**DIN RAIL / PANEL MOUNT**

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 pre-ordered with ASCII based control or modified 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**

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<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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<td>1 Element, AC Multifunction RS485 Digital Transducer</td>
<td>150 - 0-150 VAC</td>
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<td>CRD5150</td>
<td>3 Phase, 3-Wire AC Multifunction RS485 Digital Transducer</td>
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<td>CRD5170</td>
<td>3 Phase, 4-Wire AC Multifunction RS485 Digital Transducer</td>
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Note: Add an M at the end for MODBUS CRD5110-150-5-M

Available up to and including 600 VAC Above 30 AAC must use 5 amp CT

3500 Scarlet Oak Blvd. St. Louis MO USA 63122 V: 636-343-8518 F: 636-343-5119
Web: http://www.crmagnetics.com E-mail: sales@crmagnetics.com
RS485 Digital Transducer

**SPECIFICATIONS**

- **Basic Accuracy:** 0.5%
- **Calibration:** True RMS Sensing
- **Thermal Drift:** 500 PPM/°C
- **Operating Temperature:** 0°C to +60°C
- **Installation Category:** CAT II
- **Vibration Tested To:** IEC 60068-2-6, 1995
- **Pollution Degree:** 2
- **Insulation Voltage:** 2500 VDC
- **Altitude:** 2000 meter max
- **Frequency Range:** 20 Hz - 5 KHz
- **MTBF:** Greater than 100K hours
- **Cleaning:** Water-dampened cloth
- **Supply Voltage:** 24 VDC ±10%

1) RH 5% to 95%, non-condensing  
2) 0.4% max. ripple Vpp  
3) Factory default settings: address 01, baud rate 9600, no parity.

**Connection Diagram**

- **CRD510:** Single Element, 2-Wire
- **CRD5150:** Dual Element, 3-Wire
- **CRD5170:** 3 Element, 4-Wire

**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, 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>


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

**Transducer Responds:** 01[-%KWH]+[-%KWH]<check sum><cr>

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

**OUTLINE DRAWING**

**TORQUE SPECIFICATIONS:**

- **Torque Specifications:** 3.0 inch lbs (0.4Nm)

**RESPONSE TIME:**

- **Response Time:** 250 ms. max. 0-90% FS

**RELATIVE HUMIDITY:**

- **Relative Humidity:** 5% to 95%, Non-Condensing

**OUTPUT RESOLUTION:**

- **Output Resolution:** 16 bit

**TRANSducer Fanout on common bus:**

- **Transducer fanout on common bus:** 64 max.

**BAUD RATE:**

- **Baud Rate:** 1200, 2400, 4800, 9600, 19.2K bps

**A/D Conversion Type:** 4th order Delta Sigma

**Device Address:** 00 to FF

**Data Format:** ASCII

**Supply Current:** Typical 30mA Max 30mA

**Weight:** 0.5 lbs.

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