

Data Stream RS485 Digital Transducer

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

CRD5110	-		-		1 Element, AC Multifunction RS485 Digital Transducer
CRD5150	-		-		3 Phase, 3-Wire AC Multifunction RS485 Digital Transducer
CRD5170	-		-		3 Phase, 4-Wire AC Multifunction RS485 Digital Transducer

- | | | |
|---------------------------------------|---|-----------|
| | | └─ |
| 150 | - | 0-150 AAC |
| 300 | - | 0-300 AAC |
| Available up to and including 600 VAC | | |
| | | └─ |
| | - | 0-1 AAC |
| | - | 0-5 AAC |
| | - | 0-15 AAC |
| | - | 0-25 AAC |
| 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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Data Stream

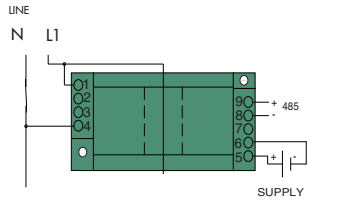
RS485 Digital Transducer

SPECIFICATIONS

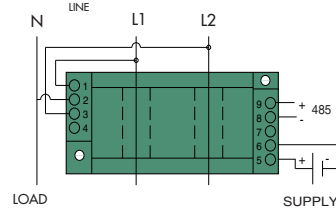
Basic Accuracy:0.5%	Torque Specifications:3.0 inch lbs (0.4Nm)	
Calibration:True RMS Sensing	Response Time:250 ms. max. 0-90% FS	
Thermal Drift:500 PPM/°C	Relative Humidity:5% to 95%, Non-Condensing	
Operating Temperature ₁ :0°C to +60°C	Output Resolution:16 bit	
Installation Category:CAT II	Transducer 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,	

Data Stream

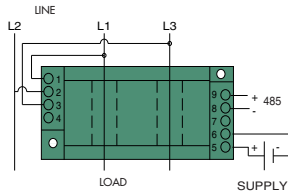
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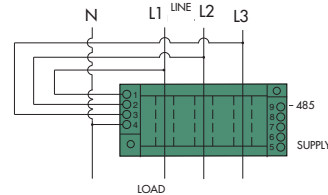
CRD5110 Single Element, 2-Wire



CRD5150 Dual Element, 3-Wire

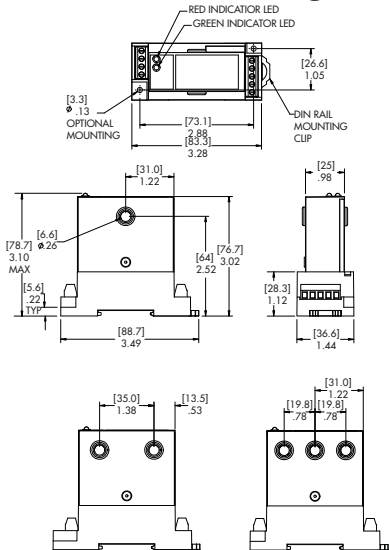


CRD5150 Dual Element, 3-Wire



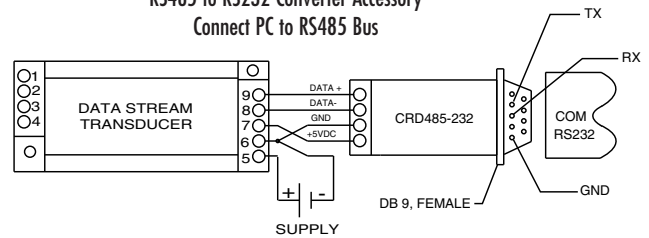
CRD5170 3 Element, 4-Wire

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_{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.