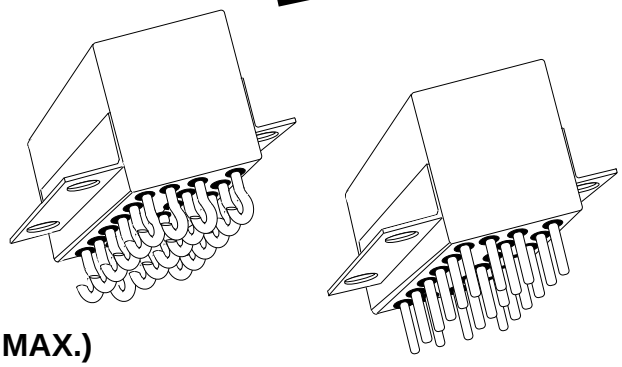
SERIES
FCA-610

Tyco Electronics Mid-Range Military/Aerospace Relays

10 AMPERES, 6PDT

QPL APPROVED
Qualified to MIL-R-83536

- **HERMETICALLY SEALED**
- **ALL WELDED CONSTRUCTION**
- **BALANCED FORCE**
- **PERMANENT MAGNET DRIVE**
- **6PDT SWITCHING IN 1.4 CU INCH**
- **CONTACTS: SILVER CADMIUM OXIDE WITH GOLD PLATING**
- **COILS FOR DC AND 400 Hz**
- **WEIGHT 4.16 OUNCES MAX. (117.94 GRAMS MAX.)**



The Series FCA-610 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 2-pole and 4-pole versions of this relay.

FCA-210: 10 AMP DPDT RELAY
FCA-410: 10 AMP 4PDT RELAY

CONTACT RATING-AMPERES

Ratings Are Continuous Duty

TYPE OF LOAD	LIFE (MIN.) CYCLES X 10^3	28 VDC	115VAC 400HZ	115/200VAC 400Hz-3ø
Resistive	100	10	10	10
Inductive	20	8	8	8
Motor	100	4	4	4
Lamp	100	2	2	2
	* 60 Hz LOADS RATED FOR 10,000 OPERATIONS			

OVERLOAD CURRENT 40 AMPS DC, 60 AMPS 400HZ
RUPTURE CURRENT 50 AMPS 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

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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	8.5 Ω	4.5	0.3	2.5
2	12	DC	33 Ω	9.0	0.75	4.5
3	28	DC	180 Ω	18.0	1.5	7.0
4 (A)	28	DC	180 Ω	18.0	1.5	7.0
5	48	DC	530 Ω	32.0	2.5	14.0
8	115	400H z	60 mA	90.0	5.0	40.0

A. CODE 4 COILS HAVE BACK EMF SUPPRESSION TO 42 VOLTS MAX.
B. DC COIL RESISTANCE ± 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. OVERVOLTAGE: 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 & X ENCLOSURES	50 g FOR 6 TO 9 mS
VIBRATION, SINUSOIDAL:*	Z, Y & X ENCLOSURES	20 g TO 2000Hz
VIBRATION, RANDOM: *	Z, Y & X ENCLOSURES	0.3 g^2/Hz 50-2000Hz
DIELECTRIC STRENGTH AT SEA LEVEL:	ALL CIRCUITS TO GROUND AND 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 MΩ MINIMUM
	AFTER LIFE OR ENVIRONMENTAL TESTS	50 MΩ MINIMUM
OPERATE TIME AT NOMINAL VOLTAGE:	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

* Max. contact opening under vibration or shock 10 microseconds

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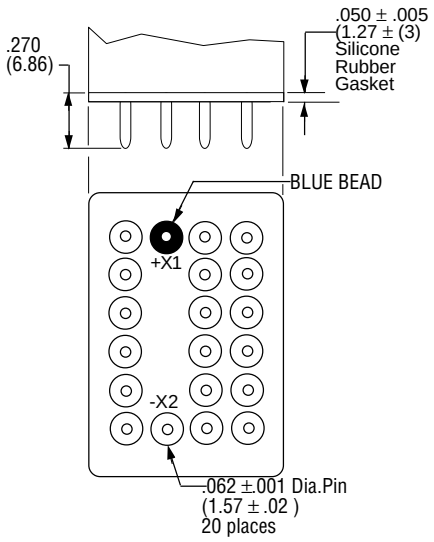
Below are shown the standard terminal types and the enclosures available. Note that the pin configuration for coil connections is determined by the coil supply voltage. Specify the assembly as indicated under How To Order. Dimensions are shown in inches ± .010 and (Millimeters ± .25) except as noted.

