ANALOG

Twelve universal (U) terminals may be configured to make analog voltage, ratiometric, or static vibrating-wire and thermistor measurements.

VOLTAGE MEASUREMENTS (U1 – U12)

Up to six differential or 12 single-ended terminals configured for voltage measurements using a 24-bit Dac, one at a time.

**INPUT RESISTANCE:** 20 GΩ typical

**INPUT LIMITS:** ±5 V

**SUSTAINED INPUT VOLTAGE WITHOUT DAMAGE:** ±20 Vdc

**DC COMMON MODE REJECTION:** > 120 dB with input reversal (≥86 dB without input reversal)

**NORMAL MODE REJECTION:** > 70 dB @ 60 Hz

**INPUT CURRENT:** ±2 nA typical @ 25°C

**INPUT RESISTANCE:** 20 GΩ typical

**FREE-WAVE VOLTAGE OVERLOAD:** ±50 V @ full scale without damage

**INPUT LIMITS:** ±200 mV (to avoid localizing noise)

**RESOLUTION (µV):** 130 ns

**ACCURACY:** ±(0.03% of reading + resolution), where resolution is 130 ns

**DEFAULT SETTLING TIME:** 500 µs

**RATIOMETRIC MEASUREMENTS (U1 – U12)**

Resistance measurements for four- and six-wire full bridge and two-, three-, and four-wire half bridge using voltage excitation or direct resistance measurements using current excitation. Excitation polarity reversal minimizes dc error.

**ACCURACY:** ±(0.02% of voltage measurement + offset), 0° to 40°C ±(0.025% of voltage measurement + offset), -40° to 70°C ±(0.03% of voltage measurement + offset), -55° to 85°C

VOLTAGE AND CURRENT EXCITATION (U1 – U12)

Up to 12 terminals configured for voltage or current excitation using 12-bit Dac, active only during ratiometric measurement, one at a time.

<table>
<thead>
<tr>
<th>Excitation Mode</th>
<th>Range</th>
<th>Resolution</th>
<th>Maximum Source/Sink Current</th>
<th>Compliance Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage (Vx)</td>
<td>±2.5 V</td>
<td>0.6 mV</td>
<td>±25 mA</td>
<td>±5 V</td>
</tr>
<tr>
<td>Current (Ix)</td>
<td>±2.5 mA</td>
<td>0.6 µA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

**ABSOLUTE ACCURACY:**

<table>
<thead>
<tr>
<th>Excitation Mode</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage (Vx)</td>
<td>±2.5 V</td>
<td>0.6 mV</td>
<td>±0.013% of reading</td>
</tr>
<tr>
<td>Current (Ix)</td>
<td>±2.5 mA</td>
<td>0.6 µA</td>
<td>±0.013% of reading</td>
</tr>
</tbody>
</table>

**STATIC VIBRATING-WIRE MEASUREMENTS (U1 – U12)**

Up to six static vibrating wire measurements without thermistor measurements or three with thermistor measurements. A U-terminal pair excites and measures vibrating-wire transducers. Up to ±5 V (12 V peak-to-peak) logarithmic sine-wave-frequency excitation, programmable from 100 Hz to 6.5 kHz followed by frequency-domain measurements, one at a time.

**INPUT RESISTANCE:** 4.75 kΩ

**MEASUREMENT SPEED:** Each vibrating-wire and thermistor measurement takes less than 1 s.

**THERMISTOR MEASUREMENTS (U1 – U12)**

**INPUT RESISTANCE:** 5 kΩ ±0.1%, 10 ppm/°C completion resistor.

PERIOD AVERAGE (U1 – U12)

Up to 12 analog inputs can be used for period averaging.

**ACCURACY:** ±0.01% of reading + resolution, where resolution is 130 ns divided by the specified number of cycle to be measured

**RANGE DEPENDENT ON INPUT**

<table>
<thead>
<tr>
<th>Voltage Gain</th>
<th>Minimum peak-to-peak Signal (mV)*</th>
<th>Maximum peak-to-peak Signal (V)</th>
<th>Minimum Pulse Width (µs)</th>
<th>Maximum Frequency (kHz)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 50</td>
<td>10 200</td>
<td>2 8</td>
<td>2 100</td>
<td>5</td>
</tr>
<tr>
<td>1 50</td>
<td>2 10</td>
<td>2 62</td>
<td>2 8</td>
<td>5</td>
</tr>
<tr>
<td>1 50</td>
<td>10 200</td>
<td>2 100</td>
<td>2 8</td>
<td>5</td>
</tr>
</tbody>
</table>

