SPECIFICATIONS

Physical
Size
Length: 8.2″
Height: 5.9″
Depth: 2.6″
Weight
1.3 lb.

Environmental
Storage
Temperature: -50 °C to 85 °C
Humidity: 0 to 95 %, non-condensing
Operating
Temperature: -40 °C to 72 °C
Humidity: 0 to 95 %, non-condensing

Mounting
Shelf or backboard

Construction
Chassis
Fully enclosed, anodized aluminum
Externally accessible LEDs and connectors
Electrical
All components mounted on conformal coated, internal PCB

Power
Voltage
Range: 9 to 36 Vdc
Consumption
Maximum: 1.8 W

Isolation
Power Terminals, Digital and Analog Inputs, Ethernet Port (optional)
Minimum: 3800 Vdc to chassis and any terminal

Capacities
Inputs
Digital: 10, all optically isolated
Analog: 4, DC voltage only
Virtual: 8, user-assigned
Timer: 8, user-assigned
Alarm: 20, user-assigned
Event Storage
Standard: 297,045 records
Maximum: 1,264,533 records

Physical Inputs
Input Impedance
Digital: minimum 10 KOhms, optically isolated
Analog: minimum 10 MOhms

Physical Inputs (continued)
Range
Digital Input-On: 9 to 36 Vdc
Digital Input-Off: 0 to 1 Vdc
Analog Voltage: 1 scale, 0 to +51.1 Vdc
Event Validation Times
Digital: .001 to 32.767 seconds, compatible with fixed rate flashing circuits
Analog: fast filter setting

Analog Limit Values
High and Low Limits: 0 to 51.1 Vdc, in multiples of .1 Vdc

Analog Input Accuracy
Typical: ±.15 Vdc

Virtual Inputs
Definitions
Any logical association shared by 1 to 4 variables (i.e., Digital, Analog or other Virtual Inputs)
Assigned by defining the state of the Virtual Input for each combination of variable states
Reporting
Creates standard Event Records

Timer Inputs
Programming
Any input can be assigned as a trigger or terminating source
On or Off events can be assigned as a trigger or terminating source
Limit Values
High and Low Limits: in multiples of .1 seconds
Range: 0.0 to 999.9 seconds
Reporting
Measured Time is reported in each Timer Input Event Record
Violation of Limit Values are also reported

Alarm Inputs
Usage
On/Off state changes create Event Records that are logged to memory
Designed for a broad range of crossing and signal monitoring applications
Definitions
User-assigned inputs and input states qualify each Alarm
User-assigned time durations validate each Alarm
All definitions are included in a single Alarm Configuration Table
Event Validation Time
0 to 99,999 seconds

Counters
Quantity: 1 per Digital Input with disable feature
Range: 0 to 65,535 with auto-rollover
Increment: advances with On or Off Event transition as selected by user

Memory
Type
Non-volatile, Event Records and Setup Database are stored in flash memory chip
Newest data over-writes oldest data, 129th day over-writes first day
Storage Longevity
Infinite with power off
Rated for 100,000 write operations

Ports
RS-232
Quantity: 1, for use with a PC
Terminal Emulation: ANSI
Baud Rates: 300, 600, 1200, 2400, 4800, 9600, 19,200, 38,400, 57,600, 115,200
Bit Format: 8-N-1
Ethernet (optional)
Type: 10/100 Base-T
Protocols: TCP/IP, Telnet, SNTP-Multicast
Concurrent Sessions: Telnet (1)
Provides remote or local access via TCP/IP connection
Data transfer rates of 4.7 Mbps
User-assignable IP Address, port, sub-net mask

Indicators and Controls
System Status LEDs (5)
Power: green
Active Alarm: red, illuminates when one of more Alarm Inputs are On
Running: green, flashes once per second to indicate processor is running
Terminal: green, flashes with send and receive data
Maintainer Mode/Event Storage: yellow, on when Maintainer Mode is active; blinks momentarily when an Event Record is logged to memory
Input Status LEDs (10)
Digital Inputs 1-10: green, illuminates when input is On
Ethernet Port LEDs (2 optional)
Green: link established
Yellow: data activity
Maintainer Mode Pushbutton
Enables and disables Maintainer Mode

A

Connectors
  Power
    Detachable, screw-down, 4-position, 12 to 22 AWG
    Dual B and N terminals
  Digital Inputs
    Detachable, screw-down, 10-position, 12 to 22 AWG
  Analog Inputs
    Detachable, screw-down, 8-position, 12 to 22 AWG
  Terminal Port
    DE-9 male, configured as modified DCE
  Ethernet Port (optional)
    RJ-45 female

