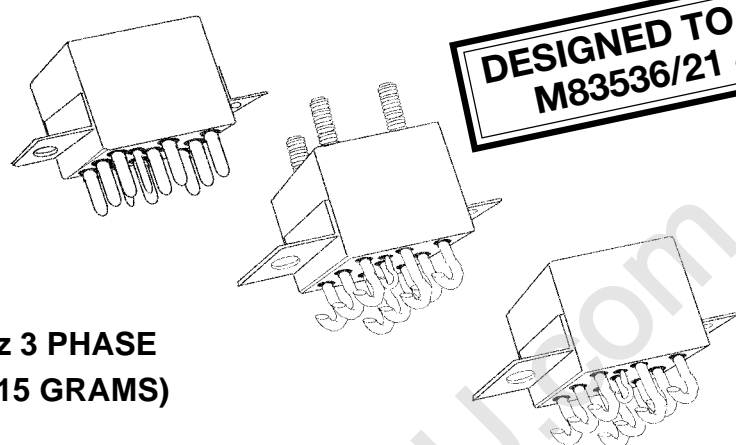




Tyco Electronics Mid-Range Military/Aerospace Relays

10 AMPERES, 3PDT

**DESIGNED TO MEET
M83536/21 & 22**



- HERMETICALLY SEALED
- ALL WELDED CONSTRUCTION
- BALANCED FORCE
- PERMANENT MAGNET DRIVE
- CONTACTS RATED LOW LEVEL TO 10 AMPS
- 28 VDC AND 115/200 VAC 400 Hz 3 PHASE
- WEIGHT .99 OUNCES MAX. (28.15 GRAMS)

The Series FCB-310 relay is a polarized single-side stable design, where the flux from a permanent magnet provides the armature holding force in the deactivated state, and its flux path is switched and combined with the coil flux in the operated state. This results in appreciably increased contact pressure in both states over that of a spring return nonpolar design. We also manufacture other versions of this relay:

- FCB-205:** 5 AMP DPDT RELAY
- FCB-405:** 5 AMP 4PDT RELAY

CONTACT RATING-AMPERES

Ratings Are Continuous Duty

| TYPE OF LOAD | LIFE (MIN.) CYCLES X 10 ³ | 28 VDC | 115VAC 400HZ | 115AC 400Hz- | 115/200VAC 400Hz-3Ø |
|--------------|--------------------------------------|--------|--------------|--------------|---------------------|
| Resistive | 50 | 10 | 10 | 10 | 10 |
| Inductive | 10 | 6 | - | - | - |
| Inductive | 20 | - | 8 | 8 | 8 |
| Motor | 50 | 4 | 4 | 4 | 4 |
| Lamp | 50 | 2 | 2 | 2 | 2 |

Low Level Switching Capability: With contacts operating a load of 10 to 50 microamperes at 10 to 50 millivolts, the contact resistance miss detection level shall be 100 ohms max. Cycling rate is 1 to 12 per second, for 100,000 operations.

OVERLOAD CURRENT 30 AMPS DC, 60 AMPS 400HZ
RUPTURE CURRENT 40AMPS DC, 80 AMPS 400HZ
CONTACT MAKE BOUNCE 1 MILLISECOND AT NOMINAL VOLTAGE
MAX. CONTACT DROP AT 10 AMPS: INITIAL 0.100 VOLTS,
END OF LIFE 0.125 VOLTS



Tyco Electronics Mid-Range Military/Aerospace Relays

10 AMPERES, 3PDT

COIL DATA

| COIL CODE | NOMINAL VOLTAGES | FREQ. HZ | DC RES (B). | OVER TEMPERATURE RANGE | | |
|-----------|------------------|----------|-------------|------------------------|------------------------|-----------------------|
| | | | | PICKUP OR BELOW VOLTS | DROPOUT OR ABOVE VOLTS | MUST HOLD VOLTAGE (C) |
| 1 | 6 | DC | 25 Ω | 4.5 | 0.3 | 2.5 |
| 2 | 12 | DC | 100 Ω | 9.0 | 0.75 | 4.5 |
| 3 | 28 | DC | 400 Ω | 18.0 | 1.5 | 7.0 |
| 4 (A) | 28 | DC | 400 Ω | 18.0 | 1.5 | 7.0 |
| 5 | 48 | DC | 1275 Ω | 36.0 | 2.5 | 14.0 |

- A. CODE 4 COILS HAVE BACK EMF SUPPRESSION TO 42 VOLTS MAX. D. MAX. OVER-VOLTAGE: 6 & 12 VDC COILS 120% OF NOMINAL; ALL OTHERS 110% OF NOMINAL.
- B. DC COIL RESISTANCE ± 10% AT 25°C;
- C. RELAY WILL STAY IN PICKED-UP STATE DOWN TO MUST HOLD VOLTAGES SHOWN.

