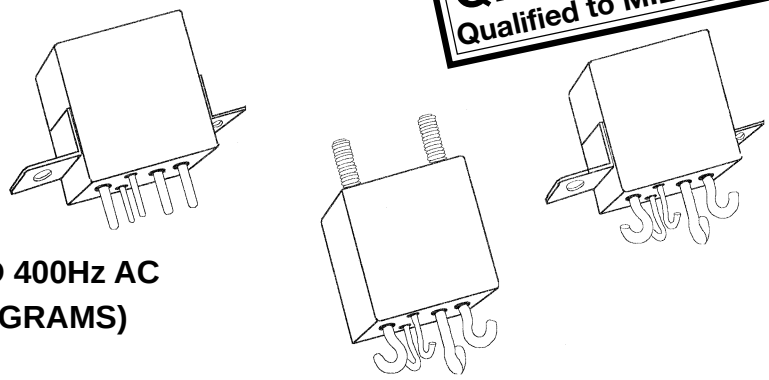
SERIES
FCA-125

Tyco Electronics Mid-Range Military/Aerospace Relays

25 AMPERES, SPDT

QPL APPROVED
Qualified to MIL-R-6106/19*

- **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 1.6 OUNCES MAX. (45.4 GRAMS)**



* Meets new spec MIL-PRF-83536/36 and MIL-PRF-83536/37

The Series FCA-125 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-325: 25 AMPERE 3PDT RELAY
FCAC-325: 25 AMPERE 3PST RELAY WITH 2 AMPERE, SPDT AUXILIARY CONTACTS

CONTACT RATING-AMPERES

Ratings Are Continuous Duty

TYPE OF LOAD	LIFE (MIN.) CYCLES X 10^3	28 VDC	115VAC 400Hz	115VAC 60Hz *
Resistive	50	25	25	10
Inductive	10	12	–	10
Inductive	20	–	15	–
Motor	50	10	10	8
Lamp	50	5	5	–
	* 60 Hz LOADS RATED FOR 10,000 OPERATIONS			

OVERLOAD CURRENT 50 AMPS DC, 80AMPS 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

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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	20 Ω	4.5	0.3	2.5
2	12	DC	80 Ω	9.0	0.75	4.5
3	28	DC	320 Ω	18.0	1.5	7.0
4 (A)	28	DC	320 Ω	18.0	1.5	7.0
5	48	DC	920 Ω	32.0	2.5	14.0
6	28	400Hz	180 mA	22.0	1.25	10.0
7	28	50/400Hz	100 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 ±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	200 g FOR 6 mS
	W & M ENCLOSURES (STUD MTG.)	100 g FOR 6 mS
VIBRATION, SINUSOIDAL:*	Z, Y, & X ENCLOSURES	30 g 33-3000Hz
	W & M ENCLOSURES (STUD MTG.)	20 g 33-3000Hz
VIBRATION, RANDOM: *	Z, Y, & X ENCLOSURES	0.4 g^2/Hz 50-2000Hz
	W & M ENCLOSURES (STUD MTG.)	0.2 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	10 ms OR LESS
	AC RELAYS	15 ms OR LESS
RELEASE TIME AT NOMINAL VOLTAGE:	DC RELAYS	10 ms OR LESS
	AC RELAYS	50 ms OR LESS

* Max. contact opening under vibration or shock 10 microseconds

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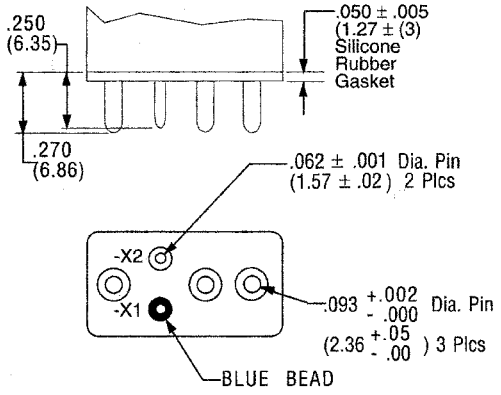
Below are shown the standard terminal types and the enclosures available. Specify the assembly as indicated under How To Order. Dimensions are shown in inches ± .010 and (Millimeters ± .25).