**MEASUREMENT SPEED:** INT(multiplex measurement time *( reps + 1) + 2 ms)

<table>
<thead>
<tr>
<th>fN1 (Hz)</th>
<th>Multiplexed Measurement Time (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>w/ Input Reversal</td>
</tr>
<tr>
<td>15000</td>
<td>2.8</td>
</tr>
<tr>
<td>60</td>
<td>36</td>
</tr>
<tr>
<td>50</td>
<td>42.7</td>
</tr>
<tr>
<td>5</td>
<td>402.7</td>
</tr>
</tbody>
</table>

**DEFAULT SETTLING TIME:** 500 µs

**MORE INFO:** 780.454.2505

campbellsci.ca/cr6

---

1. Valid notch frequencies: 5 Hz to 93 kHz.
2. Range overhead of ~5% on all ranges guarantees that full-scale values will not cause over range.
3. Effective resolution (ER) in bits is computed from ratio of full-scale range to RMS resolution.
4. Accuracy does not include the sensor and measurement noise.
5. Minimum settling time is 100 µs.
6. Assumes input reversal for differential measurements along with excitation reversal for excitation voltage <1000 mV and excitation current < 1 mA, not including bridge resistor errors and sensor and measurement noise.
7. See manual for details on estimating measurement accuracy for the various ratiometric measurement instructions. For resistance instruction the excitation current, Ix, is internally measured across a 200 Ω, ±0.005% @ 25°C, 2 ppm/°C TCR internal resistor with resulting sensor resistance determined from Vs / Ix .
8. Ratiometric accuracy, rather than absolute accuracy, determines overall measurement accuracy of ratiometric resistance measurements.
9. With signal centered around datalogger ground.
10. The maximum frequency = 1/(twice minimum pulse width) for 50% duty cycle signals.
CURRENT MEASUREMENTS

One analog input may be configured as an independent 0 to 20 mA or 4 to 20 mA current loop input (not isolated) measured one at a time using 24-bit A/D.

ACCURACY:

<table>
<thead>
<tr>
<th>Range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 20°C</td>
<td>±0.14% of reading</td>
</tr>
<tr>
<td>-40 to 70°C</td>
<td>±0.26% of reading</td>
</tr>
</tbody>
</table>

PULSE COUNTING

Four C and twelve U terminals have independent 32-bit counters and may be configured for switch closure or high-frequency-pulse inputs. All even U terminals may also be configured as low-level ac inputs. Terminals are configured as pairs with options for pull-up or pull-down and 5 V logic levels (high > 3.5 V, low < 1.5 V) or 3.3 V logic levels (high > 2.0 V, low < 0.8 V).

MAXIMUM INPUT VOLTAGE: ±20 Vdc
MAXIMUM COUNTS PER SCAN: 210
INPUT RESISTANCE: 5 kΩ
ACCURACY: ±(0.02% of reading +1/scan)

SWITCH CLOSURE (C1 - C4 and U1 - U12)

MINIMUM SWITCH CLOSED TIME: 5 ms
MINIMUM SWITCH OPEN TIME: 6 ms
MAXIMUM BOUNCE TIME: 1 ms open w/o being counted
MAXIMUM INPUT FREQUENCY: 150 Hz

HIGH-FREQUENCY (C1 - C4 and U1 - U12)

MAXIMUM INPUT FREQUENCY: 1 MHz

LOW-LEVEL AC (U2, U4, U6, U8, U10, U12)

Up to 6 terminals configured for low-level ac measurements.

RANGE: (dependent on sine wave input)12

<table>
<thead>
<tr>
<th>Sine Wave (mV RMS)</th>
<th>Range (Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1.0 to 20</td>
</tr>
<tr>
<td>200</td>
<td>0.5 to 200</td>
</tr>
<tr>
<td>2000</td>
<td>0.3 to 10,000</td>
</tr>
<tr>
<td>5000</td>
<td>0.3 to 20,000</td>
</tr>
</tbody>
</table>

INPUT HYSTERESIS: 12 mV @ 1 Hz

VOLTAGE OUTPUT

SWITCHED 12 V (SW12-1, SW12-2)

Two independent outputs provide unregulated 12 V (battery voltage) source under program control. Thermal fuse hold current = 1.60 A @ -40°C, 1.10 A @ 20°C, 0.64 A @ 70°C, 0.50 A @ 85°C.

