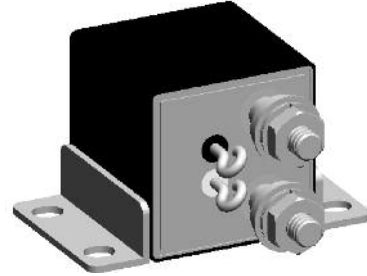
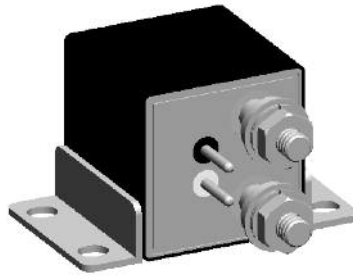


## FCA-150 Series, 50 Amps, 1PST/NO (DM) Relay

### Product Facts

- Non-latching relay
- Balanced force design
- Corrosion protected metal enclosure
- All welded hermetically sealed enclosure occupies about 1 in<sup>3</sup> (16.4 cm<sup>3</sup>)
- 1 Form X (SPST-NO-DM)
- 6, 12 and 28 Vdc coils
- Weight: 90 grams
- Designed and built in accordance to MIL-PRF-6106



The FCA-150 series 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 non-polar design.

1 Form X (SPST-NO-DM) configuration with main contacts rated 50 Amps.

### Specifications

#### Contact Data

Contact Form 1 Form X (SPST-NO-DM)

Contact Rating in Amps (Continuous Duty)

Type of Load	Life (Min.) Cycles	28 Vdc
Resistive	50,000	50
Inductive (L/R=5ms)	20,000	20
Motor	20,000	20
None	100,000	—

Overload Current (Resistive) 200 A, 50 cycles

Max. Contact Drop at 10A Initial 30mV; After Life 175mV

Operate Time at Nominal Voltage 15ms

Release Time 15ms

Bounce Time 1ms

#### Coil Data

Coil Code	1	2	3	4
Nominal Operating Voltage (Vdc)	6	12	28	28
Maximum Operating Voltage (Vdc)	7.3	14.5	29	29
Maximum Pick-Up Voltage at +125°C	4.5	9	18	18
Maximum Pick-Up Voltage at +125°C, continuous current test (Vdc)	5.7	11.25	22.5	22.5
Drop-Out Voltage at OTR	0.3 – 2.5	0.75 – 4.5	1.5 – 7.0	1.5 – 7.0
Maximum Coil Current at +25°C (A)	.50	.26	.15	.15
Back EMF Suppressed to (Vdc) (Max)	N/A	N/A	N/A	-42
Coil Resistance ±10%	18Ω	70Ω	290Ω	290Ω

**FCA-150 Series, 50 Amps, 1PST/NO (DM) Relay (Continued)**

**Specifications**

**Electrical Data**

Initial Insulation Resistance (note 1)	100 megohms, minimum, at 500Vdc, between each pin and case
Insulation Resistance After Life or Environmental Test (note 1)	50 megohms, minimum, at 500Vdc, between each pin and case
Dielectric Strength At Sea Level	
Contacts to Ground and Between Contacts	1,250Vrms, 60 Hz.
Coil to Ground	1,000Vrms, 60 Hz.
Dielectric Strength at 80,000 ft (25,000m), All Points (note 4)	
	500Vrms, 60 Hz

**Environmental Data**

Ambient Temperature Range, Operating	-70°C to +125°C
Altitude	300,000 feet
Shock Resistance	50 G's, 11 ms.
Vibration Resistance, Sinusoidal	20 G's, 75-3000Hz.

**Mechanical Data**

Approximate Weight	3.2 oz. (90g) Max.
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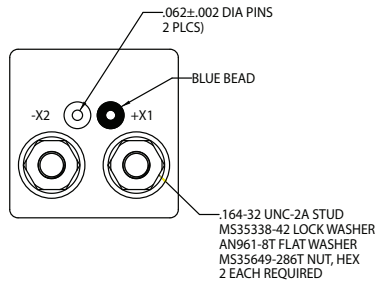
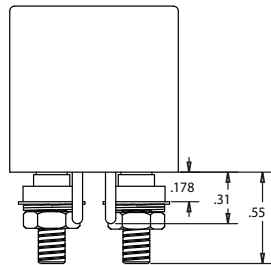
**NOTES**

1. All wired terminals must be connected together during this test. Dielectric withstanding voltage and insulation resistance are measured between all mutually insulated wired terminals and between all these terminals and case.

