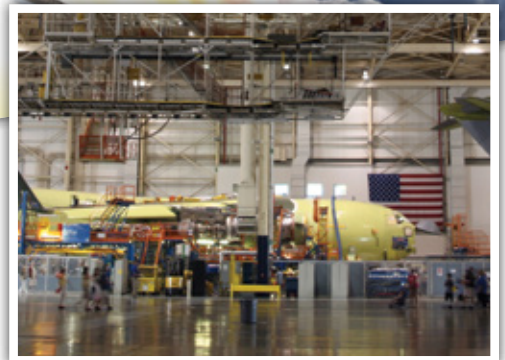


# Data Logging Solutions for the **Aerospace Industry**





## Simplifying How the World Measures & Records Data

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MadgeTech, Inc. is a global company, based in New England and founded on old-fashioned principles, customer service, quality, and trust. MadgeTech's President, Norman Carlson, started the company in 1996 and charted the growth of the product lines and services while maintaining those solid core principles.

Our 'Can Do' team of engineers and technical staff consistently incorporate new and innovative ideas into our data loggers. In short, we push the envelope, raising the bar in innovation and quality. Our competitors have praised us by adopting many of our ideas as their own. Over time, MadgeTech has become the industry standard in the data logger market. MadgeTech continuously develops new, cutting-edge products, creating solutions for our customers around the world in industries across the board. Our growing network of distributors has expanded our presence to markets far beyond our home-headquarters in

New Hampshire, our products are now sold in over 100 countries around the world.

Our employees are committed to quality and customer satisfaction. Behind the full range of MadgeTech's products and services is the cumulative expertise of experienced engineers, manufacturing and electronic professionals and technicians. Our knowledgeable sales team can offer technical advice to assist in selecting the right product for each application, as well as providing after-sales support.

MadgeTech is dedicated to providing customers with reliable, affordable products, hassle-free ordering, and excellent service, saving customers time and money. It is our goal to earn your trust in meeting your needs and providing innovative solutions. The products and services that bear the MadgeTech name come with quality assurance and the best support in the industry today.

Norman E. Carlson,

A handwritten signature in black ink, appearing to read "Norman E. Carlson".

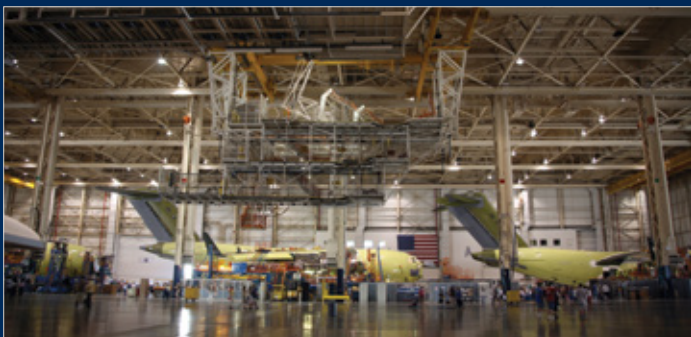
Founder & President

# Data Logging Solutions for Applications in the Aerospace Industry

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MadgeTech's aerospace selection of data loggers provides monitoring solutions for a wide variety of parameters for use in a multitude of different applications. MadgeTech offers complete data logging solutions for measuring shock, temperature, voltage, pressure and humidity enabling the user to accumulate a complete environmental profile.

These loggers can assist in ensuring aircraft component reliability during operation and storage, monitoring engine functionality, and to monitor vital parameters during aircraft testing and research studies.