Internal Clock
  Accuracy
    Typical: ±8 seconds per month (3 ppm) when not synchronized
    Volatility: maintains accuracy for minimum of 30 days with loss of power
    Resolution: .001 seconds for all Event Records
  Sync Interval
    SNTP-Multicast: per time server schedule (requires Ethernet Port option)
  Operation
    Time Zones: selectable from 7 different North American settings
    Daylight Saving Time: enable or disable automatic adjustment
    Leap Year: automatically adjusted

Temperature Sensing
  Usage: measures and reports internal temperature of recorder
  High and Low Limits: -67 °F to 257 °F

Password Protection
  Administrative Level
    Access: unrestricted to all functions
    Length: 8 characters
  Restricted Level
    Access: Event Record and Setup Database viewing only
    Length: 8 characters

MICRO-AIDE reserves the right to make changes, at its sole discretion, to any specification listed herein.

TRANSFER RATES

Table 10 on page 60 lists typical bit transfer rates for both of the CRD-14A's user-accessible ports. In each case the same 20,000 Event Records with no-detail formatting were either dumped to a PC file. The times listed are normalized relative to 1,000 Event Records. If speed is a concern, using the optional Ethernet Port is highly recommended.

Port	Time to transfer 1,000 Event Records (sec)	Actual transfer rate (bps)	Relative speed compared to 38,400
Terminal Port (38,400)	19.0	38,396	Used as reference
Terminal Port (115,200)	6.4	114,845	3.0 times faster
Ethernet Port (optional)	.2	4,704,075	122.5 times faster

Table 10: Bit Transfer Rates by Port

A

TERMINAL PORT CABLE

The following cable is included with every CRD-14A.

CRD Terminal Port
DE-9 Female

Comm Port of PC
DE-9 Female

DCE ← Direction as shown → DTE

DCD*
DSR
RD
RTS
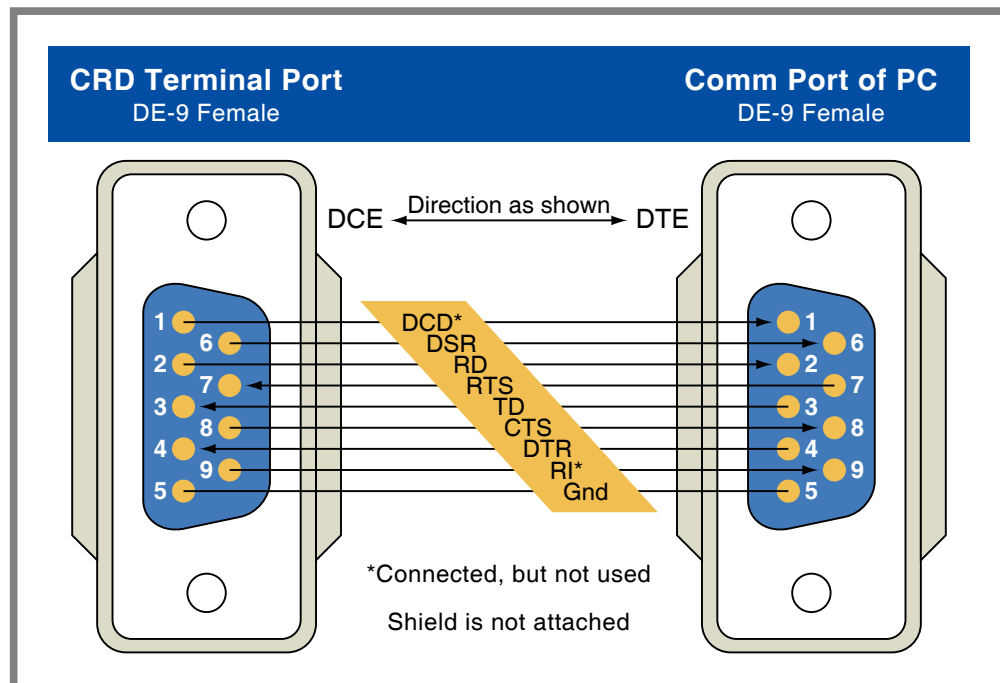TD
CTS
DTR
RI*
Gnd

*Connected, but not used

Shield is not attached

Figure 7: Terminal Port Cable - Wiring Diagram