GENERAL SPECIFICATIONS

| | | |
|-------------------------------------|--|------------------------------------|
| TEMPERATURE RATING: | | -70°C TO + 125°C |
| ALTITUDE: | | 300,000 FEET |
| SHOCK:* | Z, & Y ENCLOSURES | 200 g FOR 6 mS |
| | W, X & M ENCLOSURES | 100 g FOR 6 mS |
| | T ENCLOSURE (IN TRACK) | 50 g FOR 11 mS |
| VIBRATION, SINUSOIDAL:* | Z, & Y ENCLOSURES | 30 g 70-3000Hz |
| | W, X & M ENCLOSURES | 20 g 70-3000Hz |
| | T ENCLOSURE (IN TRACK) | 10 g 57-500 Hz 20 g 500-3000 Hz |
| VIBRATION, RANDOM: * | Z, & Y ENCLOSURES | 0.4 g ² /Hz 50-2000Hz |
| | T, W & M ENCLOSURES | 0.2 g ² /Hz 50-2000Hz |
| DIELECTRIC STRENGTH AT SEA LEVEL: | ALL CIRCUITS TO GROUND AND CIRCUIT TO CIRCUIT. | 1000 V rms |
| | COIL TO GROUND | 1000 V rms |
| DIELECTRIC STRENGTH AT 80,000 FEET: | | 250 V rms |
| INSULATION RESISTANCE: | INITIAL (500 VDC) | 100 MΩ MINIMUM |
| | AFTER LIFE OR ENVIRONMENTAL TESTS | 50 MΩ MINIMUM |
| OPERATE TIME AT NOMINAL VOLTAGE: | | 6 ms OR LESS |
| RELEASE TIME AT NOMINAL VOLTAGE: | | 6 ms OR LESS |

* Max. contact opening under vibration or shock 10 microseconds



Tyco Electronics Mid-Range Military/Aerospace Relays

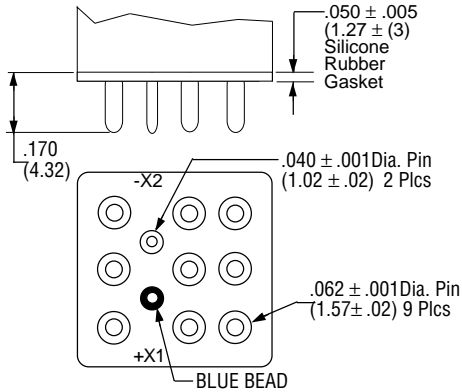
10 AMPERES, 3PDT

Below are shown the standard terminal types and the enclosures available. Specify the assembly as indicated under How To Order. Dimensions are shown in inches $\pm .010$ and (Millimeters $\pm .25$).

TERMINALS

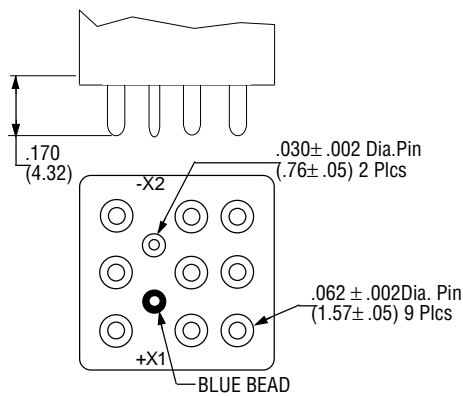
CODE
"A"

Socket Pins - All DC Coils
PIN TERMINALS ARE GOLD PLATED



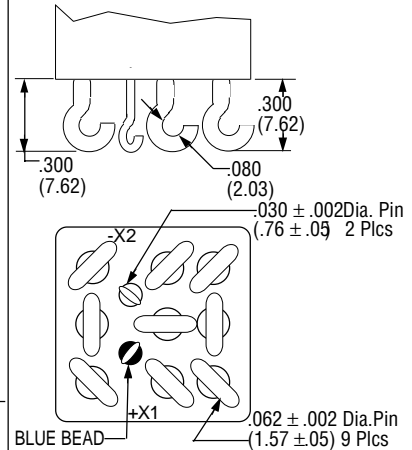
CODE
"B"

Solder Pin Terminals
PIN TERMINALS TIN/LEAD PLATED



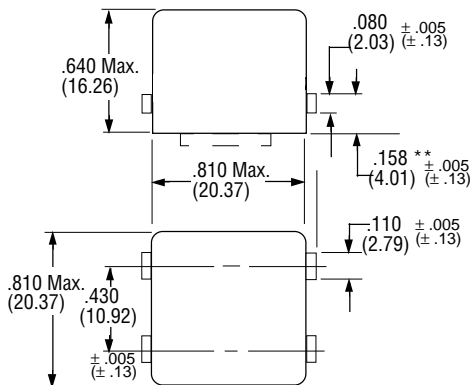
CODE
"C"

Solder Hook Terminals
HOOK TERMINALS TIN/LEAD PLATED



CODE
"T"

M83536/22-025
(REFERENCE ONLY)



** Measured from surface of header

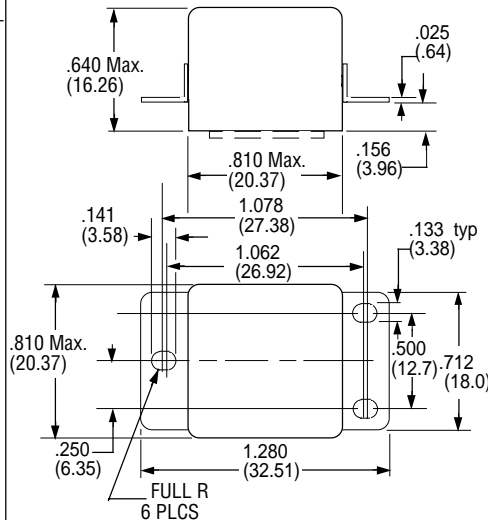
ENCLOSURES

All Enclosures have cupro-Nickel cans bright acid tin/lead plated after assembly to terminal headers.

