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REVISIONS

P	LTR	DESCRIPTION	DATE	DWN	APVD
A		INITIAL DRAWN	24OCT2019	RV	MB

General Specifications**Temperature Rating —**

-70°C TO +125°C

Altitude — 300,000 Feet**Shock* —**

Z & Y Enclosures —

200 g for 6 mS

W, X & M Enclosures —

100 g for 6 mS

Vibration, Sinusoidal* —

Z & Y Enclosures —

0.12 DA 10 to 70Hz

30 g 70 to 3000Hz

W, X & M Enclosures —

0.12 DA 10 to 57Hz

20 g 57 to 3000Hz

Vibration, Random* —

Z & Y Enclosures —

0.4 g²/Hz 50-2000Hz

W, X & M Enclosures —

0.2 g²/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 — 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

Contact Rating — Amperes Ratings Are Continuous Duty

Type of Load	Life (Min.) Cycles x 10 ³	28 VDC	120VAC	120/200VAC	
			400Hz	400Hz-30	60Hz-30*
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	1.0

*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-410 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 6-pole versions of this relay.

FCA-210 — 10 Amp DPDT Relay

FCA-412 — 12 Amp 4PDT Relay

Available

FCA-415 — 15 Amp 4PDT, Has the same specifications as the FCA-410 except is rated at 15 amps. (Commercial Only)

**Product Facts**

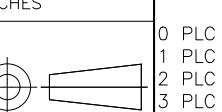
- Hermetically Sealed
- All Welded Construction
- Balanced Force
- Permanent Magnet Drive
- 4PDT switching in one inch cube
- Contacts — Silver Cadmium Oxide with Gold Plating
- Coils for DC and AC 50 to 400Hz or 400Hz
- Weight 2.72 ounces max. (77 grams max.)
- Qualified to M83536/15, /16

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	18 Ω	4.5	0.3	2.5
2	12	DC	70 Ω	9.0	0.75	4.5
3	28	DC	290 Ω	18.0	1.5	7.0
4 (A)	28	DC	290 Ω	18.0	1.5	7.0
5	48	DC	865 Ω	32.0	2.5	14.0
6	28	400Hz	225 mA	22.0	1.25	10.0
7	28	50/400Hz	120 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. OVER-VOLTAGE: 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.

THIS DRAWING IS A CONTROLLED DOCUMENT.				DWN RV CHK RV	24OCT2019	NAME	FCA-410-SERIES		
				APVD MB	24OCT2019				
DIMENSIONS: INCHES		TOLERANCES UNLESS OTHERWISE SPECIFIED:		PRODUCT SPEC		SIZE	CAGE CODE	DRAWING NO	RESTRICTED TO
		0 PLC ± - 1 PLC ± - 2 PLC ± - 3 PLC ± - 4 PLC ± - ANGLES ± -		APPLICATION SPEC					
MATERIAL		FINISH		WEIGHT		A3	-	C-FCA-410-SERIES	-
-		-		-					
CUSTOMER DRAWING						SCALE	NTS	SHEET	1 OF 2
						REV	A		

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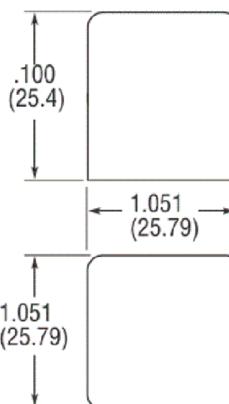
REVISIONS

P	LTR	DESCRIPTION	DATE	DWN	APVD
-	-	SEE SHEET 1	-	-	-

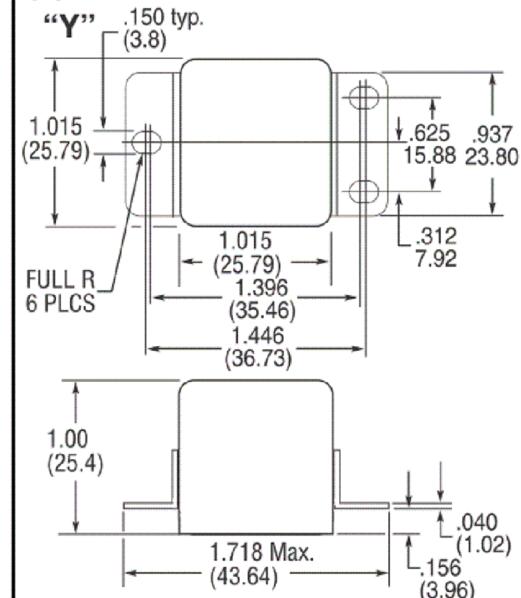
Enclosures

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

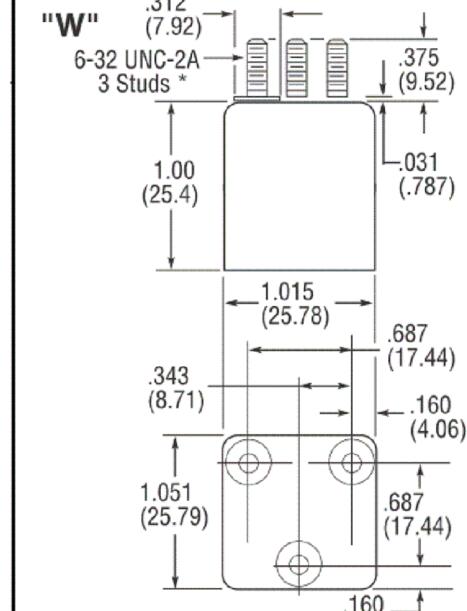
CODE "Z"



CODE "Y"

