TSR101
TRI-AXIAL TRANSIENT SHOCK RECORDER

MADGETECH
WE BUILD DATA LOGGERS

Features
- Records 3-axis shock
- Built-in accelerometers
- Measures dynamic and static acceleration
- Low cost
- Programmable start time
- Reusable
- Compact
- Optional password protection
- High speed download (115,200 baud)
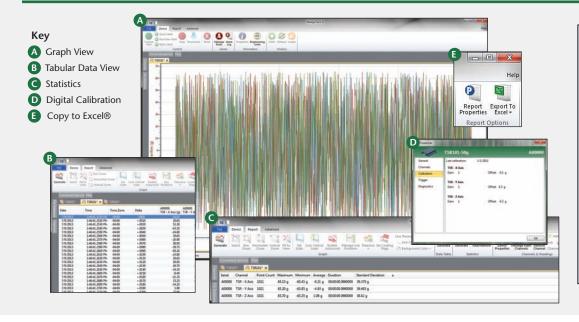
Applications
- Fragility testing
- Laboratory drop testing
- Brake testing
- Assembly line monitoring
- Aircraft turbulence measurement
- Machinery monitoring
- Railcar coupling impacts
- Shipment monitoring

The TSR101 is a battery powered, stand alone 3-axis shock recorder. The TSR101 measures and records instantaneous shock levels when the user-selectable shock levels have been exceeded. There are 15 rates to chose from ranging from 1024Hz to 1 Hz. The TSR101 is valuable in characterizing environments such as packaging & fragility assessment (drop testing), break & crash testing, and shipping validation.

This is an all-in-one compact, portable, easy to use device that will measure and record approximately 349,000 measurements per axis. The storage medium is non-volatile solid state memory, providing maximum data security even if the battery becomes discharged. The device can be started and stopped directly from your computer and its small size allows it to fit almost anywhere. The TSR101 makes data retrieval quick and easy. Simply plug it into an empty USB port and our user-friendly software does the rest.

MADGETECH DATA LOGGER SOFTWARE

Key
- **A** Graph View
- **B** Tabular Data View
- **C** Statistics
- **D** Digital Calibration
- **E** Copy to Excel®

Software Features:
- Multiple graph overlay
- Statistics
- Digital calibration
- Zoom in/ zoom out
- Lethality equations (F0, PU)
- Mean Kinetic Temperature
- Full time zone support
- Data annotation
- Min./Max./Average lines
- Data table view
- Automatic report generation
- Summary view
- Multilingual

TSR101 SPECIFICATIONS*

Channels:	Shock (3 axes)			
Accelerometer Type:	MEMS Semiconductor			
Acceleration Range (g):	±5	±50	±100	±250
Calibrated Accuracy (g):	±0.2	±1	±2	±4
Acceleration Resolution (g):	0.01	0.05	0.1	0.2

Reading Rate Range:	15 options from 0.976ms/1,024Hz to 1 second, selectable in software
Trigger Specifics:	User settable trigger levels on X, Y, and/or Z axes, and specifies # of samples after triggers
Pre-Trigger Specifics:	Records a pre-trigger of up to 50 readings prior to the trigger point
Frequency Response:	0Hz to approx. 400Hz (50, 100 g) (0-512Hz (5 g))
Real Time Recording:	May be used with PC to monitor and record instantaneous acceleration in real time (Only at 1 second rate, not possible during logging)
Start Modes:	Software programmable immediate start or delay start up to 180 days in advance
Password Protection:	An optional password may be programmed into the device to restrict access to configuration options. Data may be read out without the password

Calibration:	Digital calibration is available to the user through software
Calibration Date:	Automatically recorded within device
Battery Type:	9V lithium or alkaline battery included; **user replaceable**
Battery Life:	7 days typical with lithium battery, immediate start, 1024Hz
Data Format:	Date and time stamped gravities (g and mg)
Time Accuracy:	±1 minute/month (at 20 °C to 30 °C)
Computer Interface:	USB (interface cable required), 115,200 baud
Software:	XP SP3/Vista/Windows 7/Windows 8
Operating Environment:	-20 °C to +60 °C, 0 to 95%RH non-condensing
Dimensions:	3.5" x 4.4" x 1.0" (89 mm x 112 mm x 26 mm)
Weight:	12 oz (340 g)
Materials:	Anodized aluminum
Approvals:	CE

BATTERY WARNING: DISCARD USED BATTERY PROMPTLY. KEEP OUT OF REACH OF CHILDREN. DO NOT DISPOSE OF IN FIRE, RECHARGE, PUT IN BACKWARDS, DISASSEMBLE, OR MIX WITH OTHER BATTERY TYPES. MAY EXPLODE, FLAME, OR LEAK AND CAUSE PERSONAL INJURY.

ORDERING INFORMATION

MODEL	DESCRIPTION
TSR101-5	±5g Tri-Axial Shock Recorder
TSR101-50	±50g Tri-Axial Shock Recorder
TSR101-100	±100g Tri-Axial Shock Recorder
TSR101-250	±250g Tri-Axial Shock Recorder
IFC200	Software, manual and USB interface cable
U9VL-J	Replacement battery for TSR101

ASK ABOUT OUR OTHER DATA LOGGERS

Temperature
Humidity
Pressure
pH
Level
Shock
LCD Display
Pulse/Event/State
Current
Voltage
Wireless
Intrinsically Safe
Spectral Vibration
Motion