**Terminals**

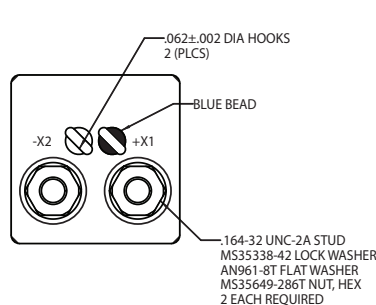
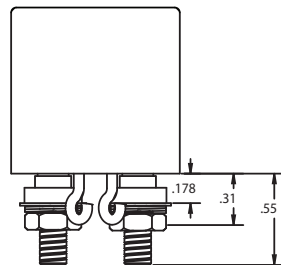
**CODE "B"**

**Solder Pin Terminals**  
Tin/Lead Plated



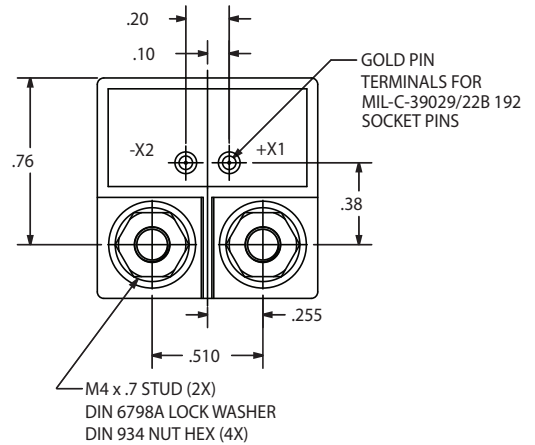
**CODE "C"**

**Solder Hook Terminals**  
Tin/Lead Plated



**CODE "K"**

**Terminal Shield**



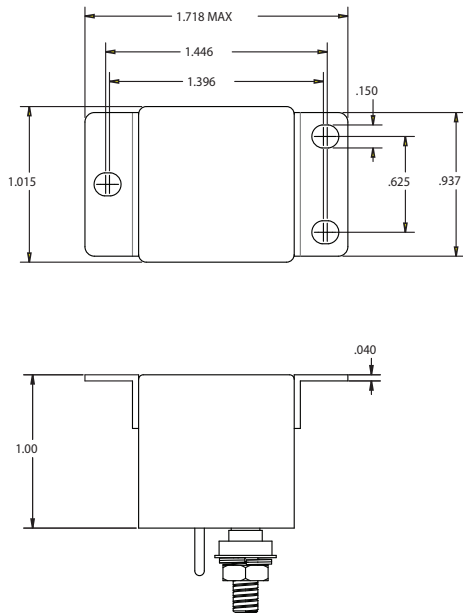
**FCA-150 Series, 50 Amps, 1PST/NO (DM) Relay** (Continued)

**Outline Dimensions**

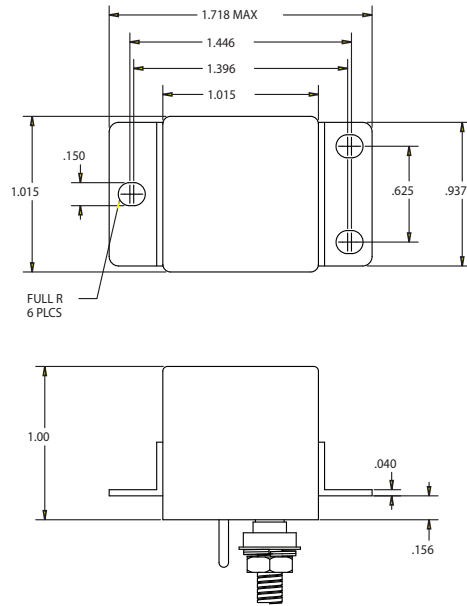
The standard terminal types and enclosures are illustrated below with dimensions in inches  $\pm 0.010$  and (millimeters  $\pm 0.25$ ).

