

ETR101A

Exhaust Temperature Data
Logging System



PRODUCT USER GUIDE

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TABLE OF CONTENTS

2 Product Overview

2 Installation Guide

2 Device Operation

4 Device Maintenance

4 Need Help?

PRODUCT USER GUIDE

Product Notes

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 .25 inch NPT coupler and a compression fitting is required for assembling, but not included.

Setup is fast and easy. The .25 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.

Installation Guide

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 madgetech.com. Follow the instructions provided in the Installation Wizard.

Device Operation

Connecting and Starting the Data Logger

1. Once the software is installed and running, plug the interface cable into the data logger.
2. Connect the USB end of the interface cable into an open USB port on the computer.
3. The device will appear in the Connected Devices list, highlight the desired data logger.
4. 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.*)
5. The status of the device will change to **Running**, **Waiting to Start** or **Waiting to Manual Start**, depending upon your start method.
6. 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

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

PRODUCT USER GUIDE

Device Operation (cont'd)

Connecting to Exhaust Pipe

Additional Materials: 68 x 4 x 4 weatherhead and a .25 inch NPT Coupler

Weld the Coupler into the exhaust pipe within 6 inches of the inlet of the muffler. Mount the waterbox to the truck and insert the thermocouple into the dapier and use the weatherhead to secure it down.

Alarm Settings

To change the settings for the alarm:

1. Select **Alarm Settings** from the **Device Menu** in the MadgeTech Software. A window will appear allowing to set the high and low alarms and warning alarms.
2. Press **Change** to edit the values.
3. Check **Enable Alarm Settings** to enable the feature and check each high and low, warn and alarm box to activate it. The values can be entered in the field manually or by using the scroll bars.
4. Click **Save** to save the changes. To clear an active alarm or warn, press the **Clear Alarm** or **Clear Warn** button.
5. To set an alarm delay, enter the duration of time into the **Alarm Delay** box in which the readings can be outside of the alarm parameters.

Set Password

To password protect the device so that others cannot start, stop or reset the device;

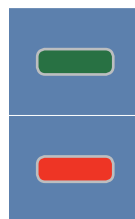
1. In the **Connected Devices** panel, click the device desired.
2. On the **Device** Tab, in the **Information** Group, click **Properties**. Or, right-click the device and select **Properties** in the context menu.
3. On the **General** Tab, click **Set Password**.
4. Enter and confirm the password in the box that appears, then select **OK**.

Thermocouple Type

To change the thermocouple type:

1. In the **Connected Devices** panel, click the device desired.
2. On the **Device** tab, in the Information Group, click **Properties**. Users can also right-click the device and select Properties in the context menu.
3. On the **General** tab, change the Thermocouple type in the drop down menu.
4. Apply these changes, there will be a prompt to reset the device, select **Yes**.

LED Indicators



Status: Green LED blinks every 5 seconds to indicate the device is logging.

Alarm: Red LED blinks every 1 second to indicate an alarm condition is set.

Multiple Start/Stop Mode Activation

- **To start device:** Press and hold the pushbutton for 5 seconds, the green LED will flash during this time. The device has started logging.
- **To stop the device:** Press and hold the pushbutton for 5 seconds, the red LED will flash during this time. The device has stopped logging.

Trigger Settings

The device can be programmed to only record based off user configured trigger settings.

1. In the **Connected Devices** panel, click the device desired.
2. On the **Device** Tab, in the Information Group, click **Properties**. Users can also right-click the device and select **Properties** in the context menu.
3. Select Trigger Settings from the Device Menu: Start Device or Identify Device and Read Status.

Note: Trigger formats are available in Window and Two Point (bi-level) mode. Window allows for one range of temperature monitoring and two point mode allows for two ranges of temperature monitoring.

NEED HELP?

Device Maintenance

Battery Replacement

Materials: Small Phillips Head Screwdriver,
3/32" HEX Driver and a Replacement Battery (LTC-7PN)

1. Remove the Data Logger from the Waterbox101A using the Allen Key.
2. Puncture the center of the back label with the screw driver and unscrew the enclosure.
3. Remove the battery by pulling it perpendicular to the circuit board.
4. Insert the new battery into the terminals and verify it is secure.
5. Screw the enclosure back together securely.

Note: Be sure not to over tighten the screws or strip the threads.

Recalibration

Recalibration is recommended annually. To send devices back for calibration, visit [madgetech.com](https://www.madgetech.com).



Product Support & Troubleshooting:

- Visit our Resources online at [madgetech.com/resources](https://www.madgetech.com/resources).
- Contact our friendly Customer Support Team at (603) 456-2011 or support@madgetech.com.



MadgeTech 4 Software Support:

- Refer to the built-in help section of the MadgeTech 4 Software.
- Download the MadgeTech 4 Software Manual at [madgetech.com](https://www.madgetech.com).
- Contact our friendly Customer Support Team at (603) 456-2011 or support@madgetech.com.

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