CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

SDM-CAN
Datalogger-to-CANbus Interface

Samples CANbus Data Directly
Uses latest CAN controller

Overview

The SDM-CAN allows a Campbell Scientific datalogger to sample data directly from a CANbus communications network. CANbus data can be stored (and synchronized) with other data values measured directly by the datalogger, allowing testing and verification of CAN-based measurements alongside those made independently. The SDM-CAN also supports transmission of data onto a CANbus network.

Benefits and Features

› Supports various CAN modes
› Uses latest Philips CAN controller
› Can be used in many networking applications, including vehicle testing

Technical Description

The SDM-CAN uses the latest Philips SJA1000 CAN controller clocked at 16 MHz; CAN 2.0A and 2.0B active and passive modes are supported, which includes SAE J1939. The CANbus protocol is used in a number of networking applications, including vehicle data acquisition systems (VDAS).

The SDM-CAN can act as a passive listen-only device, poll remote devices for data, or act as a sensor. To poll remote devices, it sends or responds to remote frame requests. It acts as a sensor by sending data packets to the CANbus network.

The SDM-CAN supports baud rates up to 1 MB (1 M, 800 k, 500 k, 250 k, 125 k, 50 k, 20 k, and lower). Non-standard baud rates may be possible. CAN data frames can also be built and sent.

SDM Operation

The datalogger enables individual modules through an addressing scheme; up to 15 SDM-CANs 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.

SDM-CAN Helper

SDM-CAN Helper is an add-on program for our RTDAQ Real-Time Data Acquisition Software. This add-on program walks users through the process of configuring their SDM-CAN, connecting the SDM-CAN to the datalogger, sending an appropriate program to the datalogger, and setting up their datalogger to collect specific values from the CANbus network.

SDM-CAN Helper is available, at no charge, from:

www.campbellsci.com/downloads

Users must have a valid installation of RTDAQ on their computer to install the SDM-CAN Helper program.

Ordering Information

Synchronous Device for Measurement	
SDM-CAN	Datalogger to CANbus Interface

Mounting Kit	
13958	SDM-CAN Mounting Kit for CR9000(X) Slot. An SDM-CAN, fitted with the 13958, occupies one slot in the CR9000(X) chassis. Please note that the mounting bracket that comes attached to the SDM-CAN must be removed prior to mounting the SDM-CAN to the 13958's metal brackets.

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

❯ Operating Voltage Range: 7 to 26 Vdc

❯ Optional (switch selectable) galvanic isolation between the datalogger and the CANbus. The minimum isolation breakdown is 50 V; this barrier is for signal isolation only (i.e., it is not a safety barrier)

❯ Uses the latest Philips SJA1000 CAN controller clocked at 16 MHz

❯ CANbus physical connection conforms to CIA draft standard 102 version 2, 9-pin D connector. (The interface will differ from this standard only with respect to pin 9, which outputs 5 Vdc instead of 7 to 13 Vdc)

❯ EU Declaration of Conformity document available at: www.campbellsci.com/sdm-can

❯ A three-way, unpluggable screw terminal block for CAN High, Low, and G provided

❯ For safety reasons, can disable CANbus transmit and acknowledge via a jumper (e.g. for in-vehicle, listen only monitoring)

❯ Maximum Cable Length: 6 m (20 ft) total to all SDM devices. Consult Campbell Scientific if longer lengths are necessary

❯ Dimensions[a]: 17.5 x 10.0 x 2.3 cm (6.9 x 3.9 x 0.9 in)

❯ Weight: 0.3 kg (0.14 lb)

Typical Current Consumption

❯ Active in Self-Powered, Isolated Mode: 70 mA (recessive state); 120 mA (dominant state)

❯ Active, Non-Isolated: 30 mA (recessive state); 70 mA (dominant state)

❯ Standby (with or without isolation): < 1 mA

❯ Communications with Datalogger: 50 mA

❯ RS-232 Port Active: 50 mA

[a]*The device can be vertically mounted with all the connectors on the top surface*