**Enclosures**

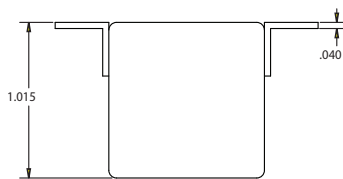
**CODE "U"**



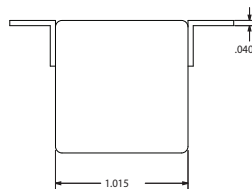
**CODE "Y"**



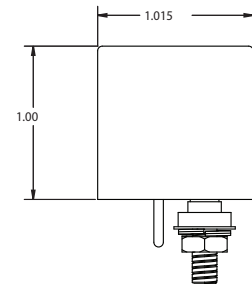
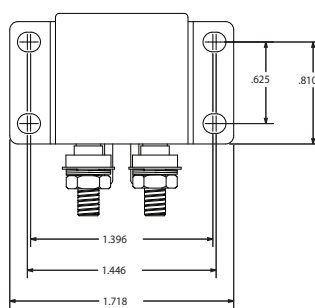
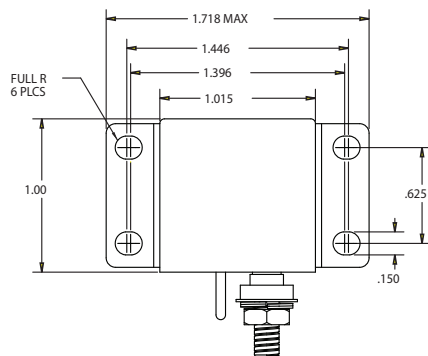
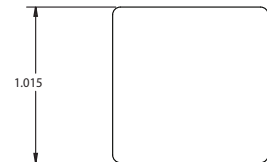
**CODE "X"**



**CODE "R"**



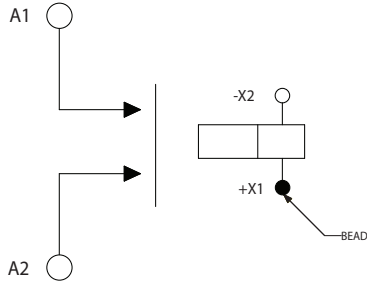
**CODE "Z"**



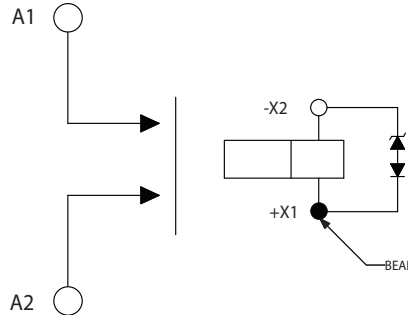
**FCA-150 Series, 50 Amps, 1PST/NO (DM) Relay** (Continued)

**Terminal Wiring**

**DC Coils**



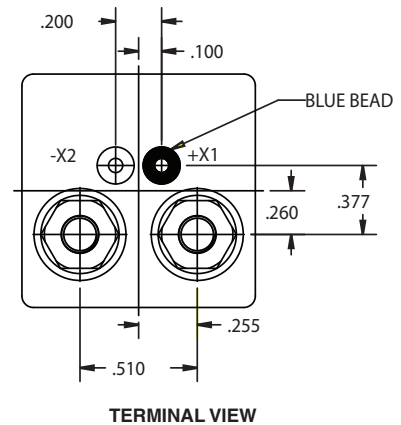
**DC Coils with Transient Suppression**



**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**

<b>Typical Part Number</b>	<b>FCA-150</b>	<b>-A</b>	<b>Y</b>	<b>3</b>
Series and Contact Arrangement: FCA-150 = Relay with 1 Form X Main Contacts				
Terminals (see drawings for details): B = Solder Pin Coil Terminals, Stud Power Terminals C = Solder Hook Coil Terminals, Stud Power Terminals K = Terminal Block, Stud Power Terminals				
Enclosure (see drawings for details): R = Horizontal Flange Mount, Rotated      U = Flush Vertical Flange Mount      X = Horizontal Flange Mount Y = Raised Vertical Flange Mount      Z = No Mount				
Coil: 1 = 6Vdc nominal      2 = 12Vdc nominal      3 = 28Vdc nominal      4 = 28Vdc nominal, with back EMF suppression				

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