



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

PERFORMANCE DATA

Specifications

Contact Data

Contact Form

FCA-150: 1 Form X (SPST-NO-DM)

FCAC-150: 1 Form 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.

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.

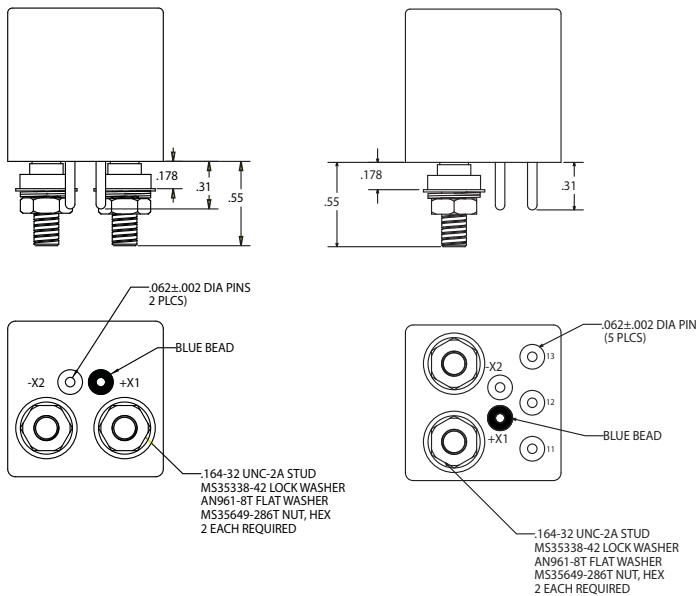


FCA-150 FCAC-150 Series Relay

TERMINALS

CODE “B”

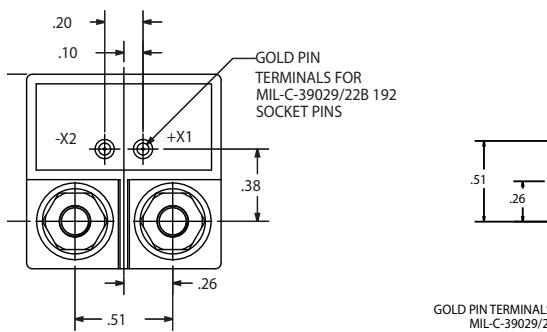
Solder Pin Terminals — Tin/Lead Plated



CODE “K”

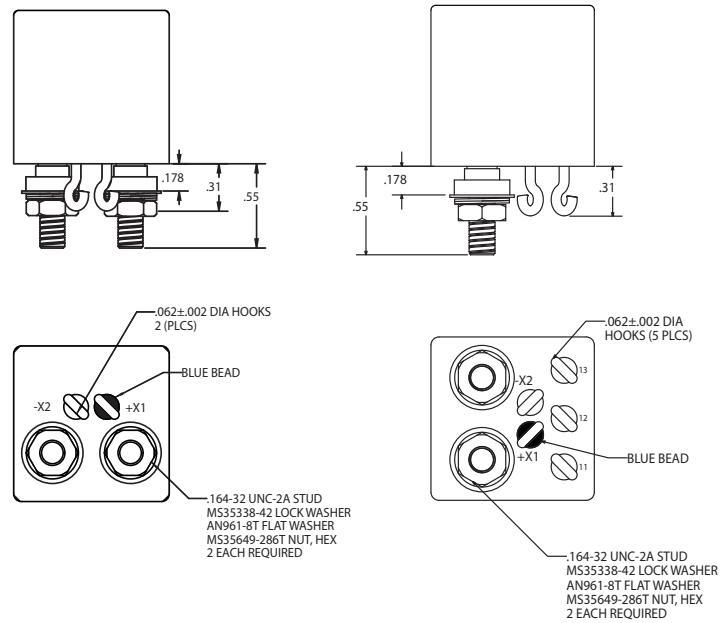
Terminal Shield

FCA-150



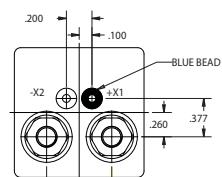
CODE “C”

Solder Hook Terminals — Tin/Lead Plated

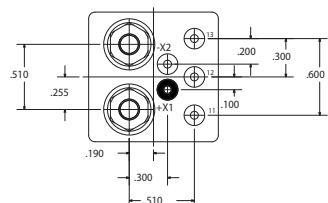


Terminal View

FCA-150

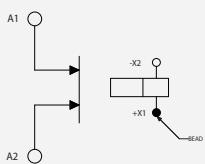
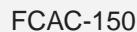


