

# IMPACT & ENVIRONMENTAL RECORDERS

ShockWatch® Impact & Environmental Recorders continually monitor and report in real time the shock, vibration, and environmental conditions experienced by structures, facilities, and equipment during transit, storage, and operation. Triaxial piezoelectric accelerometer technology records direction, amplitude, and duration of impact force, while optional onboard sensors record changes in temperature, humidity, and atmospheric pressure. GPS/GPRS tracking module is available to pinpoint the location of mishandling or exposure to unfavorable conditions. Designed for testing and regular operation, these recorders help deter, monitor, and minimize damage.

**ShockLog RD298** records the date and time of up to 400 shock and vibration events.

**Micro ShockLog** records the date and time of up to 128 events, in addition to peak values of impacts at user-specified intervals.



Use Impact & Environmental Recorders with:  
Offshore oil platforms and equipment  
Building structures and foundations  
Warehouses and storage facilities  
Packaging and vehicles in supply chain  
Lasers, missiles, and satellites  
Power transformers  
Nuclear materials  
Biomedical supplies  
Wind turbines  
...and much more

## ■ Benefits

- Decreases costs related to damage incurred during operation, shipping, handling, and storage
- Helps identify optimal modes of transportation, routes, packaging, storage options, and operational conditions through full-journey profiling
- Deters improper handling and operation
- Allows sender to respond to mishandling of shipments before customer delivery
- Alerts recipients and operators to inspect goods and equipment for potential damage
- Isolates when and precisely where unacceptable conditions occur and identifies accountable parties
- Allows for immediate corrective action in cases of potential impact, vibration, temperature, humidity, and pressure extremes
- Pinpoints potential areas for improvement in operational or shipping and handling processes
- Confirms acceptable conditions during equipment operation, shipping and handling, and storage

## ■ Shared Features

- Field-proven triaxial piezoelectric accelerometer technology
- Self-contained unit design, free of cables and wires
- User-definable alarm levels
- LED lights for visual notification of alarms and warnings
- Programmable wake-up values for maximizing battery life
- Password-protected companion software
- IP67-rated, RF-screened

## ■ Individual Product Feature Comparison

	ShockLog RD298	Micro ShockLog RD317
<b>Impact scale range</b>	1G, 3G, 10G, 30G, and 100G (user-programmable)	10G or 100G
<b>Date and time stamping</b>	Up to 400 events/512 days	Up to 128 events
<b>Data transfer method</b>	Serial	Serial or iButton
<b>Accessories</b>	<ul style="list-style-type: none"> <li>• Tilt and Roll Accelerometer</li> <li>• Environmental Sensor</li> <li>• Remote Indicator System</li> <li>• GPS/GPRS Tracking Module</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental Sensor (built in to unit)</li> </ul>
<b>Battery size</b>	C alkaline or lithium	AA alkaline or lithium
<b>Additional features</b>	<ul style="list-style-type: none"> <li>• Multiple filter frequency options for collecting the data of interest</li> <li>• Detailed Certificate of Calibration included; recalibration services available</li> <li>• Extended software option adds gRMS, Slot Alarms, and Memory Management Tool</li> </ul>	<ul style="list-style-type: none"> <li>• Set-up and data collection can be independent of computer</li> <li>• Detailed event recording for up to the 10 highest impact events</li> <li>• Time slot recording for complete shock and vibration history</li> </ul>

## ■ Software

Use the comprehensive Windows®-based software programs to set wake-up thresholds, warnings, alarm levels, and frequency of data collection for ShockLog recorders. When conditions and impact forces exceed the pre-programmed impact levels, the device triggers an LED alert and stores data for later analysis. Select from six standard reports: Summary Data, Events Summary, Events Details, Time Slot Data, Mission Report, and Log Data.

## ShockLog RD298 Accessories



### eTrak™

The eTrak tracking module works with ShockLog RD298 to deliver real-time event messages and prescheduled status updates, both via e-mail. The companion software stores messages in a searchable database for analysis and reporting. Solar-powered with battery backup, the module incorporates GPS and quad-band GSM/GPRS technologies. Reports include the date, time, and number of events since the last report, along with GPS coordinates and Google Maps hyperlinks for seamless viewing of message locations.



