



SDM-AO4A

Four-Channel Analog Output Module

Increases Available CAO Ports

Provides high resolution and high accuracy



Overview

The SDM-AO4A includes four independent, continuous, analog outputs (CAO), which are used for proportional control or driving strip charts. Measured or processed values in the datalogger are

scaled to millivolts and transferred to the SDM-AO4A as digital values. The SDM-AO4A then performs a digital to analog conversion and outputs an analog voltage signal.

Benefits and Features

- › Increases the number of CAO ports available to the datalogger
- › Supports both ± 5 V and 0 to 10 V modes* allowing the module to be used in more applications
- › Includes a choice of synchronous and sequential operation
- › Provides high resolution and high accuracy

SDM Operation

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.

**Our CR800, CR850, CR1000, CR3000, and CR5000 dataloggers support all of the SDM-AO4A's capabilities. The CR10(X), CR23X, CR7, and 21X dataloggers only support the ± 5 V mode and synchronous operation.*

questions & quotes: 435.227.9000

www.campbellsci.com/sdm-ao4a



Power Considerations

The datalogger's batteries may be a convenient choice for powering the SDM-AO4A. However, consideration must be given to the SDM-AO4A's continuous current drain (11 mA in ± 5 V mode or 21 mA in 0 to 10 V mode). The datalogger's alkaline batteries can power one SDM-AO4A for less than a month, and therefore these batteries are not recommended for continuous long-term operation. The datalogger's sealed rechargeable batteries, float charged with an ac supply or a solar panel, typically can be used for long-term operation.

The SDM-AO4A can also be powered from an external 12 Vdc source, independent from the datalogger batteries. The low side of this external 12 Vdc source needs to be connected to a datalogger ground and not directly to earth ground.

Specifications

- Operating Temperature Range: -40° to $+60^{\circ}\text{C}$
- Voltage Range: ± 5 V or 0 to 10 V
- Resolution: 167 μV
- Operating Voltage: 12 Vdc nominal (9.6 to 16 Vdc)
- Maximum Output Current
 - Per Channel: 50 mA
 - Total: 100 mA
- Overcurrent Shutdown Point: 130 mA \pm 15 mA
- Dimensions: 13.46 x 8.51 x 2.41 cm (5.3 x 3.35 x 0.95 in)
- Weight: 175 g (6.2 oz.)
- Accuracy with 20 k Ω load (maximum)
 - 25°C : $\pm(0.05\%$ of $|V_{\text{out}}(\text{V})| + 500 \mu\text{V}$)
 - -40° to 60°C : $\pm(0.1\%$ of $|V_{\text{out}}(\text{V})| + 500 \mu\text{V}$)

Ordering Information

Synchronous Device for Measurement

SDM-AO4A 4-Channel Analog Output Module

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.

- Additional Full-Scale Error with 50 mA load
 - ± 5 V Mode: -1.3 mV typical
 - 0 to 10 V Mode: -1.5 mV typical
- Typical Current Drain

	± 5 V Mode	0 to 10 V Mode
No load, $V_{\text{out}} = 0$, $V_{\text{supply}} = 12$ V	11 mA	21 mA
No load, $V_{\text{out}} = \text{Fullscale}$, $V_{\text{supply}} = 12$ V	13 mA	28 mA
With load, $V_{\text{supply}} = 12$ V	13 mA + load	28 mA + (2.4)(load)
Power down mode, $V_{\text{supply}} = 12$ V	1.1 mA	

