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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 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.

B

Data Stream

CRD5110

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

CRD5150

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

CRD5170

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

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
24 VDC powered
Use with external current transformers
Highest precision available
Connection diagram printed on case

Regulatory Agencies

CE   RoHS 2002/95/EC

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 VAC
300 - 0-300 VAC
Available up to and including 600 VAC

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 CRD5110-150-5-M

RS485 Digital Transducer

Data Stream

SPECIFICATIONS

Basic Accuracy: 0.5%
Calibration: ....True RMS Sensing
Thermal Drift: ....500 PPM/°C
Operating Temperature$_1$: ....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$_2$: ....24 VDC ±10%

Torque Specifications: ....3.0 inch lbs (0.4Nm)
Response Time: ....250 ms. max. 0-90% FS
Relative Humidity: ....80% for temperatures up to
        31°C and decreasing linearly to 50% at 40°C
Output Resolution: ....16 bit
Transducer fanout on common bus: ....64 max.
Baud Rate$_3$:   ....1200, 2400, 4800, 9600,19.2K .bps
A/D Conversion Type: ....4th order Delta Sigma
Device Address$_3$:   ....00 to FF
Data Format: ....ASCII
Supply Current:..................Typical 30mA   Max 30mA
Weight:.. ....0.5 lbs.

1) RH 5% to 95%, non-condensing 2) 0.4% max. ripple Vpp
3) Factory default settings: address 01, baud rate 9600, no parity, no flow control, 1 stop bit
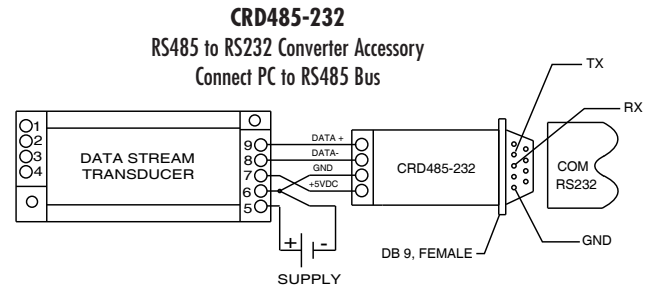
CRD5110 Single Element, 2-Wire

CRD5150 Dual Element, 3-Wire

CRD5150 Dual Element, 3-Wire

CRD5170   3 Element, 4-Wire

CRD485-232
RS485 to RS232 Converter Accessory
Connect PC to RS485 Bus

Connection Diagram

0.14 (3.5) DIA.
1.06 (26.8)
2.874 (73)

0.26 (6.5) Dia.
1 hole for single element
2 holes for two element
3 holes for three element

2.99 (76)

1.42 (36)
0.20 (5.1)
3.268 (83)
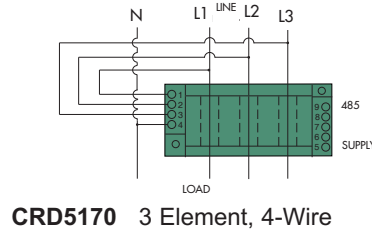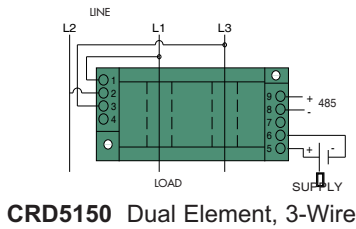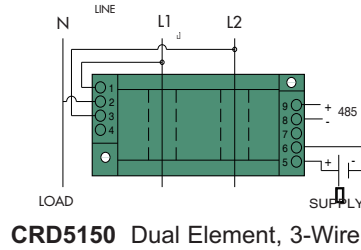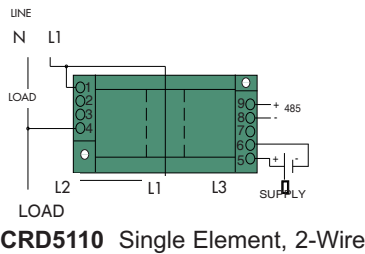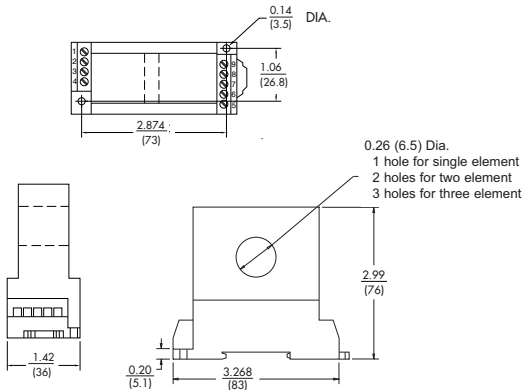
OUTLINE DRAWING

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.