

# DATA LOGGING SOLUTIONS

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# AUTOMOTIVE INDUSTRY



# The MadgeTech Advantage

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Ensure safety, quality and efficiency by measuring and recording crucial data for inconsistencies that directly impact the success of a business. Our customizable data logging solutions provide real-time monitoring for applications where the slightest change in environment could be destructive. Coupled with the accuracy and reliability of our products, we also offer free software and cloud services, making compliance and validation reporting a breeze.

## Why Choose MadgeTech?

At MadgeTech we take pride in maintaining meaningful relationships with our customers, going above and beyond to turn their everyday problems into new data logging solutions. To ensure the instrument's accuracy, MadgeTech offers in-house standard and customized calibration services, including ISO/IEC 17025 accredited calibrations for certain products.

### Benefits:

- ▲ Calibration
- ▲ ISO/IEC 17025 Accreditation
- ▲ IQ/OQ/PQ On-Site Services
- ▲ Free Technical Support
- ▲ Free Software
- ▲ Cloud Services
- ▲ 21 CFR Part 11 Compliance

MadgeTech data loggers are designed, manufactured and serviced in the USA and distributed worldwide.



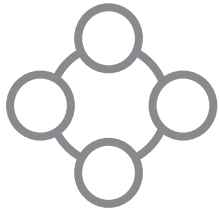
**HEADQUARTERS**  
Warner, New Hampshire

# Data Logging Solutions for Applications in the Automotive Industry

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MadgeTech's selection of automotive 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 parameters including shock, temperature, voltage, pressure and humidity enabling the user to accumulate a complete environmental profile.

These loggers can assist in ensuring the reliability of automotive components during operation and storage, engine functionality, and vital parameters during testing and research studies.



All-In-One  
Monitoring



Temperature  
Monitoring



High Temperature  
Monitoring



Pressure  
Monitoring



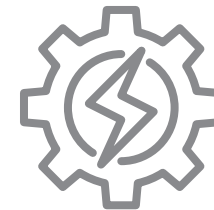
Voltage  
Monitoring



Shock  
Monitoring



Intrinsic  
Safety



Production  
Monitoring



# All-In-One Monitoring



The Titan S8-CAN is a state-of-the-art, powerful, data acquisition system designed for diesel engine monitoring and recording. With the ability to simultaneously measure and record up to 23 suspect parameter numbers, the Titan S8-CAN is an all-in-one solution for diesel engine testing.

## Portable Data Acquisition System

The **Titan S8-CAN** is a remote access data acquisition logger designed to easily connect to the Controller Area Network (CAN) via its diagnostic port.

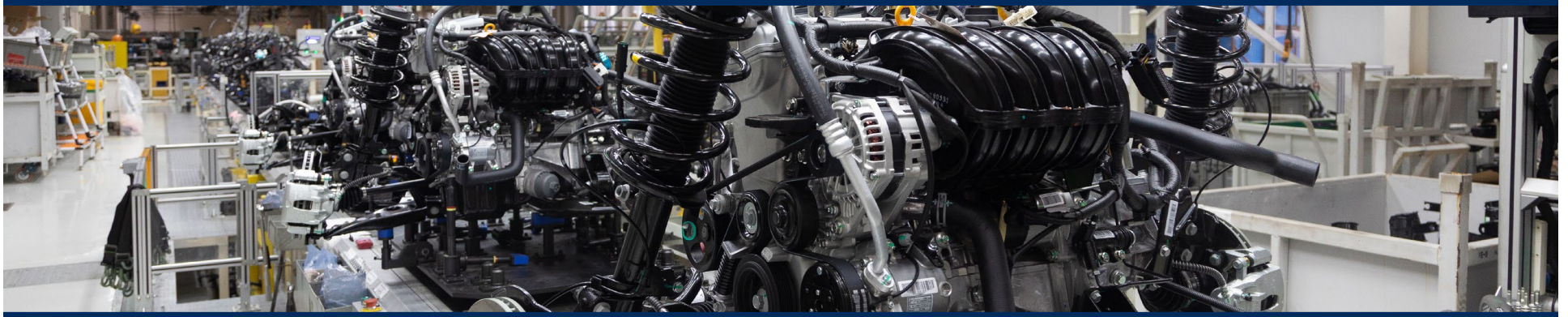
This versatile device provides the capability to monitor and record SAE J1939 compliant CAN messages from Tier 1 through Tier 4 final diesel engines. Once connected, the Titan S8-CAN has the ability to display and record up to 23 suspect parameter numbers (SPN) simultaneously during engine, road, and diagnostic testing.

