MIDÉ

SLAM·STICK X™

Vibration | Temperature | Pressure | Data Logger

FEATURES

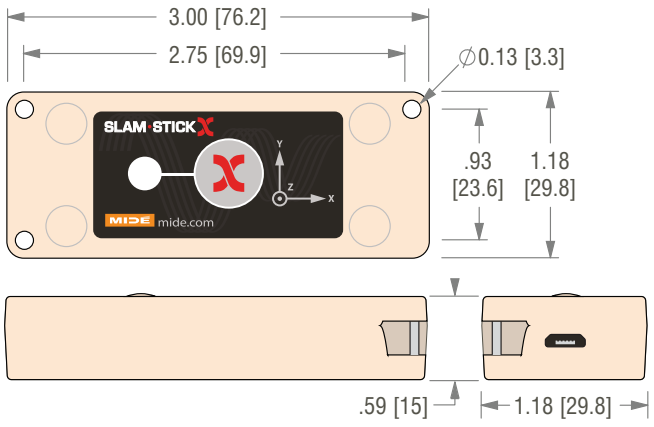
- Triaxial Accelerometer (±25, ±100, and ±500g)
- Configurable Sampling Rate up to 20 kHz
- 2GB Onboard Memory (Up To 1 Billion Data Points)
- Temperature & Pressure Sensors
- Time Stamped Data with Local Calendar Time
- Manual & Automatic Start/Trigger Modes
- Rechargeable Battery Life (10hrs @ 5 kHz)
- Lightweight
- Micro-USB Interface for Set-Up & Data Download
- Analysis Software Included (Slam Stick Lab)
- Temperature Compensating Accelerometer
- EMI Qualified (MIL-STD-461F)
- 5th Order Hardware Low-Pass Filter

APPLICATIONS

- Vibration, Impact, and Shock Detection
- Aviation and Aerospace
- Mining Equipment Testing and Monitoring
- Structural Analysis and Health Monitoring
- Equipment Testing and Evaluation
- Determine Mechanical Resonances
- Crash Testing

PRODUCT DIMENSIONS

Dimensions are in inches and [millimeters]



DESCRIPTION

The Slam Stick X is a data logger capable of measuring acceleration in all three axes while also measuring temperature and pressure. The logger is available in two enclosure options (aluminum or polycarbonate), three measurement ranges (±25g, ±100g and ±500g), and can sample at up to 20kHz per channel.

Its lightweight design and large surface area (3.5 in^2) minimize mass loading and enable two mounting options: adhesive mounting using the industrial strength double sided tape included with the product; or hard mounting, via the 3 bolt holes, for an even higher frequency response. Its rugged enclosure and wide temperature operating range (-40°C to 80°C) enable the Slam Stick X to perform in many harsh environments.

A micro-USB receptacle allows for quick and easy connection to a computer where data can be analyzed with Midé's provided software package - Slam Stick Lab. The software also enables configuration of the device to meet a variety of customer needs. Triggers for data capture include time delays, calendar date/time wake up and acceleration, temperature and/or pressure triggers.

Midé includes a N.I.S.T. traceable calibration certification.

SPECIFICATIONS

Accelerometer Performance	LOG-0002-025G	LOG-0002-100G	LOG-0002-500G	Notes
Range	±25 g	±100 g	±500 g	Request Higher Acceleration Range
Broadband Noise[1]	< 0.01 g RMS	< 0.04 g RMS	< 0.20 g RMS	
Resolution[2]	0.0008 g	0.003 g	0.015 g	16-bit
Sampling Rate Per Channel:	User Selectable from 100 Hz to 20 kHz			Selectable with Provided Software
Frequency Response Within ±5% Accuracy (X, Y & Z Axis)	Aluminum Enclosure: 2 Hz to > 2,000 Hz Polycarbonate Enclosure: 2 Hz to > 1,000 Hz			Frequency Response Plot on Page 3
Frequency Response Within ±1 dB Accuracy (X, Y & Z Axis)	Aluminum Enclosure: 1.5 Hz to > 3,000 Hz Polycarbonate Enclosure: 1.5 Hz to > 1,500 Hz			Frequency Response Plot on Page 3
Transverse Sensitivity	<10 %			
Low-Pass Filter	5th Order Hardware Butterworth			Linear Phase & Software Tunable

Temperature and Pressure Sensors		
Sampling Rate	0.07 Hz to 2 Hz	Increases with Accelerometer Sampling Rate
Temperature Accuracy	±1.0°C	-30°C to +80°C
Temperature Resolution	0.0625°C	12-bit
Pressure Relative Accuracy	±0.1 kPa	-10°C to +50°C
Pressure Resolution	1.5 Pa	20-bit

