Temperature Rise



### Notes

- (1) Operating ambient temperature must consider must operate voltage change over temperature, contact temperature rise, coil temperature rise (if coil is not allowed to cool) and maximum coil temperature.
- (2) Sealed relay terminals should not be bent.
- (3) Remove tape after cleaning process for optimum life of sealed relays.
- (4) Class B coils are UL systems approved for maximum coil temperature of 130°C, by change of resistance method. Class F coils are UL systems approved for maximum coil temperature of 155°C, by change of resistance method.

**Ordering Information**

Typical Part Number ▶

**491 -1 1 G 2 00**

**1. Basic Series:**

491 = AC coil, printed circuit board/panel power relay.

**2. Enclosure & Terminals:**

1 = Dust Cover, PC terminal. 7 = Sealed Case, Panel Mount, .187 Coil Terminal.  
2 = Sealed Case, PC terminal. 8 = Open Unit  
6 = Sealed Case, Panel Mount, .110 Coil Terminal.

**3. Contact Arrangement:**

1 = 1 Form C (SPDT) 4 = 1 Form A (SPST-NO) 5 = 1 Form B (SPST-NC)

**4. Coil Input:**

P = 12VAC Q = 24VAC T = 120VAC U = 220VAC

**5. Contacts:**

2 = Silver-cadmium oxide

**6. Coil Insulation and Special Features:**

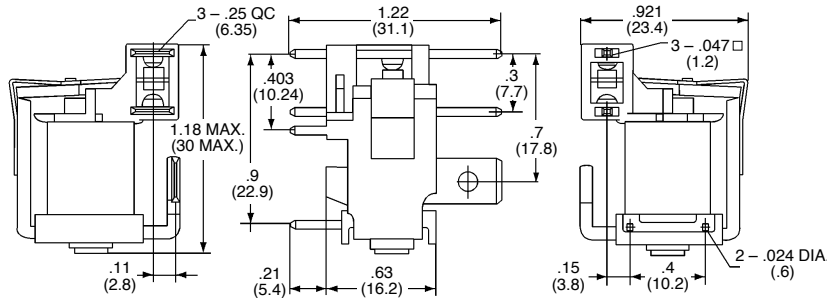
00 = Standard, UL Class B Coil Insulation System  
F0 = Special, UL Class F Coil Insulation System A1 - E9 = Special - Customer Specific Features

**Our authorized distributors are more likely to maintain the following items in stock for immediate delivery.**

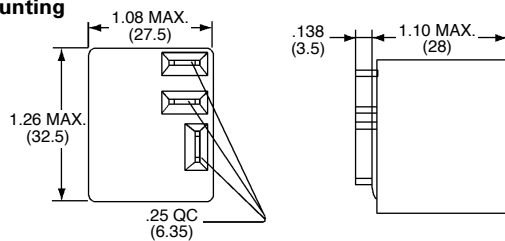
491-21T200 491-24T200 491-61T200 491-64T200  
491-21Q200 491-24Q200 491-61Q200 491-64Q200

**Outline Dimensions**

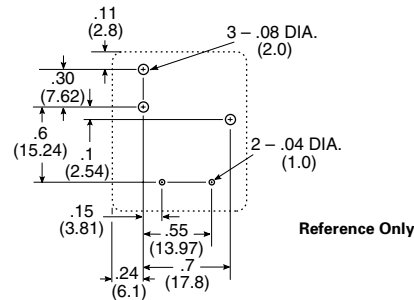
**Open Style**



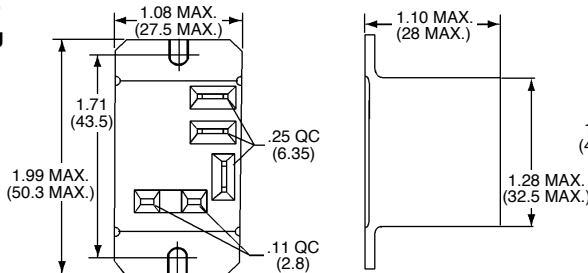
**Sealed Case for PC Board Mounting**



**PC Board Layout (Bottom View)**

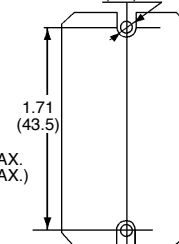


**Sealed Case for Panel Mounting**



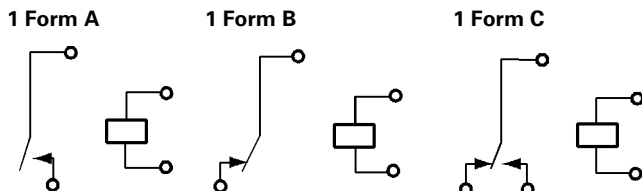
**Mounting Hole Pattern**

2 - 0.12 (3.2) DIA. or M3



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**Wiring Diagrams (Bottom Views)**



**Disclaimer**

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