Voltage Monitoring



High Temperature Monitoring



Temperature & Humidity Monitoring



Wireless Monitoring System



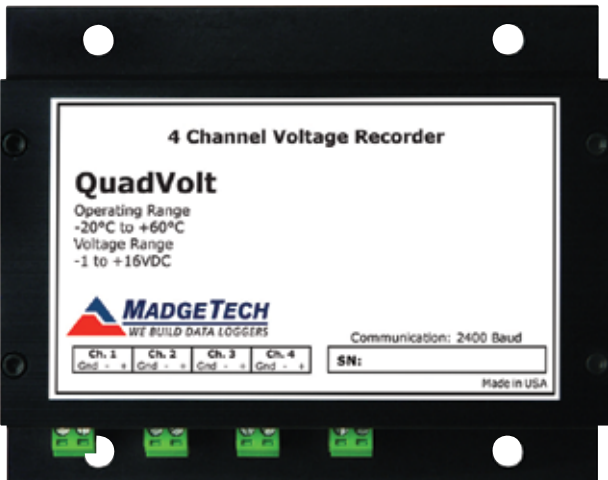
Pressure Monitoring



Shock & Vibration Monitoring

# Voltage Monitoring

MadgeTech's series of voltage data loggers provide accurate monitoring and recording of voltage levels from a variety of common sources frequently used for aerospace research, development and testing.



## QuadVolt

### 4 Channel Voltage Data Logger

The **QuadVolt** is a battery-powered, four-channel, standalone voltage data logger. This device can record up to 16,383 voltage measurements per channel. The non-volatile solid state memory ensures maximum data security even if the battery becomes discharged.

The QuadVolt is capable of accepting signals from sensors, transducers, and many other common voltage sources. This device is also available in an eight channel version called the **OctVolt**.

## Volt101A

### Voltage Data Logger

The **Volt101A** is a single channel voltage data logger with a battery life up to ten years and the ability to store up to one million time and date stamped readings, this device is ideal for long term deployment and voltage studies.



# High Temperature Monitoring

MadgeTech has designed the HiTemp140 series of data loggers specifically for monitoring high temperature applications. These rugged, high precision, fully-submersible devices can be placed directly inside the harsh environments, providing an overall temperature profile .



## HiTemp140 and HiTemp140-PT Data Loggers for High Temperatures

The **HiTemp140** and **HiTemp140-PT** series data loggers are MadgeTech's solution for precise high temperature monitoring. These data loggers can indefinitely withstand temperatures of up to 140 °C (284 °F) and. The HiTemp140 features a rigid external RTD probe capable of measuring extended temperatures, up to 260 °C (500 °F). Varied probe lengths are available up to 7 inches. The HiTemp140-PT features a 24 inch flexible steel RTD probe capable of measuring extended temperatures, up to 350 °C (662 °F).



HiTemp140-PT-1

HiTemp140-1



## HiTemp140-FP Data Logger for High Temperatures

The **HiTemp140-FP** probe design is narrow and lightweight making it ideal for placement within small vials, test tubes and other small diameter or delicate applications. The flexible lightweight probe minimizes the risks of breakage (both vial and probe) and makes placement of the probe is easy to manipulate.

# Wireless Continuous Process Monitoring

For real-time continuous monitoring, MadgeTech's wireless 2000A series is a time-saving and cost effective solution for validating temperature, humidity, pressure levels and more. The device takes readings at user-specified intervals, with data being transmitted back to a central PC or to the MadgeTech Cloud for real-time data access remotely. The built in LCD display also provides users quick access to min, max, average, and current readings.

The 2000A series also includes a programmable audible alert and visual alarms for users close by. If the temperature or humidity levels exceed the user defined safe range, the alarm will sound enabling the user to take immediate action. Additionally, email and text message notifications can be configured, ensuring real-time notifications regardless of location.



## RFTemp2000A & RFRHTemp2000A For Ambient Environmental Monitoring



**RFTemp2000A**  
*Wireless Temperature Data Logger*



**RFRHTemp2000A**  
*Wireless Temperature & Humidity Data Logger*

### Available Parameters

- Temperature
- Humidity
- Pressure
- Current
- Voltage
- Pulse
- Carbon Dioxide



# MadgeTech Cloud Services

Access Data Instantly and Securely  
from Anywhere in the World



The MadgeTech Cloud Services data logging platform provides continuous logging and monitoring of temperature, pressure and humidity data while giving users instant access from any location. Real-time data is transmitted wirelessly to the PC and recorded in the MadgeTech Software. From there, data is sent to the MadgeTech Cloud where it can be viewed on any internet or data enabled device such as a computer, tablet or cell phone.

