

Description

The 4-wire FCA Field-Configurable Alarm accepts a current or voltage input signal from an analog device such as a temperature, pressure, level, or flow transmitter. When the signal value exceeds a preset limit, the FCA outputs two contact closure signals. The alarm outputs are ideal for indicating high and/or low process conditions via a bell, buzzer, light or other device. Front panel LED's indicate when the unit is in an alarm condition.

Two Alarm Trips per Module—To reduce space requirements and equipment costs, every FCA features dual alarm trip capabilities. From one signal input, the FCA delivers two independent contact closure output signals. The FCA can be configured to respond to High/Low, High/High, or Low/Low process conditions. Precise trip point settings can be quickly made using potentiometers conveniently located on the front panel.

The choice of failsafe (unit provides relay outputs if power fails) or non-failsafe (no relay outputs if power fails) relay action is also field-configurable.

Ordering Specifications

To order, use the bold-face data from the Ordering Specifications section of the Specifications table. For assistance, refer to the model number example located at the bottom of the table.

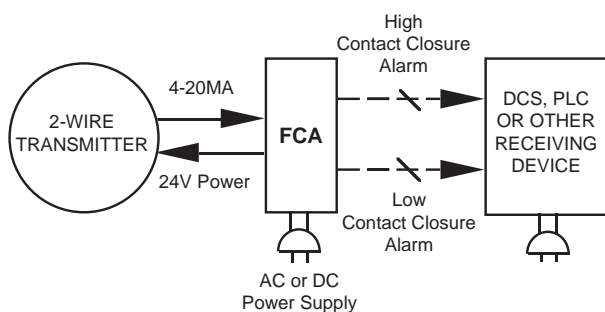


Figure 1. The FCA will supply power to a 2-wire transmitter while providing two separate alarm outputs from a single input.



The DIN-style FCA's universal mounting clip allows quick installation on a G-Type or Top Hat rail in a control room or in a field-mounted cabinet.

Features

- **Ideal plant standard.** The exceptionally versatile FCA features field-configurable input, output and power input. Ideal for both new and retrofit applications, stocking an array of costly spares is eliminated.
- **Configurable input.** Field-configures to accept a 4-20mA, 10-50mA or 1-5V input signal.
- **Configurable dual outputs.** The choice of alarm configuration (high/low, high/high, or low/low) and failsafe or non-failsafe relay action can be quickly set with easy-to-access on-board controls.
- **Powers a 2-wire transmitter.** The FCA features standard loop excitation that can be used to power a 2-wire transmitter if required for the application.
- **Universal power input.** Automatically accepts all ac (90-260Vac) and dc (22-300Vdc) power supply inputs. No adjustments, such as jumper changes, are required.
- **Isolated and RFI/EMI protected.** Exceptional signal isolation of 1000V rms and 30V/m RFI/EMI protection prevent false alarms from occurring in noisy environments

Certification



CSA: General Location — File Number LR28549-60

City of Los Angeles: General Location —
File Number 415308

Specifications

<p>Performance Repeatability: Trip point repeats within $\pm 0.1\%$ of input span Deadband: Adjust 1-20% of span using front panel potentiometers (larger ranges also available, consult factory for details) Response Time: 50ms, average, input-to-output (for a step input with trip point at midpoint of step) Isolation: 1000Vrms between input, output and power Dielectric Withstand Capability: 1500Vrms between case, power, inputs, and outputs Common Mode Rejection: Greater than 100 dB between input and case Power-Up/Down Filtering: Filtering prevents chatter or bounce upon power-up or power-down</p>	<p>Performance (continued) Power Supply Effect: Less than 0.002% of span per volt, max.; 50Hz line effect on trip point is $< 0.008\%$ between 85Vac and 262Vac Power Consumption: 2.9 watts at max. dc voltage; 6.9 watts at max. AC voltage RFI/EMI Effect: Protection rates 30V/m - ABC = $\pm 0.1\%$ of full scale when tested according to SAMA standard PMC 33.1 2-Wire Transmitter Excitation: Front panel terminals available for powering one, 2-wire, 4-20mA transmitter; regulated 24Vdc supply @ 25mA (transmitter excitation is not available when -DA option is specified)</p>	<p>Ambient Temperature Range: -18°C to $+70^{\circ}\text{C}$ (0°F to $+158^{\circ}\text{F}$) Effect: $\pm 0.02\%$ of span per $^{\circ}\text{C}$ maximum</p> <p>Adjustments Type: Front panel multiturn potentiometers Trip Points: -10% to $+110\%$ of input span Deadband: 1-20% of span (larger ranges also available, consult the factory for details)</p> <p>Indicators Type: Two LEDs on front panel indicate when Trip Point A and/or Trip Point B has been exceeded Failsafe Models: LED(s) remains on in non-alarm condition and off in alarm condition Non-Failsafe Models: LED(s) remains off in non-alarm condition and on in alarm condition</p> <p>Weight 450 grams (15.9 ounces)</p>
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Ordering Specifications

