Overview
The SDM-SIO1 expands the number of serial devices that can communicate with a CR800, CR850, CR1000, CR3000, CR9000X, or CR5000 datalogger. Up to 15 SDM-SIO1 modules can be attached to the datalogger. The SDM-SIO1 accepts up to 2047 bytes of serial data and stores the data in a buffer. The buffer allows remote equipment to transmit large amounts of data without hindering other processes in the datalogger.

Benefits and Features
- Fully compliant with the RS-232, RS-485, RS-422 standards
- Collects large amounts of data without hindering other processes within the datalogger
- Includes transient and surge protection on the serial port interface, eliminating the need for separate transient protection
- Uses simple CRBasic programs
- Acts as an RS-485 interface for sensors with only a digital output (e.g., sonic and road weather sensor) providing a straightforward and low power alternative to other RS-485 interfaces
- Supports talk-through mode that facilitates testing and diagnostics
**Communication**

**SDM Operation**
The SDM-SIO1 module connects to the datalogger using the SDM port and communication protocol. The datalogger enables individual modules through an addressing scheme; multiple SDMs (in any combination) can be connected to one datalogger. After a module is enabled, it operates independently of the datalogger until additional commands are received or results are transmitted.

**Serial Devices**
The SDM-SIO1 can communicate with serial devices that output a true RS-232, RS-485 or RS-422 signal. Remote serial devices use industry standard hardware to connect to the SDM-SIO1. When operating in RS-232 mode, the module also provides hardware handshaking.

**Specifications**

- **Modes Of Operation:**
  - RS-232 (full duplex & receive only);
  - RS-485 (half and full duplex);
  - RS-422 (half and full duplex)
- **Data Rates:** 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200 bps
- **Data Format:** 8, 7 bit data size; none, odd or even parity; one or two stop bits
- **EMC Compliance:** Complies with IEC 61326
- **Power Supply Connection:** +12 V
- **Operating Voltage:** 7 V (minimum); 12 V (nominal); 20 V (maximum)
- **Maximum Cable Length:** 6 m (20 ft) total to all SDM devices. Consult Campbell Scientific if longer lengths are necessary
- **Dimensions:** 5.4 x 8.0 x 2.5 cm (2.2 x 3.1 x 1.0 in)
- **Operating Temperature Range:** -25° to +55°C

**Current Consumption**

- **Standby (nominal):** 70 µA
- **Standby (maximum):** 100 μA
- **Active:** 5 to 13 mA depending on transmit mode and connections made

**Buffer**

- **Storage Type:** Both transmit and receive buffers are fill and discard
- **Transmit-Buffer Size:** 767 bytes (buffer from datalogger to sensor)
- **Receive-Buffer Size:** 2047 bytes (buffer from sensor to datalogger)

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**Ordering Information**

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<tr>
<th>Synchronous Device for Measurement</th>
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<td><strong>SDM-SIO1</strong></td>
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<th>Accessories</th>
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<td><strong>SC110</strong></td>
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<td><strong>CABLE5CBL-L</strong></td>
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<th>Cable Termination Options (choose one)</th>
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*The SDM-SIO1 does NOT support auto baud rate detection nor the use of the serial port for Modbus, DNP, or general PakBus communications.*

*Hardware CTS/RTS flow control is supported in RS-232 mode; the handshaking lines can also be used as general purpose I/O lines.*

*In 7-bit mode with no parity, the user must ensure that the characters received by the SDM-SIO1 have a delay of at least one bit period or greater between them. This does not affect any other configuration and does not affect transmissions out of the SDM-SIO1.*

*The device incorporates transient and surge protection that is designed to meet IEC61000-4-5, level 4, providing the device is adequately grounded.*

*Once the buffers are full, the fill and discard storage type will not accept new information and will discard all new data until space has been made.*