

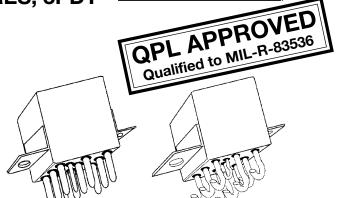


## Tyco Electronics Mid-Range Military/Aerospace Relays

25 AMPERES, 3PDT



- 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.) CYCLES X 10 <sup>3</sup>	28 VDC	115VAC 400HZ	115/200VAC 400Hz-3Ø	115/200VAC 60Hz-3Ø *		
Resistive Inductive	50 10	25 12	25	25	2.5 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**

				OVER TEMPERATURE RANGE		
COIL	NOMINAL	FREQ.	DC RES.	PICKUP OR	DROPOUT OR	MUST HOLD
CODE	VOLTAGES	HZ	AC AMPS (B)	BELOW VOLTS	ABOVE VOLTS	VOLTAGE (C)
1	6	DC	18 Ω	4.5	0.3	2.5
2	12	DC	<b>70</b> Ω	9.0	0.75	4.5
3	28	DC	<b>290</b> $\Omega$	18.0	1.5	7.0
4 (A)	28	DC	<b>290</b> $\Omega$	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		
	W, X & M ENCLOSURES	100 g FOR 6 mS		
VIBRATION, SINUSOIDAL:*	Z, Y, & V ENCLOSURES	30 g 33-3000Hz		
	W, X & M ENCLOSURES	20 g 33-3000Hz		
VIBRATION, RANDOM: *	Z, Y, & V ENCLOSURES	0.4 g <sup>2</sup> /Hz 50-2000Hz		
	W, X & M ENCLOSURES	0.2 g <sup>2</sup> /Hz 50-2000Hz		
DIELECTRIC STRENGTH	ALL CIRCUITS TO GROUND AND			
AT SEA LEVEL:	CIRCUIT TO CIRCUIT.	1250 V rms		
	COIL TO GROUND	1000 V rms		
DIELECTRIC STRENGTH				
AT 80,000 FEET:		350 V rms		
INSULATION RESISTANCE:	INITIAL (500 VDC)	100 M $\Omega$ MINIMUM		
	AFTER LIFE OR ENVIRONMENTAL TESTS	50 M $\Omega$ MINIMUM		
<b>OPERATE TIME AT NOMINAL VOLTAGE:</b>	DC RELAYS	15 ms OR LESS		
	AC RELAYS	20 ms OR LESS		
RELEASE TIME AT NOMINAL VOLTAGE:	DC RELAYS	15 ms OR LESS		
	AC RELAYS	50 ms OR LESS		

<sup>\*</sup> Max. contact opening under vibration or shock 10 microseconds

17



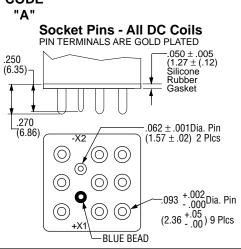


## Tyco Electronics Mid-Range Military/Aerospace Relays 25 AMPERES, 3PDT

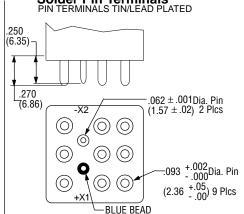
Below are shown the standard terminal types and the enclosures available. Specify the assembly as indicated under How To Order. Dimensions are shown in inches ± .010 and (Millimeters ± .25).

## **TERMINALS** CODE

CODE

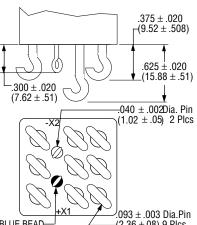


## CODE "B" Solder Pin Terminals PIN TERMINALS TIN/LEAD PLATED



#### CODE "C"



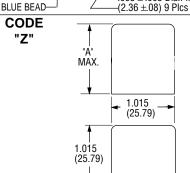


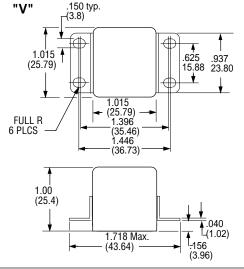


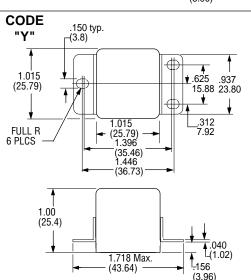
All Enclosures have cupro-Nickel cans bright acid tin/lead plated after assembly to terminal headers.

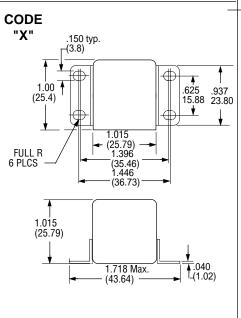
Dimensions: Inches  $\pm$  .010 (mm  $\pm$  .25)

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



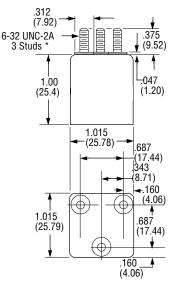






18

## CODE "W"



\*Metric threads available,To specify useMin place ofW

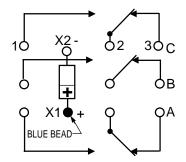




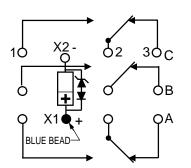
# Tyco Electronics Mid-Range Military/Aerospace Relays 25 AMPERES, 3PDT

## **TERMINAL WIRING**

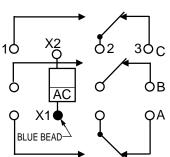
DC COILS



DC COILS WITH TRANSIENT SUPPRESSION



AC COILS

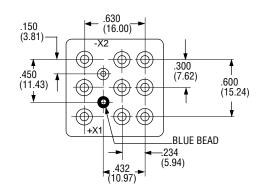


**NOTE:** Polarity must be observed with DC coil supply. Relay is polarized with a permanent magnet and will not operate or be damaged by reverse polarity.

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**

RELAY TYPE
TERMINALS (Socket Pins, DC Coil)
ENCLOSURE (With Flanges)

COIL (28 VDC With Transient Suppression).

NOTE: Only DC coil models are QPL Approved