5 V AND 3.3 V (C1 - C4 AND U1 – U12)

<table>
<thead>
<tr>
<th>Terminal</th>
<th>5 V Source (mA @ 3.3 V)</th>
<th>3.3 V Source (mA @ 1.85 V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 to C4</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>U odd</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>U even</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

TOTAL SYSTEM CURRENT: Thermal fuse hold current = 3.80 A @ -40°C, 2.50 A @ 20°C, 1.35 A @ 70°C, 1.00 A @ 85°C.

COMMUNICATIONS

ETHERNET PORT: RJ45/jack
10/100Base-TX, full and half duplex Auto-MDIX
Magnetic isolation and TVS surge protection

INTERNET PROTOCOLS: Ethernet, PPP, CS (O/IP), ICMP/Fr, Auto-IP(APIPA), IPv4, IPv6, UDP, TCP, TFS, DHCP Client, SLAAC, DNS Client, SNMPv1, NTP, Telnet, HTTP/HTTPS, FTP/FTPS, SMTP/TLS, POP3/TLS

ADDITIONAL PROTOCOLS SUPPORTED: PakBus, PakBus Encryption, CPl, SDM, SDI-12, Modbus RTU, Modbus ASCII, Modbus TCP/IP, DNP3, NTCP, NMEA 0183. Custom user definable over serial, TCP, and UDP

DATA FILE FORMATS: CSV, XML, JSON, binary, encrypted

USB: USB micro-B device only, 2.0 full-speed 12 Mbps, for computer connection.

CS I/O: Interfaces with Campbell Scientific peripherals.

CPI: RJ-45, interface to Campbell Scientific CDM measurement peripherals and sensors


0 – 5 V SERIAL (U1 to U12, C1 to C4): 8 independent Tx/Rx pairs
RS-485 (C1 to C4): 1 full duplex or 2 half duplex
SDI-12 (U1, U3, U5, U7, U9, U11, C1, C3): 8 independent SDI-12 V1.3 compliant terminals configurable as sensor or recorder

ON-BOARD RADIO

RADIO TYPE:

- RF407, RF412, RF427, and RF451
- RF422

Frequency Hopping Spread Spectrum Radios (FHSS)
SRD660 Radio with Listen before talk (LB) and Automatic Frequency Agility (AFA)

TRANSMIT:

<table>
<thead>
<tr>
<th>CR6-RF407</th>
<th>CR6-RF412</th>
<th>CR6-RF422</th>
<th>CR6-RF427</th>
<th>CR6-RF451</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Power</td>
<td>5 to 250 mW, user selectable</td>
<td>2 to 25 mW, user selectable</td>
<td>5 to 250 mW, user selectable</td>
<td>10 to 1000 mW, user selectable</td>
</tr>
<tr>
<td>Frequency</td>
<td>902 to 928 MHz (US, Canada)</td>
<td>915 to 928 MHz (New Zealand)</td>
<td>863 to 870 MHz (European Union)</td>
<td>915 to 928 MHz (Brazil)</td>
</tr>
<tr>
<td>Channel Capacity</td>
<td>Eight 25-channel hop sequences sharing 64 available channels</td>
<td>Eight 25-channel hop sequences sharing 31 available channels</td>
<td>Ten 30-channel hop sequences</td>
<td>Eight 25-channel hop sequences sharing 43 available channels</td>
</tr>
<tr>
<td>IF Output Rates</td>
<td>200 kbps</td>
<td>200 kbps</td>
<td>400 kbps</td>
<td>200 kbps</td>
</tr>
</tbody>
</table>

RECEIVE SENSITIVITY:

<table>
<thead>
<tr>
<th>CR6-RF407, RF412, and RF427</th>
<th>CR6-RF451</th>
<th>CR6-RF422</th>
</tr>
</thead>
<tbody>
<tr>
<td>-101 dBm</td>
<td>-108 dBm at 115.2 kbps for 10° BER</td>
<td>-106 dBm</td>
</tr>
<tr>
<td>-103 dBm at 153.6 kbps for 10° BER</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ANTENNA CONNECTOR: Reverse Polarity SMA (RPSMA)

WLAN (CR6-WIFI only)

COMMUNICATION RATE: 54 Mbps
FREQUENCY: 2.4 GHz
ANTENNA CONNECTOR: RPSMA
ANTENNA: pn 1600S unity gain (0 dBd), 1/2 wave whip, omnidirectional. Features an articulating knuckle joint that can be oriented vertically or at right angles.
SUPPORTED TECHNOLOGIES: 802.11 a/b/g/n, WPA/WPA2-Personal, WPA/WPA2-Enterprise Security, WEP
CLIENT MODE: WPA/WPA2-Personal and Enterprise, WEP
ACCESS POINT MODE: WPA2-Personal
TRANSMIT POWER: 7 to 18 dBm
Rx SENSITIVITY: -97 dBm

