



## 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<sup>a</sup>

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.

## Ordering Information

### Synchronous Device for Measurement

**SDM-SIO1** One-Channel Serial I/O Module

### Accessories

- SC110** Two RS-232 to Datalogger Control Port Cables, 2 ft that can be used to connect the serial sensors.
- CABLE5CBL-L** 5-conductor, 24 AWG cable connects the SDM-SIO1 to the datalogger. Enter cable length, in feet, after the -L. Must choose a cable termination option (see below).

### Cable Termination Options (choose one)

- PT** Cable terminates in stripped and tinned leads for direct connection to a datalogger's terminals.
- PW** Cable terminates in connector for attachment to a prewired enclosure.

## Specifications

- › Modes Of Operation:<sup>b</sup> 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<sup>c</sup>; none, odd or even parity; one or two stops bits
- › EMC Compliance: <sup>d</sup> 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<sup>e</sup>
- › Transmit-Buffer Size: 767 bytes (buffer from datalogger to sensor)
- › Receive-Buffer Size: 2047 bytes (buffer from sensor to-datalogger)

<sup>a</sup>The SDM-SIO1 does NOT support auto baud rate detection nor the use of the serial port for Modbus, DNP, or general PakBus communications.

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

<sup>c</sup>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.

<sup>d</sup>The device incorporates transient and surge protection that is designed to meet IEC61000-4-5, level 4, providing the device is adequately grounded.

<sup>e</sup>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.