The Titan S8 is an all-in-one solution, allowing users to view and record simultaneously without the need for a PC or software. With 1 GB of internal memory, the Titan S8-CAN can store up to 5,000,000 readings which can be download to a USB for further analysis.

- Ability to Monitor and Record SAE J1939 Compliant CAN Messages
- Display & Record 23 SPN
- Ideal for Engine, Road & Diagnostic Testing



# Temperature Monitoring

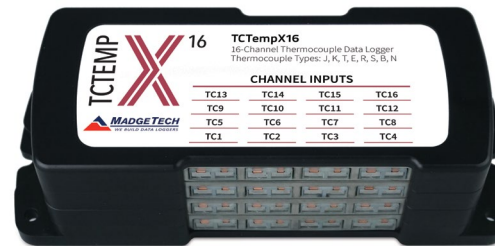


When temperature matters, rely on MadgeTech to record crucial data to ensure safety, quality and efficiency through all processes. Whether monitoring semiconductor manufacturing or testing, MadgeTech has a solution for automotive temperature monitoring.

## 8 and 16-Channel Temperature Data Logger

The **TCTempX8** and **TCTempX16** is a 16-channel thermocouple-based temperature data logger with a reading rate of up to 4 Hz, ideal for a variety of applications, whether it is remote temperature monitoring or multiple points in a central location.

- Accepts a Variety of Thermocouples
- Memory Capacity of 131,000+ Readings
- Individual Cold Junction Compensation



## Humidity and Temperature Data Logger

For many applications that require the monitoring of both ambient temperature and humidity, the **RHTemp101A** is the ideal solution measuring ambient temperature from -40 °C to 80 °C (-40 °F to +176 °F) and humidity from 0 %RH to 95 %RH.

## Thermocouple-Based Temperature Data Logger

The **TC101A** is a compact, thermocouple-based temperature data logger. This device is available in three thermocouple connection options: miniplug, screw terminal and terminal block.

- Compact Size
- Accepts a Variety of Thermocouples
- Available in 3 Thermocouple Connections





# High Temperature Monitoring



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

## High Temperature Data Loggers

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).

- Submersible
- Available in Various Probe Lengths and Styles
- Measures Temperatures from -40 °C to 140 °C (-40 °F to +284 °F)

## Flexible Probe High Temperature Data Logger

The **HiTemp140-FP** probe design is narrow and lightweight making it ideal for placement within small diameter or delicate applications.

- PFA Insulated Cable
- Available in 2 Probe Lengths
- Probe Measures Temperatures up to 260 °C (500 °F)



# 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.

## High Temperature Pressure Data Loggers

The **PR140** is a pressure data logger designed for use in high temperature applications. This device is available with a 1/4 inch NPT pressure port top, allowing it to connect with a variety of fitting and adapters.

- 1/4 Inch NPT Fitting
- Submersible up to 60 PSI
- Available in 10 Measurement Ranges from 30 to 5000 PSI



## Real-Time Pressure Data Logger

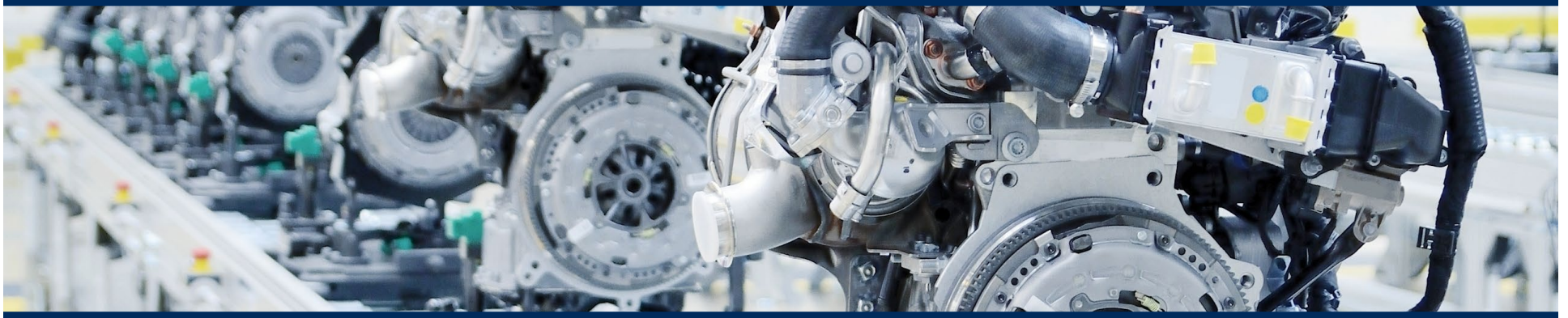
The **PR2000** is a pressure data logger with an LCD and wall mounted universal power adapter. Available in 10 ranges from 30 to 5000 PSI, the PR2000 can adapt to any application.

