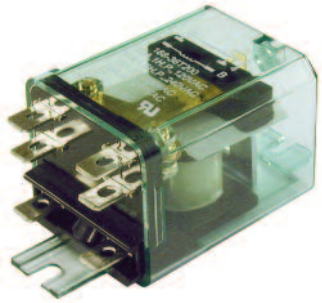


187 series

20-25 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.
- One or two pole models with single or double throw contacts.
- 187 relays with 2 form A or 2 form B contacts are rated 25 amps; 187 relays with other contact arrangements are rated 20 amps.
- .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), 2 Form C (DPDT), 2 Form A (DPST-NO) and 2 Form B (DPST-NC).
Material: Silver-cadmium oxide, .25" (6.5mm) dia. or Fine silver, .187" (4.75mm) dia.
Expected Mechanical Life: 10 million operations.
Initial Contact Resistance: 50 milliohms.

Contact Ratings

Contact Code & Description	UL Ratings	Expected Life
-200 1/4" (6.25 mm) Dia. Silver Cadmium Oxide	20A @ 120/240VAC 10A @ 480/600VAC 3/4 HP @ 120VAC, 1 1/2 HP @ 240VAC 2 HP @ 208/277VAC* 17FLA, 65LRA @ 300VAC 20A @ 28VDC	100,000 ops.
-500 3/16" (4.75 mm) Dia. Fine Silver	5A @ 120/240VAC 2A @ 480/600VAC 1/8 HP @ 120VAC, 1/4 HP @ 240VAC 2A (7.2A inrush) @ 24VAC 5A @ 28VDC	100,000 ops.
-600 1/4" (6.25 mm) Dia. Silver Cadmium Oxide	25A @ 120/240VAC 10A @ 480/600VAC 3/4 HP @ 120VAC, 1 1/2 HP @ 240VAC 2 HP @ 208/277VAC* 17FLA, 65LRA @ 300VAC	100,000 ops.

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

Initial Dielectric Strength

Between Open Contacts: >750V 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.

Coil Data @ 25°C (continued)

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 12 24 48 110	32 120 470 1,800 11,000	4.5 9.0 18.0 36.0 82.5
AC Coils	6 12 24 120 208 240	4.2 18 72 1,700 5,400 7,200	5.1 10.2 20.4 102.0 176.8 204.0

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 +60°C for open models.
-45°C to +45°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

Typical Part No. >	187-	3	2	T	2	00

1. Basic Series and Type:
187 = Open or Enclosed 20-25 Amp Power Relay.

2. Enclosure and Terminals:
1 = Open, Solder/Quick Connect Terminals.
2 = Plain Enclosure with 6-32 Tapped Core, Solder/Quick Connect Terminals
3 = Flanged Enclosure, Solder/Quick Connect Terminals
4 = Plain Enclosure with Mounting Bracket and Stud on Closed End, Solder/Quick Connect Terminals
5 = Plain Enclosure with Bottom Mounted 6-32 Stud, Solder/Quick Connect Terminals
6 = Plain Enclosure with Bottom Mounted Bracket, Solder/Quick Connect Terminals
7 = Open, Printed Circuit Board Terminals
8 = Plain Enclosure, Printed Circuit Board Terminals
0 = Special

3. Contact Arrangement:
2 = 2 Form C (DPDT) 6 = 2 Form A (DPST-NO) 7 = 2 Form B (DPST-NC) 0 = Special
8 = 1 Form X (SPST-NO-DM) 9 = 1 Form Y (SPST-NC-DB)

4. Coil:
A = 6VDC C = 24VDC F = 110VDC N = 6VAC Q = 24VAC U = 240VAC S = Special
B = 12VDC D = 48VDC P = 12VAC T = 120VAC M = 208VAC

5. Contacts:
2 = 1/4" (6.25mm) Diameter, Silver-Cadmium Oxide. 0 = Special
5 = 3/16" (4.75mm) Diameter, Pure Fine Silver.
6 = 1/4" (6.25mm) Diameter, Silver-Cadmium Oxide (Requires Contact Arrangement 6 [2 form A] or 7 [2 form B] in step 3 above).

