TSR 6DXC

Rugged Data Logger, Acceleration & Angular Velocity, CAN Bus or USB Interface

APPLICATIONS

- **Aerospace analysis**
- **Automotive safety**
- **Biomechanics**
- **Blast testing**
- **Helicopter & aircraft**
- **Impact testing**
- **Parachute deployment**
- **Ride & handling**
- **Sports & safety equipment**
- **Vibration testing**
- **Vehicle black box**

Fielded by U.S. Army as a vehicle blast recorder

The rugged TSR 6DXC data logger features mil-standard connectors and is ideal for unattended monitoring of acceleration in blast and multi-event impacts.

The TSR 6DXC high performance data logger is designed to collect shock and vibration data in harsh test environments. Compact and self-powered, the TSR 6DXC features built-in triaxial accelerometer and triaxial angular rate sensors. An advanced sleep mode "wakes" for an event trigger, collects data which is stored in 1 GB flash memory and then automatically re-arms and returns to ready-mode to capture the next event. Multiple TSR 6DXC modules can be daisy-chained, plus it offers communication via CAN Bus or USB interface.

Modules can be daisy-chained for synchronized communication status, trigger and more.

PRODUCTS

Diversified Technical Systems designs and manufactures data acquisition systems and sensors for the experienced testing professional.
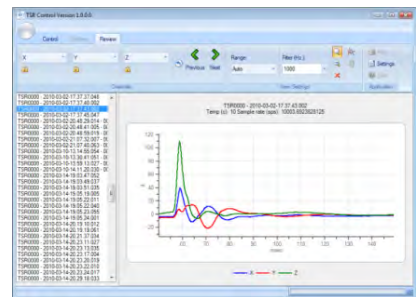
Features

- Compact size, easily mounts to test article or can be discretely embedded inside a test device

- Built-in triaxial accelerometer and triaxial angular rate sensors

- Data writes directly to 1 GB flash memory, up to 2,000 events

- High sampling rates and bandwidth

- Logs temperature, date and time for each event Synchronizes time sequence for event reporting

- USB-rechargeable Lithium battery operates up to 6 months or external power (6-36 VDC)

- CAN Bus or USB communications interface

- Modules can be daisy-chained for power, communication and trigger synchronization

- Simple, intuitive software for arming, downloading and viewing data. Simple data files can be viewed in Excel.

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.

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Specifications

MODEL	TSR 6DXC
Internal Accelerometer	± 6000 g full scale Piezo-Electric Triaxial
Internal Angular Rate Sensor	±18000 deg/sec Triaxial
Frequency Response	Accel: 0.3 Hz – 5 kHz ARS: 0-300 Hz Pressure: NA
Sampling Rate	Accel: 75000 samples/sec/channel ARS: 5000 samples/sec/channel Pressure: NA 12-bit ADC
Battery*	Lithium Rechargeable (900 mAh) Active/Record Mode ~24 hours typical Low Power/Sleep Mode ~6 months typical
	*NOTE: Battery life will vary based on type, application, duty-cycle and sampling rate. Contact a DTS sales engineer to determine the best product and estimated battery life for your specific application. See TSR Battery Life article available on DTS Help Center.

PHYSICAL
Size:	83 x 83 x 32 mm (3.25 x 3.25 x 1.25")
Weight:	420 g (15 oz.)
Model:	TSR 6DXC

ENVIRONMENTAL
Operating Temp.:	-30 to 60°C (-22 to 140°F)
Humidity:	20 to 95%
Shock:	10000 g survivable
IP Rating:	IP67

INPUT CHANNELS
Acceleration:	3 channels, internal accelerometer
Angular Rate:	3 channels, internal angular rate sensor
Additional Features:	Logs temperature and time stamp per event

DATA CONVERSION
Resolution:	12-bit ADC
Memory Capacity:	1 GB flash
Sleep:	Advanced motion detection for power savings
Trigger:	When armed in low power mode, data collection starts <100 µsec after trigger
Data Collection Modes:	
Active:	Loops in memory waiting for trigger
Low power:	No pre-trigger data

COMMUNICATIONS
Communication:	USB or CAN Bus

CONNECTORS
Mil-Std 38999:	Dual, chainable for power, CAN Bus, trigger and status

TRIGGERING
Software Trigger:	Programmable level trigger from acceleration

POWER
Internal Battery:	USB-rechargeable lithium polymer

SOFTWARE
Product Name:	TSR Control
Data Management:	Date/Time/Temp recorded for each event
Post-Processing:	SAE Filters, View multiple channels/tests, HIC Head Injury Criteria
Operating Systems:	Windows® 7/8/10 (32- and 64-bit)
Communication:	USB or CAN Bus

Additional DTS data logger models are available with a variety of sensor options, shock ratings, sampling rates and more.

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