- Digital Display
- 1/4 Inch NPT Fitting
- Memory Capacity of 262,000+ Readings





# Voltage Monitoring

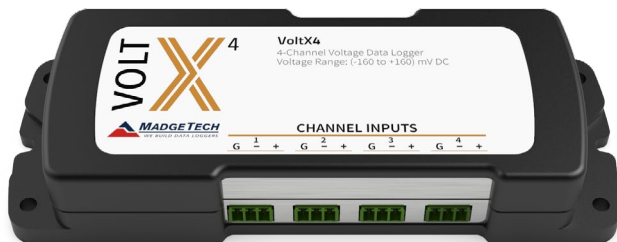


MadgeTech's series of voltage data loggers provide accurate monitoring and recording of low-level voltage from a variety of common sources frequently used for automotive research, development and testing.

## 4-channel Low-Level Voltage Data Logger

The **VoltX4** is a 4-channel, battery powered, DC voltage data logger with a wall mounted universal power adapter. This device is available in three voltage ranges: 160mVDC, 3.2VDC, 32VDC.

- Available in 3 Measurement Ranges
- Memory Capacity of 349,000+ Readings
- Accepts Voltage Signals from Common Sources
- Also available in 8, 12 and 16 channels



## Low-Level Voltage Data Loggers

The **Volt101A** is a compact, low-level DC voltage data logger. This device is available in four ranges: 2.5VDC, 15VDC, 30VDC and  $\pm 160$ mVDC.

- Compact Size
- 10-Year Battery Life
- 3 Measurement Ranges





# Shock Monitoring



Valuable parts and equipment can be damaged if exposed to excessive amounts of vibration. Using a MadgeTech shock data logger, data can be gathered to correlate outside factors to create a full picture and identify sources of destruction.

## Tri-Axial Shock, Temperature, Humidity and Pressure Data Logger

The **UltraShock** is a tri-axial, stand-alone, compact shock data logger with three built-in acceleration ranges. It also can record temperature, humidity and pressure.

- Three built-in acceleration ranges:  $\pm 15$  g,  $\pm 100$  g and  $\pm 300$
- >4M readings of non-volatile memory
- 1 kHz sampling rate
- Rechargeable battery with three-month battery life
- Direct USB interface connection



## Tri-Axial Shock Data Logger

The **Shock300** is a tri-axial, stand-alone, compact shock data logger with three built-in acceleration ranges.

- Three built-in acceleration ranges:  $\pm 15$  g,  $\pm 100$  g and  $\pm 300$
- >4M readings of non-volatile memory
- 1 kHz sampling rate
- Rechargeable battery with three-month battery life
- Direct USB interface connection



# Intrinsic Safety



MadgeTech's Ex line of data loggers are designed to be intrinsically safe for use in hazardous locations, carrying ATEX and IECEx certifications. These data loggers ensure the safety of products being used in explosive environments.

## Intrinsically Safe Humidity and Temperature Data Logger

The **RHTemp1000Ex** is a compact, humidity and temperature data logger that carries hazardous location and intrinsically safe global certification (ATEX and IECEx).

- Electrical Protection Concepts: IEC: 60079-11 Ex ia – Ex ic, Intrinsic Safety Zones 0-2
- Equipment Protection Level: Ga – Gc, Zones 0-2
- Gas Groups: IIC
- Temperature Class: T4



