FCA-210 Series, 10 Amperes, DPDT



Product Facts

- **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)**
- **Qualified to M83536/9, /10**

The Series FCA-210 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-410 — 10 Ampere 4PDT Relay

FCA-610 — 10 Ampere 6 PDT Relay

Available:

FCA-215 — 15 Ampere DPDT Relay, Has the same specifications as the FCA-210 except is rated at 15 amps. (Commercial Only)

Contact Rating — Amperes
Ratings Are Continuous Duty

Type of Load	Life (Min.) Cycles x 10^3	28 VDC	115VAC 400Hz	115/200VAC 3Ø	
				400Hz	60Hz*
Resistive	100	10	10	10	2.5
Inductive	20	8	8	8	2.5
Motor	100	4	4	4	2.0
Lamp	100	2	2	2	1

*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

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
At 80,000 Feet — 350 V rms

Insulation Resistance —
Initial (500 VDC) — 100 MΩ Min.
After Life or Environmental Tests —
50 MΩ Min.

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

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	50/400 Hz	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.

Catalog 5-1773450-5
Revised 3-13

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Dimensions are shown for reference purposes only. Specifications subject to change.

Dimensions are in millimeters unless otherwise specified.

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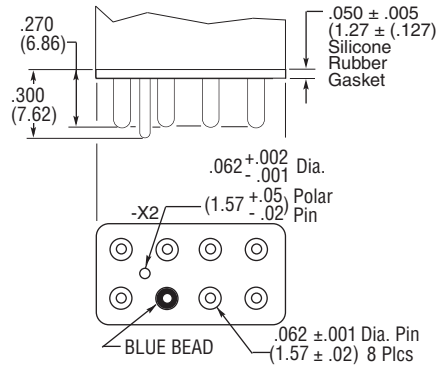
FCA-210 Series, 10 Amperes, DPDT (Continued)

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).

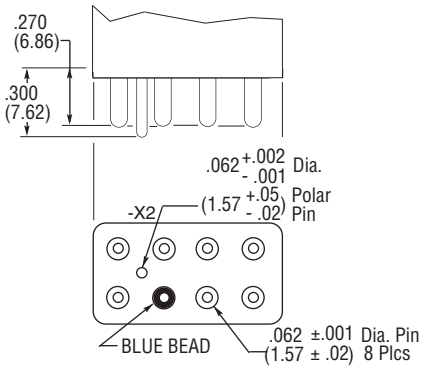
Terminals

SOCKET PINS ARE GOLD PLATED
POLARIZING PINS ARE TIN/LEAD PLATED
CIRCUIT BOARD PINS ARE TIN/LEAD PLATED
DIMENSIONS EXCEPT AS NOTED:
INCHES ± .010 (MILLIMETERS ± .25)

CODE "A" **Socket Pins - All DC Coils**

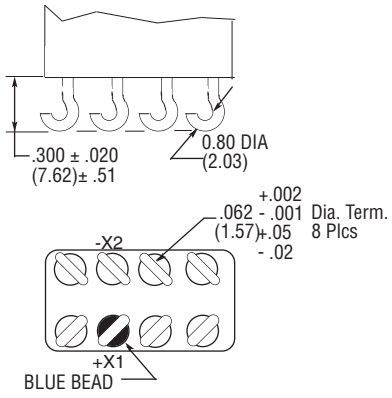


CODE "B" **Circuit Board Pins - All DC Coils**

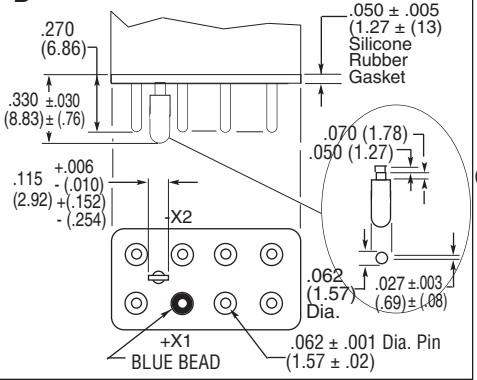


CODE "C" **Solder Hook Terminals**

HOOK TERMINALS TIN/LEAD PLATED

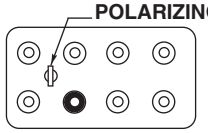


CODE "D" **Socket Pins 115 VAC**

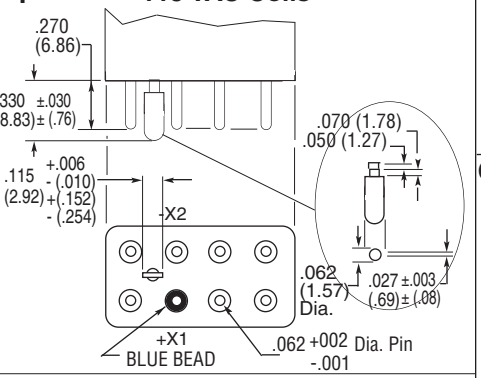


CODE "E" **Socket Pins 28 VAC Coils**

Same as Code "D" Except polarizing Pin turned 90˚ to this plane.

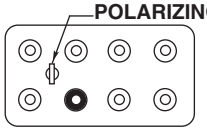


CODE "F" **Circuit Board Pins 115 VAC Coils**



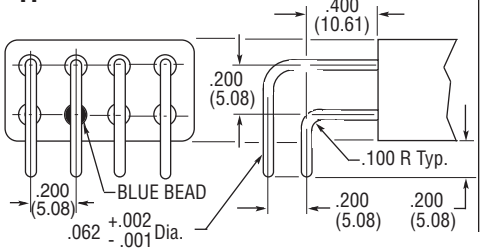
CODE "G" **Circuit Board Pins 28 VAC Coils**

Same as Code "F" Except polarizing Pin turned 90˚ to this plane.



