

# ULTRASHOCK

## TEMPERATURE, HUMIDITY, PRESSURE & TRI-AXIAL SHOCK DATA LOGGER



### Features

- Built-in accelerometers
- All inclusive design
- Compact
- Programmable start time
- High speed download
- Real-time operation
- Low cost
- Reusable
- User-friendly
- CE compliant

### Applications

- Complete environmental shipment monitoring
- Shipping live cargo
- Aircraft turbulence measurement
- Endurance testing
- Assembly line monitoring
- Brake testing
- Laboratory drop testing
- Machinery monitoring
- Railcar coupling impacts

The UltraShock is a battery powered, stand alone temperature, pressure, humidity and 3-axis shock recorder. The UltraShock measures and records temperature, pressure and humidity at the selected reading rates, while shock is recorded as the peak acceleration levels over the same interval.

The UltraShock is specifically designed for documenting dynamic environments such as moving vehicles, trucks, containers, ships, etc. The device is also valuable in characterizing environments such as production and assembly lines of delicate electronics, IC fabrication, communications and computer components. This compact, portable, easy to use device will measure and record up to 174,762 measurements per channel. 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 UltraShock 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

# ULTRASHOCK SPECIFICATIONS\*

## TEMPERATURE

<b>Sensor:</b>	Semiconductor
<b>Range:</b>	-20 °C to +60 °C
<b>Resolution:</b>	0.1 °C
<b>Accuracy:</b>	±0.5 °C (0 °C to +50 °C)

## HUMIDITY

<b>Sensor:</b>	Capacitive Polymer
<b>Range:</b>	0 %RH to 95 %RH
<b>Resolution:</b>	0.1 %RH
<b>Calibrated Accuracy:</b>	±3 %RH (±2 %RH typical at 25 °C)
<b>Specified Accuracy Range:</b>	+10 °C to +40 °C; 10 %RH to 80 %RH

## PRESSURE

<b>Sensor:</b>	Semiconductor Strain Gage
<b>Range:</b>	0 PSIA to 30 PSIA
<b>Resolution:</b>	0.002 PSIA
<b>Calibrated Accuracy:</b>	±1.0 %FSR at 25 °C; ±0.2 % typical

## SHOCK

<b>Accelerometer Type:</b>	MEMS Semiconductor			
<b>Acceleration Range (g):</b>	±5 g	±50 g	±100 g	±250 g
<b>Acceleration Resolution (g):</b>	0.01 g	0.05 g	0.1 g	0.2 g
<b>Calibrated Accuracy (g):</b>	±0.2 g	±1.0 g	±2.0 g	±4.0 g
<b>Sampling Rate:</b>	1.953 millisecond (512 Hz)			
<b>Accelerometer Freq. Resp.:</b>	0 Hz to approx. 400 Hz			
<b>Reading Rate:</b>	64 Hz to 5 minutes for shock, selectable in software. Temperature, pressure & humidity sampled approx. every 2 seconds at intervals shorter than 2 seconds. Otherwise, sampled at the reading rate.			

<b>Memory:</b>	174,762 readings per channel
<b>Start Modes:</b>	Software programmable immediate start or delay start, up to 6 months in advance
<b>Real Time Recording:</b>	May be used with PC to monitor and record instantaneous measurements in real time
<b>Password Protection:</b>	An optional password may be programmed into the device to restrict access to configuration options. Data may be read out with the password.
<b>Calibration:</b>	Digital calibration through software
<b>Calibration Date:</b>	Automatically recorded within device
<b>Battery Type:</b>	9V lithium or alkaline battery included; <b>user replaceable</b>
<b>Battery Life:</b>	7 days typical with lithium battery, 1 min. reading rate @ 25 °C
<b>Data Format:</b>	Date and time stamped gravities (g and mg), temperature (°C, °F, K, °R), humidity (%RH, mg/ml water vapor concentration), pressure (PSIA, inHg, mmHg, bar, atm, Torr, Pa, kPa, MPa)
<b>Time Accuracy:</b>	±1 minute/month (at 2 °C to 30 °C)
<b>Computer Interface:</b>	USB (interface cable required); 115,200 baud
<b>Software:</b>	XP SP3/Vista/Windows 7/Windows 8
<b>Operating Environment:</b>	-20 °C to +60 °C, 0 %RH to 95 %RH non-condensing
<b>Dimensions:</b>	3.5 in x 4.4 in x 1.0 in (89 mm x 111 mm x 26 mm)
<b>Weight:</b>	12 oz (341 g)
<b>Enclosure:</b>	Anodized aluminum
<b>Approvals:</b>	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
ULTRASHOCK-5-EB	Temperature, Humidity, Pressure and ±5g Tri-Axial Shock Recorder
ULTRASHOCK-50	Temperature, Humidity, Pressure and ±50g Tri-Axial Shock Recorder
ULTRASHOCK-100	Temperature, Humidity, Pressure and ±100g Tri-Axial Shock Recorder
ULTRASHOCK-250	Temperature, Humidity, Pressure and ±250g Tri-Axial Shock Recorder
IFC200	Software, manual and USB interface cable
Calibration Certificate	Calibration Certificate available for data logger
U9VL-J	Replacement battery for UltraShock

**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