Environmental		
Operating Temperature	-40°C to 80°C (-40°F to 176°F)	
Calibrated Temperature[3]	-20°C to 60°C (-4°F to 140°F)	Accelerometer Accuracy is Within ±5%
Recommended Storage Temperature	15°C to 30°C (59°F to 86°F)	Recharging Temperature 0°C to 45°C (32°F to 113°F)
Humidity	0 to 95 %RH	Non-Condensing
Pressure	20 kPa to 110 kPa (2.9 psi to 16.0 psi)	
Shock Limit	>1,000 g	5,000 g Shock Limit for Embeded Accelerometer
Electric Field Susceptibility	2 MHz to 18 GHz @ 200 V/m	Refer to EMI Test Report (PDF)
Magnetic Field Susceptibility	30 Hz to 100 kHz	Refer to EMI Test Report (PDF)

Physical	Aluminum (-AL)	Polycarbonate (-PC)	
Mass	65 grams	40 grams	
Dimensions	0.50" x 1.18" x 3.00"	0.50" x 1.18" x 3.00"	See Product Dimensions for Axis Direction
Case Material	Aluminum 7075 T6	Polycarbonate/ABS	Aluminum Enclosure has a Clear Anodized Coat
Mounting Torque (4-40 Bolt)	100 in-oz	70 in-oz	Mounting with Double-Sided Tape is Optional

Miscellaneous		
Battery Life @ 5 kHz Sampling Rate	>10 Hours	Refer to Page 3 for Different Sample Rates
Storage Capacity	2 GB (1 Billion Data Points)	Refer to Page 3 for Different Sample Rates
Battery Lifetime - datasheet (pdf)	3 years	Battery Needs to be Charged Twice a Year (Minimum)

Analysis/Configuration Software Specifications		
Compatible Operating Systems	Windows	Program Files Included on Device[4]
Interface	Micro-USB	6ft Micro-USB Cable Included with Purchase

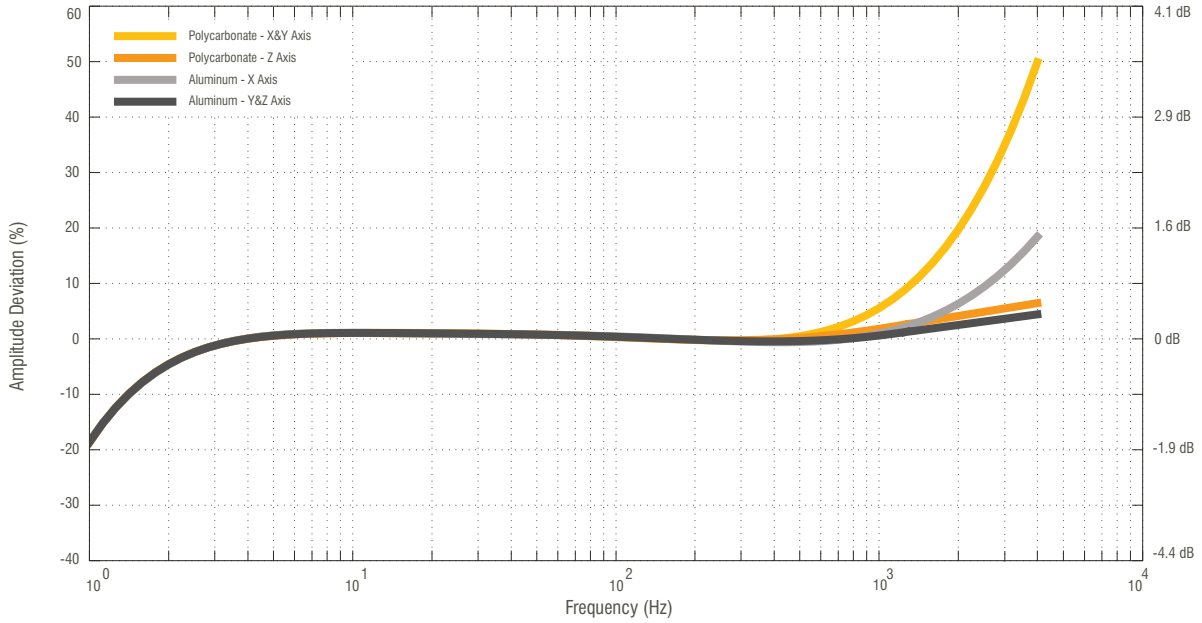
[1]Tested with a 20 kHz sampling rate and with a 5 kHz filter frequency. Noise levels will be lower with slower sampling rate and/or lower filter frequency.

