

# Ground Fault Sensor

## CR7310 Series



### OUTPUT OPTIONS

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

### RELAY (-ELR)

Arrangement: 1 Form C (SPDT)  
 Contact Material: Silver-cadmium oxide  
 Terminals: 3 1/4" 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 mA DC max. @ rated full-on  
 V<sub>ce</sub> (full on): 1.5 VDC @ 120 mA DC I<sub>sink</sub>  
 Off state leakage current: 5µa @ 30 VDC (typical)  
 Terminals: 2 1/4" Male Q C

### 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 µa @ 240 VAC max.  
 Terminals: 2 @ 1/4" Male QC

The **CR7310** Series, Ground Fault Sensor provides a reliable and cost effective method for sensing ground faults. The current-carrying wires are routed through the opening extending from the top of the case. When ground current reaches the level set by the trip point adjustment, the relay trips, illuminates the tripped LED and provides an output signal. A precision voltage reference circuit ensures a highly repeatable trip point. The Sensor is rated as a Class 1 device.

### Applications

Monitor Electrical Heater Elements  
 Sense Motor Over/Under Loads  
 Detect Lamp burn-out  
 Indicate Phase Loss

### Features

Variable Trip Point and Time Delay  
 Monitors Currents from 10mA AC to 100 AAC Amps  
 Electrical Isolation Between Circuits  
 Output Relay Rated up to 20 Amps  
 LED Trip Status Indicator  
 Dead Band Prevents Relay Chatter  
 Calibrated Dial Option Available  
 External Current Transformers Available

### Specifications

Mounting:  
 3/16" dia. clearance holes on 1 15/16" by 2 15/16" centers  
 Environmental:  
 Operating Temperature: -30° C to +60° C  
 Storage Temperature: -55° C to +85° C  
 Power-On Delay: 100 MS MAX  
 Hysteresis: 5% Max.  
 Input Supply Power:  
 Typical 80mA                      Max 100mA  
 Sensed Current:  
 Max. Continuous: 200% Full Scale  
 Frequency: 60-400 Hz \*  
 \*All specifications for operation at 60 Hz only  
 Altitude: 2000 meters max.  
 (Contact factory for High Altitude applications)  
 Weight 0.5 LBS.

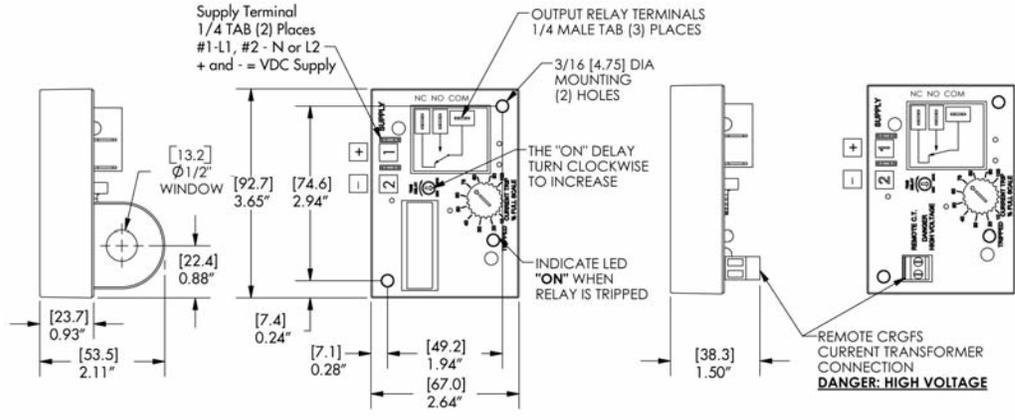
### Regulatory Agencies



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

# Ground Fault Sensor

## OUTLINE DRAWING

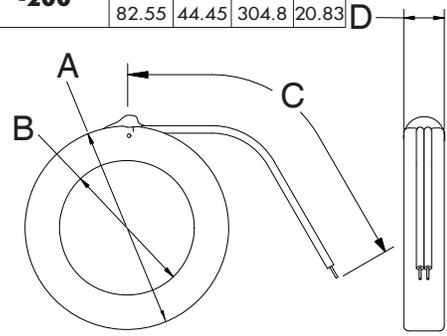


Top view of Current Sensing Relay

Shown with Remote Current Transformer Option (-R)

## CR7310 Series

CRGFS	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 CRGFS - Series

PART NUMBER											
CR7310	-	-	-	-	-	-	-	-	-	-	-

**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.

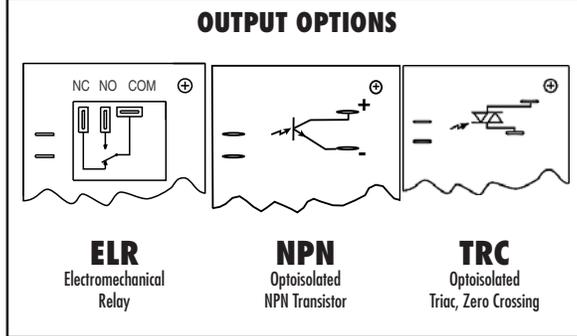
**SUPPLY VOLTAGE**  
**AC**  
**120** - 120 VAC  
**240** - 240 VAC  
**DC**  
**24D** - 24 VDC  
 All supply voltage tolerances are ± 10 %

**TRIP RANGE**  
**.011** - .01 to 0.1 AAC  
**.11** - 0.1 to 1.0 AAC  
**110** - 1.0 to 10 AAC  
**330** - 3.0 to 30 AAC  
**660** - 6.0 to 60 AAC  
**101** - 10 to 100 AAC  
 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  
 -3.30 trip range shown

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



**Example Part Numbers:**  
**CR7310-EH-120-.011-CD-ELR-I (Relay with CT on board)**  
**CR7310-EL-240-.11-CD-NPN-R1 (Relay with external CRGFS-100)**