



S3-E500D40  
**S3 Shock Sensor**

Polycarbonate  
 Piezoelectric Accelerometer:  $\pm 500g$   
 Digital Capacitive Accelerometer:  $\pm 40g$   
 Battery: 250 mAh  
 Storage: 8 GB

**S3-E500D40**

The S3-E500D40 is a shock recorder with a high performance piezoelectric accelerometer, a secondary capacitive accelerometer and other environmental sensors. This model is most popular for shock testing.

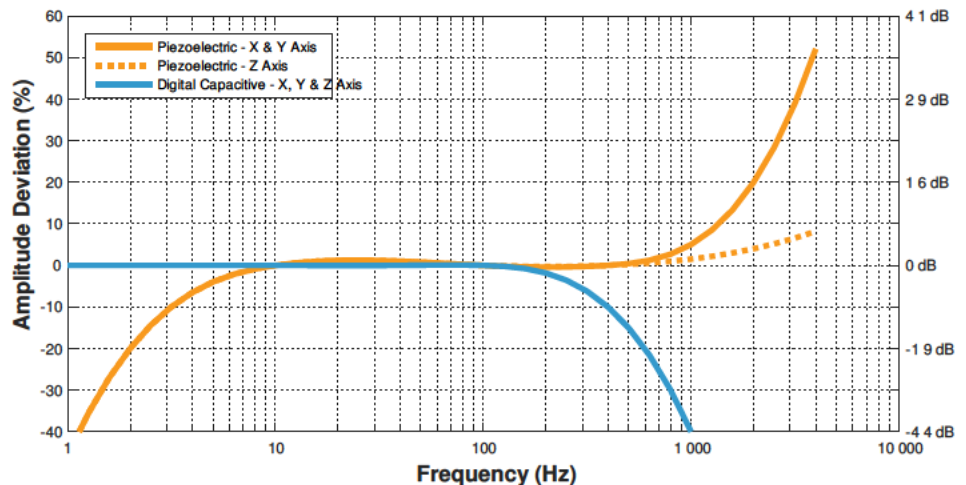
**Product Features**

- **Convenient, Configurable, and Reliable** [Learn More](#)
- **Standalone Measurement System**  
Embedded sensors, storage & power
- **Selectable High-Performance Accelerometers**  
Variable capacitance, piezoelectric & piezoresistive  
Selectable measurement range from 16g to 2,000g  
Selectable sampling rate up to 20,000 samples per second
- **Up to 4 Billion Data Points of Memory**
- **Embedded Sensor Suite**  
Gyroscope, magnetometer, pressure, temperature, humidity & light
- **Triggering from Sensors and/or Time-Based**
- **Rechargeable Battery Life of Over 4 Hours Continuous**  
Can operate with external 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
Piezoelectric	$\pm 500g$	20,000 Hz	5 to 1,000 Hz	< 0.2 gRMS	0.015 g
Digital Capacitive	$\pm 40g$	4,000 Hz	0 to 300 Hz	< 0.01 gRMS	0.00008 g

**Frequency Response Plot**

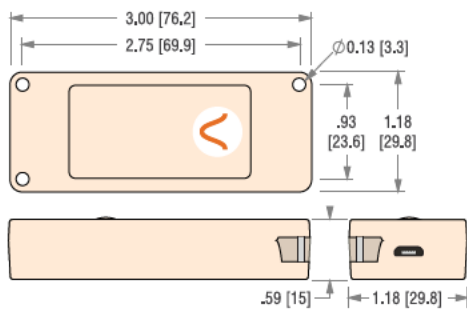


### Battery & Storage Performance

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 Material	Polycarbonate
Mounting - Screw	4-40 Bolts (70 in-oz)
Mounting - Tape (Double Sided)	3M 950 Tape
Length	76.2 mm (3.00")
Width	29.8 mm (1.18")
Thickness	15.0 mm (0.59")
Ingress Protection	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 Spectrogram Digital Filtering