## RFC1000 Cloud Relay Data Logging Hub

The **RFC1000 Cloud Relay** is a data logging hub that communicates via Ethernet to transmit live data directly to the MadgeTech Cloud Services platform. This allows users to remotely monitor and manage groups of data loggers, throughout a large facility without the need of a central PC.



Manage data loggers and relays or configure text and email alerts all from a smartphone, tablet or PC. Live data is sent to the MadgeTech Cloud for instant access and is available to download as a CSV file for your records or further analysis.



## RFC1000 Wireless Transceiver

The RFC1000 is a high powered wireless transceiver with substantially long transmit range, providing optimal performance in occluded environments, such as ovens and refrigerators. The RFC1000 has an external antenna, allowing more flexibility with mounting positions in both orientation and proximity to metal walls. The RFC1000 may be used as a repeater, or directly plugged into a Windows PC. Splash proof and CE approved versions available.

# Temperature & Humidity Monitoring

From research studies to engine performance monitoring, MadgeTech offers a variety of temperature and humidity data logging options.

## QuadTemp 4 Channel Temperature Data Logger

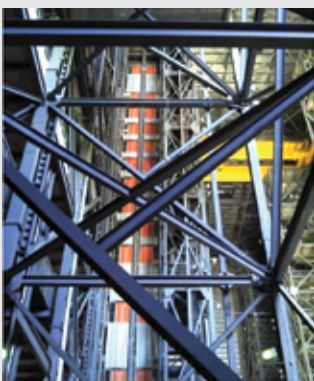
The **QuadTemp** is a four channel thermocouple temperature data logger with a reading rate of up to 4 Hz. It can measure and record data for up to 500,000 readings per channel. To maximize memory capacity, users can disable unused channels to add additional memory onto enabled channels.

The QuadTemp is ideal for a variety of applications, whether it is remote temperature monitoring, or multiple points in a central location. This device is also available in an eight channel version called the **OctTemp**.



## RHTemp101A Humidity & Temperature Data Logger

For many applications that require the monitoring of both ambient temperature and humidity, the **RHTemp101A** is the ideal solution. The RHTemp101A can measure ambient temperature from -40 °C to 80 °C and humidity from 0 %RH to 95 %RH. This compact device can be placed virtually anywhere to provide an accurate temperature and humidity record of the environment. Use several RHTemp101A's to capture a thorough mapping of large rooms or facilities.



## NASA using MadgeTech Data Loggers at the Kennedy Space

*In late 2012, seventeen RHTemp101A MadgeTech data loggers were strategically set up around NASA's Vehicle Assembly Building (VAB) located in the Kennedy Space Center in Florida with a goal of creating an accurate overview of the internal environment.*

*As the organization planned to alter the building to house a Space Launch System, as well as Multi-Purpose Crew Vehicles and commercial business, collecting precise data was extremely important. The loggers were set up to take readings every ten minutes continuously for one year to show any temperature differentials that could impact the launch of the spacecraft.*



# Pressure Monitoring

MadgeTech's series of pressure data loggers includes devices which can be used to monitor and record pressure in a variety of applications. These devices provide an easy and efficient way to monitor pressure by connecting directly to an NPT port.

## PRTemp1000

### Rugged, Pressure & Temperature Data Logger

The **PRTemp1000** is a rugged, stand-alone pressure and temperature data logger that accurately records data at user programmable reading rates, over long periods of time. The device can be deployed in the field to record data for weeks or even months based on the user selected reading rate. The rugged stainless steel design allows it to be placed in harsh environments and comes standard with a 1/4 inch NPT fitting, which allows it to be connected to almost any pressure adapter.



## PRTrans1000

### Rugged, Transient Pressure Data Logger

The **PRTrans1000** is a transient pressure data logger with a stainless steel enclosure. It is designed to monitor and record transitory pressure drops or spikes within a three day window of time. The device samples constantly at 100 Hz, but only records to memory when the user selectable trigger settings are exceeded, only capturing the transient pressure event. The device also records pre and post trigger pressure data to memory for in depth analysis.

## PR2000

### Real-Time Pressure Data Logger

The **PR2000** is a pressure data logger equipped with an LCD screen. The 8 button key pad and large LCD provide convenient access to current data and recorder setup. Available on-screen data include: statistics (min, max and average) and recording status (start, stop and recording rate). The LCD also displays a graph of the last 100 readings to show data trends.

