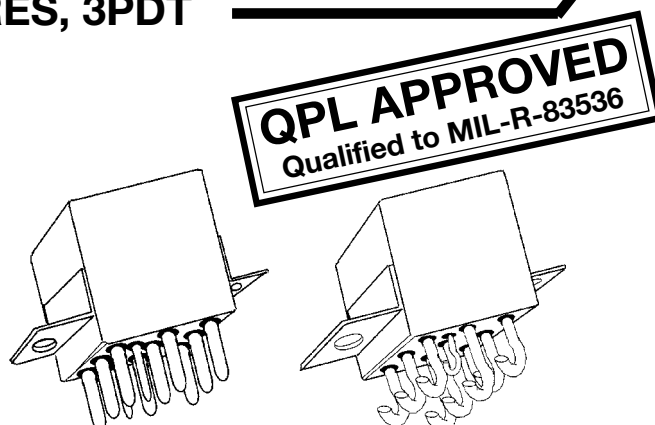




## Tyco Electronics Mid-Range Military/Aerospace Relays

**25 AMPERES, 3PDT**

- HERMETICALLY SEALED
- ALL WELDED CONSTRUCTION
- BALANCED FORCE
- PERMANENT MAGNET DRIVE
- CONTACTS: SILVER CADMIUM  
OXIDE WITH GOLD PLATING
- COILS FOR DC, 50 TO 400Hz AND 400Hz AC
- WEIGHT 2.89 OUNCES MAX. ( 82 GRAMS)



The Series FCA-325 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:

**FCA-125:** 25 AMP SPDT RELAY

**FCAC-325:** 25 AMP 3PST RELAY WITH 2 AMP SPDT AUXILIARY CONTACTS

### CONTACT RATING-AMPERES

Ratings Are Continuous Duty

| TYPE OF LOAD                              | LIFE (MIN.)<br>CYCLES X 10 <sup>3</sup> | 28 VDC | 115VAC<br>400HZ | 115/200VAC<br>400Hz-3Ø | 115/200VAC<br>60Hz-3Ø * |
|-------------------------------------------|-----------------------------------------|--------|-----------------|------------------------|-------------------------|
| Resistive                                 | 50                                      | 25     | 25              | 25                     | 2.5                     |
| Inductive                                 | 10                                      | 12     | -               | -                      | 2.5                     |
| Inductive                                 | 20                                      | -      | 15              | 15                     | -                       |
| Motor                                     | 50                                      | 10     | 10              | 10                     | 2.0                     |
| Lamp                                      | 50                                      | 5      | 5               | 5                      | 1.0                     |
| * 60 Hz LOADS RATED FOR 10,000 OPERATIONS |                                         |        |                 |                        |                         |

OVERLOAD CURRENT 50 AMPS DC, 80 AMPS 400HZ

RUPTURE CURRENT 60 AMPS DC, 100 AMPS 400HZ

CONTACT MAKE BOUNCE 1 MILLISECOND AT NOMINAL VOLTAGE

MAX. CONTACT DROP AT 25 AMPS: INITIAL 0.150 VOLTS.

END OF LIFE 0.175 VOLTS



# Tyco Electronics Mid-Range Military/Aerospace Relays

## 25 AMPERES, 3PDT

### COIL DATA

| COIL CODE | NOMINAL VOLTAGES | FREQ. HZ | DC RES. AC AMPS (B) | OVER TEMPERATURE RANGE |                        |                       |
|-----------|------------------|----------|---------------------|------------------------|------------------------|-----------------------|
|           |                  |          |                     | PICKUP OR BELOW VOLTS  | DROPOUT OR ABOVE VOLTS | MUST HOLD VOLTAGE (C) |
| 1         | 6                | DC       | 18 $\Omega$         | 4.5                    | 0.3                    | 2.5                   |
| 2         | 12               | DC       | 70 $\Omega$         | 9.0                    | 0.75                   | 4.5                   |
| 3         | 28               | DC       | 290 $\Omega$        | 18.0                   | 1.5                    | 7.0                   |
| 4 (A)     | 28               | DC       | 290 $\Omega$        | 18.0                   | 1.5                    | 7.0                   |
| 5         | 48               | DC       | 865 $\Omega$        | 32.0                   | 2.5                    | 14.0                  |
| 6         | 28               | 400HZ    | 225 mA              | 22.0                   | 1.25                   | 10.0                  |
| 7         | 28               | 50/400Hz | 120 mA              | 22.0                   | 1.25                   | 10.0                  |
| 8         | 115              | 400 Hz   | 40 mA               | 90.0                   | 5.0                    | 40.0                  |
| 9         | 115              | 50/400Hz | 30 mA               | 95.0                   | 5.0                    | 40.0                  |

- A. CODE 4 COILS HAVE BACK EMF SUPPRESSION TO 42 VOLTS MAX.
- B. DC COIL RESISTANCE  $\pm 10\%$  AT 25°C; AC COIL MAX. CURRENT AT NOMINAL VOLTAGE.
- C. RELAY WILL STAY IN PICKED-UP STATE DOWN TO MUST HOLD VOLTAGES SHOWN.
- D. MAX. OVER-VOLTAGE: 6 & 12 VDC COILS 120% OF NOMINAL; ALL OTHERS 110% OF NOMINAL.
- E. COILS AVAILABLE FOR OTHER VOLTAGES AND FOR AC 50/60HZ.
- NOTE: Only DC Coil Models are QPL Approved.