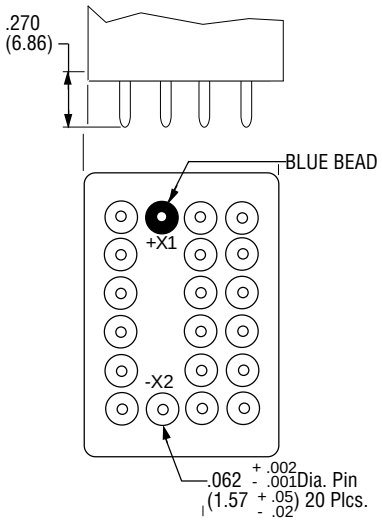
TERMINALS

Terminals on 0.200 centers.
Coil terminals: X1-X2; See Page 30.
Socket Pins are Gold Plated.
Circuit Board Pins are Tin/Lead Plated.

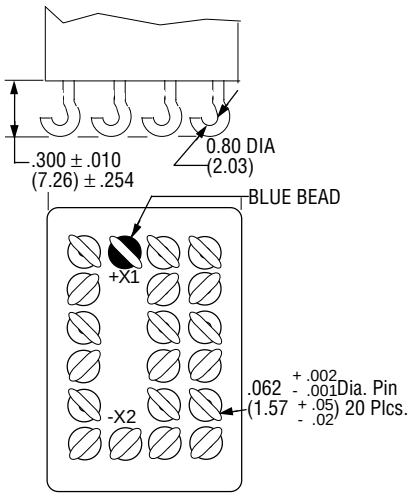
CODE "A"
Socket Pins-All DC Coils



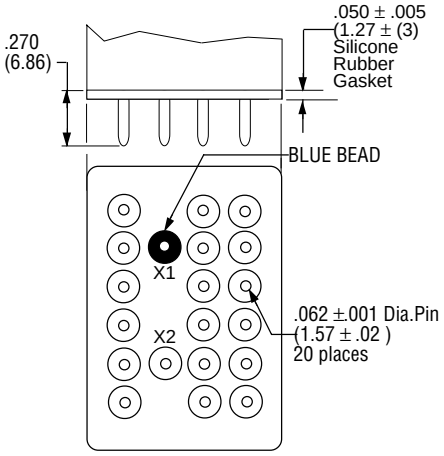
CODE "B"
Circuit Board Pins-All DC Coils



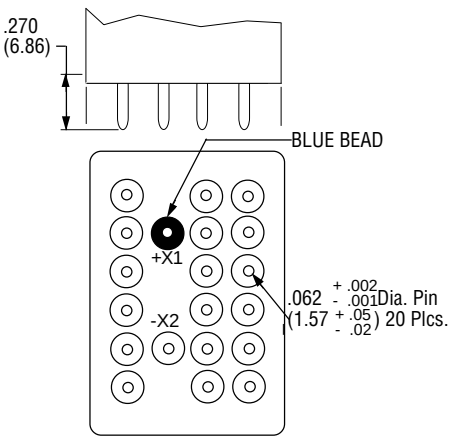
CODE "C"
Solder Hooks-AC or DC Coils



CODE "D"
Socket Pins-All AC Coils



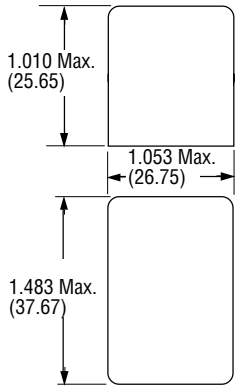
CODE "F"
Circuit Board Pins-All AC Coils



