

Interval Timer

Model SDM-INT8

The SDM-INT8 is an eight-channel interval timer that outputs processed timing data to a CR10X, CR800, CR1000, CR3000, CR5000, CR7, or CR9000X datalogger. Input channels are programmed to record the timing of input voltage transitions (events). The SDM-INT8 outputs period, pulse width, frequency, counts, or time intervals. Processing by the datalogger or a computer yields RPM, duty cycle, velocity, crank angle, etc.

The SDM-INT8 is programmed by the datalogger but functions independently. This allows the SDM-INT8 to make measurements and process data while the datalogger performs other tasks. Multiple SDM-INT8s, each with a unique address, may be controlled by one datalogger.

SDM-INT8 measurement capabilities include:

- 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

Features:

- Internal microprocessor allows measurement independent of datalogger’s execution interval.
- Captures timing events with ± 1 microsecond resolution over a maximum range of 16.7 seconds.
- Programmable output options record results as:
 - Execution interval averages
 - Continuous averages
 - Specified interval averages
 - Capture all events

SPECIFICATIONS

- Operating voltage: 9.6 V to 16 Vdc
- Current drain: 13 to 20 mA, active; 400 μ A, quiescent
- Operating temperature range: -25° to $+50^{\circ}$ C
- Size and weight: 8" x 5" x 1"; 1.8 lbs. (20.3 x 12.7 x 2.5 cm; 0.82 kg)
- Resolution: ± 1 microsecond
- Maximum timing measurement: 16.7 seconds



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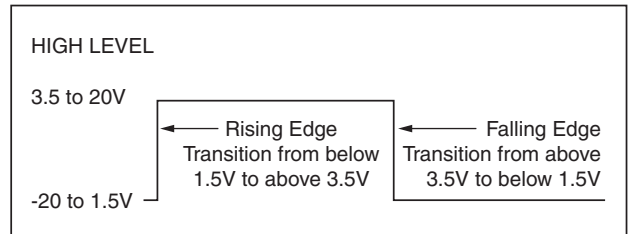
SPECIFICATIONS (continued)

INPUT VOLTAGE OPTIONS

(Each channel may be programmed independently)

High Level Voltage Input Pulses:

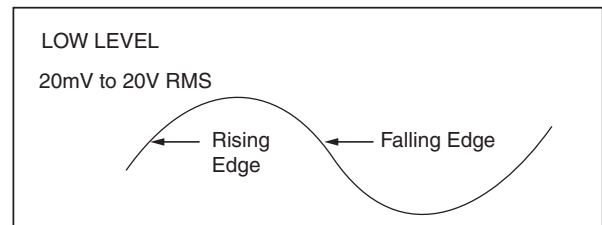
- Minimum pulse width: 2 microseconds
 - Signal edges:
 - rising: transition from <1.5 to >3.5 V
 - falling: transition from >3.5 to <1.5 V
 - maximum input voltage: ± 20 Vdc
 - Maximum frequency:
 - high resolution (32-bit) values, assumes all eight channels in use
 - 5.1 kHz when using Averaging Options
 - 10 kHz when Capturing All Events
 - low resolution (16-bit) values (Execution Interval Averaging only)
- Maximum frequency increases depending on the number of channels programmed.



<u>No. of Channels</u>	<u>Max Freq. (kHz)</u>
1	42.5
2	17.5
3	11.0
4	8.6
5	5.2
6	4.8
7	4.5
8	4.28

Low Level AC Voltage Input:

- Minimum ac voltage: 20 mV RMS
- Input Hysteresis: 11 mV
- Maximum ac voltage: 20 V RMS
- Minimum frequency: 1 Hz
- Maximum frequency:



<u>Minimum ac voltage RMS</u>	<u>Max Freq. (Hz)</u>
20 mV	100
50 mV	400
150 mV	1000
2.5 V - 20 V	4000

Cautionary Note: Total cable length connecting all SDM devices cannot exceed 20 feet (6 m).