Unit	Input	Output	Power	Options	Housing
FCA	<p>PRG Universal unit can be field-configured via connection terminals on front panel to accept: 4-20mA into 50 ohms 10-50mA into 20 ohms 1-5V @ 1 megohm</p> <p>Units with -DA Option REQUIRE one of the following input selections:</p> <p>2X4-20MA 4-20mA into 50 ohms 2X10-50MA 10-50mA into 20 ohms 2X1-5V 1-5V @ 1 megohm</p>	<p>PRG Universal unit field-configures via internal solderless jumpers for any output type listed under FACTORY CONFIGURATION (PRG unit comes configured as DH1L1)</p> <p>FACTORY CONFIGURATION Specify any of below output types and the unit will be delivered factory configured (unit retains configurability even if Factory Configuration is specified): DH1L1 High/low, failsafe alarm DH2L2 High/low, non-failsafe alarm DH1H1 High/high, failsafe alarm DH2H2 High/high, non-failsafe alarm DL1L1 Low/low, failsafe alarm DL2L2 Low/low, non-failsafe alarm</p> <p>(DPDT relay contacts rated 5A @ 220/240Vac or 24Vdc non-inductive)</p> <p>NOTE: Failsafe refers to relays that are energized in the non-alarm condition and de-energized upon alarm or power loss to the unit.</p>	<p>Universal Power: U Accepts 22-300Vdc or 90-260Vac (6 watts nominal, 7 watts max.) 117AC 240AC</p>	<p>-AR Alarm response delay adjustable from 150ms to 30 seconds via internal multiturn potentiometer -DA Deviation alarm (transmitter excitation deleted with this option; 2X4-20mA, 2X10-50mA or 2X1-5V input type must be specified) -MR Manual reset terminals provided for customer supplied pushbuttons</p>	<p>DIN Aluminum DIN-style housing mounts on G-type or Top Hat rail</p> <p>NOTE: Mounting brackets are available for installing the DIN-style FCA housing in existing STD surface-mount housing holes. Consult the factory for details.</p>

When ordering, specify: Unit / Input / Output / Power / Options [Housing]
Model number examples: FCA / PRG / PRG / U / -MR [DIN]

Field-Selectable Inputs and Outputs with Universal Power

It's easy to specify the right FCA. One field-configurable, universal model handles the majority of alarm trip applications.

The FCA quickly sets up to accommodate common current and voltage signal input types and

alarm configurations. Standardize on the FCA and avoid having to stock an array of expensive and restrictive fixed-parameter units.

Adding to its flexibility, the FCA automatically adjusts to accept any standard ac or dc power supply.

