



# 188 series

## 30 Amp Power Relays

File E38802

File LR54109

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

### Features

- AC coils 6-240VAC 50/60 Hz., DC 6-110VDC.
- Single pole, double throw, double break/double make contacts.
- .250" combination quick connect/solder terminals or PC terminals.
- Various mounting options include stud, core, bracket, flange, PC board.
- Open-style relay or with dust cover.

### Contact Data @ 25°C

**Arrangements:** 1 Form X (SPST-NO-DM), 1 Form Y (SPST-NC-DB and 1 Form Z (SPDT-NC/NO-DB/DM).

**Material:** Silver-cadmium oxide, .25" (6.5mm) dia.

**Expected Mechanical Life:** 10 million operations.

**Initial Contact Resistance:** 50 milliohms.

### Contact Ratings

| Contact Arrangement                 | UL Ratings   | Expected Life   |
|-------------------------------------|--|-----------------|
| 1 Form X,<br>1 Form Y &<br>1 Form Z | 30A 120/240/277VAC<br>15A 480/600VAC<br>1 HP @ 120VAC,<br>1 1/2 HP @ 240VAC<br>2 HP @ 208/277VAC*<br>30A @ 28VDC | 100,000<br>ops. |

\*2 HP rating at reduced electrical life, consult factory.

### Initial Dielectric Strength

**Between Open Contacts:** >1,200V rms, 60 Hz.

**Between All Other Mutually Isolated Elements:** >2,500V rms, 60 Hz.

### Coil Data @ 25°C

**Voltage:** 6-110VDC and 6-240VAC.

**Nominal Power:**

**DC Coils:** 1.2 Watts.

**AC Coils:** 3.0VA.

**Duty Cycle:** Continuous at up to 25% overvoltage.

**Initial Insulation Resistance:** 1,000 megohms, min. @ 500VDC

**Insulation:** Class B, 130°C.

**Temperature Rise:**

**AC Coils:**

**Nominal Voltage:** 35°C for open models.  
45°C for enclosed models.

**25% Overvoltage:** 55°C for open models.  
65°C for enclosed models.

**DC Coils:**

**Nominal Voltage:** 35°C for open models.  
40°C for enclosed models.

**25% Overvoltage:** 50°C for open models.  
55°C for enclosed models.

### Coil Data

|          | Nominal Voltage | DC Resistance in Ohms ± 10% | Must Operate Voltage |
|----------|-----------------|-----------------------------|----------------------|
| DC Coils | 6               | 32                          | 4.5                  |
|          | 12              | 120                         | 9.0                  |
|          | 24              | 470                         | 18.0                 |
|          | 48              | 1,800                       | 36.0                 |
|          | 110             | 11,000                      | 82.5                 |
| AC Coils | 6               | 4.2                         | 5.1                  |
|          | 12              | 18                          | 10.2                 |
|          | 24              | 72                          | 20.4                 |
|          | 120             | 1,700                       | 102.0                |
|          | 208             | 5,400                       | 176.8                |
|          | 240             | 7,200                       | 204.0                |

### Operate Data @ 25°C

**Must Operate Voltage:**

**DC Coils:** 75% of nominal.

**AC Coils:** 85% of nominal.

**Operate Time (Excluding Bounce):** 20 milliseconds, max, at nominal voltage, no coil suppression.

**Release Time (Excluding Bounce):** 10 milliseconds, max, at nominal voltage, no coil suppression.

### Environmental Data

**Temperature Range (50/60 Hz operation, based on 105°C limit):**

**Operating**

**AC Coils:** -45°C to +70°C for open models.  
-45°C to +60°C for enclosed models.

**DC Coils:** -45°C to +80°C for open models.  
-45°C to +70°C for enclosed models.

**Storage**

**All:** -65°C to +100°C.

**Shock:** 15g's, 11 ± 1 ms (non-operating, no mechanical damage).

**Vibration:** .1" double amplitude or 10 g's, 10-55 Hz. (operating, no contact chatter).

### Mechanical Data

**Termination:** .250" quick connect/solder; and PC board.

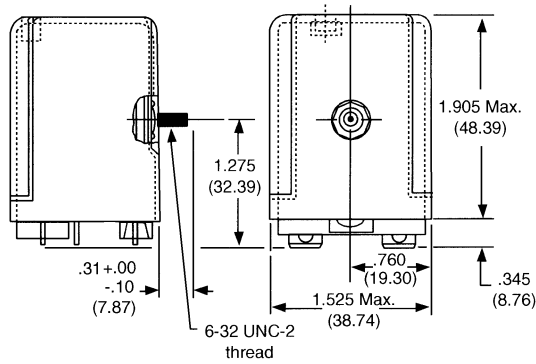
**Enclosure:** Open or polycarbonate dust cover.

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

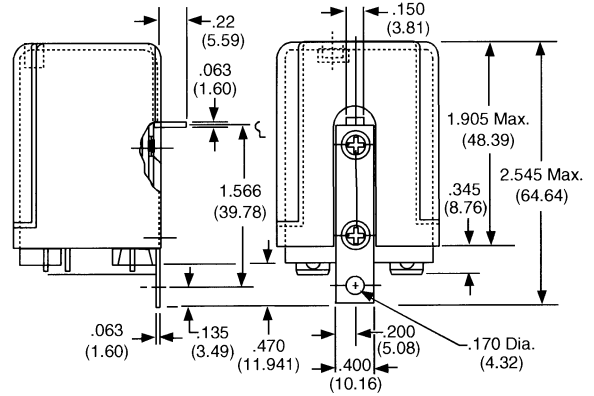


**Outline Dimensions (Continued)**

**Bottom Stud 188-5**

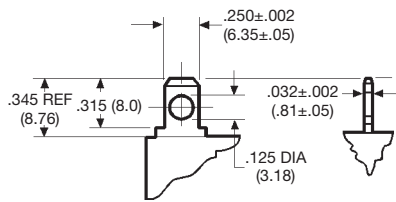


**Bracket Mount 188-6**

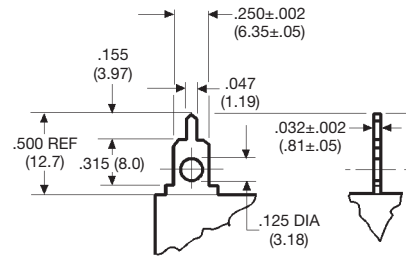


**Terminal Dimensions**

**.250" (6.35mm) Quick Connect**

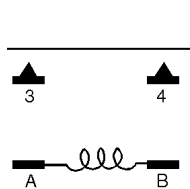


**Printed Circuit**

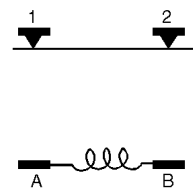


**Wiring Diagrams**

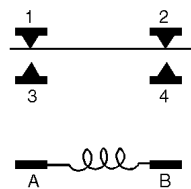
**1 Form X (SPST-NO-DM)**



**1 Form Y (SPST-NC-DB)**

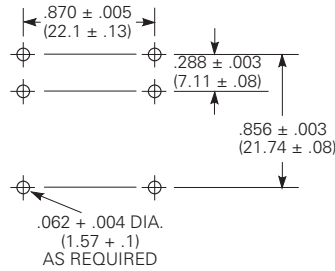


**1 Form Z (SPDT-NC/NO-DB/DM)**



**PC Board Layout (Bottom View)**

**Suggested PCB layout for 188 series relays with PCB terminals**



**Reference Only**

**Disclaimer**

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