Logicbus

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 COM or USB port and our user-friendly software does the rest.
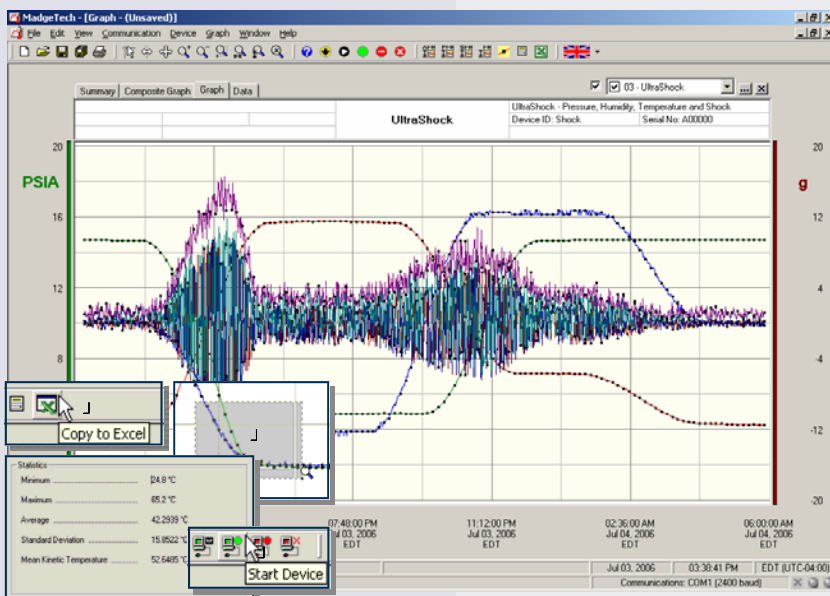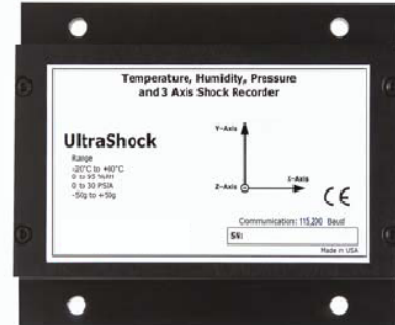
MadgeTech Data Recorder Software displays shock, temperature, humidity and pressure data in an easy to use graph.

The Windows®-based software package allows the user to effortlessly collect, display and analyze data. A variety of powerful tools allow you to examine, export, and print professional looking data with just a click of the mouse.

UTLRASHOCK SPECIFICATIONS*

TEMPERATURE

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

HUMIDITY

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

PRESSURE

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

SHOCK

Accelerometer Type: MEMS Semiconductor

	±5	±50	±100
Acceleration Range (g):	±5	±50	±100
Acceleration Resolution (g):	0.01	0.03	0.05
Calibrated Accuracy (g):	±0.2	±1.0	±2.0

Sampling Rate:	1.953 millisecond (512Hz)
Accelerometer Freq. Resp.:	0Hz to approx. 400Hz
Reading Rate:	64Hz 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.

Memory:	174,762 readings per channel; 1,572,858 total readings
Start Modes:	Software programmable immediate start or delay start, up to 6 months in advance
Real Time Recording:	May be used with PC to monitor and record instantaneous measurements in real time
Password Protection:	An optional password may be programmed into the device to restrict access to configuration options. Data may be read out with the password.
Calibration:	Digital calibration 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, 1 min. reading rate @ 25°C
Data Format:	Date and time stamped °C, °F, K, °R ; %RH, mg/ml water vapor concentration; PSIA, inHg, mmHg, bar, atm, Torr, Pa, kPa, MPa, altitude; g
Time Accuracy:	±1 minute/month (at 2 to 30°C)
Computer Interface:	PC serial or USB (interface cable required); 115,200 baud
Software:	Windows 95/98/ME/NT/2000/XP based software
Operating Environment:	-20 to +60°C, 0 to 95%RH non-condensing
Dimensions:	3.5" x 4.4" x 1.0" (89mm x 111mm x 26mm)
Weight:	12 oz (341 g)
Enclosure:	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.

SOFTWARE FEATURES

Multiple Graphs:	Simultaneously analyze data from several units or deployments; easily switch to a single data series
Graphical Cursor:	One click displays readings by time, value, parameter or sample number
Data Table:	Instantly access tabular view for detailed dates, times, values, and annotations
Scaling Options:	Autoscale function fits data to the screen, or allows user to manually enter their own values
Formatting Options:	Change colors, line styles, plotting options, show or hide channels quickly

Statistics:	Calculate averages, min, max, standard deviation, and mean kinetic temperature with the touch of a button
Export Data:	Export data in a variety of common formats, or switch to Excel® with a single click
Calibration:	Automatically calculate and store calibration parameters
Logger Configuration:	Easy set up and launch of data loggers with immediate or delayed start, preferred sample rate, and device ID
Communications:	Automatically sets up communications port, or lets user select configuration

ORDERING INFORMATION

Model	Description
ULTRASHOCK-5	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
IFC110	Software, manual and RS232 interface cable
IFC200	Software, manual and USB interface cable
NIST	N.I.S.T. Calibration Certificate
U9VL-J	Replacement battery for UltraShock

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