SYSTEM

PROCESSOR: Renesas RX63N (32-bit with hardware FPU, running at 100 MHz)
MEMORY: 1128 MB flash + 32 MB RAM (battery backed)
DATA STORAGE: 4 MB RAM + 72 MB flash
DATA STORAGE EXPANSION: Removable microSD flash memory, up to 8 GB
CLOCK ACCURACY: ±3 min. per year. Optional GPS correction to 10 µs
CLOCK RESOLUTION: 1 ms
PROGRAM EXECUTION: 1 ms to one day

POWER REQUIREMENTS

CHARGER INPUT (CHG): 16 to 32 Vdc, current limited at 1.2 A @ 20°C
Power converter or solar panel input
EXTERNAL BATTERIES (BAT): 12 Vdc, valve-regulated, lead-acid (VRLA), 2 to 24 Ah battery, typical
INTERNAL LITHIUM BATTERY: AA, 2.4 Ah, 3.6 Vdc (Tadiran TL 5903/3) for battery-backed memory and clock only. 3 year life with no external power source

11 This information applies to CR6 dataloggers with serial numbers 7502 and newer.
12 These dataloggers have two blue stripes on the label.
**TYPICAL POWER REQUIREMENTS** (assumes 12 Vdc on BAT terminals)

SLEEP: < 1 mA
ACTIVE 1 Hz SCAN: 3 mA
ACTIVE 20 Hz SCAN: 67 mA
ETHERNET 1 MINUTE: Active + 1 mA
ETHERNET IDLE: Active + 4 mA
ETHERNET LINK: Active + 47 mA
SERIAL (RS-232/RS-485): Active + 25 mA

**WI-FI (CR6-WIFI only)**

**AVERAGE ADDITIONAL CURRENT CONTRIBUTION @ 12 Vdc**

<table>
<thead>
<tr>
<th>Mode</th>
<th>-WIFI Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Mode</td>
<td>7 mA, Idle, 70 mA, Communicating</td>
</tr>
<tr>
<td>Access Point Mode</td>
<td>62 mA, Idle, 70 mA, Communicating</td>
</tr>
<tr>
<td>Sleep (disabled using PwrLwrPwr() or DevConfig setting)</td>
<td>&lt; 1 mA</td>
</tr>
</tbody>
</table>

**ON-BOARD RADIO**

**AVERAGE ADDITIONAL CURRENT CONTRIBUTION @ 12 Vdc**

<table>
<thead>
<tr>
<th>CR6-RF407, CR6-RF412, CR6-RF427, CR6-RF451, CR6-RF422</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmit</td>
<td>&lt; 80 mA, 650 mA, 20 mA</td>
</tr>
<tr>
<td>Idle On</td>
<td>12 mA, 15 mA, 9.5 mA</td>
</tr>
<tr>
<td>Idle 0.5 s Power Mode</td>
<td>4 mA, 3.5 mA</td>
</tr>
<tr>
<td>Idle 1 s Power Mode</td>
<td>3 mA</td>
</tr>
<tr>
<td>Idle 4 s Power Mode</td>
<td>1.5 mA</td>
</tr>
</tbody>
</table>

**VIBRATION:** MIL-STD 810G method S146

**PROTECTION:** IP50

**ON-BOARD WIFI** (CR6-WIFI Only):

- **UNITED STATES FCC ID:** XF6-5RS91135B
- **INDUSTRY CANADA (IC):** 8407A-RS91135B

**ON-BOARD RADIO:**

- **CR6-RF407**
- **CR6-RF412**
- **CR6-RF451**
- **CR6-RF422**
- **CR6-RF427**
- **CR6-RF451**

**PHYSICAL**

**DIMENSIONS:** 21 cm x 10.2 cm x 5.7 cm (8.3 in x 4.0 x 2.2 in);
additional clearance required for cables and leads

**WEIGHT/MASS:**

- **CR6:** 0.42 kg (0.92 lb)
- **CR6-WIFI:** 0.50 kg (1.10 lb)
- **CR6-RF451:** 0.52 kg (1.15 lb)
- **CR6-RF407/412/422/427:** 0.51 kg (1.13 lb)

**MATERIAL:**

- **CASE:** High-impact-resistant polycarbonate and UV-resistant TPE, recycle code 7
- **DUST PLUGS:** UV-resistant TPE

**WARRANTY**

Three years against defects in materials and workmanship.

