

S4-R500D40

S4 Shock Sensor

$3,500.00

Aluminum 7075
Piezoresistive Accelerometer: ± 500g
Digital Capacitive Accelerometer: ± 40g
Battery: 250 mAh
Storage: 8 GB

S4-R500D40

The S4-R500D40 is a shock recorder with a high performance piezoresistive accelerometer, a secondary capacitive accelerometer and other environmental sensors. This model is most popular for shock testing. Its aluminum enclosure improves reliability in harsh environments and widens its frequency response.

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Product Features

Convenient
- Standalone measurement system with sensors, storage & rechargeable battery
- Handheld form factor
- Setup in minutes over USB interface

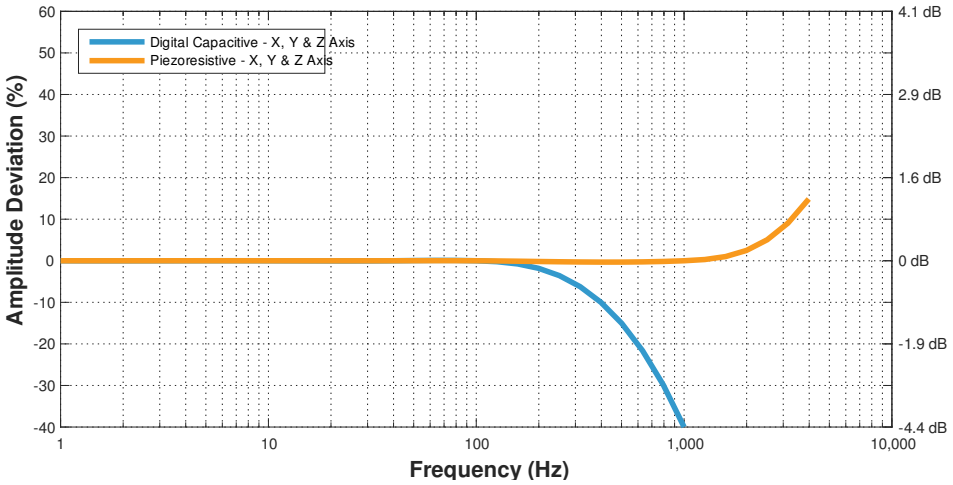
Adaptable
- Multiple accelerometers for dynamic range
- Many additional embedded sensors into single system
- User-programmable wake-up conditions and sample rates

Reliable
- Trusted in harsh environments by over 2,000 customers & the US Navy
- Calibrated with NIST Traceable Accelerometer
- Storage capacity for billions of data points

Accelerometer Specifications

Accelerometer Type	Range	Sampling Rate	Bandwidth	Noise	Resolution
Piezoresistive	± 500g	20,000 Hz	0 to 2,000 Hz	< 0.40 gRMS	0.015 g
Digital Capacitive	± 40g	4,000 Hz	0 to 300 Hz	< 0.01 gRMS	0.00008 g

Frequency Response Plot



Additional Sensor Specifications

Sensor	Measurement Range	Resolution	Sampling Rate
Gyroscope	2000°/s	0.06 °/s	0 (off) to 200 Hz
Magnetometer	± 1300 µT	0.3 µT	0 (off) to 10 Hz
Temperature	-40 to 85 °C	0.01 °C	0 (off) to 10 Hz
Pressure	1 to 200 kPa	1.6 Pa	0 (off) to 10 Hz
Humidity	0 to 100 %RH	0.04% RH	0 (off) to 10 Hz
Light	0 to > 20 uV	<100 mlx	0 (off) to 4 Hz

Environmental Specifications

Parameter	Range	Notes
Operating Temperature	-10°C to 80°C (14°F to 176°F)	
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)	Absolute Pressure
Shock Limit	>3,000 g	Refer to Shock Report (PDF)
No Electric Field Susceptibility	2 MHz to 18 GHz @ 200 V/m	Refer to EMI Test Report (PDF)
No Magnetic Field Susceptibility	30 Hz to 100 kHz	Refer to EMI Test Report (PDF)

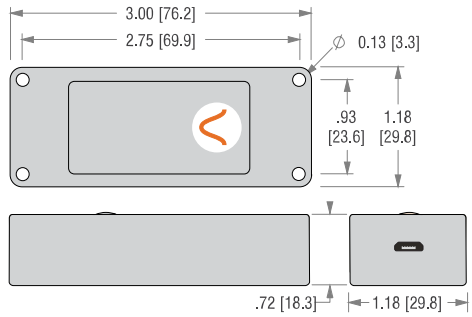
Battery & Storage Performance

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: Measurement Settings, 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	11 hours	17 hours	64 hours	45 days
1,000 Hz	9 days	11 hours	17 hours	64 hours	43 days
5,000 Hz	63 hours	9 hours	16 hours	63 hours	36 days
20,000 Hz	17 hours	5 hours	16 hours	60 hours	22 days

Dimensions

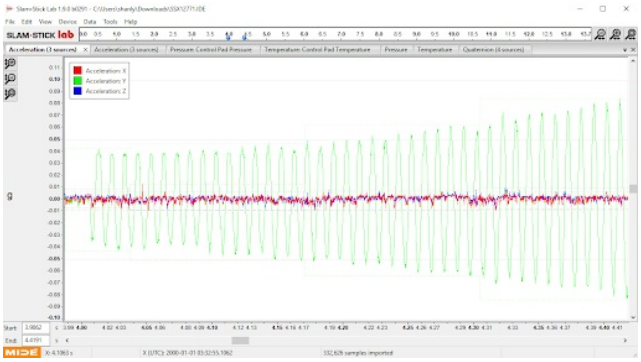


Mechanical Specifications

Mass	65 grams
Case Material	Aluminum 7075
Mounting - Screw	4-40 Bolts (100 in-oz)
Mounting - Tape (Double Sided)	3M 950 Tape
Length	76.2 mm (3.00")
Width	29.8 mm (1.18")
Thickness	18.3 mm (0.72")
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 Spectogram Digital Filtering



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