Overview

The CR310 is a multi-purpose, compact, low-cost measurement and control data logger that includes an integrated 10/100 Ethernet port and removable terminal connectors. This entry-level data logger, with its rich instruction set, can measure most hydrological, meteorological, environmental, and industrial sensors. It will concentrate data, making it available over varied networks and deliver it using your preferred protocol. The CR310 also performs automated on-site or remote decision making for control and M2M communications. The CR310 is ideal for small applications requiring long-term, remote monitoring and control.

The primary differences between the CR300 and CR310 are that the CR310 offers removable connectors and a 10/100 Ethernet connection.

The CR310 has multiple radio options that are suitable for different regions:

- CR310-RF407: US and Canada
- CR310-RF412: Australia and New Zealand
- CR310-RF422: Europe
- CR310-RF427: Brazil

Note: Campbell Scientific does not recommend the CR310 for use as a PakBus router in networks with more than 50 devices. Large arrays or string variables may also reach memory limits. For such applications, a CR1000X Measurement and Control Datalogger is recommended.

Benefits and Features

- Set up easily with PC software and USB connectivity
- Measure with confidence analog and digital sensors
- Internet ready–email, FTP, HTTP/web, TCP–with required add-ons
- Trust in the Campbell Scientific quality, including integral surge and ESD protection
- Save money and space using the integrated Ethernet port
- Network wirelessly to another node or Internet gateway with integrated radio option
- CR310-WIFI ideal for short-range, wireless IP communication
- Wiring made easy through removable terminal block

For comprehensive details, visit: www.campbellsci.com/cr310
### Specifications

- **Operating Temperature Range**: -40° to +70°C (standard)  
  *Non-condensing environment*

- **Case Material**: Powder-coated aluminum

- **Analog Inputs**: 6 single-ended or 3 differential (individually configured)

- **Pulse Counters**: 8 (P_SW, P_LL, C1, C2, and SE1 to SE4)

- **Voltage Excitation Terminals**: 2 (VX1, VX2)

- **Communications Ports**:  
  - 10/100 Ethernet RJ45  
  - USB Micro B  
  - RS-232

- **Switched 12 Volt**: 1 terminal

- **Digital I/O**: 7 terminals (C1, C2, P_SW, and SE1 to SE4) configurable for digital input and output. Includes status high/low, pulse width modulation, external interrupt, and communication functions. Exception: The SE4 terminal doesn't do external interrupt.

- **Input Limits**: -100 to +2500 mV

- **Analog Voltage Accuracy**:  
  - ±(0.04% of measurement + offset) at 0° to 40°C  
  - ±(0.1% of measurement + offset) at -40° to +70°C  
  - Accuracy specifications do not include sensor or measurement noise.

- **ADC**: 24-bit

- **Power Requirements**: 16 to 32 Vdc for charger input (CHG)

- **Real-Time Clock Accuracy**: ±1 min. per month

- **Internet Protocols**: Ethernet, PPP, RNDIS, ICMP/Ping, Auto-IP(AP/PA), IPv4, IPv6, UDP, TCP, TLS, DNS, DHCP, SLAAC, NTP, Telnet, HTTP(S), FTP(S), SMTP/TLS, POP3/TLS

- **Communication Protocols**: PakBus, Modbus, DNP3, SDI-12, TCP, UDP, and others

- **Warranty**: 3 years (against defects in materials and workmanship)

- **CPU Drive/Programs**: 80 MB serial flash

- **Data Storage**: 30 MB serial flash

- **Idle Current Drain, Average**: 32 mA (@ 12 Vdc with Ethernet link idle)

- **Active Current Drain, Average**: 23 mA + 51 mA (@ 12 Vdc with Ethernet link active, processor always on)

- **Dimensions**: 16.26 x 7.62 x 5.68 cm (6.4 x 3.0 x 2.2 in.)

- **Weight**: 288 to 306 g (0.64 to 0.68 lb) depending on communication option selected

#### CR310-RF407 Option

- **Radio Type**: Frequency Hopping Spread Spectrum (FHSS)

- **Output Power**: 5 to 250 mW (user-selectable)

- **Frequency**: 902 to 928 MHz (US, Canada)

- **RF Data Rate**: 200 kbps

- **Receive Sensitivity**: -101 dBm

- **Antenna Connector**: RPSMA (external antenna required; see [www.campbellsci.com/order/rf407](http://www.campbellsci.com/order/rf407) for Campbell Scientific antennas)

- **Idle Current Drain, Average**: 12 mA (@ 12 Vdc)

- **Active Current Drain, Average**: < 80 mA (@ 12 Vdc)

#### CR310-RF412 Option

- **Radio Type**: Frequency Hopping Spread Spectrum (FHSS)

- **Output Power**: 5 to 250 mW (user-selectable)

- **Frequency**: 915 to 928 MHz (Australia, New Zealand)

- **RF Data Rate**: 200 kbps

- **Receive Sensitivity**: -101 dBm

- **Antenna Connector**: RPSMA (external antenna required; see [www.campbellsci.com/order/rf412](http://www.campbellsci.com/order/rf412) for Campbell Scientific antennas)

- **Idle Current Drain, Average**: 12 mA (@ 12 Vdc)

- **Active Current Drain, Average**: < 80 mA (@ 12 Vdc)