### GENERAL SPECIFICATIONS

|                                     |                                                                                                               |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------|
| TEMPERATURE RATING:                 | -70°C TO + 125°C                                                                                              |
| ALTITUDE:                           | 300,000 FEET                                                                                                  |
| SHOCK:*                             | Z, Y, & V ENCLOSURES 200 g FOR 6 mS<br>W, X & M ENCLOSURES 100 g FOR 6 mS                                     |
| VIBRATION, SINUSOIDAL:*             | Z, Y, & V ENCLOSURES 30 g 33-3000Hz<br>W, X & M ENCLOSURES 20 g 33-3000Hz                                     |
| VIBRATION, RANDOM: *                | Z, Y, & V ENCLOSURES 0.4 g <sup>2</sup> /Hz 50-2000Hz<br>W, X & M ENCLOSURES 0.2 g <sup>2</sup> /Hz 50-2000Hz |
| DIELECTRIC STRENGTH AT SEA LEVEL:   | ALL CIRCUITS TO GROUND AND CIRCUIT TO CIRCUIT. 1250 V rms<br>COIL TO GROUND 1000 V rms                        |
| DIELECTRIC STRENGTH AT 80,000 FEET: | 350 V rms                                                                                                     |
| INSULATION RESISTANCE:              | INITIAL (500 VDC) 100 M $\Omega$ MINIMUM<br>AFTER LIFE OR ENVIRONMENTAL TESTS 50 M $\Omega$ MINIMUM           |
| OPERATE TIME AT NOMINAL VOLTAGE:    | DC RELAYS 15 ms OR LESS<br>AC RELAYS 20 ms OR LESS                                                            |
| RELEASE TIME AT NOMINAL VOLTAGE:    | DC RELAYS 15 ms OR LESS<br>AC RELAYS 50 ms OR LESS                                                            |

