



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  | <ul style="list-style-type: none"> <li>› -25° to +50°C (standard)</li> <li>› Non-condensing environment</li> </ul>  |
| 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         | <ul style="list-style-type: none"> <li>› CS I/O</li> <li>› RS-232</li> </ul>  |
| Switched 12 Volt             | 1 terminal  |
| Digital I/O                  | <ul style="list-style-type: none"> <li>› 4 I/Os or 2 RS-232 COM I/O ports can be paired as transmit and receive for measuring smart serial sensors.</li> <li>› Certain digital ports can be used to count switch closures.</li> </ul> |
| Input Limits                 | ±5 V  |

|                               |  |
|-------------------------------|--|
| 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 | <ul style="list-style-type: none"> <li>› 1 mA (1 Hz sample rate @ 12 Vdc without RS-232 communication)</li> <li>› 28 mA (100 Hz sample rate @ 12 Vdc with RS-232 communication)</li> <li>› 16 mA (100 Hz sample rate @ 12 Vdc without RS-232 communication)</li> </ul> |
| 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)  |

For comprehensive details, visit: [www.campbellsci.com/cr800](http://www.campbellsci.com/cr800) 



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