DATASHEET

# ETR101A

MadgeTech

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MADGETECH
WE BUILD DATA LOGGERS

# ETR101A

## Exhaust Temperature Data Logger

The ETR101A is an Exhaust Temperature Profiling Kit designed to profile the exhaust temperature of on-road vehicles and off-road equipment, including tractor trailers, buses, trucks over 14,000 lbs, waste water vehicles, and sweepers. The ETR101A comes assembled and includes a data logger, temperature sensor (thermocouple type K), weatherproof enclosure, interface cable, hex screwdriver and software. A ¼ inch NPT coupler and a compression fitting is required for assembling, but not included.

Setup is fast and easy. The ¼ inch NPT coupler is attached to the exhaust pipe; the use of a compression fitting allows for the thermocouple to be placed directly in the exhaust stream, providing for highly accurate profiling. The data logger, which is contained within the weatherproof enclosure, is then mounted to the vehicle.

Using the MadgeTech software, the logger is programmed to record for a set period, generally three to five days. Data is stored in the data logger, and is downloadable at any time via a PC or laptop computer. The complete temperature profile is then provided to the diesel particulate filter (DPF) manufacturer, aiding in the selection of the correct DPF for the exhaust system. Many DPF manufacturers, including Donaldson Corp., recommend the use of temperature profiling equipment, such as the MadgeTech ETR101A, to aid in the selection of the appropriate diesel particulate filter.

## FEATURES

- 10 Year Battery Life
- 1 Second Reading Rate
- Multiple Start/Stop Function
- Ultra High Speed Download
- 500,000 Reading Storage Capacity
- Memory Wrap
- Battery Life Indicator
- Optional Password Protection
- Programmable High and Low Alarms
- Field Upgradeable

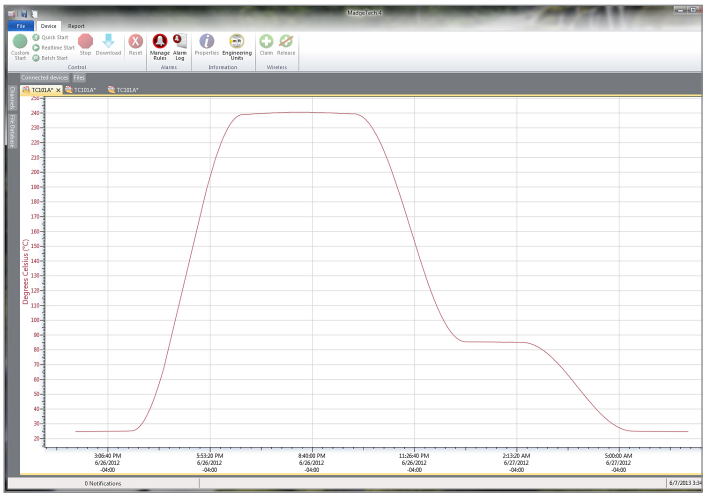
## BENEFITS

- Simple Setup and Installation
- Minimal Long-Term Maintenance
- Long-Term Field Deployment

## APPLICATIONS

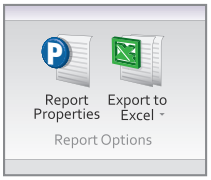
- Profile Exhaust Temperature of On-Road Vehicles and Off-Road Equipment

## MadgeTech 4 Software Features

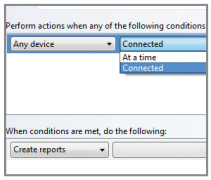


**Graph View**

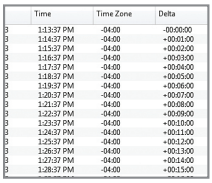
- Multiple graph overlay
- Statistics
- Digital calibration
- Zoom in/ zoom out
- Lethality equations (F0, PU)
- Mean Kinetic Temperature
- Full time zone support
- Data annotation
- Min./Max./Average lines
- Summary view



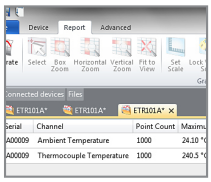

**Export to Excel**




**Automation**



**Tabular Data View**



**Statistics**

# Specifications

Specifications are subject to change without notice. Specific warranty remedy limitations apply. Call **(603) 456-2011** or go to **madgetech.com** for details.

