



# 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.

### 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.

### 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

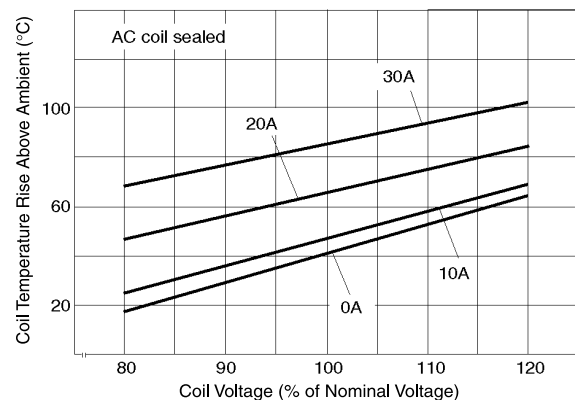
**Termination:** Printed circuit and quick connect terminals <sup>(4)</sup>.

**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:**

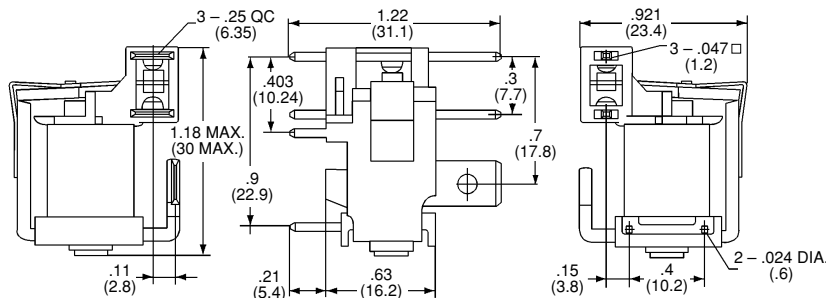
00 = Standard, UL Class B Coil Insulation System M0 = Magnetic Blowout (with enclosure 1 or 2 only, not UL or CSA)  
 F0 = Special, UL Class F Coil Insulation System A1 - E9 = Special - Customer Specific Features

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

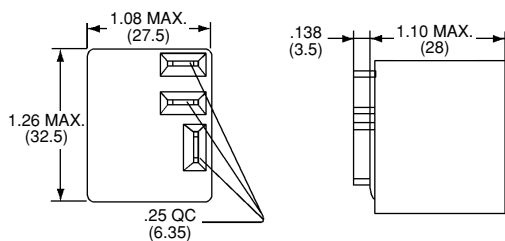
491-21T200    491-24T200    491-61T200    491-64T200  
 491-21Q200    491-24Q200    491-61Q200    491-64Q200

**Outline Dimensions**

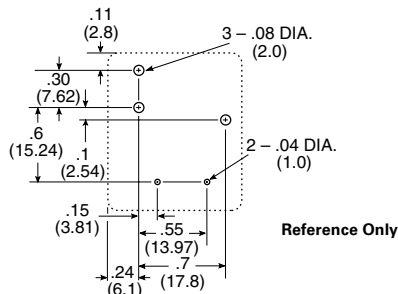
**Open Style**



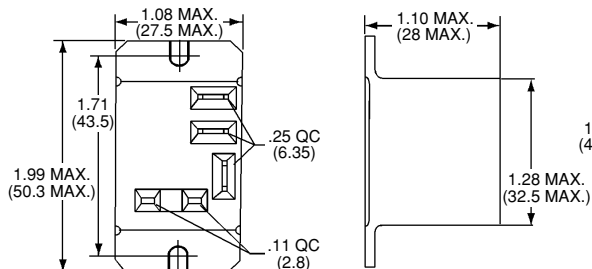
**Sealed Case for PC Board Mounting**



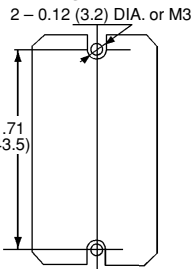
**PC Board Layout (Bottom View)**



**Sealed Case for Panel Mounting**



**Mounting Hole Pattern**



**Wiring Diagrams (Bottom Views)**

