
Serial Input/Output Module

Model SDM-SIO1

The SDM-SIO1 expands the number of serial devices that can communicate with a CR800, CR850, CR1000, or CR3000 datalogger. You can attach up to 15 SDM-SIO1 modules to the datalogger. This allows a CR800 or CR850 datalogger to communicate with 17 serial devices and a CR1000 or CR3000 datalogger to communicate with 19 serial devices.

Features/Benefits

- Enables up to 15 additional devices to be connected to a datalogger
- Fully compliant with the RS-232, RS-485, RS-422 standards
- Collects large amounts of data without hindering other processes within the datalogger
- Uses simple CRBasic programs
- Includes transient and surge protection on the serial port interface, eliminating the need for separate transient protection
- Acts as an RS485 interface for sensors with only a digital output (e.g., sonic and road weather sensor) providing a straight-forward and low power alternative to other RS485 interfaces
- Supports talk-through mode that facilitates testing and diagnostics



Datalogger Connection/Communications

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. Total cable length between datalogger and all SDMs cannot exceed 20 feet (6 m).

Serial Device Connection/Communications

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.

Buffer

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.

Datalogger Programming

The CRBasic program when using the SDM-SIO1 module is similar to the CRBasic program for using the standard datalogger serial port. The only difference in operation between the SDM-SIO1 and a built-in port is that a small delay occurs when transferring data to and from the device via the SDM connection.

Specifications

Compatible dataloggers:	CR800, CR850, CR1000, CR3000
Supported data rates:	300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200 bps
Supported modes of operation:	RS-232 (full duplex and receive only), RS-485 (half and full duplex), RS-422 (half and full duplex). <i>Hardware CTS/RTS flow control is supported in RS-232 mode; the handshaking lines can also be used as general purpose I/O lines.</i>
Supported data format:	8, 7 bit data size*; none, odd or even parity; one or two stops bits. <i>*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.</i>
Buffer	
Storage type:	Both transmit and receive buffers are fill and discard type. Once the buffers are full, this storage type will not accept new information and will discard all new data until space has been made.
Transmit-buffer size:	767 bytes (buffer from datalogger to sensor)
Receive-buffer size:	2047 bytes (buffer from sensor to datalogger)
Power supply connection:	+12 V
Operating Voltage:	7 V minimum; 12 V nominal; 20 V maximum
Current drain:	
Standby:	70 μ A nominal; 100 μ A maximum
Active:	5 to 13 mA depending on transmit mode and connections made
Dimensions:	2.2" x 3.1" x 1.0" (5.4 x 8.0 x 2.5 cm)
EMC compliance:	The SDM-SIO1 has been tested and shown to comply with IEC 61326. The device incorporates transient and surge protection that is designed to meet IEC61000-4-5, level 4, providing the device is adequately grounded.

Note: *The SDM-SIO1 does NOT support auto baud rate detection nor the use of the serial port for general PAKBUS communications.*

