


S4-E100D40

# S4 Shock & Vibration Sensor

Aluminum 7075
Piezoelectric Accelerometer: ± 100g
Digital Capacitive Accelerometer: ± 40g
Battery: 250 mAh
Storage: 8 GB

## S4-E100D40

The S4-E100D40 is a vibration and shock recorder with a high performance piezoelectric accelerometer, a secondary capacitive accelerometer and other environmental sensors. This model is most popular for general purpose testing because of its wide application range. Its aluminum enclosure improves reliability in harsh environments and widens its frequency response.

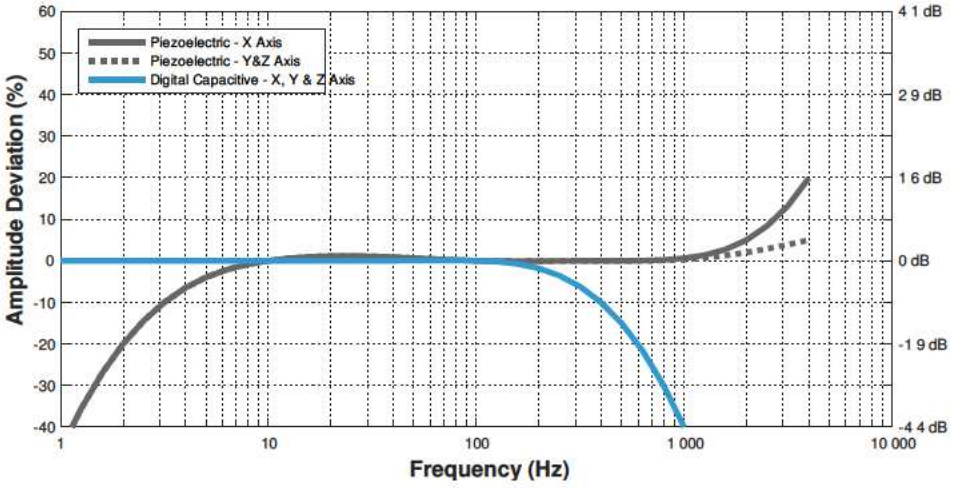
## Product Features

- **Convenient, Configurable, and Reliable** Learn More
- **Standalone Measurement System**
  Embedded sensors, storage & power
- **Selectable High-Performance Accelerometers**
  Var ab e capac tance, p ezoe ectr c & p ezores st ve
  Se ectab e measurement range from 16g to 2,000g
  Se ectab e samp ng rate up to 20,000 samp es per second
- **Up to 4 Billion Data Points of Memory**
- **Embedded Sensor Suite**
  Gyroscope, magnetometer, pressure, temperature, hum d ty & ght
- **Triggering from Sensors and/or Time-Based**
- **Rechargeable Battery Life of Over 4 Hours Continuous**
  Can operate w th externa power
- **Simple USB Interface for Download & Charging**
- **NIST Traceable Calibration**
- **Trusted by Over 1,500 Different Commercial Customers**

## Accelerometer Specifications

| Accelerometer Type | Range | Sampling Rate | Bandwidth | Noise | Resolution |
|---|---|---|---|---|---|
| P ezoe ectr c | ± 100g | 20,000 Hz | 5 to 2,000 Hz | < 0.04 gRMS | 0.003 g |
| D g ta Capac t ve | ± 40g | 4,000 Hz | 0 to 300 Hz | < 0.01 gRMS | 0.00008 g |

## Frequency Response Plot

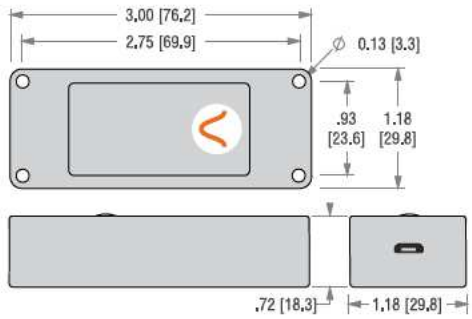



## Battery & Storage Performance

Battery performance is heavily dependent upon the device configuration (sensor sample rates and triggers), battery age (including charging cycles), and temperature. The following table provides the battery life and storage capacity of this device assuming it has a relatively new battery and it is at room temperature. When showing performance it assumes all sensors are on at the default sample rate with the main accelerometer sample rate driving performance. With triggers, it assumes the device is in trigger mode 99% of the time. Here are some additional resources: Setting Sensor Configuration, Battery Specifications, Battery Life Estimator Tool.

| Sample Rate | Storage Capacity | Continuous Recording | Main Accel. Trigger | 2nd Accel. Trigger | Periodic/Time Trigger |
|---|---|---|---|---|---|
| 100 Hz | 22 days | 13 hours | 13 hours | 52 hours | 52 days |
| 1,000 Hz | 9 days | 12 hours | 13 hours | 52 hours | 49 days |
| 5,000 Hz | 63 hours | 9 hours | 13 hours | 52 hours | 38 days |
| 20,000 Hz | 17 hours | 5 hours | 13 hours | 49 hours | 20 days |

## Dimensions




## Mechanical Specifications

| | |
|---|---|
| Mass | 40 grams |
| Case Mater a | A um num |
| Mount ng - Screw | 4-40 Bo ts (100 n-oz) |
| Mount ng - Tape (Doub e S ded) | 3M 950 Tape |
| Length | 76.2 mm (3.00") |
| W dth | 29.8 mm (1.18") |
| Th ckness | 18.3 mm (0.72") |
| Ingress Protect on | IP 50 (Dust Protected) |

## Free Software Features

- **Free Standalone Software Packages** Lab - Configuration, Quick Snapshot, Batch File Conversion Analyzer - Analysis of enDAQ Sensor Data in MATLAB
- **Configure Sensors for Measurement**
- **Export/Convert Data to CSV or MATLAB**
- **Analysis** FFT PSD Spectogram Digital Filtering

