

# Direct Current Sensing Relay

## CR5395 Series



### OUTPUT OPTIONS

The Relay is available with three different output configurations, electromechanical relay, optoisolated NPN transistor or ZeroCrossing optoisolated triac. Specify desired selection in part number.

### RELAY (-ELR)

Arrangement: 1 Form C (SPDT)  
Contact Material: Silver-cadmium oxide  
Terminals: 3<sup>1/4</sup>" Male QC  
Mechanical Life: 10 million operations,  
typ. @ rated load  
Electrical Life: 100,000 operations,  
typ. @ rated load  
Initial Contact Resistance:  
50 milliohms max. @ 500 mA, 12 VDC  
Contact Rating: UL508/873 & CSA

### DC SWITCHING (-NPN)

V<sub>ce</sub> (full off): 30 VDC max.  
I<sub>sink</sub> (full on): 120 mADC max. @ rated full-on  
V<sub>ce</sub> (full on): 1.5 VDC @ 120 mADC I<sub>sink</sub>  
Off state leakage current: 5 $\mu$ a @ 30 VDC  
(typical)  
Terminals: 2<sup>1/4</sup>" Male QC

### AC SWITCHING (-TRC)

Off state voltage: 240 VAC RMS max.  
Minimum switch voltage: 24 VAC RMS  
On state current: 500 mA RMS max. continuous  
Switching mode: Zero Crossing  
Off state leakage: 60  $\mu$ a @ 240 VAC max.  
Terminals: 2 @ 1/4" Male QC

The **CR5395** Series, Direct Current Sensing Relay provides a precision and cost effective method for monitoring Direct Current. Magnetic Modulator Technology is utilized for the current sensing to provide a stable and highly repeatable current trip. The current-carrying wire is routed through the opening extending through the top of the case. When current reaches the level set by the trip point adjustment, the relay trips and starts the adjustable timer. After the timer cycles the electromechanical relay energizes.

### Applications

DC motor drives  
Battery Chargers  
Power Supply Management  
Uninterruptible Power Systems  
Motor Application

### Features

Variable Trip Point and Time Delay  
Bi-polar  
Monitors Currents from 1.0 ADC to 100 ADC  
Electrical Isolation Between Circuits  
Output Relay Rated up to 20 Amps  
LED Trip Status Indicator  
Dead Band Prevents Relay Chatter  
Calibrated Dial  
External Current Transformers Available

### Specifications

Mounting:  
3/16" dia. clearance holes on 1<sup>15/16</sup>" by 2<sup>15/16</sup>" centers  
Environmental:  
Operating Temperature: -30° C to +70° C  
Storage Temperature: -55° C to +85°  
0-95% RH, Non-condensing  
Input Supply Power:  
Typical 80mA                      Max 100mA  
Sensed Current: Max. Continuous: 200% Full Scale  
Altitude: 2000 meters max.  
(Contact factory for High Altitude applications)  
Weight 0.5 LBS.

### Regulatory Agencies



VOLTAGE	LOAD TYPE	N.O. CONTACT	N.C. CONTACT
240 VAC	Resistive	20A	10A
240 VAC	Motor	2HP	1/2 HP
125 VAC	Motor	1HP	1/4 HP
28 VDC	Resistive	20A	10A



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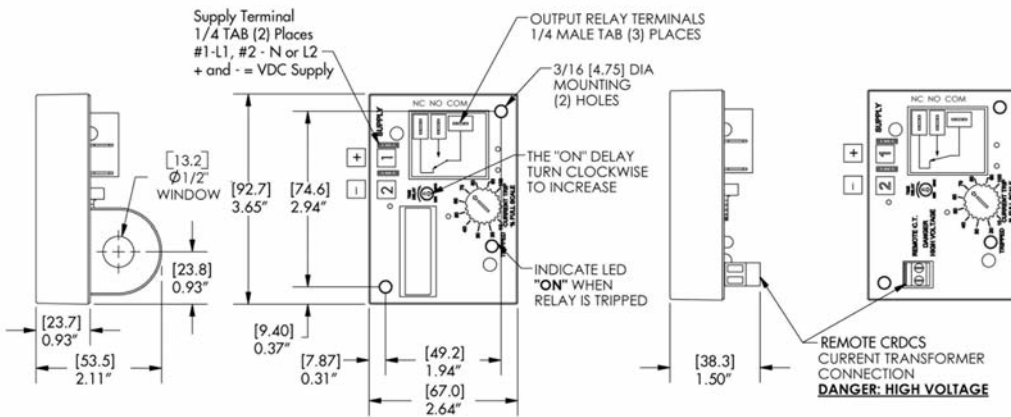
E-mail: [sales@crmagnetics.com](mailto:sales@crmagnetics.com)

