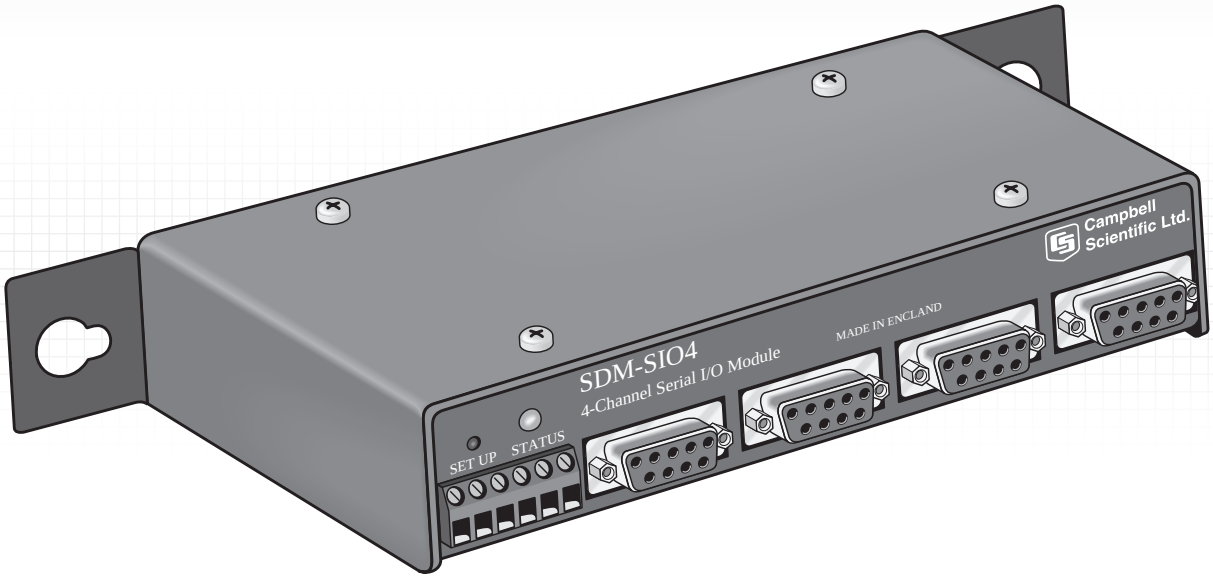
CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

SDM-SIO4

4-Channel Serial I/O Interface



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 multitasking 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 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 microprocessor 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; ±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: ±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° to +50°C

Current Consumption

- All Ports Active: 40 mA
- Quiescent: 0.7 mA (quiescent state entered if there is no SDM or port activity for ~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