



## Overview

The SDM-SIO4\* has four configurable serial RS-232 ports that communicate with intelligent serial sensors, display boards, printers, satellite links, and other serial devices. Once programmed, the SDM-SIO4 communicates with devices connected in parallel

with the datalogger's own program sequence, thus making the complete datalogging system faster and more efficient. A multi-tasking operating system allows concurrent transmission and receipt of data on all ports.

## Benefits and Features

- Provides four configurable serial RS-232 ports
- A multitasking operating system allows concurrent transmission and receipt of data on all ports

## Power Considerations

Because of the minimal current drain (0.7 mA quiescent, 40 mA with all four ports active), the SDM-SIO4 is typically powered directly from the datalogger. A supplementary power supply may

be required for some applications, especially where more than one SDM is operated by a single datalogger.

*\* Dataloggers released after October 2014 may not support the SDM-SIO4, and therefore this interface is only recommended for existing networks that already contain the SDM-SIO4.*



## SDM Operation

Up to 16 SDM modules (in any combination) can be added to a single datalogger, making it possible for a full complement of SDM-SIO4s to provide up to 64 RS-232 ports. Multiple SDM-SIO4s are assigned different SDM addresses and are connected to the datalogger in parallel. After a module is enabled, it operates independently of the datalogger until additional commands are received or results are transmitted.

## Ordering Information

### Synchronous Device for Measurement

**SDM-SIO4** 4-Channel Serial I/O Interface

### SDM-to-Datalogger Cable

**CABLE5CBL-L** 5-conductor, 24 AWG cable with drain wire and Santoprene jacket. 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

- › Communication Rate: Speed at which data is transferred is controlled by the datalogger and can vary with the micro-processor activity as well as the length of the SDM cables
- › Typical Transfer Rate: One byte per millisecond
- › Power Supply: Unregulated 12 V supply, 9 to 18 Vdc
- › Internal Battery: Retains configuration information only (lithium battery has an estimated life of 10 years)
- › Number of Ports: 4 (independently configurable for different serial data formats)
- › Serial Ports Baud Rate: 25 to 115,200 bps
- › Port Output: 0 to 5 V logic;  $\pm 5$  V for RS-232 (switchable)
- › Port Configuration: 9-pin D connectors
- › Data Flow Control: by datalogger or SDM-SIO4, if required, using hardware or software protocols
- › Onboard Diagnostics: Built-in system watchdog resets the processor in the event of a crash caused by transients and a built-in LED gives an indication of SDMSIO4 status on power-up
- › Input Voltage Limits:  $\pm 25$  V
- › Dimensions: 18.3 x 8.9 x 3.6 cm (7.2 x 3.5 x 1.4 in)
- › Dimensions with Mounts: 22.4 x 8.9 x 3.6 cm (8.8 x 3.5 x 1.4 in)

- › Maximum Cable Length: 6 m (20 ft) total to all SDM devices. Consult Campbell Scientific if longer lengths are necessary
- › Weight: 499 g (1.1 lb)
- › Operating Temperature Range:  $-25^{\circ}$  to  $+50^{\circ}$ C

### Current Consumption

- › All Ports Active: 40 mA
- › Quiescent: 0.7 mA (quiescent state entered if there is no SDM or port activity for  $\sim 30$  ms)

### Buffer

- › Type: fill and stop (once filled, additional data received is lost)
- › Receive (Rx): 981 B + 16 B hardware buffer
- › Transmit (Tx): 981 B + 16 B hardware buffer
- › Processed Data Storage: 891 B (suitable for storing 224 4 B Campbell Scientific floating point values)
- › Floating Point Buffer: Used only when the datalogger outputs floating point data via the SDM. This buffer is 241 B—sufficient for 60 floating-point values