This rugged, splash-proof (IP65) device has one of the largest memory capacities of any similar data recorder on the market, logging up to 262,143 readings. The non-volatile memory will retain recorded data, even when battery power is lost. The PR2000 is ideal for applications requiring precise displayed pressure readings.



# Shock & Vibration Monitoring

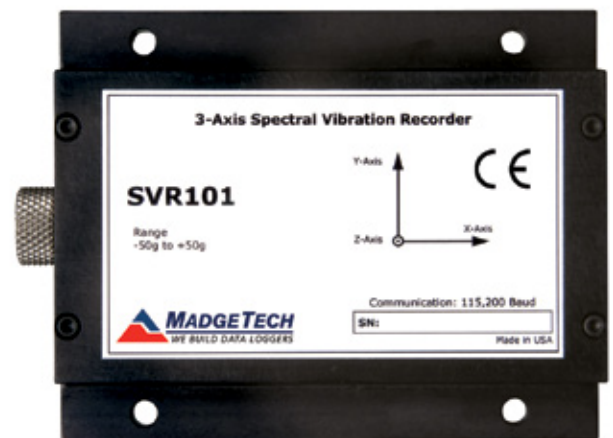
The monitoring of shock and vibration for all types of aircraft is essential to the safety of the vehicle, cargo and its components. Valuable equipment can be damaged if exposed to excessive amounts of vibration. When damage is suffered, it can be difficult to determine when the impact or vibration occurred and the level of shock that was experienced. Using a MadgeTech shock or vibration data logger, data can be gathered to correlate outside factors to create a full picture and identify sources.



## SVR101

### Spectral Vibration Data Logger

The **SVR101** is a spectral vibration data logger capable of measuring accelerations from  $\pm 50g$ , and spectral intensities from 0-128 Hz. This device is great for determining at what frequency a certain magnitude occurred. The SVR101 is trigger-based, meaning that it will only collect data when it meets or exceeds a user-programmable threshold.

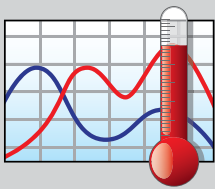


## Shock101

### Tri-Axial Shock Data Logger

The **Shock101** is a high speed, battery powered, stand alone, tri-axial shock data logger. Continuously sampling at 512 Hz and at the specified reading rate, the device records the peak (high and low) magnitude to memory.