## INTERNAL CHANNEL

| | |
|---|---|
| **Temperature Range** | -40°C to +80°C (-40°F to +176°F) |
| **Temperature Resolution** | 0.1°C (0.18°F) |
| **Calibrated Accuracy** | ±0.25°C (±0.45°F) |

## REMOTE CHANNEL

| | | | |
|---|---|---|---|
| **Thermocouple Types:** | K* | | |
| **Thermocouple Connection** | Pluggable screw terminal | | |
| **Cold Junction Compensation** | Automatic based on internal channel | | |
| **Max. Thermocouple Resistance** | 100 Ω | | |
| **Thermocouple Type** | **Range (°C)** | **Resolution** | **Accuracy**** |
| **K** | -270 to +899 | 0.1°C | ±2°C |

*Use of stainless steel braided thermocouples with the Waterbox101A may allow water to wick in through the cable and cause damage to the data logger.
**Thermocouple accuracy is specified with a 24 AWG.

## GENERAL

| | |
|---|---|
| **Start Modes** | Immediate start<br>Delay start up to 18 months<br>Multiple pushbutton start/stop |
| **Stop Modes** | Manual through software<br>Timed (specific date and time) |
| **Multiple Start/Stop Mode** | Start and stop the device multiple times without having to download data or communicate with a PC |
| **Real Time Recording** | May be used with PC to monitor and record data 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 without the password. |
| **Memory** | 500,000 readings; software configurable memory wrap<br>250,000 readings in multiple start/stop mode |
| **Wrap Around** | Yes |
| **Alarm** | User selectable high and low limits; blinking LED for alarm and low battery |
| **LEDs** | 2 status LEDs |
| **Reading Rate** | 1 reading every second to 1 every 24 hours |
| **Calibration** | Digital calibration through software |
| **Calibration Date** | Automatically recorded within device |
| **Battery Type** | 3.6 V lithium battery included; user replaceable |
| **Battery Life** | 10 years typical at a 15 minute reading rate |
| **Data Format** | Date and time stamped C, °F, K, °R; µV, mV, V |
| **Time Accuracy** | ±1 minute/month at 25 °C (77 °F)<br>(Stand alone mode) |
| **Computer Interface** | USB (interface cable required); 115,200 baud |
| **Operating System Compatibility** | Windows XP SP3 or later |
| **Software Compatibility** | Standard Software version 2.05.06 or later<br>Secure Software version 4.1.3.0 or later |
| **Operating Environment** | -20°C to +80°C (-4°F to +176°F)<br>0 to 100%RH |
| **Dimensions** | **Data Logger:** 1.4 in x 2.1 in x 0.6 in (35 mm x 54 mm x 15 mm)<br>**Waterbox:** 3.5 in x 2.9 in x 1.1 in (87 mm x 73 mm x 27 mm)<br>**Thermocouple Wire:** 24 gauge, 30 in (762 mm)<br>**Thermocouple Probe:** 6 in x .125 in dia. (153 mm x 3.2 mm) |
| **Material** | **Data Logger:** ABS plastic<br>**Enclosure:** Aluminum, Polycarbonate, Stainless Steel |
| **Weight** | **Complete Kit**: 9.5oz (269g) |
| **Approvals** | CE |

**BATTERY WARNING:** FIRE, EXPLOSION AND SEVERE BURN HAZARD. DO NOT RECHARGE, DISASSEMBLE, HEAT ABOVE 100 °C (212 °F), INCINERATE, CRUSH, OR EXPOSE CONTENTS TO WATER.

# Ordering Information

| | | |
|---|---|---|
| **ETR101A** | PN 900098-00 | Exhaust Temperature Data Logging System with Type K Thermocouple. *Other types available upon request. Contact MadgeTech for details.* |
| **IFC200** | PN 900298-00 | USB interface cable |
| **LTC-7PN** | PN 900352-00 | Replacement battery for the ETR101A |

For Quantity Discounts call (603) 456-2011 or email **sales@madgetech.com**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