

# USB Vibration Datalogger

Model 7016000-1



## Input Specifications:

- Piezoelectric Sensor Element
- 25g Peak Full Scale Range
- 0.0006gRMS Spectral Noise Floor
- 0.4 Hz to 12,000 Hz Frequency Response

## DSP Specifications:

- 125Hz to 65kHz Sampling Rate
- 16 bit Resolution
- 128kbyte Data Storage
- Programmable Data Form
  - Time Waveform
  - Filtered Time Waveform
    - 50-1000Hz band
    - 500-10,000Hz band

## Communication Specifications:

- USB 1.1 (low speed device, 3m cable)
- USB 2.0 (full speed device, 5m cable)
- MIL-C-26482 Connector (four pin)

## General Specifications:

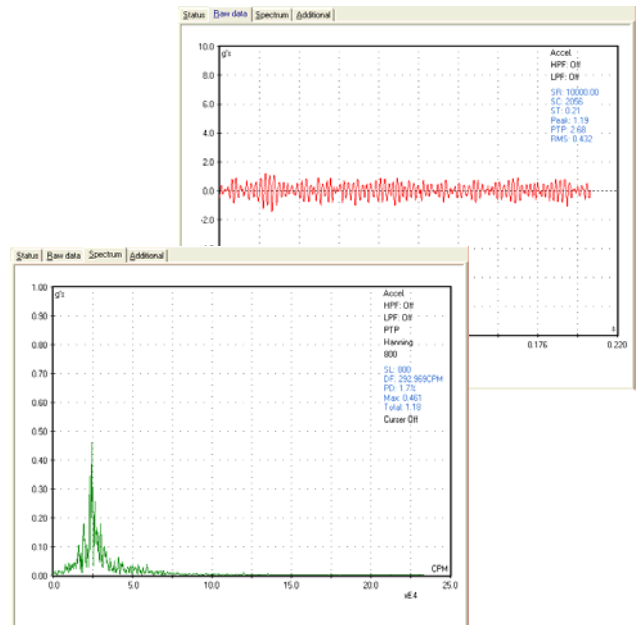
- Power over USB
- Hermetically Sealed, 316 Stainless
- 1.37" diameter x 3.00"
- ¼-28 Thread Mount in Base
- Case Isolated
- ESD Protection



## Description

The 7016 is an accelerometer and data logger in a single package, which communicates to a host device through a standard USB connection. The unit contains a piezoelectric accelerometer, constant current power source, amplifier, filter, microcontroller, data memory, and USB client transceiver. The data collection parameters are configured from a host device such as a handheld computer or laptop.

The 7016 responds to a simple list of protocol commands such as wakeup, sleep, EEPROM request, and data request. Data is provided in binary form and can be easily converted to time trace in engineering units through the use of our WindowsXP application or a LabView Virtual Instrument. Both are included on the software installation CD ROM.



**Performance:** T<sub>C</sub>=25° C unless otherwise specified.

Parameter	Min.	Typ	Max	Units
Number of Axes		1		Z
Full Scale Range		25		g
Calibration Accuracy (Stored in product EEPROM)	-3		+3	%
Acceleration Sensitivity (spectral)		0.0006		g
Frequency Response (+/-3 dB)	0.4		12,000	Hz
Frequency Response (+/- 5%)	3		2,500	Hz
Amplitude Nonlinearity		1		%
Transverse Sensitivity		5		%
A/D Resolution over Selected Range		16		Bits
Sampling Rate	125		65,000	Hz
Storage Size	20		50,000	Samples
Max Mechanical Shock			2500	g
Sensitivity over Temperature (-40C to +85C)		3		%FSO
Damping Ratio of Accelerometer Element	0.4	0.7	0.9	NA
Power (from USB line)	4.35		5.25	V
Current Draw when Active Mode		40		mA
Current Draw when Sleep Mode		15		mA
Current Draw when in USB Suspend Mode		250	500	μA
Weight		8.6		oz
Tightening Torque on ¼-28 Mounting Threads	22	24	28	in-lb
Operating/Storage Temperature	-40		+85	°C

## Ordering Information

*Part Number:*

- 7016000-1**, Standard version, USB Accelerometer, Z-Axis, 25G, 316 stainless case  
**7016010-1**, USB cable, straight, 15 foot length, MIL-C-26482 In-Line to USB Series A  
**7016020-1**, USB cable, coiled, 6 foot extended length, MIL-C-26482 In-line to USB Series A  
**7016030-1**, USB cable, coiled, 6 foot extended length, MIL-C-26482 right-angle to USB Series A



Specification Rev A.1

As part of our continuous product improvement initiative, specifications are subject to change without notice