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Relays, Switches, & Sensors

# Direct Current Sensing Relay

## OUTLINE DRAWING

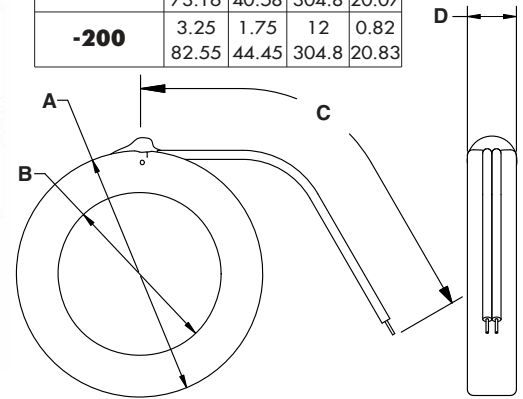


Top view of Current Sensing Relay

Shown with Remote Current Transformer Option (-R)

## CR5395 Series

CRDCS	A	B	C	D
-100	2.88	1.60	12	0.79
	73.16	40.58	304.8	20.07
-200	3.25	1.75	12	0.82
	82.55	44.45	304.8	20.83



Remote Current Transformers CRDCS - Series

## PART NUMBER

**CR5395**

### TRIP STATUS

**EH** - Energized on High, trips when sense current is above trip point and returns to non-trip status when sense current is below the trip point.  
**EL** - Energized on Low, trips when sense current is below trip point and returns to non-trip status when sense current is above the trip point.  
**LH** - Latch on High, trips when sense current is above trip point and remains tripped until supply power is removed.  
**LL** - Latch on Low, trips when sense current is below trip point and remains tripped until supply power is removed.

### SUPPLY VOLTAGE

**ACV** - 85 to 265 VAC/VDC  
**24D** - 24 VDC

All supply voltage tolerances are  $\pm 10\%$

### TRIP RANGE

**110** - 1.0 to 10 ADC  
**330** - 3.0 to 30 ADC  
**660** - 6.0 to 60 ADC  
**101** - 10 to 100 ADC

The trip ranges shown are for one wire pass through the window opening. The trip range may be proportionally lowered with additional wire passes through the window.

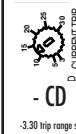
### TRIP ON DELAY

**A** - .5 to 6 Sec.  
**B** - 2 to 25 Sec.  
**C** - .1 to 1 Sec.  
**X** - none

Time-on delay is the time from when the relay trips to when the output energizes. The ranges are guaranteed minimum, actual range may be slightly greater.

### TRIP POINT DIAL

**CD** - Calibrated Dial  
**FP** - Fixed Trip Point  
 (Specify value of fixed trippoint with order)

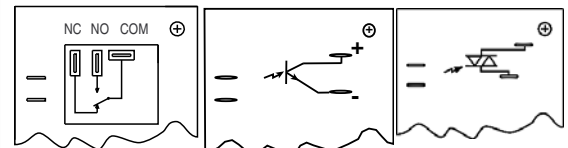


No adjustment dial provided with the fixed set point option

- CD - FP

**I** - INTERNAL TRANSFORMER  
**R1** - REMOTE TRANSFORMER w/ CRDCS-100 (1.60" window diameter)  
**R2** - REMOTE TRANSFORMER w/ CRDCS-200 (1.75" window diameter)

### OUTPUT OPTIONS



**ELR**  
Electromechanical Relay

**NPN**  
Optoisolated NPN Transistor

**TRC**  
Optoisolated Triac, Zero Crossing

### Example Part Numbers:

**CR5395-EH-ACV-110-CD-ELR-I (Relay with CT on board)**

**CR5395-EL-24D-330-CD-NPN-R1 (Relay with external CRDCS-100)**