TERMINALS

CODE "A"

Socket Pins - All DC Coils

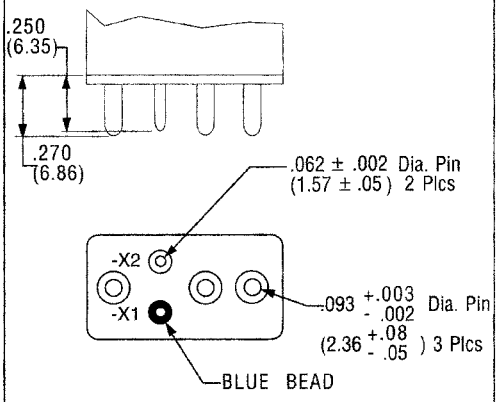
PIN TERMINALS ARE GOLD PLATED



CODE "B"

Solder Pin Terminals

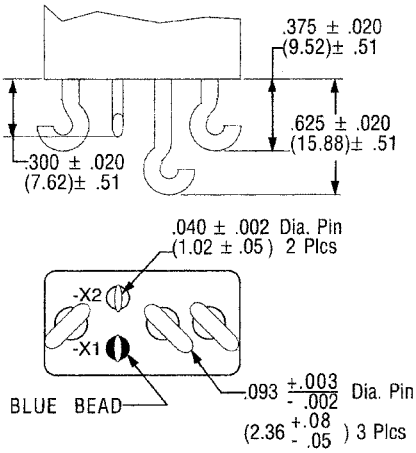
PIN TERMINALS TIN/LEAD PLATED



CODE "C"

Solder Hook Terminals

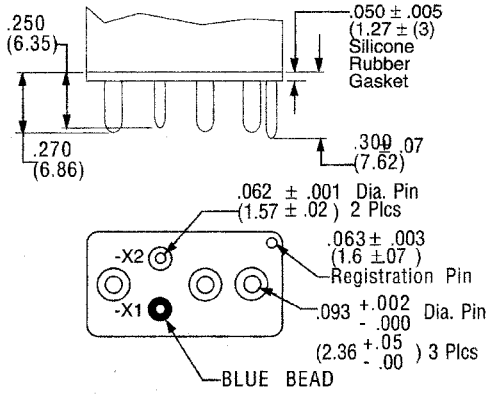
HOOK TERMINALS TIN/LEAD PLATED



CODE "D"

Socket Pins - All AC Coils

PIN TERMINALS ARE GOLD PLATED



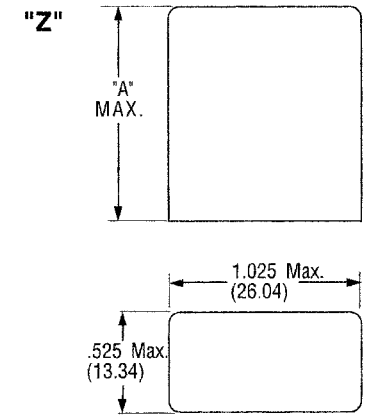
ENCLOSURES

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

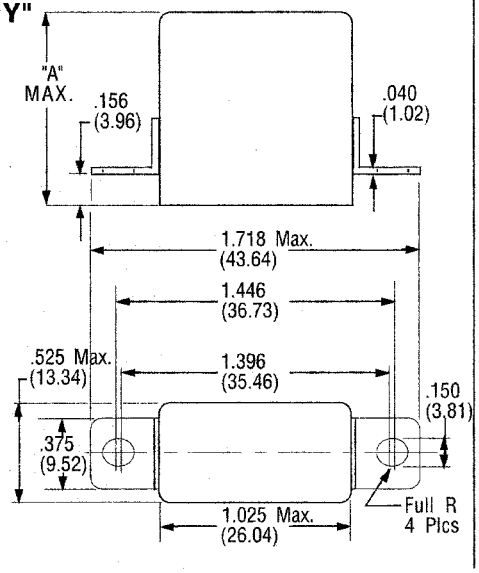
Dimensions: Inches ± .010 (mm ± .25)

"A" - AC Coils 1.125 in. (31.91) Max
DC Coils 1.010 in. (28.65) Max..