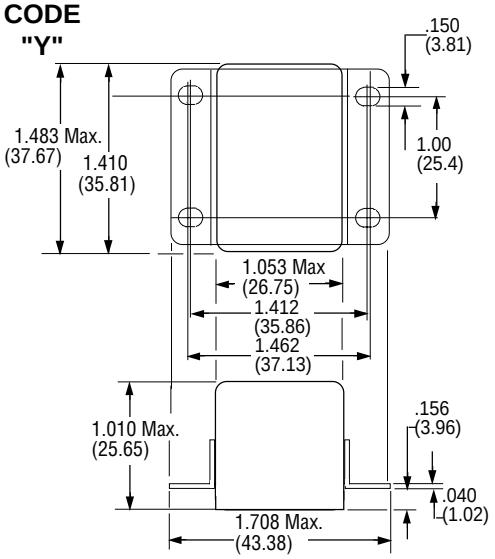
ENCLOSURES

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

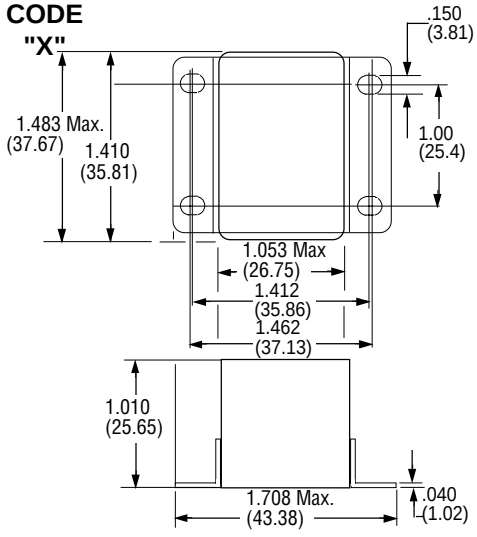
CODE "Z"



CODE "Y"



CODE "X"



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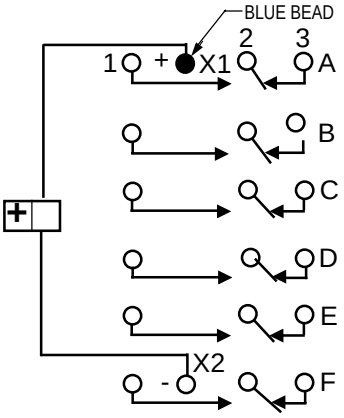
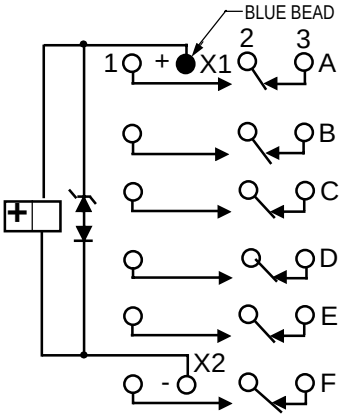
TERMINAL WIRING

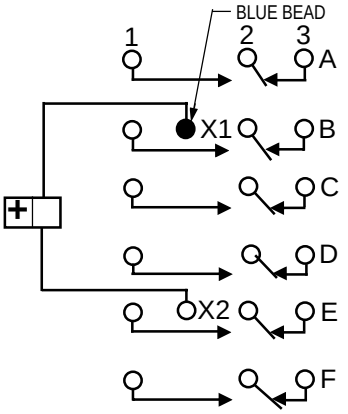
ALL DC COILS & AC SOLDER HOOKS



DC COILS WITH TRANSIENT SUPPRESSION



AC COILS (SOCKET PINS)

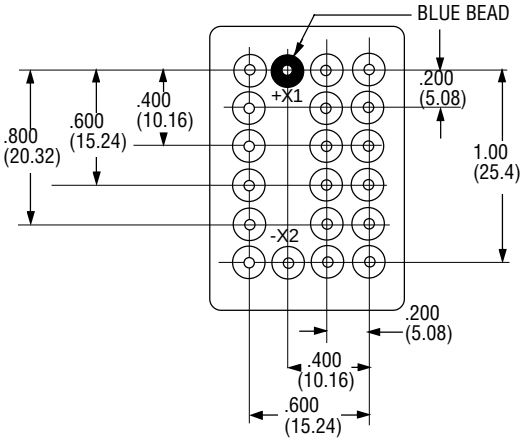


NOTE: Polarity must be observed with DC coil supply. Relay is polarized with a permanent magnet and will not operate or be damaged by reverse polarity.

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-610- A Y 4**

RELAY TYPE

TERMINALS (Socket Pins DC Coils)

ENCLOSURE (With Flanges)

COIL (28 VDC With Transient Suppression).

NOTE: Only DC coil models are QPL Approved