# 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

www.te.com

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

Dimensions are in millimeters unless otherwise specified.

USA: +1 800 522 6752
Asia Pacific: +86 0 400 820 6015
UK: +44 800 267 666

For additional support numbers please visit www.te.com

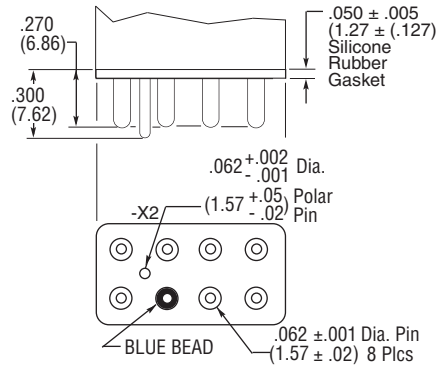
## FCA-210 Series, 10 Amperes, DPDT (Continued)

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).

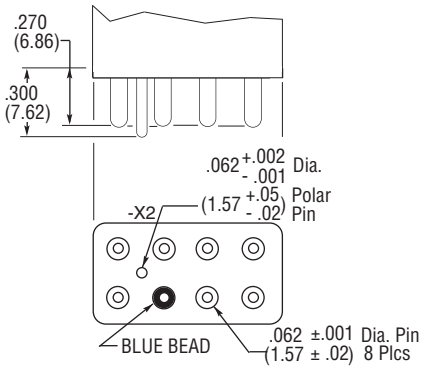
### Terminals

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**

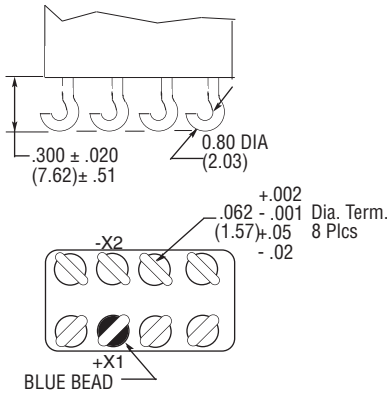



**CODE "B"** **Circuit Board Pins - All DC Coils**

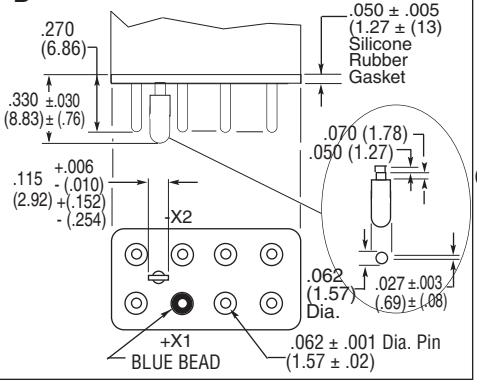



**CODE "C"** **Solder Hook Terminals**

HOOK TERMINALS TIN/LEAD PLATED

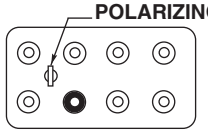



**CODE "D"** **Socket Pins 115 VAC**

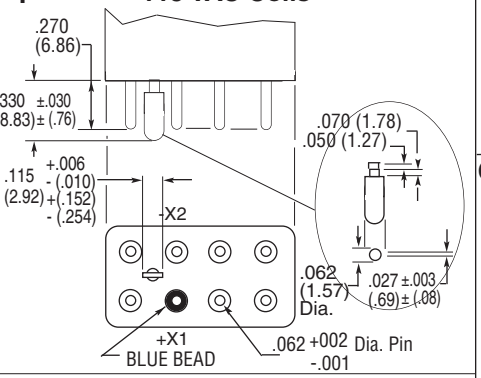



**CODE "E"** **Socket Pins 28 VAC Coils**

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

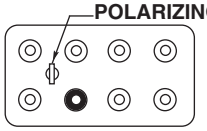



**CODE "F"** **Circuit Board Pins 115 VAC Coils**



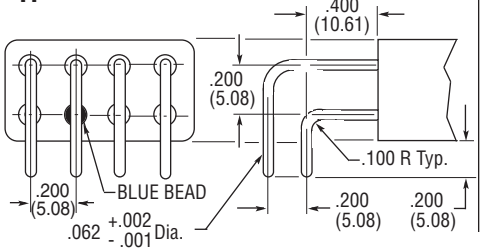

**CODE "G"** **Circuit Board Pins 28 VAC Coils**

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




**CODE "H"** **90˚ Solder Pins**

All Pins Bright Acid Tin/lead



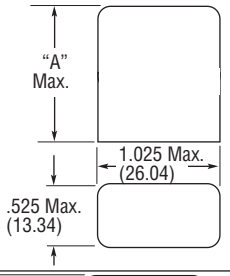

### Enclosures

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