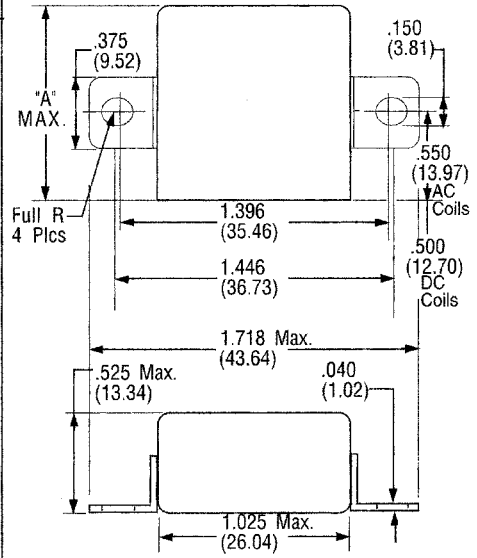
CODE "Z"



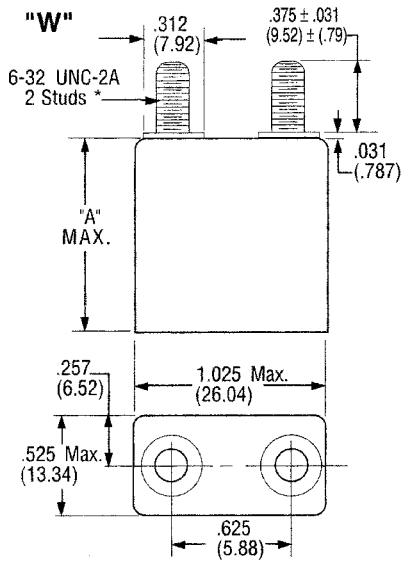
CODE "Y"



CODE "X"



CODE "W"



*Metric threads available.
To specify use M in place of W

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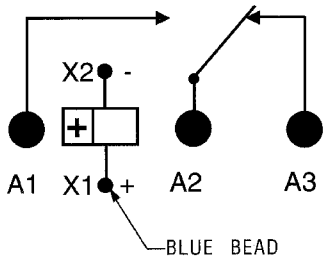
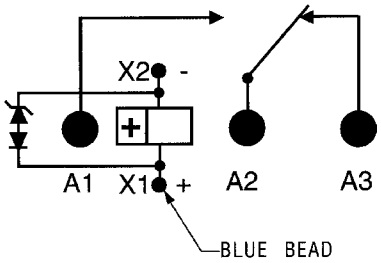
TERMINAL WIRING

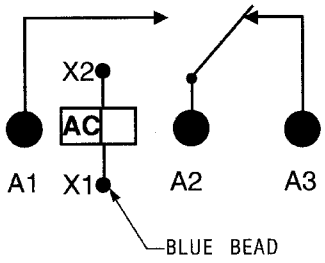
DC COILS



DC COILS WITH TRANSIENT SUPPRESSION



AC COILS

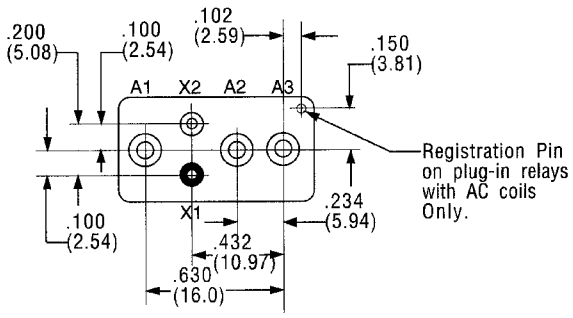


NOTE: Polarity must be observed with DC coil supply. Relay is polarized with a permanent magnet and will not operate or be damaged by reverse polarity.

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-125-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

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