



**THE DATASHEET OF  
CRD5110-300-5**



# Data Stream RS485 Digital Transducer

**B**

**Data Stream**

## DIN RAIL / PANEL MOUNT



**CRD5110**

Single Element - .26" (6.5)  
Window 150 to 300 VAC  
1 to 25 AAC Input Range



**CRD5150**

Two Element - .26" (6.5)  
Window 150 to 300 VAC  
1 to 25 AAC Input Range



**CRD5170**

Three Element - .26" (6.5)  
Window 150 to 300 VAC  
1 to 25 AAC Input Range

The **CRD5100** Series Data Stream Digital Transducers are designed for complete monitoring of electrical power systems. The digital technology is used to measure voltage, 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 through a single master connection. These advanced sensors are ideal for entire plant or zone monitoring. Also, the communication algorithm can be ordered with ASCII based control or modified to MODBUS based control.

### Sensing

- Voltage, True RMS
- Current, True RMS
- Active Power, bi-directional
- Active Energy, bi-directional
- Reactive Power, bi-directional
- Reactive Energy, bi-directional
- Power Factor
- Frequency

### 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



## PART NUMBERS

|                |   |  |   |  |   |
|----------------|---|--|---|--|---|
| <b>CRD5110</b> | - |  | - |  | 1 Element, AC Multifunction RS485 Digital Transducer      |
| <b>CRD5150</b> | - |  | - |  | 3 Phase, 3-Wire AC Multifunction RS485 Digital Transducer |
| <b>CRD5170</b> | - |  | - |  | 3 Phase, 4-Wire AC Multifunction RS485 Digital Transducer |

- |            |   |          |
|------------|---|----------|
|            |   | └─       |
| <b>150</b> | - | 0-1 AAC  |
| <b>300</b> | - | 0-5 AAC  |
|            | - | 0-15 AAC |
|            | - | 0-25 AAC |
- Available up to and including 600 VAC
- Above 30 AAC must use 5 amp CT

**Note: Add an M at the end for MODBUS**  
**CRD5110-150-5-M**



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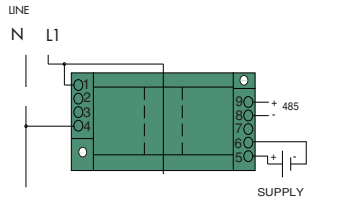
# RS485 Digital Transducer

## SPECIFICATIONS

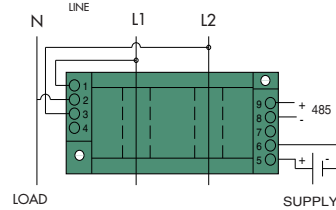
|   |   |
|---|---|
| Basic Accuracy: .....0.5%   | Torque Specifications: .....3.0 inch lbs (0.4Nm)                |
| Calibration: .....True RMS Sensing                                  | Response Time: .....250 ms. max. 0-90% FS                       |
| Thermal Drift: .....500 PPM/°C                                      | Relative Humidity: .....5% to 95%, Non-Condensing               |
| Operating Temperature <sub>1</sub> : .....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 <sub>3</sub> : .....1200, 2400, 4800, 9600,19.2K .bps |
| Pollution Degree: .....2  | A/D Conversion Type: .....4th order Delta Sigma                 |
| Insulation Voltage: .....2500 VDC                                   | Device Address <sub>3</sub> : .....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 <sub>2</sub> : .....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, |   |

Data Stream

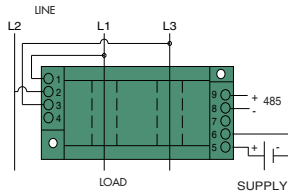
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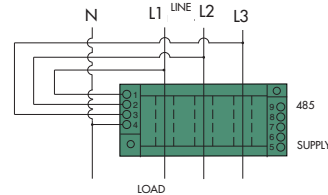
CRD5110 Single Element, 2-Wire



CRD5150 Dual Element, 3-Wire

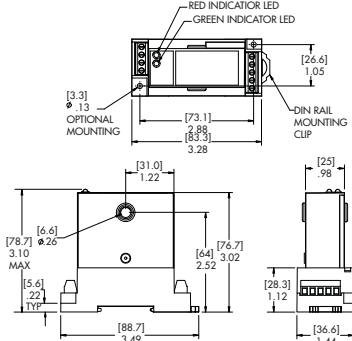


CRD5150 Dual Element, 3-Wire

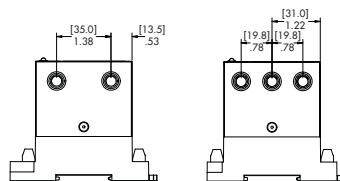


CRD5170 3 Element, 4-Wire

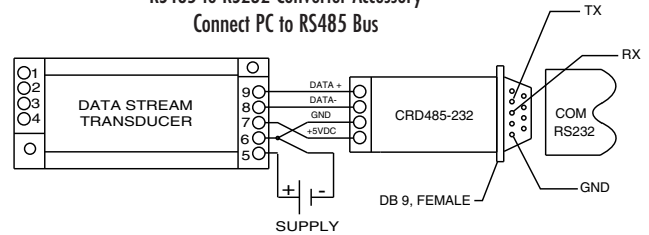
## Connection Diagram



## 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<sub>L1-N</sub>]+[% FS Current<sub>L1</sub>]+[% FS Voltage<sub>L2-N</sub>]+[% FS Current<sub>L2</sub>]+[% FS Voltage<sub>L3-N</sub>]+[% FS Current<sub>L3</sub>],[+/- % 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.

## Looking for pricing, stock, or lifecycle information?

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-  [View CRD5110-300-5 on WIN SOURCE](#)
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