TSR PRO & TSR PRO-HB
Shock Recorder with Internal Triaxial Accelerometer

The TSR PRO and TSR PRO-HB both feature an internal triaxial accelerometer and are capable of recording up to 10 kspfs/channel for extended periods of time.

Features
- Simple, easy-to-use software
- Compact size; unit easily mounts to test article or can be discreetly embedded inside
- Memory: 1 GB Flash
  Over 2 hours of data storage at maximum sampling rate
- Lithium battery options:
  USB rechargeable or non-rechargeable
- Standard range options: ±50, 250, 500 g
- Records up to 10 kspfs/channel
- Logs temperature and time stamp for each event, synchronizes time sequence for event reporting

Software
TSR Control software provides fast, easy-to-use tools for controlling the recorder and viewing the stored events. With a focus on speed and simplicity, TSR Control provides the tools to configure the recorder, view real-time sensor output and review your time-history data.

The TSR PRO & TSR PRO-HB from DTS are self-powered shock recorders with three internal accelerometers. High sampling rates, small size and rugged packaging make the TSR PRO & TSR PRO-HB ideal for unattended monitoring of acceleration including vibration, blast, package testing and multi-event impacts.

Simple and reliable, the TSR PRO & TSR PRO-HB are ideal for both short duration tests or long-term monitoring up to 6 months. An advanced sleep mode wakes for an event trigger, collects data to flash memory and then automatically re-arms and returns to ready mode to capture the next event. A detailed time history for thousands of events can be stored in 1 GB of data memory.

Applications
- Aerospace analysis
- Amusement ride testing
- Automotive safety
- Biomechanics
- Blast testing
- Helicopter & aircraft
- Impact testing
- Parachute deployment
- Package testing: truck, air, ship & rail
- Ride & handling
- Sports & safety equipment

Diversified Technical Systems designs and manufactures data acquisition systems and sensors for the experienced test professional.
## Specifications

<table>
<thead>
<tr>
<th><strong>Internal Accelerometer</strong></th>
<th>MEMS Triaxial (DC response)</th>
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</thead>
<tbody>
<tr>
<td><strong>Sensor Range Options</strong></td>
<td>±50 or 250 g</td>
<td>±500 g</td>
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<tr>
<td><strong>Frequency Response</strong></td>
<td>DC to 300 Hz, 4-pole Butterworth, SAE/ISO Class 180</td>
<td>DC to 1650 Hz, 4-pole Butterworth, SAE/ISO Class 1000</td>
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<tr>
<td><strong>Sampling Rate</strong></td>
<td>1-10 ksps/channel, 16-bit ADC</td>
<td>1-10 ksps/channel, 16-bit ADC</td>
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<tr>
<td><strong>Battery Options</strong></td>
<td>Lithium Rechargeable (900 mAh), Battery Life: Up to 3 months</td>
<td>Lithium Rechargeable (900 mAh), Battery Life: Up to 3 months or Lithium Non-Rechargeable (2400 mAh), Battery Life: Up to 6 months</td>
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</tbody>
</table>

*NOTE: Battery life will vary based on application, activity and sampling rate. Please contact a DTS sales engineer to help determine the best product and estimated battery life for your specific application.*

### PHYSICAL
- **Size:** 72 x 72 x 22 mm (2.83 x 2.83 x 0.87”)
- **Weight:** ~237 g (8.37 oz)
- **Model Options:** TSR PRO, TSR PRO-HB

### ENVIRONMENTAL
- **Operating Temp.:** 0-60°C (32-140°F) Rechargeable or 0-85°C (32-185°F) Non-Rechargeable
- **Humidity:** 95% RH non-condensing
- **Shock:** 500 g operating; 2000 g survivable
- **IP Rating:** IP67

### INPUT CHANNELS
- **Number:** 3 ch/module, internal triaxial accelerometer
- **Features:** Logs temperature and time stamp per event

### DATA CONVERSION
- **Sampling Rate:** 10 ksps/channel maximum
- **Memory Capacity:** 1 GB flash
- **Sleep Mode:** Advanced motion detection for power savings
- **Ready Mode:** Data collection starts ~100 µsec after trigger
- **Slope of input signal will affect trigger response**
- **Data Collection Modes:**
  - **Recorder mode:** Start/stop or set specific timer duration
  - **Circular Buffer mode:** Loops in memory waiting for trigger
  - **Dynamic Level mode:** Starts/stops based on accelerometer

### TRIGGERING
- **Software Trigger:** Programmable level trigger
- **Hardware Trigger:** Voltage input, Voltage or contact-closure output
- **Status:** Voltage or contact-closure output

### POWER
- **External:** External power input available, 6-36 VDC
- **Internal Battery Options:** USB rechargeable lithium polymer or non-rechargeable lithium primary

### SOFTWARE
- **Control:** TSR Control
- **Operating Systems:** Windows® XP/Vista/7
- **Communication:** USB

*All models are available with either a USB-rechargeable or a non-rechargeable lithium battery.*