CR200-series Datalogger Specifications

Electrical specifications are valid over a -40° to +50°C range unless otherwise specified; non-condensing environment required. We recommend that you confirm system configuration and critical specifications with Campbell Scientific before purchase.

ANALOG INPUTS; DIGITAL I/O

Channels SE1 to SE5 can be individually configured for single-ended measurement or digital I/O.

SINGLE-ENDED MEASUREMENT (SE1 TO SE5):
- Analog Input Range: 0 ≤ V ≤ 2.5 Vdc
- Measurement Resolution: 0.6 mV
- Measurement Accuracy:
  - Typical: ±(0.25% of reading + 1.2 mV offset) over -40°C to +50°C
  - Worst-case: ±(1% of reading + 2.4 mV offset) over -40°C to +50°C
- Minimum Input: 20 mV RMS
- Maximum Frequency: 1 kHz
- Voltage Threshold: <0.5 to >2.5 V
- Frequency Range: 0 to 150 kHz
- Maximum Input Voltage: 4 Vdc
- Maximum Frequency: 1 kHz
- Voltage Threshold: <0.5 to >2.5 V

COMMUNICATIONS

ON-BOARD SPECTRUM RADIO:
- Frequency: 915 MHz (CR206), 922 MHz (CR211), or 2.4 GHz (CR216)
- Transmission Range: 1 mile with 0 dBd ¼ wave antenna (line-of-sight) and 900 MHz radios; 0.6 miles (1 km) with 0 dBd ¼ wave antenna (line-of-sight) and 2.4 GHz radio; up to 10 miles with higher gain antenna (line-of-sight)
- RF4XX used as a base station radio

available radio transmission modes:
- Always on, program controlled
- Cycle Time: 1 or 8 s cycles; on for 100 ms every period; checks for incoming communication
- Scheduled Transmission Time: off until transmission time
- PaxBus® packet switching network protocol

CLOCK ACCURACY
- 8.2 minutes/month @ -40° to +50°C; 1 minute/month @ +25°C

CPU AND STORAGE
- FINAL STORAGE: 512 kbyte Flash, data format is 4 bytes per data point (table-based)
- PROGRAM STORAGE: 6.5 kbyte Flash
- FASTEST SCAN RATE: once per second

SWITCHED BATTERY (SW BATTERY)
- Switched under program control; 300 mA minimum current available

POWER
- BATTERY VOLTAGE RANGE: 7 to 16 Vdc (can program datalogger to measure internal battery voltage)
- MAX. CONTINUOUS BATTERY CHARGING CURRENT: 0.9 A @ 20°C, 0.65 A @ 50°C
- RECOMMENDED BATTERIES: 12 Vdc, 7 Ahr or smaller sealed rechargeable battery when connected to the on-board charging circuit. Using larger batteries with the datalogger's built-in charger may result in excessive PC board heating. This is especially a concern when the battery is deeply discharged or failing with a shorted cell.

ALTERNATIVE BATTERIES:
- Alkaline cells, lithium, or other non-rechargeable battery types may be connected if the charging circuit is not used (i.e., nothing connected to Charge terminals).

CHARGER INPUT VOLTAGE: 16 to 22 Vdc

SOLAR PANEL: 10 W or smaller when using on-board charging circuit.

WALL CHARGER: 1 A or smaller when using on-board charging circuit.

SHELF LIFE OF CLOCK’S BACKUP BATTERY: 5 years

CURRENT DRAIN (@12 V)
- QUIESCENT CURRENT DRAIN:
  - No Radio or Radio Powered Off: ~3 mA
  - ACTIVE CURRENT DRAIN:
    - Radio receive: ~20 mA (CR206, CR211), ~36 mA (CR216)
    - Radio transmit: ~75 mA (CR206, CR211, CR216)
  - AVERAGE CONTINUOUS CURRENT DRAIN:
    - Radio always on: ~20 mA (CR206, CR211), ~36 mA (CR216)
    - Radio in 1 s duty cycle: ~2.2 mA (CR206, CR211), ~4 mA (CR216)
    - Radio in 8 s duty cycle: ~0.45 mA (CR206, CR211), ~0.8 mA (CR216)

CE COMPLIANCE (as of 03/02)
- CE COMPLIANT DATALOGGERS: CR200, CR206, CR211, CR216
- STANDARD(S) TO WHICH CONFORMITY IS DECLARED: IEC61326:2002

EMI AND ESD PROTECTION

IMMUNITY: Meets or exceeds following standards:
- ESD: per IEC 1000-4-2; ±8 kV air, ±4 kV contact discharge
- RF: per IEC 1000-4-3; 3 V/m, 80-1000 MHz
- EFT: per IEC 1000-4-4; 1 kV power, 500 V I/O

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WARRANTY
- One year covering parts and labor.