



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

CII FCAC-150 Series Relay  
*50 Amps, 1PST/NO (DM) with  
1PDT Auxiliary Contacts*

# FCA-150 FCAC-150 Series Relays

## KEY FEATURES

- Non-latching relay
- Balanced force design
- Corrosion protected metal enclosure
- All welded hermetically sealed enclosure occupies about 1 in<sup>3</sup>
- 1 Form X (SPST-NO-DM) Auxiliary versions available with 1 Form C (SPDT) aux.
- 6, 12 and 28 Vdc coils available
- Weight: 90 grams
- Designed and built in accordance with MIL-PRF-6106
- Rated for altitude up to 300,000 ft.
- Available with optional terminals and mounting styles

## DESCRIPTION

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. The FCAC-150 series has a 1 Form C (SPDT) auxiliary contact set rated at 2 Amps available.

Designed and built to perform under the most demanding environmental conditions and can withstand such changing environmental factors as temperature, altitude, shock, vibration, and salt spray.

Minimum mechanical life expectancy is 50,000 cycles under resistive load.

3 available coil voltages (6, 12 and 28 Vdc) with optional transient suppression.

## APPLICATIONS

Used in military, aerospace, and associated ground support electrical and electronic systems. Principle areas of application include:

- Aircraft
- Missiles
- Power Distribution
- Fuel Pumps
- Avionics Main Power Feed
- Weapons Systems
- Ground Support Equipment

## PART NUMBERING SYSTEM

<b>Typical Part Number</b>	<b>FCA-150 or FCAC-150</b>	<b>-A</b>	<b>Y</b>	<b>3</b>
Series and Contact Arrangement: FCA-150 = Relay with 1 Form X Main Contacts FCAC-150 = Relay with 1 Form X Main Contacts and 1 Form C Auxiliary 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 Y = Raised Vertical Flange Mount U = Flush Vertical Flange Mount Z = No Mount X = Horizontal Flange Mount				
Coil: 1 = 6Vdc nominal      2 = 12Vdc nominal      3 = 28Vdc nominal      4 = 28Vdc nominal, with back EMF suppression				

## PERFORMANCE DATA

### Specifications

#### Contact Data

Contact Form	FCA-150: 1 Form X (SPST-NO-DM) FCAC-150: 1Form X (SPST-NO-DM) with 1 Form C (SPDT) Auxiliary Contacts			
Contact Rating in Amps (Continuous Duty)	Type of Load	Life (Min.) Cycles	28 Vdc	115 Vac 400Hz
	Resistive	50,000	50	50
	Inductive (L/R=5ms)	20,000	20	20
	Motor	20,000	20	20
	None	100,000	–	–
Overload Current (Resistive)	200 A, 50 cycles			
Max. Contact Drop at 10A	Initial 150mV; 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 +125°C	0.3 – 2.5	0.75 – 4.5	1.5 – 7.0	1.5 – 7.0
Maximum Coil Current at +25°C (mA)	.50	.26	.15	.15
Back EMF Suppressed to (Vdc)	N/A	N/A	N/A	-42
Coil Resistance	18Ω	70Ω	290Ω	290Ω

#### 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.

## FOR MORE INFORMATION

### Technical Support

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Harrisburg, PA

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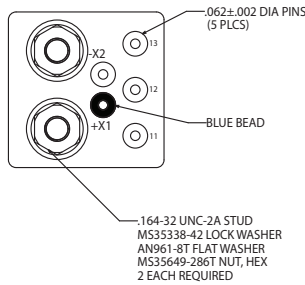
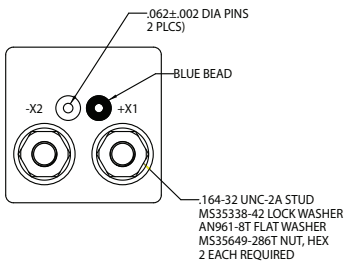
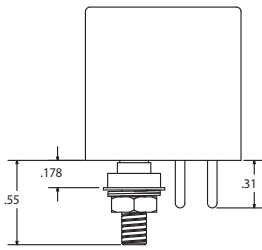
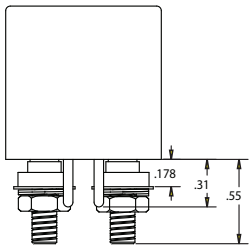
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# FCA-150 FCAC-150 Series Relays

## TERMINALS

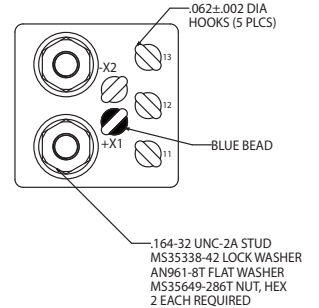
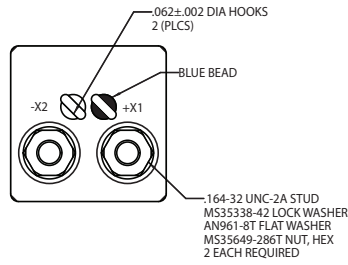
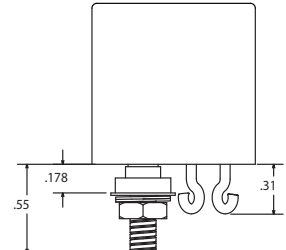
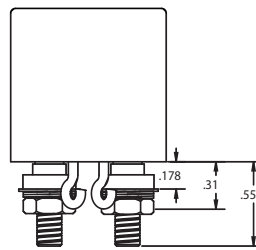
### CODE "B"

