

# Split Core Current Transducers



## NEW PRODUCT

### Split Core Current Transducers for Sensing AC and DC Current Sources



**CR Magnetics** is proud to introduce a new line of **Split Core Current Transducers**. Split core devices give the user more options when implementing a sensing application. These devices can be installed on existing power systems without the need to remove power. Also, they make assembling new installations much easier than solid core designs. The advanced package includes capability of mounting on either a panel or standard DIN rail installations.

The **CR4110/20S Series** provide **True RMS** sensing of the current waveform. True RMS is recommended when sensing current waveforms that are variable frequency, chopped up, or non-sinusoidal in general.

The **CR4410/20S Series** provide **Average RMS** sensing of the current waveform. Average RMS is recommended when sensing current waveforms that have a fixed frequency, and are usually for loads operated from standard utility power.

The **CR4210S Series** are **Self Powered** devices providing a proportional DC voltage output that is powered by the sensed current. These products are ideal for applications where instrument power is not available.



The **CR4220S Series** are **Loop Powered** devices providing a proportional DC current output that is powered by a DC power supply within the output current loop. These products are ideal for applications where instrument power is remotely located away from the sensing point.

The **CR5210/20S Series** are **DC Current Sensing** devices that give the average DC value of a direct current input waveform. The **CR5210S** has a  $\pm 5VDC$  that is **Bi-Directional**, ideal for battery charging applications.

The **CR5410S Series** are **AC/DC Current Sensing** devices providing a proportional DC voltage output that provides an identical calibrated waveform to the input current signal. Ideal for closed loop applications.

All CR Magnetics Split Core Transducers come in an advanced package that can be **Panel Mounted**, or mounted using a standard **DIN Rail**. All power and signal connections are through reliable numbered screw terminals. **Non-contact Current Sensing** is accomplished by placing the conductor in the window of the device. **Standard and Custom ranges are available**. In stock and ready for immediate delivery! [www.crmagnetics.com](http://www.crmagnetics.com)



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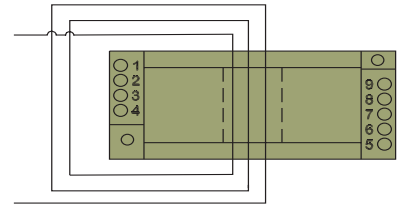
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## INDUSTRIAL APPLICATIONS FOR ELECTRICAL TRANSDUCERS

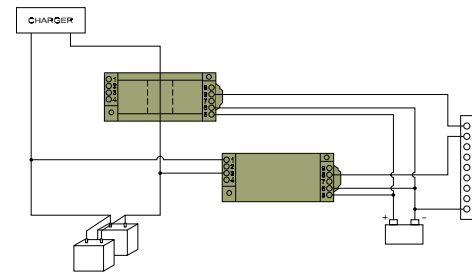
### FIELD ADJUSTMENT OF TRANSDUCER RANGE

Looping the primary current-carrying wire several times through the window opening may change the scaling factor. The "actual" measurement range will be the nameplate rating of the transducer divided by the number of wire passes. For example, the CR4220-30 has a nameplate rating of 0-30 Aac. Three passes of the wire through the window opening will then provide an effective range of 0-10 Aac (30/3).



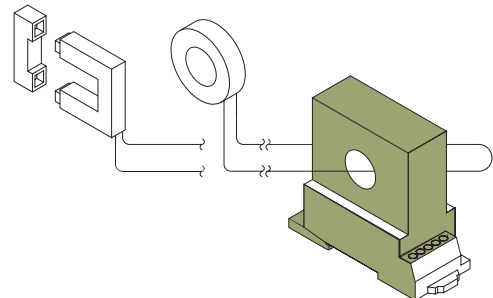
### DC POWER MEASUREMENT

A plant manager needs to record the total charge to a bank of batteries. A CR5210S DC Current Transducer is attached to one of the incoming current lead and a CR5310 is attached to the incoming voltage lines. The output from each transducer is attached to a 0-5 Vdc analog input module on a PLC. The PLC computes the product of the current and voltage for the total power usage.



### EXTERNAL CURRENT TRANSFORMERS

The transducers and transmitters may be used with an external split-core or solid-core current transformer. The external transformer can be used to access remote loads or where the current-carrying wire is too large to fit through the window opening of the unit. A standard, 5 Amp secondary, commercial grade current transformer would be attached with the secondary leads threaded through the window opening. A transducer or transmitter with a 0-5 Amp input range would be selected. Request CR Magnetics current transformer catalog.



# Split Core Current Transducers

DIN RAIL / PANEL MOUNT, AC and DC Sensing



OPEN



CLOSED

The **Split Core Current Transducers** from CR Magnetics provide a quick and easy method of measuring current carrying conductors. A variety of inputs and outputs are available to satisfy any application.