6. Standard or Special:
00 = Standard F0 = Class "F" Coil A1-Z9 = Special Construction or Feature
L0 = Lamp in parallel with coil M0 = Magnetic blowout

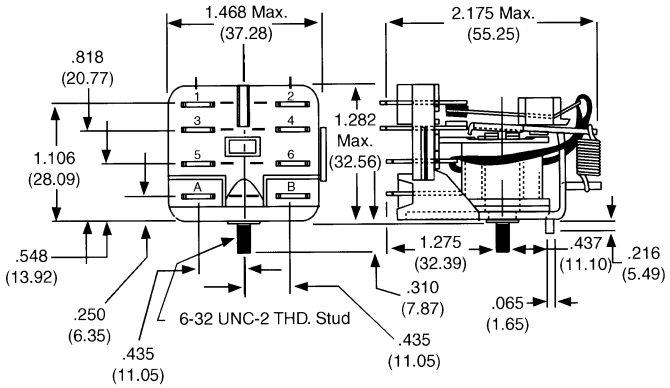
NOTE: No sockets are available for this relay.

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

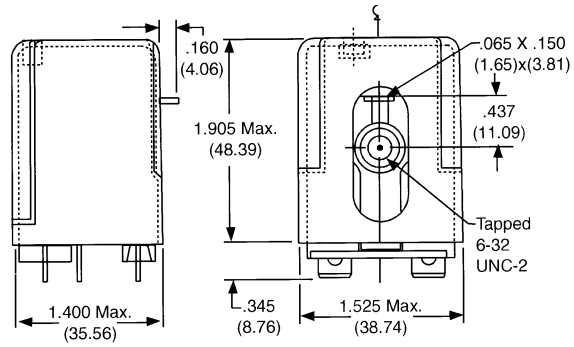
187-32B200	187-32D200	187-32Q200	187-32U200
187-32C200	187-32F200	187-32T200	

