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RELEASED FOR PUBLICATION  
— , — .

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REVISIONS

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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<sup>2</sup>/Hz 50-2000Hz  
W & M Enclosures (Stud Mtg.) —  
0.2 g<sup>2</sup>/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.

Contact Rating — Amperes  
Ratings Are Continuous Duty

| Type of Load | Life (Min.) Cycles x 10 <sup>3</sup> | 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

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

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

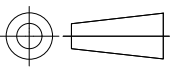
■ Weight 1.6 ounces max. (45.4 grams)

■ Qualified to M83536/9, /10

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)

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS:  
INCHES



TOLERANCES UNLESS OTHERWISE SPECIFIED:

0 PLC ± —  
1 PLC ± —  
2 PLC ± —  
3 PLC ± —  
4 PLC ± —  
ANGLES ± —

MATERIAL

—

DWN RV 18OCT2019  
CHK RV 18OCT2019  
APVD MB 18OCT2019

PRODUCT SPEC  
—

APPLICATION SPEC  
—

WEIGHT  
—

CUSTOMER DRAWING

TE Connectivity

NAME  
FCA-210-SERIES  
—  
—

SIZE  
A3

CAGE CODE  
—

DRAWING NO  
FCA-210-SERIES

RESTRICTED TO  
—

SCALE  
NTS

SHEET  
1 OF 2

REV  
B

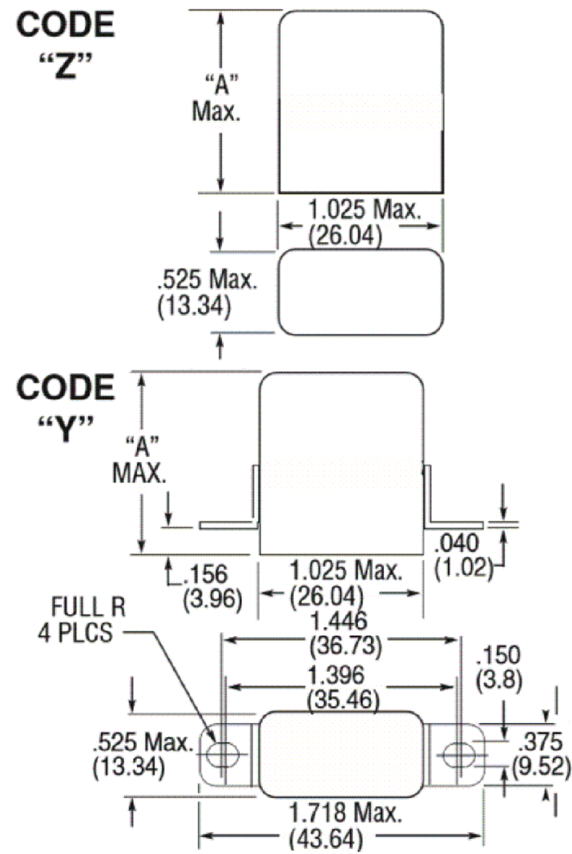
1470-19 (1/15)

**Enclosures**

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

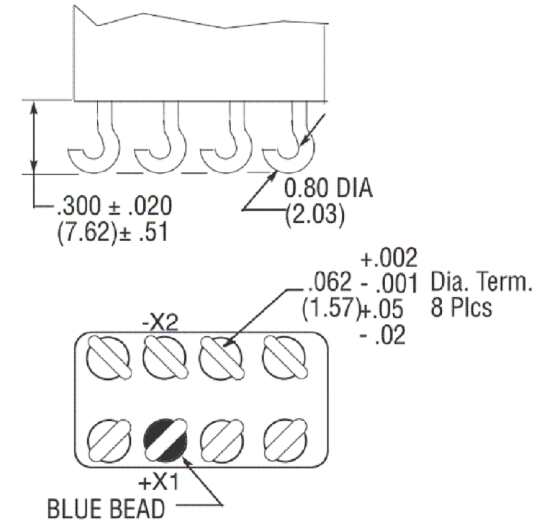
Dimensions: Inches ± .010 (mm ± .25)