[2]Resolution depends on sampling rate; 16-bit < 8.5 kHz. 15-bit < 16 kHz. 14-bit > 16 kHz.

[3]The onboard temperature sensor compensates for variations in accelerometer sensitivity with temperature.

[4]The software will run faster if these files are copied onto the PC.

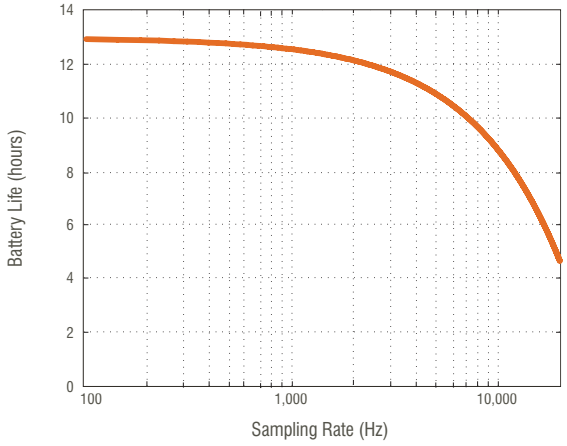
FREQUENCY RESPONSE



This data was generated with an aluminum unit (gray) bolted with 100 in-oz torque, and a polycarbonate unit (orange) mounted with double sided tape.

Both units were calibrated at 10 g, 100 Hz. The sweep was conducted at a 20 kHz sampling rate with a 5 kHz filter.

BATTERY AND STORAGE LIFE



Sampling Frequency (Hz)	Time available for 2 GB (hours)	Battery Life (hours)
100	978	13.0
1,000	98	12.5
5,000	20	10.5
10,000	10	9.0
20,000	5	4.5

Extending Battery Life

Longer battery life is achievable by utilizing the triggering options. For example, configuring the Slam Stick X to record for 5 seconds every 2 minutes with a 100 Hz sampling rate enables the battery to last over 39 hours.

For Continuous Recording

For continous recording, press the button to start your recording sequence and then plug it into your USB power source. The recording time is then limited by storage capacity. 8 GB storage available upon request.

SOFTWARE OVERVIEW & FEATURES

Multiple Plots: Simultaneously view data from several sensor channels. Plots can also be rearranged in the window for comparison.

Analysis: FFT and spectrograms can be generated for every sensor channel. Rolling maximum, minimum, and mean can be plotted. Absolute maximum, minimum, as well as sampling rate and range of each sensor channel is provided.

Logger Configuration: Configure the sampling frequency, anti-aliasing cutoff frequency, oversampling, calendar wake, time delay, recording duration, and g-level / temperature / pressure triggers.

Export Data: Ability to export all data in a .CSV or .MAT format for use with Excel, MATLAB, or other analysis software packages. FFT and Spectrogram can also be exported. The time range of exported data is user selectable.

IDE Splitter: Command-line tool to split up large files into more manageably sized files.

MATLAB Converter & Functions: Command-line tool to convert Slam Stick X's .IDE recording files directly to a MATLAB® compatible format. MATLAB functions are also provided for data analysis.

PART NUMBERING INFORMATION

The part numbering of the Slam Stick X specifies the measurement range of the accelerometer. The standard ranges available include ±25g, ±100g, and ±500g; but higher ranges are available upon request.

Included with each purchase:
Slam Stick Lab analysis software; 6ft micro-USB cable; Mounting tape; Mounting bolts; User Manual and Quick Start Guide; N.I.S.T. Calibration Certification.

Part Numbering System: LOG-0002-025G-PC
(A = LOG-0002, B = 025G, C = PC)

A = Slam Stick X
B = Measurement Range (±25g, ±100g, ±500g)
C = Enclosure Type. PC=Polycarbonate, AL=Aluminum

Part Number	Product Description
LOG-0002-025G-PC	Polycarbonate Enclosure. ±25 g Acceleration Range
LOG-0002-025G-AL	Aluminum Enclosure. ±25 g Acceleration Range
LOG-0002-100G-PC	Polycarbonate Enclosure. ±100 g Acceleration Range
LOG-0002-100G-AL	Aluminum Enclosure. ±100 g Acceleration Range
LOG-0002-500G-PC	Polycarbonate Enclosure. ±500 g Acceleration Range
LOG-0002-500G-AL	Aluminum Enclosure. ±500 g Acceleration Range

Contact us for more information: service@mide.com

Стандарт Электрон Связь

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