Synchronous Devices for Measurement (SDMs) are addressable peripherals that expand the datalogger’s measurement and control capabilities. This functionally diverse group of peripherals operate somewhat independently of the datalogger, yet expand its measurement and control capabilities. The datalogger typically requests, processes, and stores data from the SDM. In control applications, the datalogger can then send a controlling SDM updated control signals to react to changing conditions in the application. Up to 15 SDMs, in any combination, can be connected to one Campbell Scientific datalogger. SDMs are not compatible with the CR200X-series or CR300-series dataloggers.

## MAJOR SPECIFICATIONS

<table>
<thead>
<tr>
<th>Function</th>
<th>Number of Channels</th>
<th>Compatible Dataloggers</th>
<th>Current Drain</th>
</tr>
</thead>
</table>
| **SDM-AO4A** | 4-Channel Analog Output Module | Increases the number of continuous analogue output (CAO) ports available to a datalogger. CAOs are used for proportional control or driving strip charts. | 4 | CR6, CR800, CR850, CR1000, CR3000 | ±5 V Mode  
  Power Down Mode: 1.1 mA  
  No Load: 11 to 13 mA  
  With Load: 13 mA + load  
  0 to 10 V Mode  
  Power Down Mode: 1.1 mA  
  No Load: 21 to 28 mA  
  With Load: 28 mA + (2.4 x load) |
| **SDM-CAN** | Datalogger-to-CANbus Interface | Allows a datalogger to sample data directly from a CANbus communication network. Uses latest CAN controller. | 1 | CR6, CR800, CR850, CR1000, CR3000, CR9000X | Standby (with or without isolation): < 1 mA  
  Communications with Datalogger: 50 mA  
  RS-232 Port Active: 50 mA  
  Active in Self-Powered, Isolated Mode  
  Recessive State: 70 mA  
  Dominant State: 120 mA  
  Active, Non-Isolated  
  Recessive State: 30 mA  
  Dominant State: 70 mA  
  With All Outputs Off: < 0.5 mA  
  Active Quiescent Current  
  27 or 54 mA, depending on operating mode (no load on output ports)  
  Estimated Total Current  
  (Active Quiescent Current + sum of all output currents x 1.5)  
  For example, if each port is at 10 mA output,  
  Total = 54 + (1.5 x 4 x 10) = 114 mA  |
| **SDM-CVO4** | 4-Channel Current/Voltage Output Module | Expands datalogger current/voltage output capability. | 4 | CR6, CR800, CR850, CR1000, CR3000, CR9000X | With All Outputs Off: < 0.5 mA  
  Active Quiescent Current  
  27 or 54 mA, depending on operating mode (no load on output ports)  
  Estimated Total Current  
  (Active Quiescent Current + sum of all output currents x 1.5)  
  For example, if each port is at 10 mA output,  
  Total = 54 + (1.5 x 4 x 10) = 114 mA  |
| **SDM-CD16AC** | 16-Channel AC/DC Relay Controller | Allows a datalogger to automatically activate external ac or dc devices such as motors, pumps, heaters, valves, and fans. | 16 | CR6, CR800, CR850, CR1000, CR3000, CR9000X | Quiescent: 6 mA  
  Per Active LED (switch on or auto active): 45 mA |
### MAJOR SPECIFICATIONS

<table>
<thead>
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<tbody>
<tr>
<td><strong>SDM-CD16D</strong></td>
<td>16-Channel Digital Control Port Expansion Module</td>
<td>16</td>
<td>CR6, CR800, CR850, CR1000, CR3000, CR9000X&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>SDM-CD85</strong></td>
<td>8-Channel Solid-State DC Relay Controller</td>
<td>8</td>
<td>CR6, CR800, CR850, CR1000, CR3000, CR9000X&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>SDM-CD16S</strong></td>
<td>16-Channel Solid-State DC Relay Controller</td>
<td>16</td>
<td>CR6, CR800, CR850, CR1000, CR3000, CR9000X&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>SDM-INT8</strong></td>
<td>8-Channel Interval Timer</td>
<td>8</td>
<td>CR6, CR800, CR850, CR1000, CR3000, CR9000X</td>
</tr>
<tr>
<td><strong>SDM-IO16</strong></td>
<td>16-Channel Input/Output Expansion Module</td>
<td>16</td>
<td>CR6, CR800, CR850, CR1000, CR3000</td>
</tr>
<tr>
<td><strong>SDM-SIO1A</strong></td>
<td>Serial Input/Output Module</td>
<td>1</td>
<td>CR6, CR800, CR850, CR1000, CR3000, CR9000X&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>SDM-SIO4A</strong></td>
<td>Serial Input/Output Module</td>
<td>4</td>
<td>CR6, CR800, CR850, CR1000, CR3000, CR9000X&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>SDM-SW8A</strong></td>
<td>8-Channel Switch Closure Input Module</td>
<td>8</td>
<td>CR6, CR800, CR850, CR1000, CR3000</td>
</tr>
</tbody>
</table>

<sup>a</sup> Retired products are not listed. Refer to the product web page for compatibility with retired products.

<sup>b</sup> Although compatible, these SDMs do not support the CR9000X’s fastest communications rate, making them impractical for most CR9000X applications.

<sup>c</sup> The CR9000X’s operating system must be OS 6 or higher.