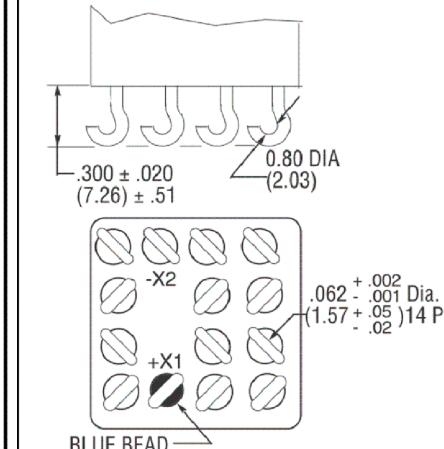


CODE "W"

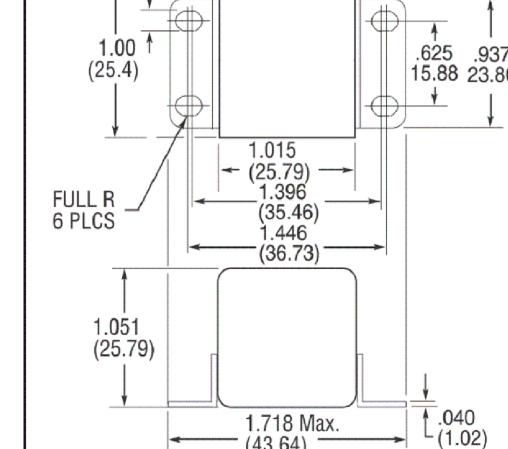


*Metric threads available, To specify use **M** in place of **W**

CODE "C" Solder Hooks-AC or DC Coils



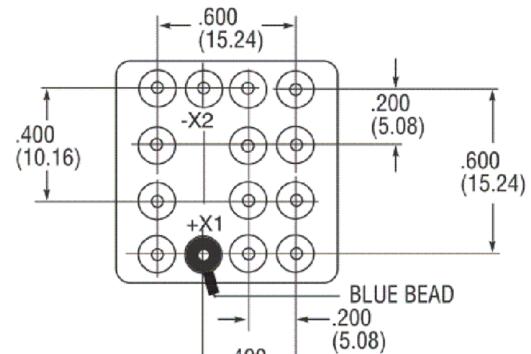
CODE "X"



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

FCA-415-
FCA-410 A Y 4

HOW TO ORDER

RELAY TYPE

SOLDER HOOK

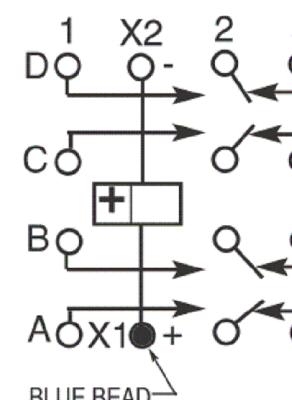
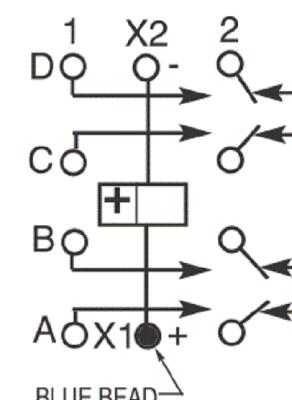
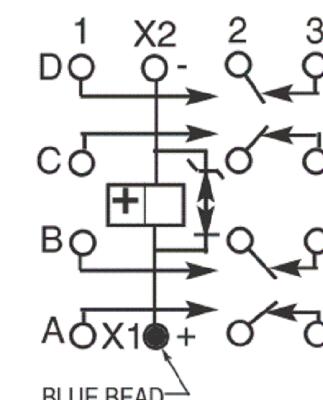
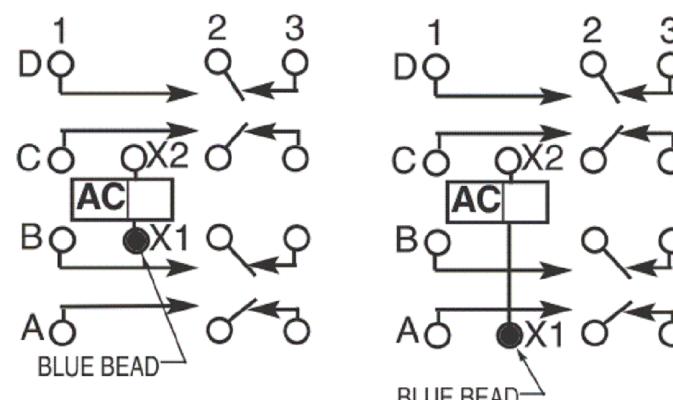
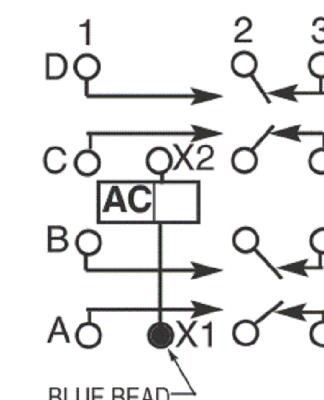
ENCLOSURE (With Flanges)

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.

Terminal Wiring

A & B Pin Terminal
All DC CoilsC Hook Terminal
All AC & DC CoilsTransient Suppression
Cir.D & F Pin Terminal
115 VAC CoilsE & G Pin Terminal
28 VAC Coils

ALL DIMENSIONS ARE IN INCHES(MM)

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DIMENSIONS:
INCHES



TOLERANCES UNLESS
OTHERWISE SPECIFIED:

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

MATERIAL

FINISH

WEIGHT

DWN
RV
CHK
RV
APVD
MB

PRODUCT SPEC

APPLICATION SPEC

18OCT2019

18OCT2019

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NAME

FCA-410-SERIES

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