Outline Dimensions

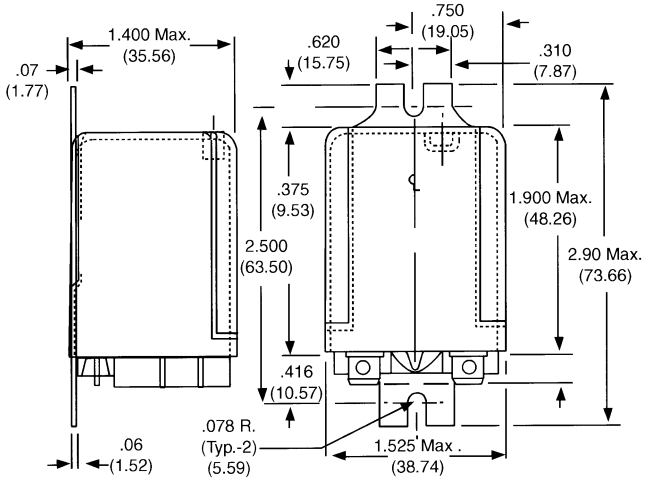
Open 187-1



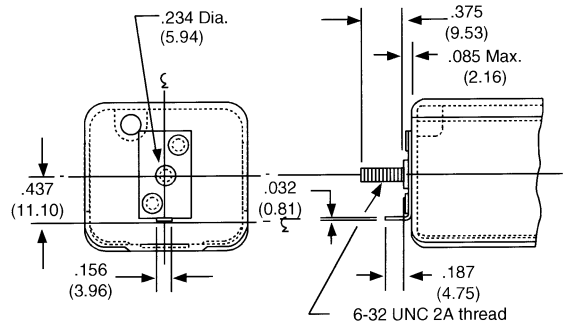
Dust Cover 187-2



Dust Cover with Mounting Flange 187-3

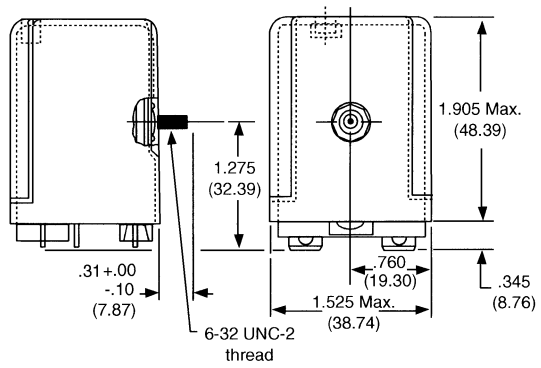


Dust Cover with Bracket and Stud on End 187-4

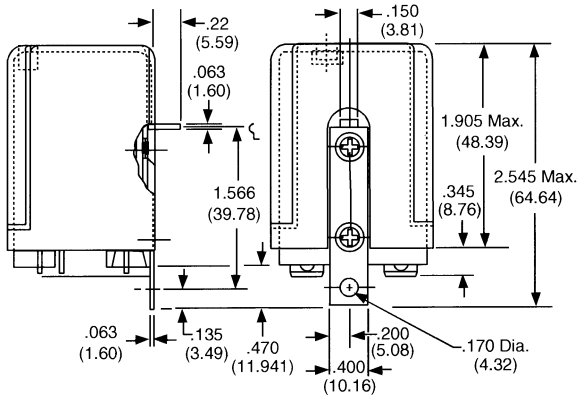


Outline Dimensions (Continued)

Bottom Stud 187-5

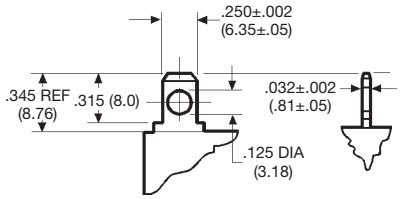


Bracket Mount 187-6

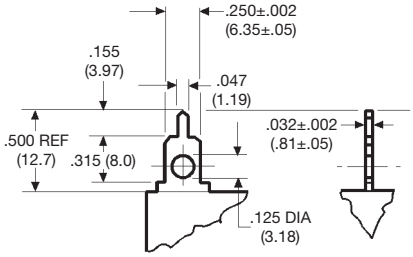


Terminal Dimensions

.250" (6.35mm) Quick Connect

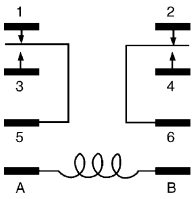


Printed Circuit

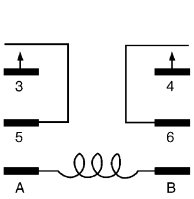


Wiring Diagrams

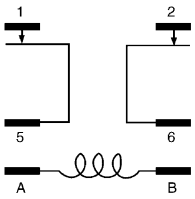
2 Form C (DPDT)



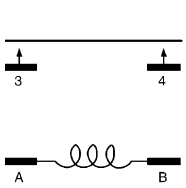
2 Form A (DPST-NO)



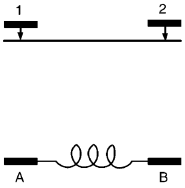
2 Form B (DPST-NC)



1 Form X (SPST-NO-DM)

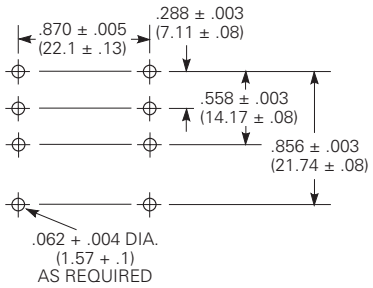


1 Form Y (SPST-NC-DB)



PC Board Layout (Bottom View)

Suggested PCB layout for 187 series relays with PCB terminals



Reference Only

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