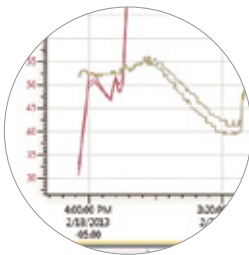
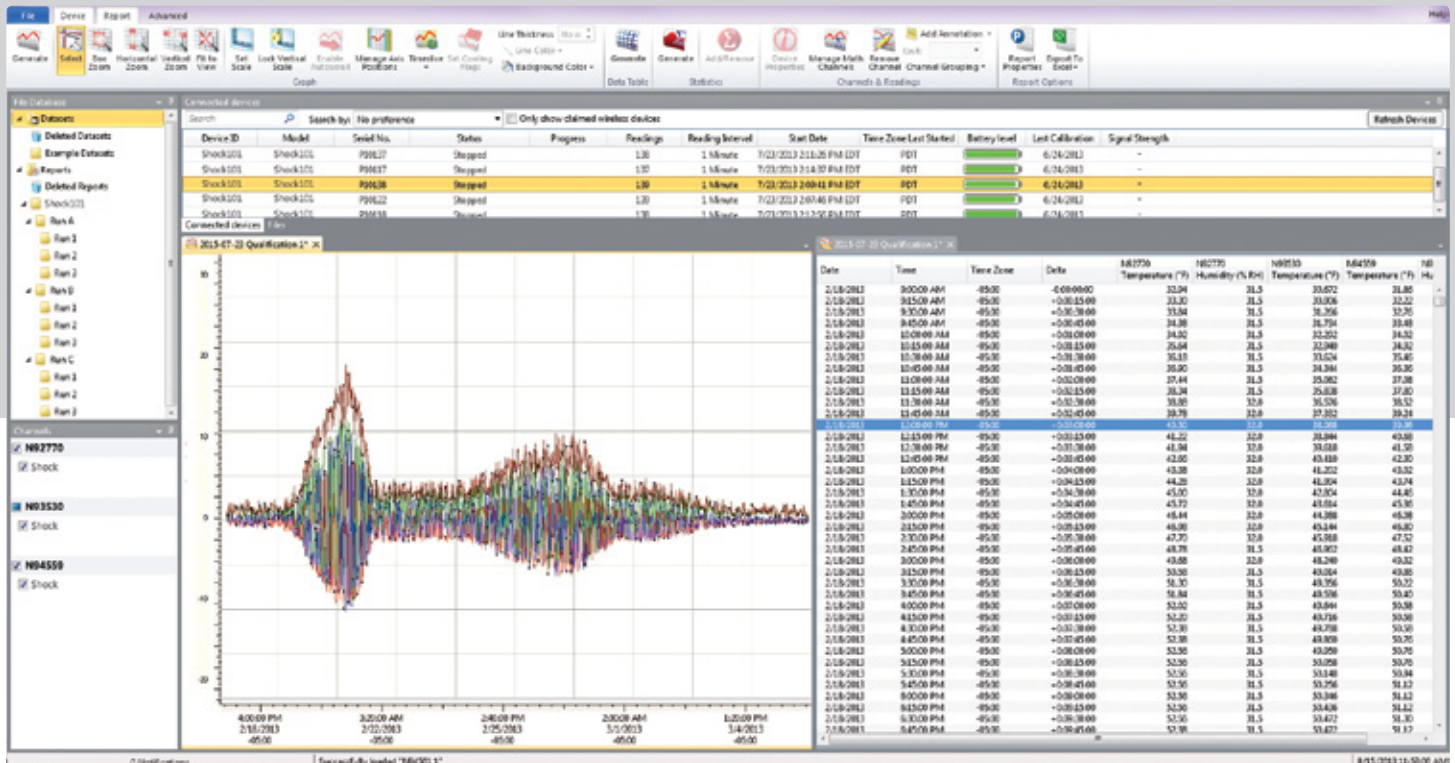
This is an all-in-one, compact, portable, easy to use device that measures and records data up to 349,525 measurements per axis. The storage medium is non-volatile solid state memory, providing maximum data security should the battery become discharged. The Shock101 is also available in an extended battery version, the **Shock101-EB**.



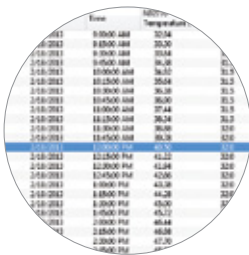
# MadgeTech Data Logger Software

This simple, easy-to-use, Windows-based software enables the user to effortlessly collect, display, and analyze data. A variety of powerful tools can be used to examine, export, and print professional quality reports with just a click of the mouse. The user-friendly MadgeTech software is available for free download from [www.madgetech.com](http://www.madgetech.com).

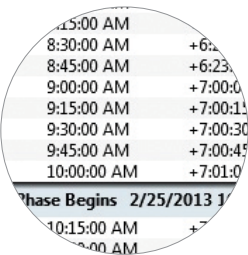
## Simple, Easy-to-use, Windows-based Software



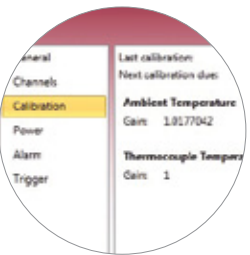
Customizable Graphs



Tabular Data View



Automatic Statistics Calculation



Digital Calibration



Copy to Excel

## Software Features

- Multiple Graph Overlay
- Statistics
- Digital Calibration
- Zoom In / Zoom Out
- Timeslice
- Lethality Equations (F0, PU, Fh, Fd)
- Mean Kinetic Temperature
- Full Time Zone Support
- Data Annotation
- User Friendly File Management
- Min / Max. / Average Lines
- Data Table View
- Automatic Report Generation
- Summary View



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