MOORE INDUSTRIES

DCA

Direct Current Alarm

August 2023

Data Sheet 9.20

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 ±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 includ-ing: 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 tenturn 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.

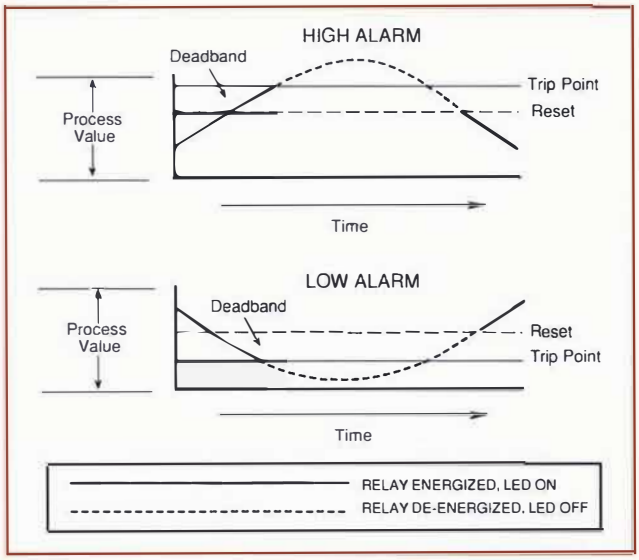
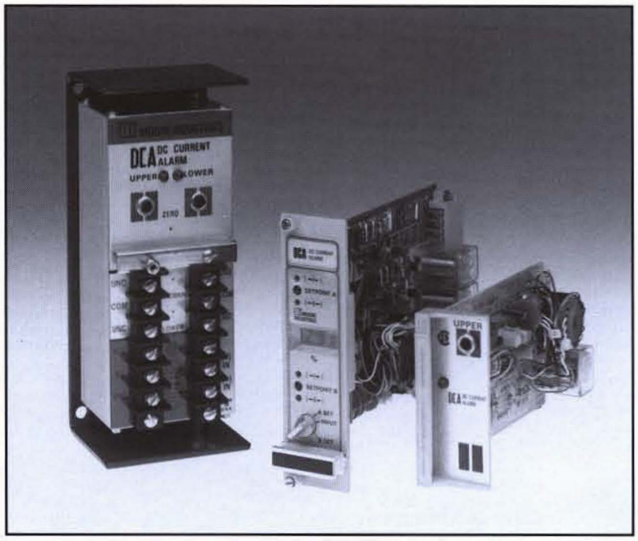


Figure 1. *Normal Failsafe High and Low Alarm Configuration.*



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 ac-curate 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.

Certifications

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

City of Los Angeles, General Locations

DCA

Direct Current Alarm

Specifications

Characteristics

Performance
Repeatability: Trip point repeats within ±0.1% of input span
Dead Band: 1% of span, standard
Alarm Response: 50 milliseconds for a step change of 1% of span beyond trip points
Line Voltage Effect: ±0.005%/1% line voltage change (ac or dc)
Isolation: Input, output and power input are isolated with no dc connections between them (both ac and dc powered units)

Ambient Temperature
Range: -18°C to +65°C (0°F to +150°F)
Effect on Amplifier: Less than ±0.018%/°C (±0.01%/°F) over above range

Adjustments
Trip Points: Multiturn front panel potentiometers adjust over a range of 0% to 100% of span

Indicators
Front panel LED(s) indicate when relay is energized

Weight
Approximately 908 grams (2 pounds)

Ordering Specifications

Unit
DCA Direct Current Alarm

Input
1-5MA@ 200 ohms
4-20MA@ 50 ohms
10-5OMA@ 20 ohms
1-5V@ 1 megohm min.
(consult factory for special range applications)

Output
See Table 1 below (SPOT 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)

Power
117AC. 220AC, or **240AC,** 50/60Hz, ±10%
24DC or **45DC,** ±10%
(5 watts. nominal)

Options
-AD Adjustable deadband, 1-20% nominal (available up to 100%)
-AR Alarm response time delay; specify between 1-30 seconds (factory set)
-DA Deviation alarm (not available on PC housing when -MR option is used)
-DI Dual input
-DPDT Double-pole, double-throw relay(s)
-FU Power fuse on PC housing
-HS Hermetically sealed relays, rated 1 A@ 117Vac non-inductive or 2A@ 26Vdc

Options (continued)
-IO Indicator Output (1-5V@ 1mA), In combination with -TT option, output changes to 0-4V @ 1mA
-MR Manual reset (for customer supplied external pushbuttons)
-PR Power Relay. Solid state relay for inductive loads
-RE External relay rated 5A @ 28Vdc (DPDT is required for inductive loads on alarms with -RF option)
-RF* RF/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)
-TT Ten-turn lockable dial with vernier scale for setting trip point(s)
-TX 2-wire transmitter excitation (30Vdc@ 25mA)

Housings*
STD Standard housing with U-back bracket for surface mounting
AB Standard housing with angle flanges for surface mounting or mounting in NEMA enclosures
PC Plug-in card for mounting in RMR or SMR multi-unit plug-in card rack
DCM DIN clip for mounting standard housing on G-type rail
EX Standard housing in 2-hub, solid cover, NEMA 7 explosion-proof enclosure

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)	**SH1**	**SH2**
Single (S), Low (L)	**SL1**	**SL2**
Dual (D), High (H)-Low (L)	**DH1L1**	**DH2L2**
Dual (D), High (H)-High (H)	**DH1H1**	**DH2H2**
Dual (D), Low (L)-Low (L)	**DL1L1**	**DL2L2**

NOTE: Failsafe considerations are such that the relay is energized in the normal condition and de-energized either upon alarm Of 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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