1. The user is responsible for emissions if changing the antenna type or increasing the gain.

**PROGRAMMABLE TERMINALS**

Twelve U terminals and fourteen C terminals are programmable as pairs for the following functions.

<table>
<thead>
<tr>
<th>Analog Input</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>U1</th>
<th>U2</th>
<th>U3</th>
<th>U4</th>
<th>U5</th>
<th>U6</th>
<th>U7</th>
<th>U8</th>
<th>U9</th>
<th>U10</th>
<th>U11</th>
<th>U12</th>
<th>RG</th>
<th>RS-232/485</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Ended</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period Average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibrating Wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Loop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermostat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analog Output</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switched-Voltage Excitation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switched-Current Excitation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDI-12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPS Time Sync</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TTL 0 to 5 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LVTTL 0 to 3.3 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS-232</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS-485 (Half Duplex)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS-485 (Full Duplex)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I2C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digital I/O</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>U1</th>
<th>U2</th>
<th>U3</th>
<th>U4</th>
<th>U5</th>
<th>U6</th>
<th>U7</th>
<th>U8</th>
<th>U9</th>
<th>U10</th>
<th>U11</th>
<th>U12</th>
<th>RG</th>
<th>RS-232/485</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>General I/O Pair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 V or 3.3 V Source</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse-Width Modulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timer I/O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrupt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse Counting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch Closure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Level AC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMPLIANCE INFORMATION**

**VIEW EU DECLARATION OF CONFORMITY FOR THE CR6 AND CR6-WIFI AT:** www.campbellsci.com/cr6

**SHOCK:** MIL-STD-810G method 516.6

---

1. If U1 is programmed for analog input or output, its associated pair, U2, may only be used as an analog input or output.
2. Triggering conflicts can occur when companion ports are used for different triggering instructions (TimerInput, PulseCount, SDI12Recorder, WaitDigTrig). For example, if U3 is used for the SDI12Recorder instruction, U4 cannot be used in the TimerInput, PulseCount, or WaitDigTrig instructions.
3. Only one trio of channels can be programmed as an SDM connection. For example, if channels C1–C3 are used for an SDM connection, you cannot connect another SDM on any of the other channels.
Global Sales & Support Network
A worldwide network of companies to help meet your needs

Australia
Location: Garbutt, QLD Australia
Phone: 61.7.4401.7700
Email: info@campbellsci.com.au
Website: www.campbellsci.com.au

Brazil
Location: São Paulo, SP Brazil
Phone: 11.3732.3399
Email: vendas@campbellsci.com.br
Website: www.campbellsci.com.br

Canada
Location: Edmonton, AB Canada
Phone: 780.454.2505
Email: dataloggers@campbellsci.ca
Website: www.campbellsci.ca

China
Location: Beijing, P. R. China
Phone: 86.10.6561.0080
Email: info@campbellsci.com.cn
Website: www.campbellsci.com

Costa Rica
Location: San Pedro, Costa Rica
Phone: 506.2280.1564
Email: info@campbellsci.cc
Website: www.campbellsci.cc

France
Location: Antony, France
Phone: 0033.0.1.56.45.15.20
Email: info@campbellsci.fr
Website: www.campbellsci.fr

Germany
Location: Bremen, Germany
Phone: 49.0.421.460974.0
Email: info@campbellsci.de
Website: www.campbellsci.de

South Africa
Location: Somerset West, South Africa
Phone: 27.21.8800885
Email: cleroux@csafrica.co.za
Website: www.csafrica.co.za

Southeast Asia
Location: Bangkok, Thailand
Phone: 66.2.719.3399
Email: thitipongc@campbellsci.asia
Website: www.campbellsci.asia

Spain
Location: Barcelona, Spain
Phone: 34.93.2323938
Email: info@campbellsci.es
Website: www.campbellsci.es

UK
Location: Shepshed, Loughborough, UK
Phone: 44.0.1509.601141
Email: sales@campbellsci.co.uk
Website: www.campbellsci.co.uk

USA
Location: Logan, UT USA
Phone: 435.227.9120
Email: info@campbellsci.com
Website: www.campbellsci.com

Other Locations:
Sales and support are provided in many other locations through an extensive network of international reps. For the full list, please visit www.campbellsci.com/directory.