

Includes Internal Microprocessor

Allows independent measurement intervals

Overview

The SDM-INT8 is an eight-channel interval timer that outputs processed timing data to a Campbell Scientific datalogger. Input channels are programmed to record the timing of input voltage transitions (events). Each channel can be programmed indepen-

dently. The SDM-INT8 outputs period, pulse width, frequency, counts, or time intervals. Processing by the datalogger or a computer yields measurements such as RPM, duty cycle, velocity, and crank angle.

Benefits and Features

- › Allows individual programming for each of the eight channels
- › Includes an internal microprocessor that allows measurement independent of datalogger's execution interval
- › Outputs period, pulse width, frequency, counts, or time intervals
- › Records results as execution interval averages, continuous averages, specified interval averages, or capture all events

Measurement Capabilities

- › Period (ms)
- › Frequency (kHz)
- › Elapsed time between events on adjacent channels
- › Number of counts measured on channel 2 between a start event on channel 1 and a stop event on any other channel
- › Elapsed time between events on channel 1 and any other channel
- › Pulse Counting (any channel can function as a pulse counter)

Typical Applications

- › Ignition and fuel injection timing
- › Velocity/elapsed time between two points
- › Wind speed measurements (ac generator type)
- › Cold crank engine testing
- › Independent wheel speed measurements for anti-lock brake testing



Power Considerations

The SDM-INT8 draws 20 mA. In most applications, the datalogger's sealed rechargeable power supply can be used. The datalogger's alkaline power supply has sufficient capacity to operate the SDM-INT8 during short-term installations only.

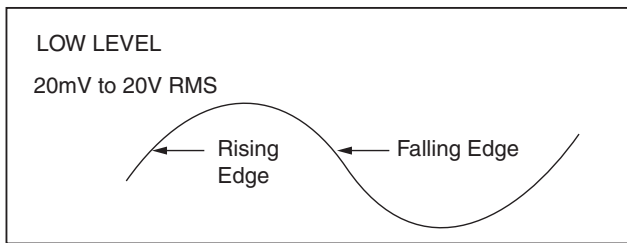
SDM Operation

The datalogger enables individual modules through an addressing scheme; up to 15 SDM-INT8s 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.

Specifications

- › Operating Voltage Range: 9.6 to 16 Vdc
- › Current Drain: 13 to 20 mA active; 400 μ A quiescent
- › Maximum Timing Measurement: 16.7 s
- › Resolution: ± 1 μ s
- › Operating Temperature Range: -25° to +50°C
- › Dimensions: 0.3 x 12.7 x 2.5 cm (8 x 5 x 1 in)
- › Weight: 0.82 kg (1.8 lb)

Low Level AC Voltage Input



- › AC Voltage: 20 mV RMS (min.), 20000 mV RMS (max.)
- › Input Hysteresis: 11 mV
- › Minimum Frequency: 1 Hz
- › Maximum Frequency:

| Minimum AC Voltage RMS | Maximum Frequency (Hz) |
|------------------------|------------------------|
| 20 mV | 100 |
| 50 mV | 400 |
| 150 mV | 1000 |
| 2.5 V to 20 V | 4000 |

Ordering Information

Synchronous Device for Measurement

SDM-INT8 Eight-Channel Interval Timer Module

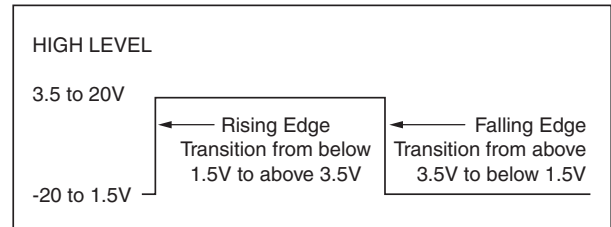
SDM-to-Datalogger Cable

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.

High Level Voltage Input Pulses



- › Minimum Pulse Width: 2 μ s
- › Signal Edges
 - Rising: Transition from <1.5 to >3.5 V
 - Falling: Transition from >3.5 to <1.5 V
- › Maximum Input Voltage: ± 20 Vdc

Maximum Frequency (high resolution (32-bit) values; assumes all eight channels used)

- › Averaging Options: 5.1 kHz
- › Capturing All Events: 10 kHz

Maximum Frequency (low resolution (16-bit) values)

- › Execution Interval Averaging only:

| Number of Channels Programmed | Maximum Frequency (kHz) |
|-------------------------------|-------------------------|
| 1 | 42.5 |
| 2 | 17.5 |
| 3 | 11.0 |
| 4 | 8.6 |
| 5 | 5.2 |
| 6 | 4.8 |
| 7 | 4.5 |
| 8 | 4.28 |