DIN RAIL / PANEL MOUNT

Single Element - .26" Window
1 to 25 AAC Input Range

Two Element - .26"Window
1 to 25 AAC Input Range

Three Element - .26"Window
1 to 25 AAC Input Range

The **CRD4100** Series Data Stream Digital Current Transducers are designed for applications where AC current waveforms are not purely sinusoidal. The digital technology is used to measure volt-age, current, power frequency and energy in single and three phase designs. The data is streamed over an RS485 IEEE bus which enables multiple transducers to communicate thru a single master connection. These advanced sensors are ideal for entire plant or zone monitoring. Also, the communication alagorithm can be pre-ordered with ASCII based control or modified MODBUS based control.

Sensing

True RMS Current, Each Phase

Applications

Sub-Metering
Motor Loads
Uninterruptible Power
Systems Remote Monitoring
Load Shedding
Energy Management

Features

35mm DIN Rail or Panel Mount
Red LED - Flashes when Power is Connected
Red & Green LED Flash during Communication
24 VDC powered
Use with external current transformers
Highest precision available
Connection diagram printed on case

Regulatory Agencies

CR Magnetics has a wide selection of Current and Potential Transformers to extend the range of any part. See Sections F & G for details.

PART NUMBERS

CRD4110	-		Single Element, AC Current RS485 Digital Transducer
CRD4150	-		Two Element, AC Current RS485 Digital Transducer
CRD4170	-		Three Element, AC Current RS485 Digital Transducer

1 - 0-1 AAC
5 - 0-5 AAC
15 - 0-15 AAC
25 - 0-25 AAC

Above 30 AAC must use 5 amp CT

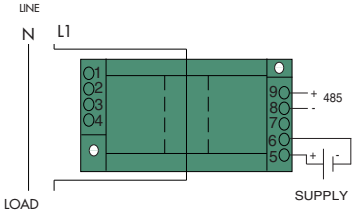
Note: Add an M at the end for MODBUS CRD4110-5-M

SPECIFICATIONS

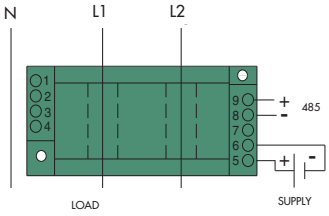
Basic Accuracy: 0.5%	Torque Specifications: .....3.0 inch lbs (0.4Nm)
Calibration: .....True RMS Sensing	Response Time: .....250 ms. max. 0-90% FS
Thermal Drift: .....500 PPM/°C	Relative Humidity:.....5% to 95%, Non-Condensing
Operating Temperature$_1$: .....0°C to +60°C	Output Resolution: .....16 bit
Installation Category: .....CAT II	Transducer fanout on common bus: .....64 max.
Vibration Tested To: .....IEC 60068-2-6,1995	Baud Rate$_3$: .....1200, 2400, 4800, 9600,19.2K .bps
Pollution Degree: 2	A/D Conversion Type: .....4th order Delta Sigma
Insulation Voltage: .....2500 VDC	Device Address$_3$: .....00 to FF
Altitude: .....2000 meter max	Data Format: ....ASCII
Frequency Range: .....45Hz ~ 65Hz	Supply Current:.....Typical 30mA Max 30mA
MTBF: .....Greater than 100K hours	Weight:.. .....0.5 lbs.
Cleaning: .....Water-dampened cloth	
Supply Voltage$_2$: .....24 VDC ±10%	

1) RH 5% to 95%, non-condensing 2) 0.4% max. ripple Vpp no flow control, 1 stop bit

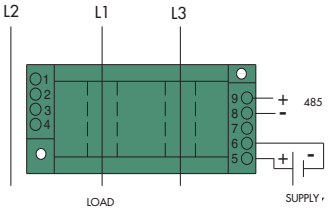
3) Factory default settings: address 01, baud rate 9600, no parity,



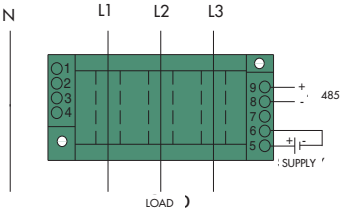
CRD4110 Single Element, 2-Wire



CRD4150 Dual Element, 3-Wire

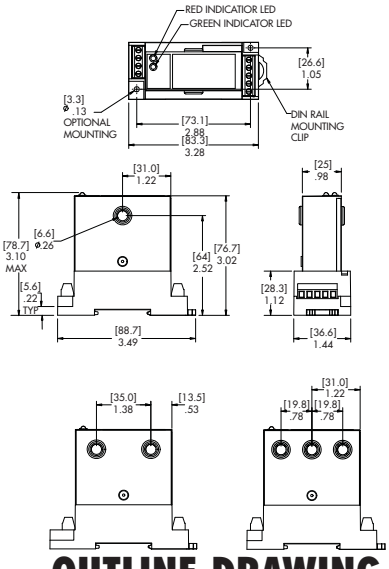


CRD4150 Dual Element, 3-Wire



CRD4170 3 Element, 4-Wire

Connection Diagram

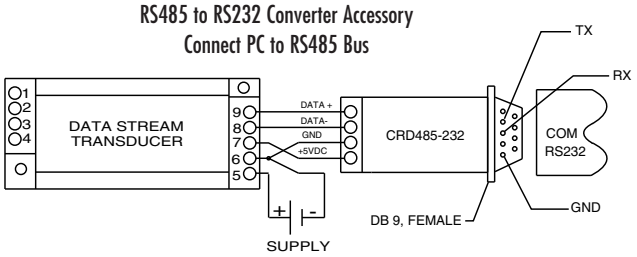


OUTLINE DRAWING

CRD485-232

RS485 to RS232 Converter Accessory

Connect PC to RS485 Bus



ASCII Simplified Programming Commands

A simplified data structure is used with only 6 commands required for full control of the transducer. Commands are : Read Transducer Name, Read Configuration, Set Configuration, Read Measurements, Read Energy Totalizer and Clear Energy Totalizer. For illustration, the following commands are used to read data from a CRD5170 3 Phase, 4 Wire Transducer with a device address of 00.

Command Transducer to Read Data: #00A<cr>

Transducers Response: >+[% FS Voltage$_{L1-N}$]+[% FS Current$_{L1}$]+[% FS Voltage$_{L2-N}$]+[% FS Current$_{L2}$]+[% FS Voltage$_{L3-N}$]+[% FS Current$_{L3}$,][+/- % FS Power][+/-% FS VARS][+/-Power Factor][Frequency]<cr>

Command Transducer to Read Energy Totalizer: #00W<cr>

Transducer Responds: 01[+/-KWHr]{\[+/-KVHr][check sum]<cr>

Note: This is for illustration purposes only, See Applications Guides (Section I for complete instructions.