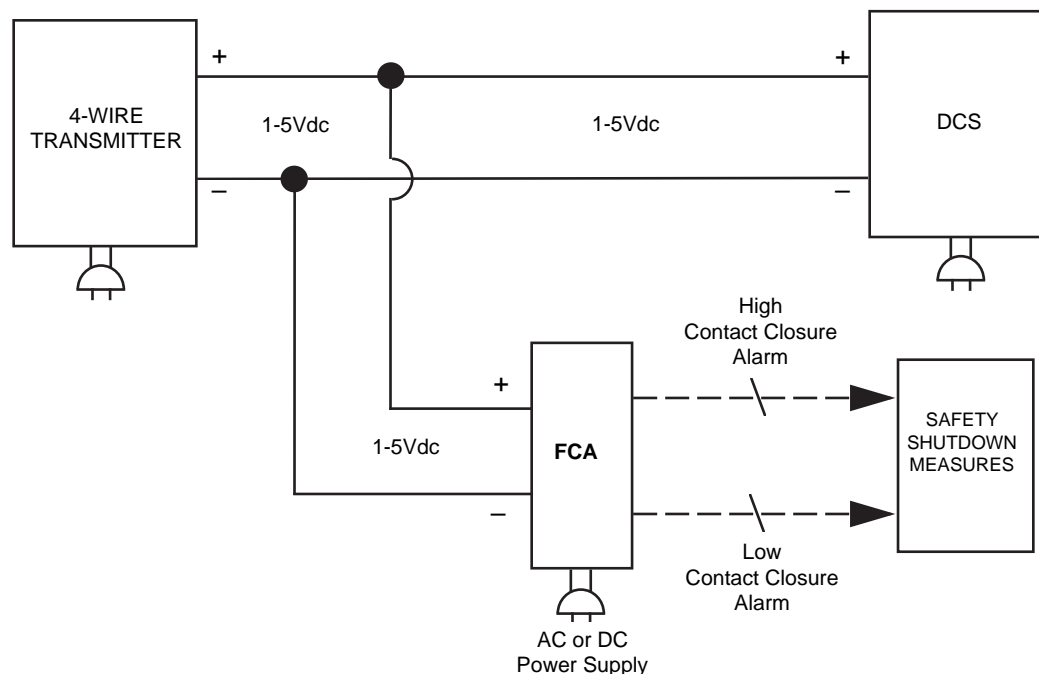
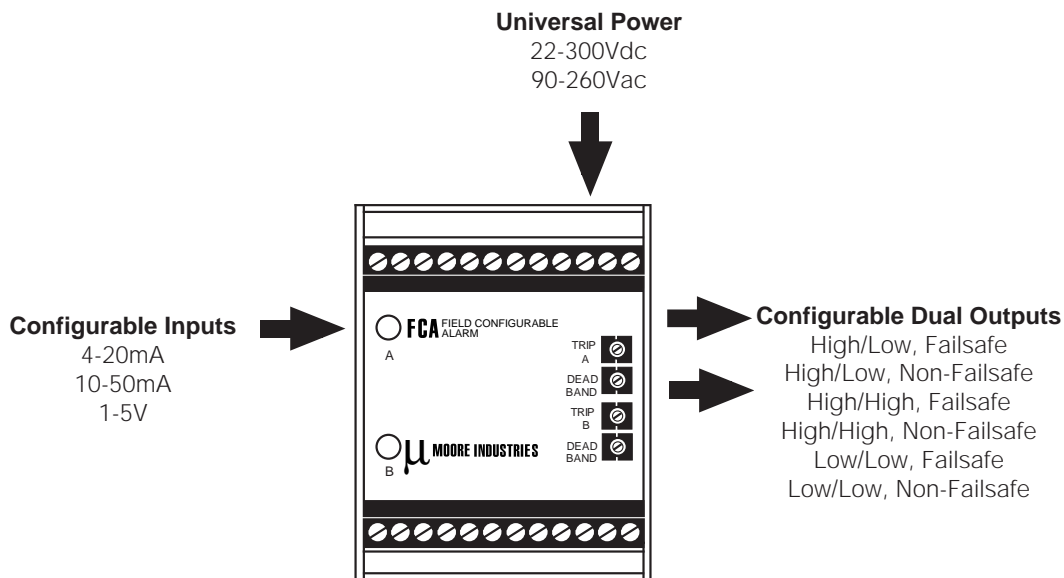
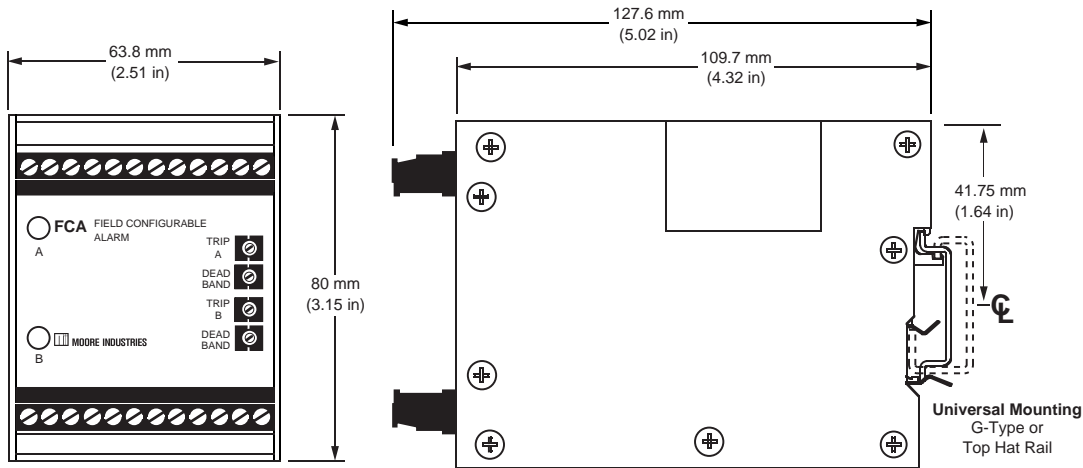


Figure 2. The FCA provides a hard-alarm backup in the event of DCS common mode failure.

FCA

Field-Configurable
Current and Voltage Alarm



Removable Terminal Blocks
allow the FCA to be taken out
of service without interrupting
the process loop

Figure 3. Outline Dimensions

Table 1. Terminal Designations

Unit	Top Terminals (left to right)											
	1	2	3	4	5	6	7	8	9	10*	11*	12
Standard	-IN	50MA	20MA	5V				TX		POWER or AC	POWER or ACC	GND
-DA Option	COM	+REF	+IN							POWER or AC	POWER or ACC	GND
-MR Option	-IN	50MA	20MA	5V	AMR	COM MR	BMR	TX		POWER or AC	POWER or ACC	GND
-DA & -MR	COM	+REF	+IN		AMR	COM MR	BMR			POWER or AC	POWER or ACC	GND
Bottom Terminals (left to right)												
All Units	Relay A						Relay B					
	13	14	15	16	17	18	19	20	21	22	23	24
	NC1	CM1	NO1	NC2	CM2	NO2	NC1	CM1	NO1	NC2	CM2	NO2

* Linear Power Configurations are labeled: "AC / ACC / GND". Universal Power units are labeled: "Power / Power / GND".

Table 1a. Key to Abbreviations

Key	Description
AMR	Manual Reset Terminal, Relay A
BMR	Manual Reset Terminal, Relay B
CM	Common
COM MR	Manual Reset Terminal, Common
TX	Transmitter Excitation, 4-20mA output, Use with -IN
NC	Normally Closed
NO	Normally Open
5V	1-5V input
20MA	4-20mA input
50MA	10-50mA input



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