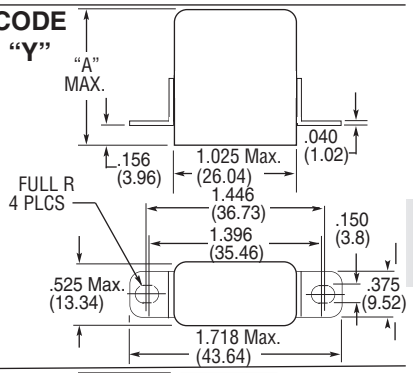
Dimensions: Inches ± .010 (mm ± .25)

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

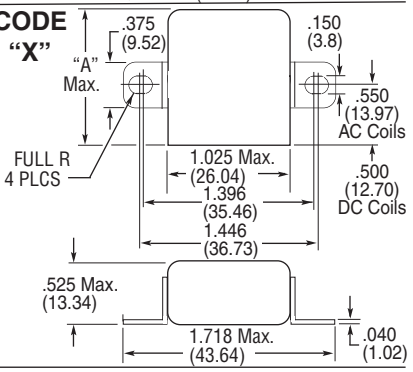
**CODE "Z"**



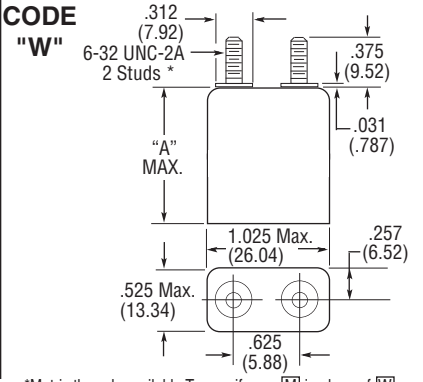

**CODE "Y"**




**CODE "X"**




**CODE "W"**




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





Catalog 5-1773450-5
Revised 3-13

www.te.com

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

Dimensions are in millimeters unless otherwise specified.

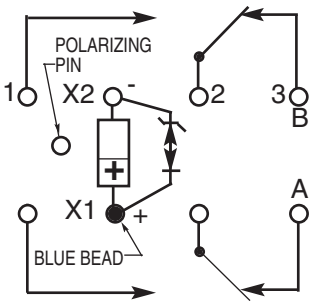
USA: +1 800 522 6752
Asia Pacific: +86 0 400 820 6015
UK: +44 800 267 666

For additional support numbers please visit www.te.com

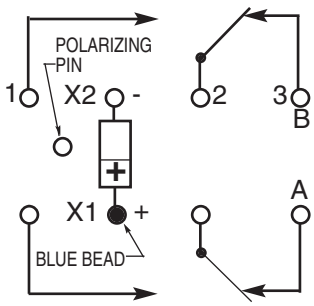
## FCA-210 Series, 10 Amperes, DPDT (Continued)

### Terminal Wiring

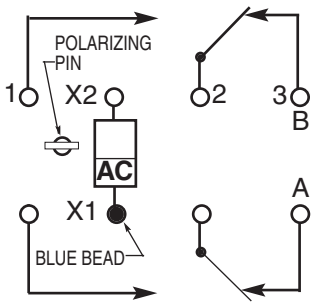
**DC Coils with Transient Suppression**



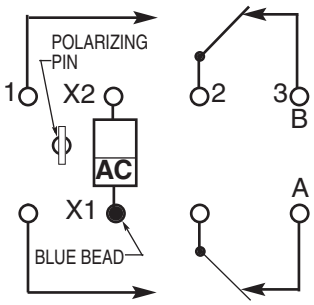

**DC Coils**




**AC Coils 115 VAC**



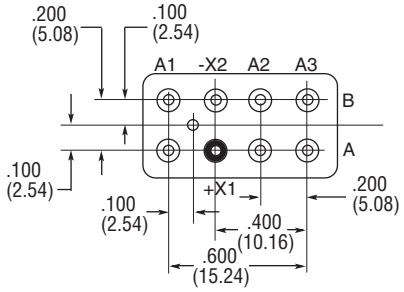

**AC Coils 28 VAC**




**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
Revised 3-13

www.te.com

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

Dimensions are in millimeters unless otherwise specified.

USA: +1 800 522 6752
Asia Pacific: +86 0 400 820 6015
UK: +44 800 267 666

For additional support numbers please visit www.te.com

# Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

## TE Connectivity:

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