## Regulatory Agencies

- Pending UL3111-1, First Edition, Amendment 2
- Pending CAN/CSA-C22.2, No. 1010.1-92
- Meets IEC 61010-1 and BS EN 61010-1

## Applications

- Directly connect to PLC
- Sense motor stalls and short circuits
- Industrial instrumentation
- Process control loops
- Phase Fired Controlled Heaters

## Features

- 35mm DIN Rail or Panel Mount
- Available with analog 4-20 ma or 0-5 Vdc outputs
- 24 Vdc powered
- Use with external current transformers
- Highest precision available
- Connection diagram printed on case
- Internet <http://www.crmagnetics.com>

- |                |   |  |   |
|----------------|---|--|---|
| <b>CR4110S</b> | - | <input type="checkbox"/> 0 - 5 VDC output, AC True RMS             | <input type="checkbox"/> Add suffix for input range |
| <b>CR4120S</b> | - | <input type="checkbox"/> 4 - 20 mA DC output, AC True RMS          |   |
| <b>CR4210S</b> | - | <input type="checkbox"/> 0 - 5 VDC output, AC Avg Self Powered     | <b>5</b> - 0-5 Amps                                 |
| <b>CR4220S</b> | - | <input type="checkbox"/> 4 to 20 mA DC output, AC Avg Loop Powered | <b>10</b> - 0- 10 Amps                              |
| <b>CR4410S</b> | - | <input type="checkbox"/> 0 - 5 VDC output, AC Avg RMS              | <b>15</b> - 0-15 Amps                               |
| <b>CR4420S</b> | - | <input type="checkbox"/> 4 - 20 mA DC output, AC Avg RMS           | <b>20</b> - 0-20 Amps                               |
| <b>CR5210S</b> | - | <input type="checkbox"/> +/- 5 VDC output, DC Current              | <b>30</b> - 0-30 Amps                               |
| <b>CR5220S</b> | - | <input type="checkbox"/> 4 - 20 mA DC output, DC Current           | <b>50</b> - 0-50 Amps                               |
| <b>CR5410S</b> | - | <input type="checkbox"/> +/- 5 VDC output, AC/DC Current           | <b>75</b> - 0-75 Amps                               |
|                |   | (5410S Available in 20 Amp and higher)                             | <b>100</b> - 0-100 Amps                             |

Transducers



Another HUNTINGTON ELECTRIC Company

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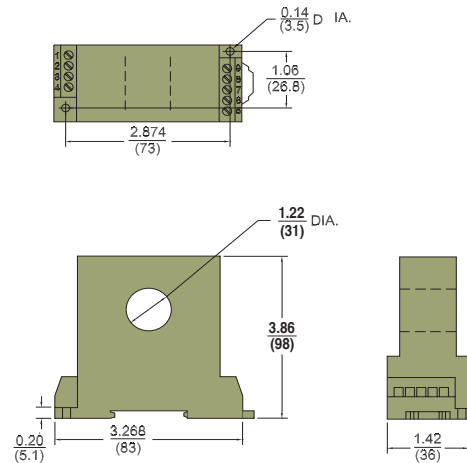
# Split Core Current Transducers

DIN RAIL / PANEL MOUNT, AC and DC Sensing

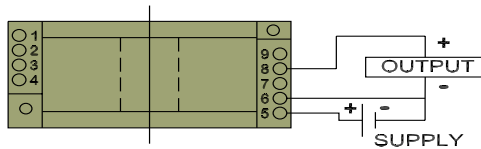
## SPECIFICATIONS

Basic Accuracy	1.0%
Calibration	True RMS Sensing, Average RMS, DC
Thermal Drift	500 PPM/°C
Operating Temperature	0°C to +60°C
Installation Category	CAT II
Pollution Degree	2
Insulation Voltage	2500 Vdc
Altitude	2000 meter max.
Frequency Range	DC, DC to 4KHZ, 20 Hz - 5 KHz
MTBF	Greater than 100 K hours
Cleaning	Water-dampened cloth
Supply Voltage	24 Vdc $\pm$ 10%
Output Load	4-20 mA dc - 0 to 300 W
	0-5 Vdc - 2K W or Greater
Response Time	250 ms max. 0-90% FS (0.25 ms for CR5410S)
Relative Humidity	80% for temperatures up to 31°C and decreasing linearly to 50% at 40°C

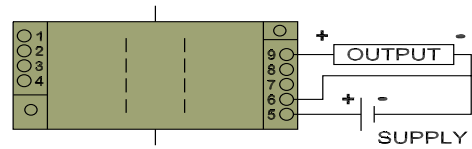
## OUTLINE DRAWING



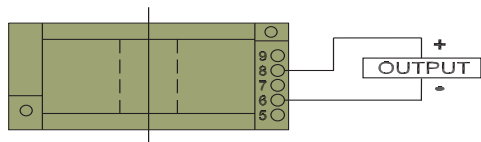
## CONNECTION DIAGRAM



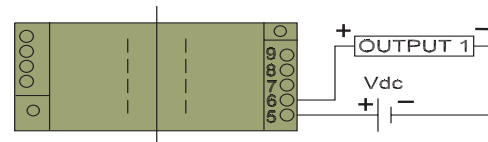
**0 - 5 VDC, +/- 5VDC Output**  
**CR4110S**  
**CR4410S**  
**CR5210S**  
**CR5410S**



**4 - 20 mA DC Output**  
**CR4120S**  
**CR4420S**  
**CR5220S**



**Self Powered 0-5VDC Output**  
**CR4210S**



**Loop Powered 4-20 ma Output**  
**CR4220S**

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