

## Description

Moore Industries' popular DCA Direct Current Alarm accepts a current or voltage input from a temperature, pressure, level or flow transmitter or other current or voltage source. When the input value falls outside of a fully-adjustable preset limit, the DCA outputs a contact closure signal ideal for indicating a high and/or low condition via a bell, buzzer, light or other device. A bright LED on the front panel indicates when an alarm condition has occurred.

Highly accurate to within  $\pm 0.1\%$  of span, the DCA is offered in both single and dual alarm models. The dual alarm models allow configuration of two separate trip points per module (High/Low, High/High or Low/Low). On both single and dual alarm models, trip points are easily set using potentiometers conveniently located on the unit's front panel.

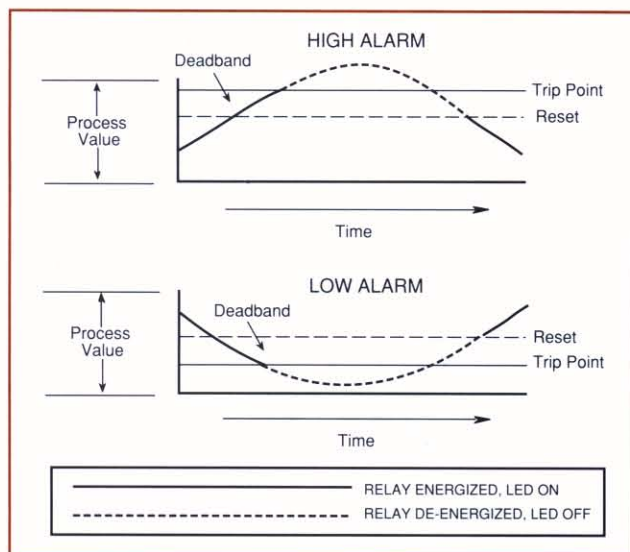
**Valuable Options**—Adding to its versatility, the DCA can be ordered with a variety of options including: a deviation alarm trip (-DA) that allows the unit to accept signals from two sources and alarm according to the magnitude of their difference; a ten-turn lockable dial with a vernier scale (-TT) that simplifies trip point adjustment; alarm response delay (-AR) of between 1 and 30 seconds (factory set); dual input (-DI) that provides two separate alarm trips per unit; and superior RFI/EMI protection (-RF). For a complete listing of available options, see Options under Ordering Specifications on the back page.



*The DCA's easy-to-install surface-mount and high-density plug-in card housings are ideal for control room applications. A field-mount enclosure is also available.*

## Features

- **Wide range of inputs.** The DCA accepts all standard current and voltage inputs from almost any temperature, pressure, level, or flow transmitter and many other current or voltage sources.
- **Industry standard.** Thousands of DCAs are counted on worldwide to provide reliable and accurate performance in a wide variety of process applications.
- **Versatile mounting.** The DCA's broad selection of control room and field mounting options permit fast and simple installation in nearly any environment.
- **Complete isolation.** Prevents false alarms due to ground loops.



