



PRODUCT



CR800

Measurement and Control Datalogger



Smaller, Simpler Data Logger

Research-grade power for smaller installations

Overview

The CR800 is a smaller, research-grade data logger designed for stand-alone operation in harsh, remote environments. It is intended for smaller configurations in which fewer sensors will be measured. Each CR800 reads input from sensors, then transmits the data via a communication peripheral; most sensors and telecommunication devices are compatible.

Multiple CR800s can be configured as a network or units can be deployed individually.

Another data logger, the CR850, is similar to the CR800, but it has an integrated keyboard and display screen for on-site control.

Benefits and Features

- › Ideal applications include wind profiling, weather stations, ETo/agriculture, air quality, soil moisture, water level/stage, aquaculture, vehicle testing, Time Domain Reflectometry, SCADA, and water quality
- › Simpler in design, the CR800 and CR850 are easier to program and wire.
- › Serial communications with serial sensors and devices supported via I/O port pairs
- › Contains custom ASIC chip that expands pulse count, control port, and serial communications capabilities
- › Compatible with channel expansion peripherals allowing you to expand your system
- › Supports PakBus, Modbus, SDI-12, and DNP3 protocols
- › Includes both an CS I/O port and an RS-232 port for connecting communication devices
- › Gas Discharge Tube (GDT) protected inputs
- › Battery-backed clock that ensures accurate time is maintained while data logger is disconnected from battery power
- › Program with LoggerNet, PC400, or Short Cut to fit your setup

Detailed Description

The CR800 consists of measurement electronics encased in a plastic shell and an integrated wiring panel. This data logger uses an external keyboard/display and power supply. Low power consumption allows the CR800 to operate for extended

periods on a battery recharged with a solar panel—eliminating the need for AC power. The CR800 suspends execution when

primary power drops below 9.6 V, reducing the possibility of inaccurate measurements.

The on-board operating system includes measurement, processing, and output instructions for programming the data logger. The programming language, CRBasic, uses a BASIC-like

syntax. Measurement instructions specific to bridge configurations, voltage outputs, thermocouples, and pulse/frequency signals are included. Processing instructions support algebraic, statistical, and transcendental functions for on-site processing. Output instructions process data over time and control external devices.

Specifications

-NOTE-

Note: Additional specifications are listed in the [CR800-Series Specifications Sheet](#).

| | |
|------------------------------|---|
| Operating Temperature Range | » -25° to +50°C (standard) » Non-condensing environment |
| Maximum Scan Rate | 100 Hz |
| Analog Inputs | 6 single-ended or 3 differential (individually configured) |
| Pulse Counters | 2 |
| Voltage Excitation Terminals | 2 (VX1, VX2) |
| Communications Ports | » CS I/O » RS-232 |
| Switched 12 Volt | 1 terminal |
| Digital I/O | » Certain digital ports can be used to count switch closures. » 4 I/Os or 2 RS-232 COM I/O ports can be paired as transmit and receive for measuring smart serial sensors. |
| Input Limits | ±5 V |

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|-------------------------------|--|
| Analog Voltage Accuracy | ±(0.06% of reading + offset) at 0° to 40°C |
| ADC | 13-bit |
| Power Requirements | 9.6 to 16 Vdc |
| Real-Time Clock Accuracy | ±3 min. per year (Correction via GPS optional.) |
| Internet Protocols | FTP, HTTP, XML POP3, SMTP, Telnet, NTCIP, NTP |
| Communication Protocols | PakBus, Modbus, DNP3, SDI-12, SDM |
| Idle Current Drain, Average | 0.7 mA (@ 12 Vdc) |
| Active Current Drain, Average | » 1 mA (1 Hz sample rate @ 12 Vdc without RS-232 communication) » 16 mA (100 Hz sample rate @ 12 Vdc without RS-232 communication) » 28 mA (100 Hz sample rate @ 12 Vdc with RS-232 communication) |
| Dimensions | 24.1 x 10.4 x 5.1 cm (9.5 x 4.1 x 2 in.) |
| Weight | 0.7 kg (1.5 lb) |