FCAC-150

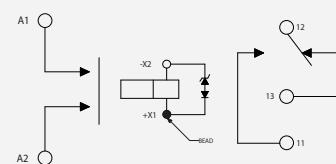


Terminal Wiring

DC Coils



DC Coils w/Transient Suppression



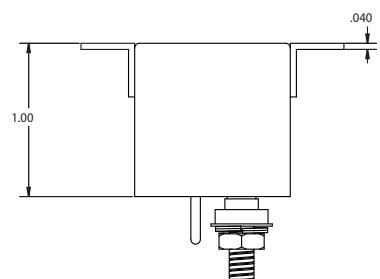
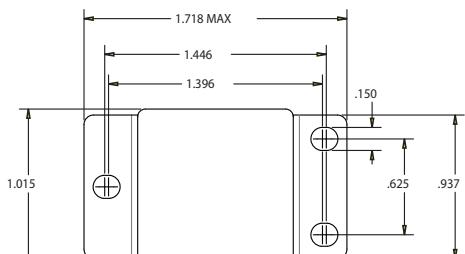
**FCA-150
FCAC-150
Series Relay**

PRODUCT OUTLINE DIMENSIONS

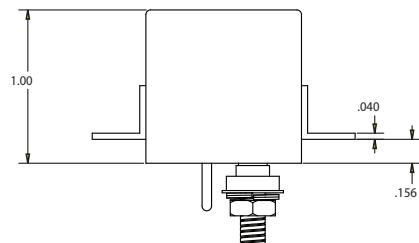
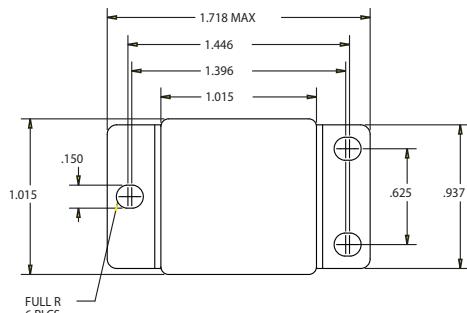
The standard terminal types and enclosures are illustrated below with dimensions in inches ± 0.010 and (millimeters ± 0.25).

FCA-150 representative drawings shown below.

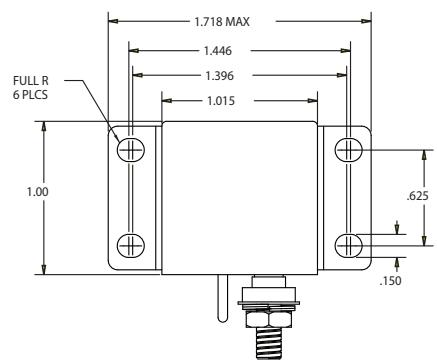
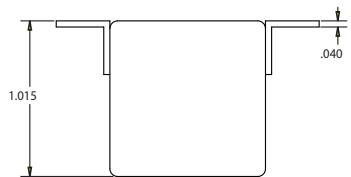
**CODE
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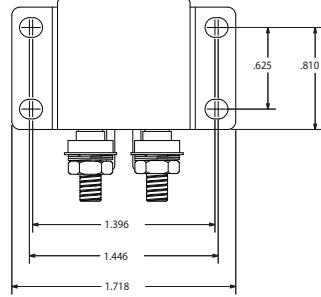
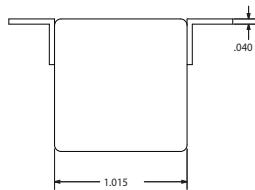
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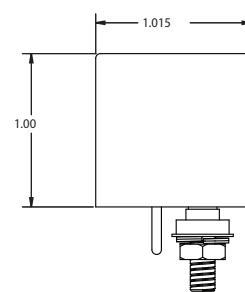
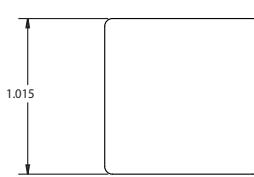
**CODE
"X"**



**CODE
"R"**



**CODE
"Z"**



FCA-150

FCAC-150

Series Relay



KEY FEATURES

Non-latching relay

Balanced force design

Corrosion protected metal enclosure

All welded hermetically sealed enclosure occupies about 1 in³

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

Typical Part Number

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

-A

Y

3

Coil:

1 = 6Vdc nominal

2 = 12Vdc nominal

3 = 28Vdc nominal

X = Horizontal Flange Mount

4 = 28Vdc nominal, with back EMF suppression

FOR MORE INFORMATION

Technical Support

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