

# SDM-CD16S

## 16-Channel Solid State DC Relay Controller



The SDM-CD16S is a 16-channel, solid-state relay driver that can control devices that have a relatively high-powered load such as solenoids, solenoid valves, dc motors, stepper motors, lights, horns, heaters, and fans. With a voltage range of up to 48 Vdc and a maximum current output per channel of 2 A, the SDM-CD16S can drive up to 100 Watts of power on each channel.

The SDM-CD16S has 16 DC voltage outputs. Separate inputs for power-to-outputs (48 Vdc maximum) and power-to-SDM-CD16 logic (7 to 48 Vdc) allow the option of powering the logic from the datalogger's 12 V while switching a higher voltage. LEDs provide a visual indicator of active outputs.

The SDM-CD16S has a toggle switch with three positions: MANUAL, OFF and AUTO. In the MANUAL position, outputs are controlled by the position of the individual rocker switches. In the OFF position, all outputs are off. In the AUTO position, the state of the relays is controlled by the SDM commands from the datalogger or by the logic control inputs.

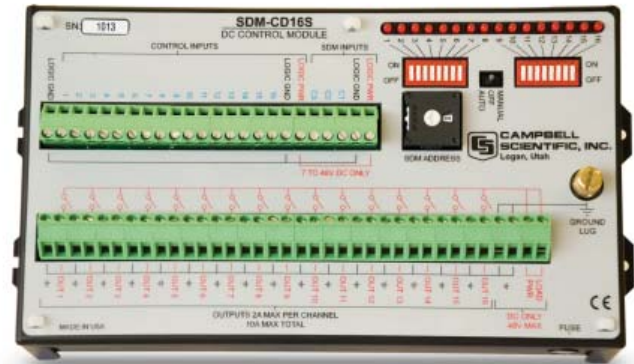
### SDM Operation

The SDM-CD16S is a synchronously addressed datalogger peripheral. Datalogger control ports 1, 2, and 3 are used to address the SDM-CD16S, then clock out the desired state of each of the 16 control ports. Up to 16 SDM-CD16S Controllers may be addressed, making it possible to control a maximum of 256 ports from the first three datalogger control ports.

### Power Considerations

The SDM-CD16S power requirements may be large compared to most Campbell Scientific products. For most applications, an external power supply is recommended to power the SDM-CD16S.

For some applications, it may be convenient to use the datalogger's sealed-rechargeable battery. If the datalogger's rechargeable batteries are used, the batteries need to be float charged via a wall charger or solar panel. The current available from the wall charger limits the SDM continuous output current. Campbell Scientific does not recommend using the datalogger's alkaline power supply.



### Datalogger Connection

The CABLE5CBL-L is recommended for connecting the module to the datalogger. A 1-ft cable length should be sufficient when both datalogger and SDM-CD16S are housed within an ENC12/14 enclosure; a 2-ft length may be required if the datalogger and SDM-CD16S are housed at opposite ends of an ENC16/18 Enclosure.

The cable length should be as short as possible. Typically, the maximum cable length is 20 ft. Contact Campbell Scientific if the length needs to be longer.

### Ordering Information

#### Synchronous Device for Measurement

**SDM-CD16S** 16-Channel Solid State DC Relay Controller

#### 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

<b>Compatible Dataloggers:</b>	CR9000(X), CR5000, CR3000, CR1000, CR850, CR800, CR23X, CR10(X), 21X, and CR7; the SDM-CD16S is not compatible with the CR500, CR510, and CR200 series .	<b>Supply Voltage for Output:</b>	48 Volt Maximum, DC only
<b>Isolation:</b>	Optically isolated between the inputs and outputs	<b>Maximum current</b>	
<b>Logic Power Voltage:</b>	7 to 48 Vdc	<b>Per Channel:</b>	2 A
<b>Logic Current Drain @ 12 Vdc:</b>	15 mA quiescent; 2.5 mA per active LED (manual or auto)	<b>All Channels Total:</b>	10 A Fused
<b>Toggle Switch:</b>	MANUAL, OFF, AUTO; individual dip switches for manual	<b>Fuse:</b>	3 AG – 10 A
		<b>Actuation/Release Times:</b>	8 $\mu$ s/200 $\mu$ s
		<b>Operating Temperature:</b>	-40° to +70°C
		<b>Maximum Cable Length:</b>	20 ft total to all SDM devices. Consult Campbell Scientific if longer lengths are necessary.

