MADGETECH
WE BUILD DATA LOGGERS

Description	UltraShock
Channels	Shock (3 axes), Temperature, Humidity, Pressure
Range	*See Tables Below
Resolution	*See Tables Below
Accuracy	*See Tables Below
Sample Rate	512 Hz
Reading Rate	64 Hz up to 5 minutes
Memory	174,762/channel
Required Interface Package	IFC200
Baud Rate	115,200
Typical Battery Life	7 days
Operating Environment	-20 °C to +60 °C (-4 °F to +140 °F), 0 %RH to 95 %RH (non-condensing)
Material	Anodized aluminum
Dimensions	3.5 in x 4.4 in x 1 in (89 mm x 112 mm x 26 mm)
Weight	12 oz (341 g)
Approvals	CE

*Acceleration Range, Resolution and Accuracy

Channel	Temperature	Humidity	Pressure
Range	-20 °C to +60 °C	0 %RH to 95 %RH	0 to 30 PSIA
Accuracy	±0.5 °C	±3 %RH	±1 %FSR @ 25 °C
Resolution	0.1 °C	0.1 %RH	0.002 PSIA

*Shock Acceleration Range, Resolution and Accuracy

Shock Range	±5 g	±50 g	±100 g	±250 g
Accuracy	±0.2 g	±1.0 g	±2.0 g	±4.0 g
Resolution	0.01 g	0.03 g	0.05 g	0.2 g

Battery Warning

WARNING: FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 60 °C (140 °F).
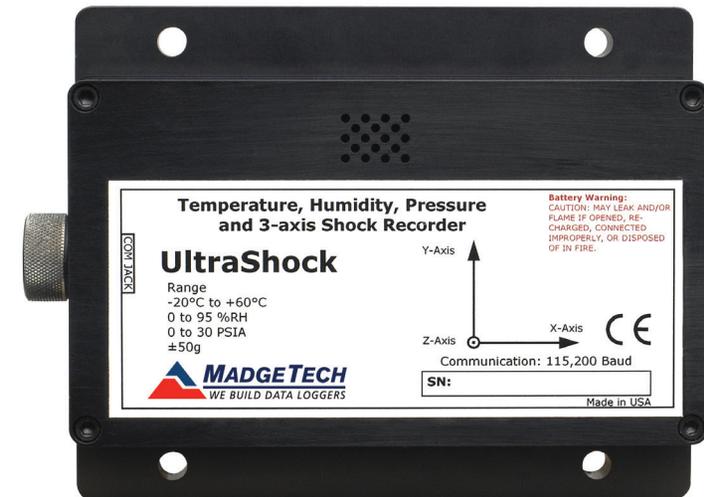
Specifications subject to change.
See MadgeTech's terms and conditions at www.madgetech.com

UltraShock

UltraShock-5
Temperature, Humidity, Pressure, and Tri-axial ±5g, Shock Data Logger

UltraShock-50
Temperature, Humidity, Pressure, and Tri-axial ±50g, Shock Data Logger

UltraShock-100
Temperature, Humidity, Pressure, and Tri-axial ±100g, Shock Data Logger

UltraShock-250
Temperature, Humidity, Pressure, and Tri-axial ±250g, Shock Data Logger

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To view the full MadgeTech product line,
visit our website at www.madgetech.com.

Product Notes

Reading Intervals

The UltraShock measures pressure, temperature, humidity and tri-axial shock. When the device is running, the shock parameter samples at 512 Hz and at the user specified reading rate, the device writes the peak values (g-force) from the samples to memory.
For Example:

Sampled Data:	Recorded Data:
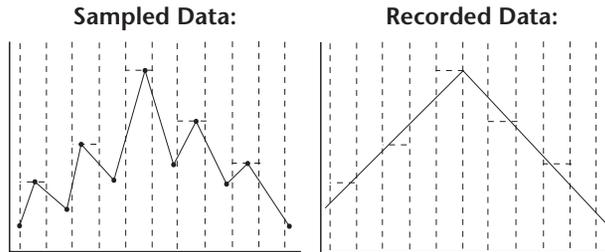
Pressure, temperature and humidity readings are taken at the user specified reading rate up to a maximum of 2 seconds intervals.

Axis Orientation

When the UltraShock is laying flat, with the label facing up, the x-axis indicates left to right direction and will read ~0 g when still. The y-axis reads in a top to bottom direction and reads ~0 g when still. The z-axis reads perpendicular to the other two axis, and will read ~1 g when still.

Y-Axis

X-Axis

Z-Axis
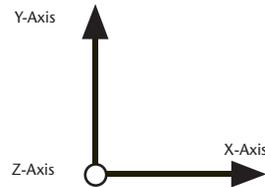
Installing the Interface cable

- IFC200

  Insert the device into a USB port. The drivers will install automatically.

Installing the software

The Software can be downloaded from the MadgeTech website at the following link: www.madgetech.com/software-download. Double click the zipped dowloaded file and follow the steps to complete the download

Device Operation

Connecting and Starting the data logger

- Once the software is installed and running, plug the interface cable into the data logger.
- Connect the USB end of the interface cable into an open USB port on the computer.
- The device will appear in the Connected Devices list, highlight the desired data logger.
- For most applications, select **"Custom Start"** from the menu bar and choose the desired start method, reading rate and other parameters appropriate for the data logging application and click **"Start"**. (*"Quick Start"* applies the most recent custom start options, *"Batch Start"* is used for managing multiple loggers at once, *"Real Time Start"* stores the dataset as it records while connected to the logger.)

- The status of the device will change to **"Running"**, **"Waiting to Start"** or **"Waiting to Manual Start"**, depending upon your start method.
- Disconnect the data logger from the interface cable and place it in the environment to measure.

Note: The device will stop recording data when the end of memory is reached or the device is stopped. At this point the device cannot be restarted until it has been re-armed by the computer.

Downloading data from a data logger

- Connect the logger to the interface cable.
- Highlight the data logger in the Connected Devices list. Click **"Stop"** on the menu bar.
- Once the data logger is stopped, with the logger highlighted, click **"Download"**. You will be prompted to name your report.
- Downloading will offload and save all the recorded data to the PC.

Device Maintenance

Battery Replacement

Materials: 3/32" HEX Driver (Allen Key) and a Replacement Battery (U9VL-J)
- Remove the cover from the device by unscrewing the four screws.
- Remove the battery from its compartment and unsnap it from the connector.
- Snap the new battery into the terminals and verify it is secure.
- Replace the cover taking care not to pinch the wires. Screw the enclosure back together securely. *Note: Be sure not to over tighten the screws or strip the threads.*

Recalibration

The UltraShock standard calibration is performed at one temperature point at 25 °C, two humidity points at 25 %RH and 75 %RH, two pressure points at 15 PSI and 27-30 PSI and 0 g for the x-axis, 0 g for the y-axis and 1 g for the z-axis.

Note: The shock parameters are not traceable to NIST.

Additional Services:
Custom calibration and verification point options available, please call for pricing.

Call for custom calibration options to accommodate specific application needs.
Prices and specifications subject to change. See MadgeTech's terms and conditions at www.madgetech.com
To send devices to MadgeTech for calibration, service or repair, please use the MadgeTech RMA Process by visiting www.madgetech.com, then under the services tab, select RMA Process.