## Intrinsically Safe Temperature Data Logger

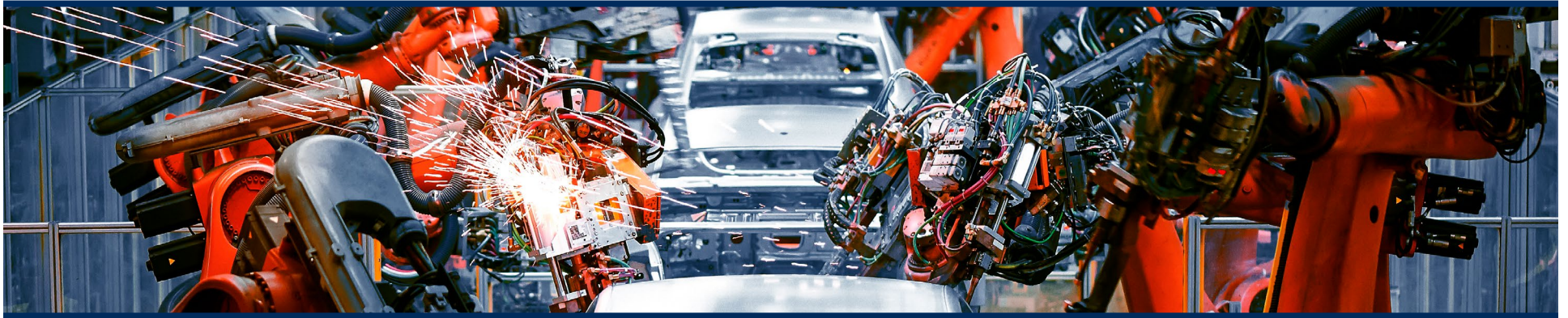
The **Temp1000Ex** temperature data logger carries hazardous location and intrinsically safe global certification (ATEX and IECEx). Includes ISO 17025 accredited calibration certificate.

- Electrical Protection Concepts: IEC: 60079-11 Ex ia – Ex ic, Intrinsic Safety Zones 0-2
- Equipment Protection Level: Ga – Gc, Zones 0-2
- Gas Groups: IIC
- Temperature Class: T4





# Production Monitoring



From diesel emission testing to electrical assembly, MadgeTech offers a wide array of data loggers for use in testing and manufacturing processes.

## Portable Data Acquisition Logger

The **Titan S8** is an 8-channel, remote access data acquisition logger with a full-color, 5 inch touchscreen interface for real-time monitoring.

- Wi-Fi and Ethernet Enabled
- Large Touchscreen Control
- Independent Channel Configuration
- Directly Accepts Thermocouple, RTD and Thermistor Probes
- Programmable Inputs



## Exhaust Temperature System

The **ETR101A** is an Exhaust Temperature Profiling Kit designed to profile the exhaust temperature of on-road vehicles and off-road equipment.

- TC101A Temperature Data Logger
- Type K Thermocouple
- IFC200 Data Logger Interface
- Weatherproof Enclosure



# MadgeTech 4 Software



The 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. This software can be downloaded for free from the MadgeTech website.

## MadgeTech 4 Software Customizable Features and Options

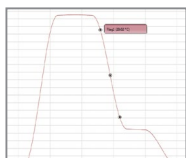
**MadgeTech 4 Software** can communicate with multiple loggers through multiple interface cables. Capable of simultaneous start, stop and download of over 100 devices, this software serves as your virtual command center for large scale facilities and small. Display your data in graphs, with tabbed views and multi-monitor support. Utilize the infinite graphing flexibility by combining channels and datasets as desired. All graphing makes use of accelerated graphics hardware for real-time updating and high performance visuals.

MadgeTech 4 Software is designed with a built-in database for automatic storage of downloaded data. The look and feel is organized much like standard email programs to aid in user friendliness and ease of use. MadgeTech 4 Software also offers extensive alarming options across multiple devices, wireless and non-wireless. Alarm output options include email, on-screen, text message and run-a-program alerts.

MadgeTech 4 Software has a powerful and comprehensive statistics system that allows the user to customize and view statistics as desired. Another feature is customizable engineering units. This enables users to support and program devices with many different unit types as well as the ability to display them as an alternate unit if desired.



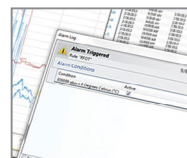
Cooling Flags



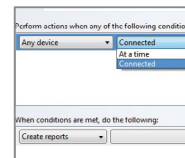
Graph View

Time	Time Zone	Delta
1:13:37 PM	-04:00	-00:00:00
1:14:37 PM	-04:00	+00:01:00
1:15:37 PM	-04:00	+00:02:00
1:16:37 PM	-04:00	+00:03:00
1:17:37 PM	-04:00	+00:04:00
1:18:37 PM	-04:00	+00:05:00
1:19:37 PM	-04:00	+00:06:00
1:20:37 PM	-04:00	+00:07:00
1:21:37 PM	-04:00	+00:08:00
1:22:37 PM	-04:00	+00:09:00
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1:24:37 PM	-04:00	+00:11:00
1:25:37 PM	-04:00	+00:12:00

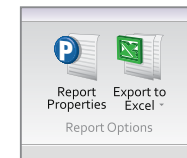
Tabular Data View



Alarm Notifications



Automation



Export to Excel

## Software Features

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