CODE "H" **90˚ Solder Pins**

All Pins Bright Acid Tin/lead



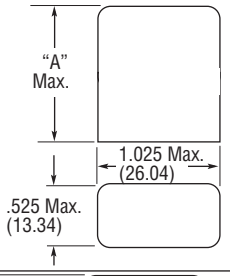
Enclosures

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

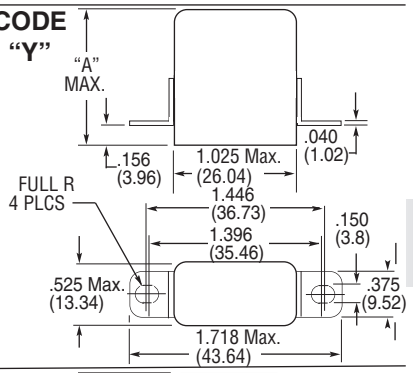
Dimensions: Inches ± .010 (mm ± .25)

"A" AC Coils 1.125 in. (28.57) Max.
DC Coils 1.010 in. (25.65) Max.

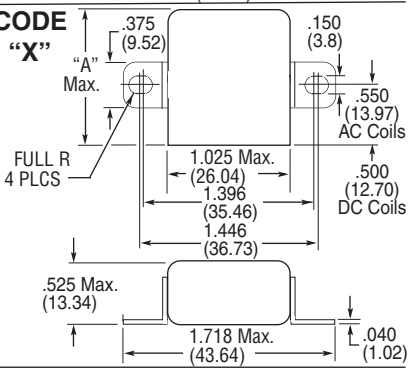
CODE "Z"



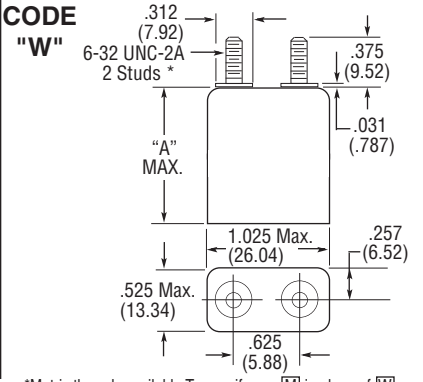
CODE "Y"



CODE "X"



CODE "W"



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

Catalog 5-1773450-5
Revised 3-13

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Dimensions are in millimeters unless otherwise specified.

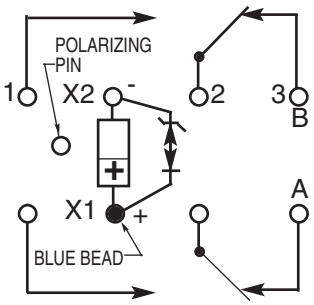
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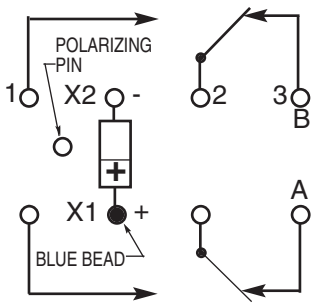
FCA-210 Series, 10 Amperes, DPDT (Continued)

Terminal Wiring

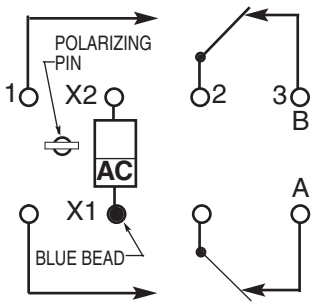
DC Coils with Transient Suppression



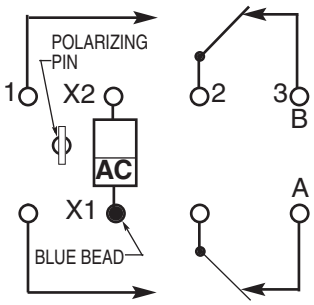
DC Coils



AC Coils 115 VAC



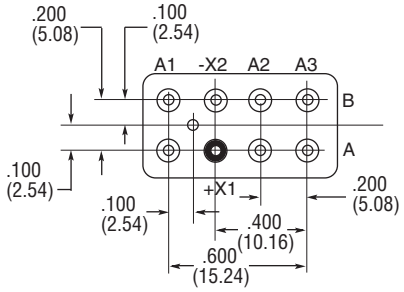
AC Coils 28 VAC



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 VIEW

HOW TO ORDER

FCA-215-
FCA-210-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

* The part number example shown on this page is for catalog items. For a list of specific QPL part numbers, please see the index in Section 15.

Catalog 5-1773450-5
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RH73H2A40MKTN SBCHE64R7K 1-962915-1 2377783-2 650075-000 CPF0402B37K4E1 MPT100C18RF U5254-000005-030PA 3-1393225-0 3631B101LL 1969656-1 936348-1 CRGCQ2010J3K3 SMW73R0JT 1393431-1 1743455-2 2834055-1 ROX05SJ18R SBCHE154R7K 1-794222-0 141991-2 2-292161-3 917696-1 TE50BR39J 175977-2 1903112-2 2005330-1 2310537-1 2380312-2 3430B2F51RTDF