



## Smaller, Simpler Data Logger

Research-grade power with built-in keyboard and display

### Overview

The CR850 is a smaller, research-grade data logger that includes an on-board keyboard display as part of its integrated package. It is intended for smaller configurations in which fewer sensors will be measured. Each CR850 reads input from sensors, then transmits the data via a communication

peripheral; most sensors and telecommunication devices are compatible. Multiple CR850s can be configured as a network or units can be deployed individually. This rugged data logger can provide stand-alone operation in harsh, remote environments.

### Benefits and Features

- › Integrated keyboard and display screen let you program, manually initiate data transfers, and view data, all on site.
- › 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
- › Supports PakBus, Modbus, SDI-12, and DNP3 protocols
- › Compatible with channel expansion peripherals allowing you to expand your system
- › 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 CR850 consists of measurement electronics encased in a plastic shell with an integrated wiring panel, 16-character keyboard, and display screen. The display can show 8 lines x 21 characters (64 x 128 pixels). Custom menus are supported

allowing customers to set up choices within the data logger program that can be initiated by a simple “toggle” or “pick list”.

Its keyboard and display screen is used to program the data logger, manually initiate data transfer, and display data.

The CR850 uses an external power supply. Low power consumption allows the it to operate for extended periods on a battery recharged with a solar panel—eliminating the need for AC power. The CR850 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>› Non-condensing environment</li> <li>› -25° to +50°C (standard)</li> <li>› -30° to +80°C (extended)</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>› Certain digital ports can be used to count switch closures.</li> <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> </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	1 mA (@ 12 Vdc)
Active Current Drain, Average	<ul style="list-style-type: none"> <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> <li>› 1 to 16 mA (1 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/cr850](http://www.campbellsci.com/cr850) 



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