### Tilt & Roll Accelerometer

The Tilt & Roll Accelerometer extends the monitoring capability of ShockLog RD298 to include tilt (front-to-back movement) and sway (left-to-right movement). The accelerometer uses an RS232 cable to connect directly into ShockLog RD298 and utilizes its own power supply and the ShockLog's memory to store tilt and sway data. To ensure maximum resolution, the data is recorded in quadrants and is displayed in a range of  $\pm 90^\circ$ .



### Remote Indicators

Remote Indicators allow users to collect impact and environmental data from areas that are not easily accessible — and then view the current ShockLog status and any alarm conditions from a more convenient location. Remote Indicators are often selected when it is necessary to embed the ShockLog device into the product or package.



### Environmental Sensor

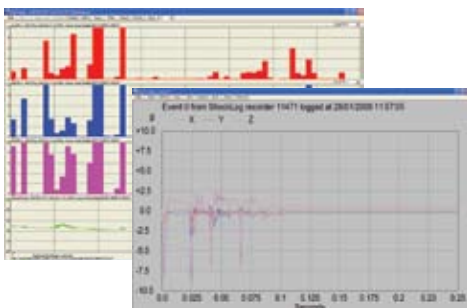
The Environmental Sensor measures temperature, humidity, and pressure. Data are recorded in time slots for easy analysis.

## ShockLog Reports



### One Page Reports

A powerful feature of the ShockLog software is the One Page Report. This report provides an overview of the entire journey. Information delivered includes ShockLog setup parameters, summary of alarm conditions, information regarding first and most severe alarm, summary of peak acceleration and time domain representation of the most severe event.



### Detail Reports

Time Slot Reports show data collected with relationship to time. Impacts in the X-, Y-, and Z-axes as well as internal temperature are standard time slot report options. External temperature, pressure, humidity, tilt, and roll are available if accessory options are connected to the ShockLog. By drilling down into Time Slot Reports, Event Data can be reviewed and analyzed in detail.

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## ShockLog Specifications

### Operating Temperature Range

Standard -4°F/-20°C to 158°F/70°C  
Extended -40°F/-40°C to 185°F/85°C

### Size

7.1"/180.34mm x 3.3"/83.82mm x  
1.7"/43.18mm

### Weight

1.5 lbs/680.39g (without battery)

### Battery

1 x 3.6V lithium size C  
1 x 1.5V alkaline size C

### Case Material

Aluminum IP67 rating

### Scale Factor Accuracy at 5G

+/-2%

### Acceleration Range

+/-0.001 to +/-100G

### Cut-Off Frequency Options

10Hz, 40Hz, 90Hz, 250Hz

### Wake-Up Threshold (% of Range)

5-95%

### Warning and Alarm Threshold (% of Range)

6-95%

### Wake-Up Time

1.5ms

### External Power Source Option

4.8V min/18V max

## Micro ShockLog Specifications

### Operating Temperature Range

-40°F/-40°C to 185°F/85°C

### Size

3.3"/83.82mm x 3.3"/83.82mm x  
2.0"/50.80mm

### Weight

0.7lbs/317.51g (without battery)

### Battery

1 x 3.6V lithium size AA

### Case Material

Aluminum and steel — IP67 rating  
with connector and cap fitted

### Operating Range Options

10G and 100G

### Wake-Up Threshold (% of Range)

10-95%

### Alarm Threshold (% of Range)

11-95%

### Wake-Up Time

1.5ms

## Accessories

### eTrack™

### Operating Temperature Range

-40°C to 85°C

### Size

6.3"/160mm x 9.8"/250mm x  
1.6"/40mm

### Weight

1.53lbs/696g

### Power Supply

Solar panel, trickle charge to 680mA  
hour LiOn battery

### Case Material

ABS

### Regions

Global provided GSM network  
coverage available

## Accessories, continued

### Tilt & Roll Accelerometer Specifications

### Operating Temperature Range

Standard -40 to 85°C

### Size

3.3"/84mm x 3.3"/84mm x  
1.9"/47mm

### Weight

0.7lbs/317.51g (without battery)

### Battery

2 x 3.6V Lithium Thionyl Chloride

### Case Material

Aluminum, IP67 Rating

### Tilt Range Monitored

+/-90°

### Resolution

0.3°

### Transverse Sensitivity

5%

### Noise (rms)

DC -30

## External Temperature, Humidity, and Pressure Sensor Specifications

### Temperature Measuring Range

-40°F/-40°C to 185°F/85°C

### Humidity Measuring Range

0-100% RH

### Pressure Measuring Range

0-1.1 bar (standard)

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# SHOCKWATCH®

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