**Solder Pin Terminals — Tin/Lead Plated**  
FCA-150 FCAC-150



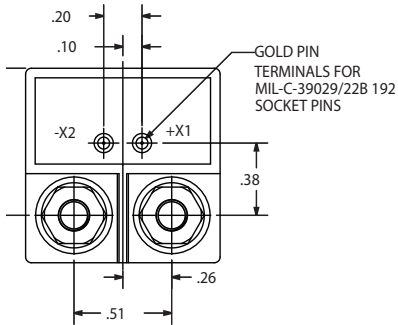
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**Solder Hook Terminals — Tin/Lead Plated**  
FCA-150 FCAC-150

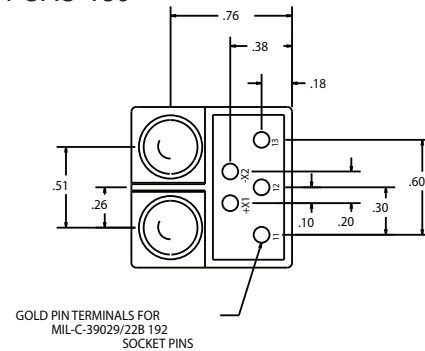


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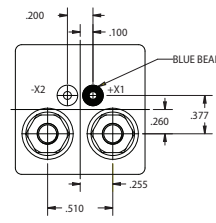
**Terminal Shield**  
FCA-150



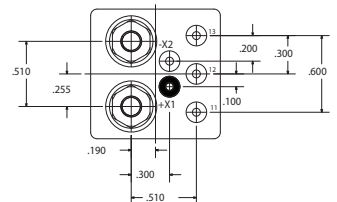
FCAC-150



**Terminal View**  
FCA-150

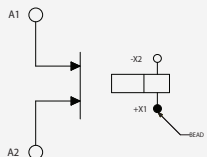


FCAC-150

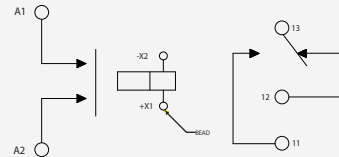


## Terminal Wiring

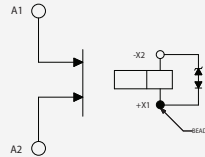
**DC Coils**  
FCA-150



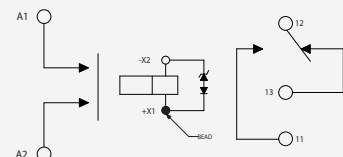
FCAC-150



**DC Coils w/Transient Suppression**  
FCA-150



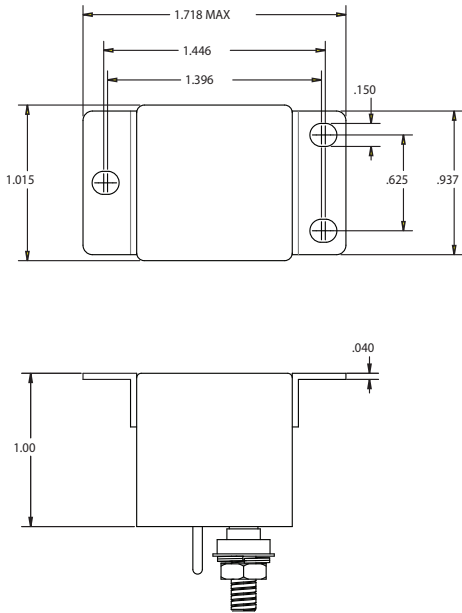
FCAC-150



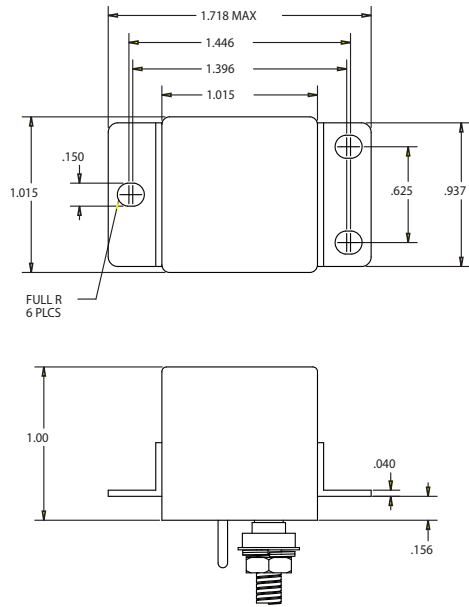
**PRODUCT OUTLINE DIMENSIONS**

The standard terminal types and enclosures are illustrated below with dimensions in inches  $\pm 0.010$  and (millimeters  $\pm 0.25$ ).  
**FCA-150 representative drawings are shown below.**

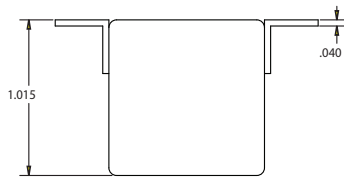
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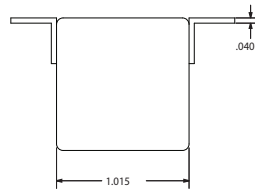
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**CODE  
"X"**



**CODE  
"R"**



**CODE  
"Z"**