**Figure 1.** Normal Failsafe High and Low Alarm Configuration.

### Certifications



CSA, General Locations; Hazardous Locations, Class I, Groups C and D

City of Los Angeles, General Locations

# DCA

Direct Current Alarm

## Specifications

Characteristics	Ordering Specifications	Options (continued)
<p><b>Performance</b></p> <p><b>Repeatability:</b> Trip point repeats within <math>\pm 0.1\%</math> of input span</p> <p><b>Dead Band:</b> 1% of span, standard</p> <p><b>Alarm Response:</b> 50 milliseconds for a step change of 1% of span beyond trip points</p> <p><b>Line Voltage Effect:</b> <math>\pm 0.005\%/1\%</math> line voltage change (ac or dc)</p> <p><b>Isolation:</b> Input, output and power input are isolated with no dc connections between them (both ac and dc powered units)</p> <p><b>Ambient Temperature</b></p> <p><b>Range:</b> <math>-18^{\circ}\text{C}</math> to <math>+65^{\circ}\text{C}</math> (<math>0^{\circ}\text{F}</math> to <math>+150^{\circ}\text{F}</math>)</p> <p><b>Effect on Amplifier:</b> Less than <math>\pm 0.018\%/^{\circ}\text{C}</math> (<math>\pm 0.01\%/^{\circ}\text{F}</math>) over above range</p> <p><b>Adjustments</b></p> <p><b>Trip Points:</b> Multiturn front panel potentiometers adjust over a range of 0% to 100% of span</p> <p><b>Indicators</b></p> <p>Front panel LED(s) indicate when relay is energized</p> <p><b>Weight</b></p> <p>Approximately 908 grams (2 pounds)</p>	<p><b>Unit</b> DCA Direct Current Alarm</p> <p><b>Input</b> <b>1-5MA</b> @ 200 ohms <b>4-20MA</b> @ 50 ohms <b>10-50MA</b> @ 20 ohms <b>1-5V</b> @ 1 megohm min. (consult factory for special range applications)</p> <p><b>Output</b> See Table 1 below (SPDT relay contacts provide user-selection of either NO or NC contact configurations and are rated at 5A @ 117Vac non-inductive or 28Vdc; DPDT and 10A relays are optional)</p> <p><b>Power</b> <b>117AC</b>, <b>220AC</b>, or <b>240AC</b>, 50/60Hz, <math>\pm 10\%</math> <b>24DC</b> or <b>45DC</b>, <math>\pm 10\%</math> (5 watts, nominal)</p> <p><b>Options</b> <b>-10A</b> 10 amp relay (not available on PC housing) <b>-AD</b> Adjustable deadband, 1-20% nominal (available up to 100%) <b>-AR</b> Alarm response time delay; specify between 1-30 seconds (factory set) <b>-DA</b> Deviation alarm (not available on PC housing when -MR option is used) <b>-DI</b> Dual input <b>-DPDT</b> Double-pole, double-throw relay(s) <b>-FU</b> Power fuse on PC housing <b>-HS</b> Hermetically sealed relays, rated 1A @ 117Vac non-inductive or 2A @ 26Vdc</p>	<p><b>-IO</b> Indicator Output (1-5V @ 1mA); In combination with -TT option, output changes to 0-4V @ 1mA</p> <p><b>-MR</b> Manual reset (for customer supplied external pushbuttons)</p> <p><b>-PR</b> Power Relay. Solid state relay for inductive loads</p> <p><b>-RE</b> External relay rated 5A @ 28Vdc (DPDT is required for inductive loads on alarms with -RF option)</p> <p><b>-RF</b> RFI/EMI protection rated at 50V/m - ABC = 1% F.S. as defined by SAMA Standard 33.1 (when -RF option is selected, the -RE option must also be specified)</p> <p><b>-TT</b> Ten-turn lockable dial with vernier scale for setting trip point(s)</p> <p><b>-TX</b> 2-wire transmitter excitation (30Vdc @ 25mA)</p> <p><b>Housings*</b></p> <p><b>STD</b> Standard housing with U-back bracket for surface mounting</p> <p><b>AB</b> Standard housing with angle flanges for surface mounting or mounting in NEMA enclosures</p> <p><b>PC</b> Plug-in card for mounting in RMR or SMR multi-unit plug-in card rack</p> <p><b>DCM</b> DIN clip for mounting standard housing on G-type rail</p> <p><b>EX</b> Standard housing in 2-hub, solid cover, NEMA 7 explosion-proof enclosure</p>

**When ordering, specify:** Unit / Input / Output / Power / Options / [Housing]

**Model number example:** DCA / 4-20MA / DH1L1 / 117AC / -AD / [STD]

\*Other housings and enclosures are available. Installation and terminal information can be found on the applicable housing sheets.

## Ordering Information

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

**Table 1. Alarm Output Configurations.**

Alarm Configuration	Failsafe (1)	Non-Failsafe (2)
Single (S), High (H)	<b>SH1</b>	<b>SH2</b>
Single (S), Low (L)	<b>SL1</b>	<b>SL2</b>
Dual (D), High (H)-Low (L)	<b>DH1L1</b>	<b>DH2L2</b>
Dual (D), High (H)-High (H)	<b>DH1H1</b>	<b>DH2H2</b>
Dual (D), Low (L)-Low (L)	<b>DL1L1</b>	<b>DL2L2</b>

**NOTE:** Failsafe considerations are such that the relay is energized in the normal condition and de-energized either upon alarm or power loss to the unit. Combinations of Failsafe and Non-Failsafe for dual alarms are possible also by following the same method of designation.



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