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

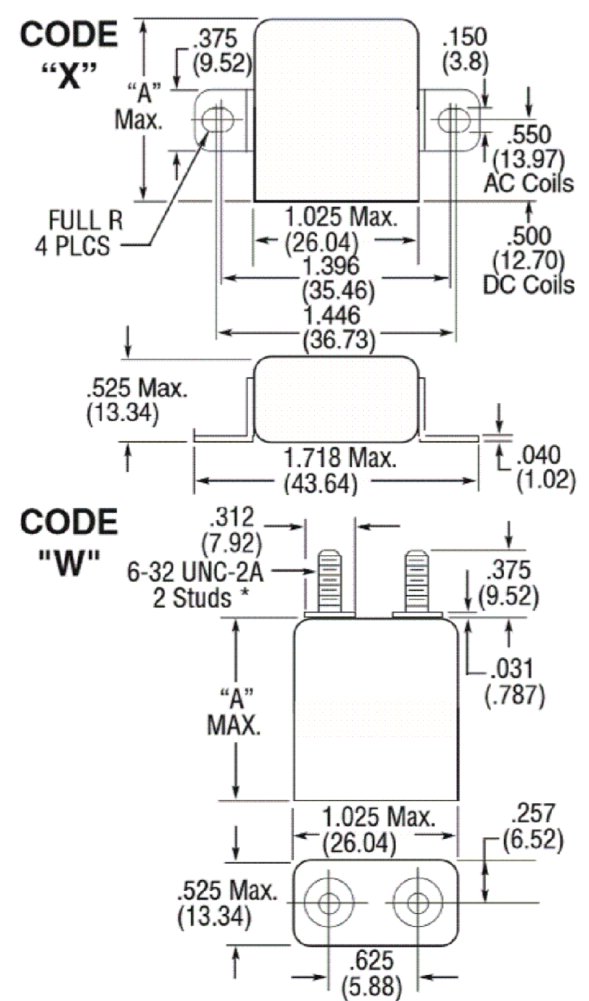


**CODE “C” Solder Hook**

HOOK TERMINALS TIN/LEAD PLATED



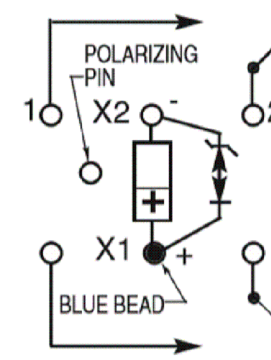
ALL DIMENSIONS ARE IN INCHES(MM)



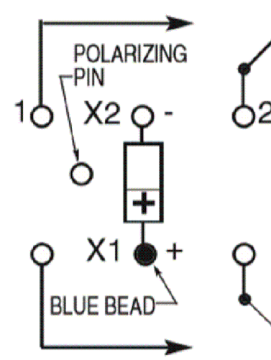
\*Metric threads available, To specify use [M] in place of [W]

**Terminal Wiring**

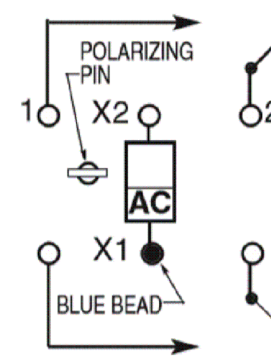
**DC Coils with Transient Suppression**



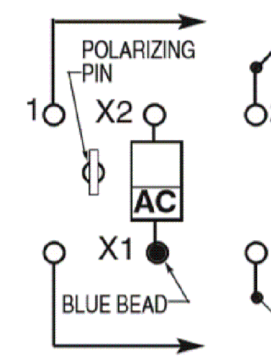
**DC Coils**



**AC Coils 115 VAC**



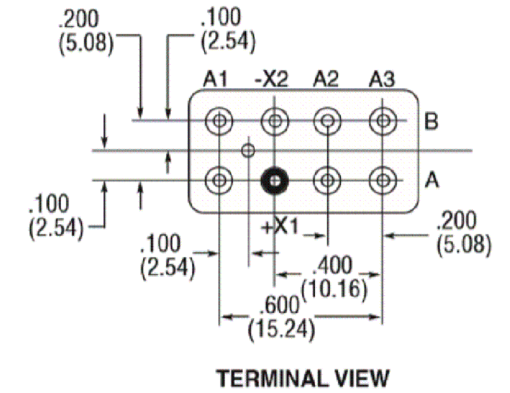
**AC Coils 28 VAC**



**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.



**HOW TO ORDER**

**RELAY TYPE** \_\_\_\_\_

**SOLDER HOOKS, DC COIL** \_\_\_\_\_

**ENCLOSURE (With Flanges)** \_\_\_\_\_

**COIL (28 VDC With Transient Suppression).** \_\_\_\_\_

**FCA-215**  
**FCA-210-A Y 4**

|                                        |                                                                             |                   |                 |              |            |
|----------------------------------------|-----------------------------------------------------------------------------|-------------------|-----------------|--------------|------------|
| THIS DRAWING IS A CONTROLLED DOCUMENT. |                                                                             | DWN RV 18OCT2019  | TE Connectivity |              |            |
|                                        |                                                                             | CHK RV 18OCT2019  |                 |              |            |
| DIMENSIONS:<br>INCHES                  | TOLERANCES UNLESS OTHERWISE SPECIFIED:                                      | APVD MB 18OCT2019 | NAME            |              |            |
|                                        |                                                                             | PRODUCT SPEC      | FCA-210-SERIES  |              |            |
|                                        | 0 PLC ± -<br>1 PLC ± -<br>2 PLC ± -<br>3 PLC ± -<br>4 PLC ± -<br>ANGLES ± - | APPLICATION SPEC  | —               |              |            |
|                                        |                                                                             | —                 | —               |              |            |
| MATERIAL                               | FINISH                                                                      | WEIGHT            | SIZE A3         | CAGE CODE    | DRAWING NO |
| —                                      | —                                                                           | —                 | —               | —            | —          |
| CUSTOMER DRAWING                       |                                                                             |                   | SCALE NTS       | SHEET 2 of 2 | REV B      |