\* Max. contact opening under vibration or shock 10 microseconds



# Tyco Electronics Mid-Range Military/Aerospace Relays

## 25 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  $\pm .25$ ).

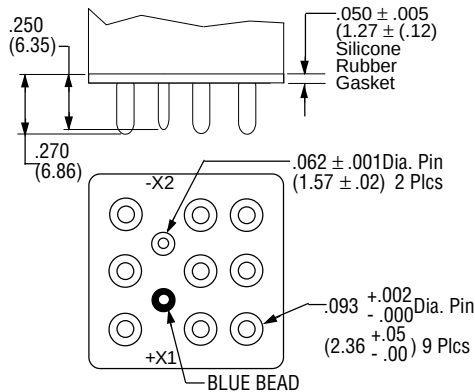
### TERMINALS

#### CODE

##### "A"

#### Socket Pins - All DC Coils

PIN TERMINALS ARE GOLD PLATED

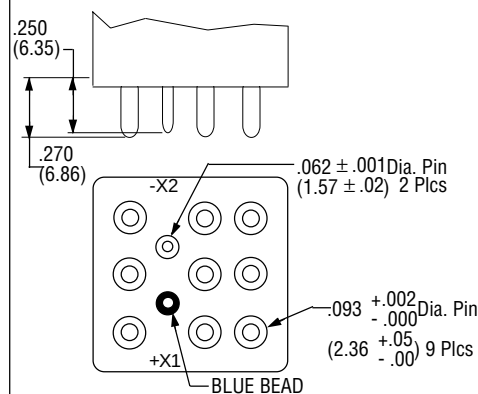


#### CODE

##### "B"

#### Solder Pin Terminals

PIN TERMINALS TIN/LEAD PLATED

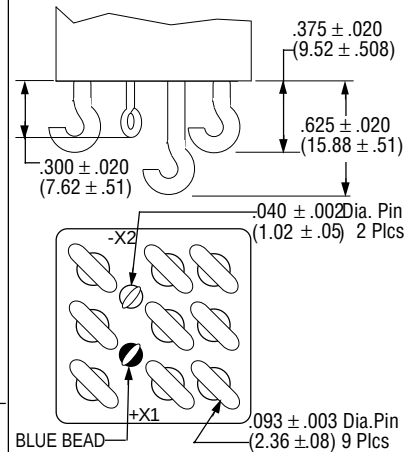


#### CODE

##### "C"

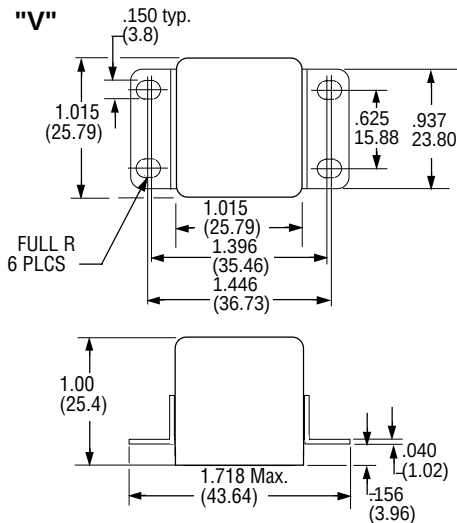
#### Solder Hook Terminals

HOOK TERMINALS TIN/LEAD PLATED



#### CODE

##### "V"



### ENCLOSURES

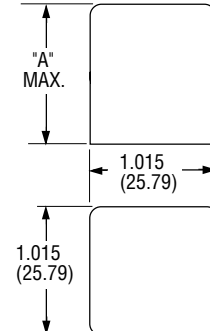
All Enclosures have cupro-Nickel cans bright acid tin/lead plated after assembly to terminal headers.

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

For socket pin terminals: specify "Y" enclosures with DC coils and "V" enclosures with AC coils.

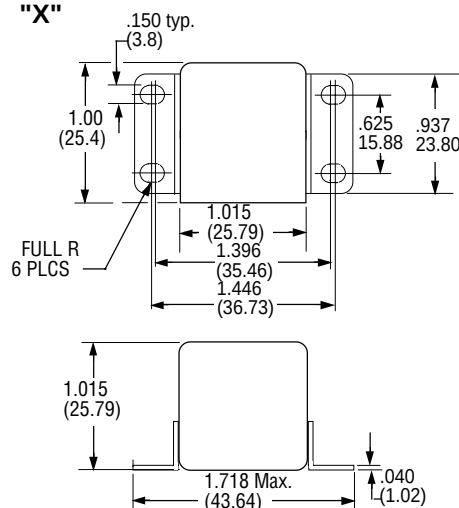
#### CODE

##### "Z"



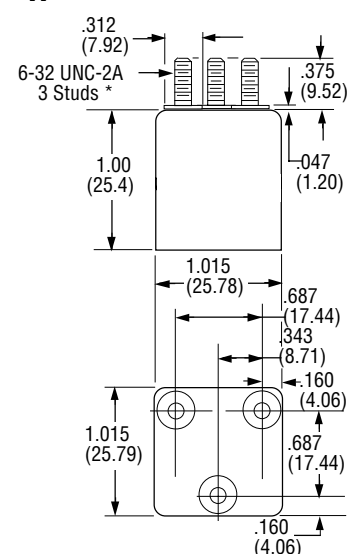
#### CODE

##### "X"



#### CODE

##### "W"



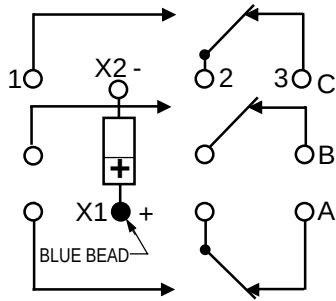
\*Metric threads available, To specify use  $\text{M}$  in place of  $\text{W}$

# Tyco Electronics Mid-Range Military/Aerospace Relays

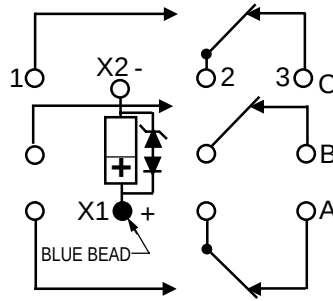
**25 AMPERES, 3PDT**

## TERMINAL WIRING

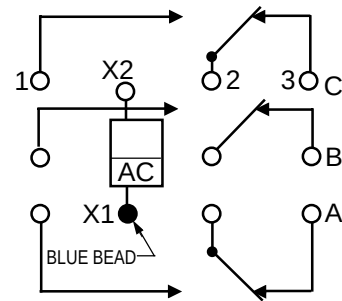
### DC COILS



### DC COILS WITH TRANSIENT SUPPRESSION



### AC COILS

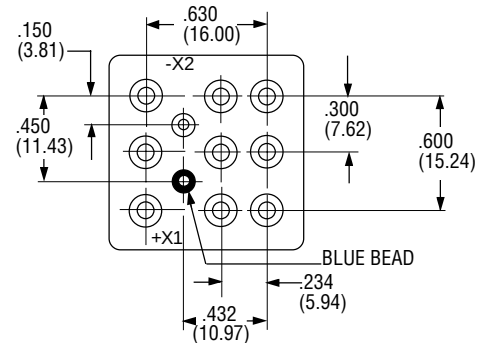


**NOTE:** Polarity must be observed with DC coil supply. Relay is polarized with a permanent magnet and will not operate or be damaged by reverse polarity.

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) \_\_\_\_\_ **FCA-325-A Y 4**

RELAY TYPE \_\_\_\_\_

TERMINALS (Socket Pins, DC Coil) \_\_\_\_\_

ENCLOSURE (With Flanges) \_\_\_\_\_

COIL (28 VDC With Transient Suppression). \_\_\_\_\_

**NOTE: Only DC coil models are QPL Approved**