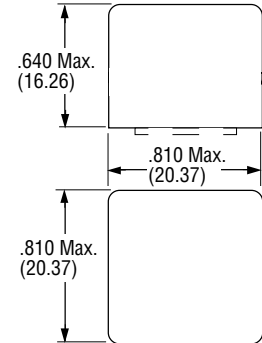
Dimensions: Inches $\pm .010$ (mm $\pm .25$)

Enclosure "T" is for use with track mounted sockets and requires socket pin terminals, but no gasket. The gasket is included in the socket assembly.

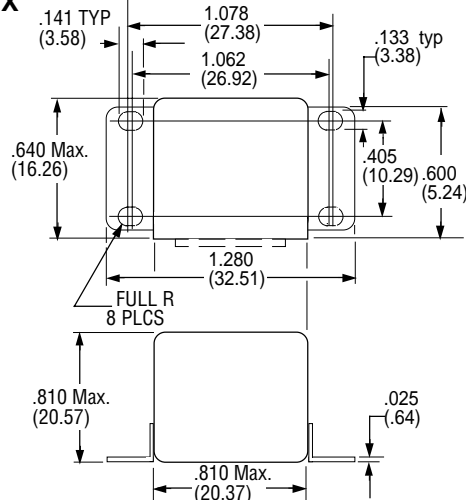
CODE
"Y"



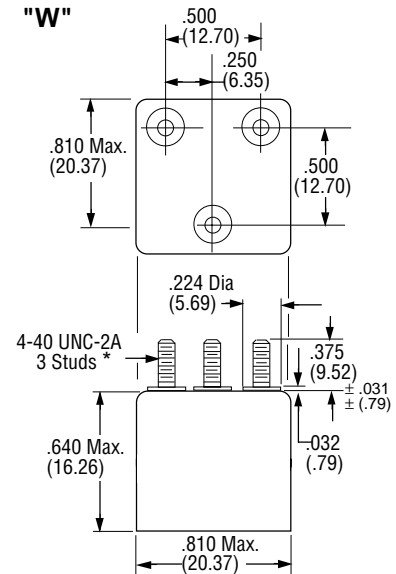
CODE
"Z"



CODE
"X"



CODE
"W"



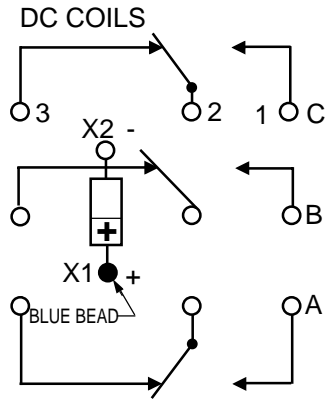
*Metric threads available. To specify use \square in place of \square



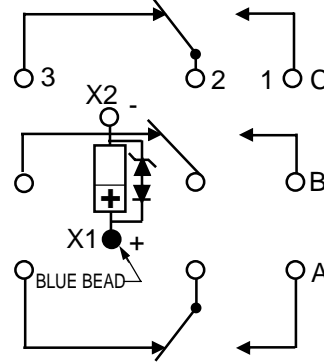
Tyco Electronics Mid-Range Military/Aerospace Relays

10 AMPERES, 3PDT

TERMINAL WIRING



DC COILS WITH TRANSIENT SUPPRESSION

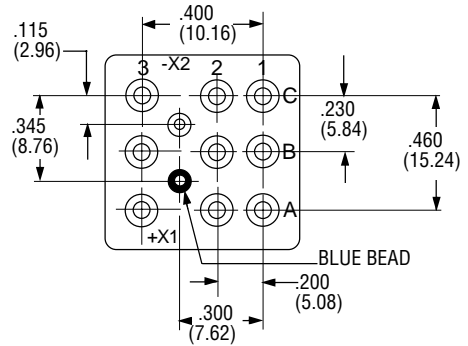


NOTE: Polarity must be observed with DC coil supply. Relay is polarized with a permanent magnet and will not operate or be damaged by reverse polarity.

Diodes used in transient suppression and in AC rectifier circuits have peak inverse voltage rating of 600 VDC minimum. Zener diodes have a minimum rating of 1 watt.

Terminal designations are for reference only and do not appear on the header.

TERMINAL LAYOUT



HOW TO ORDER

(EXAMPLE) _____ **FCB-310-A Y 4**

RELAY TYPE _____

TERMINALS (Socket Pins) _____

ENCLOSURE (With Flanges) _____

COIL (28 VDC With Transient Suppression). _____