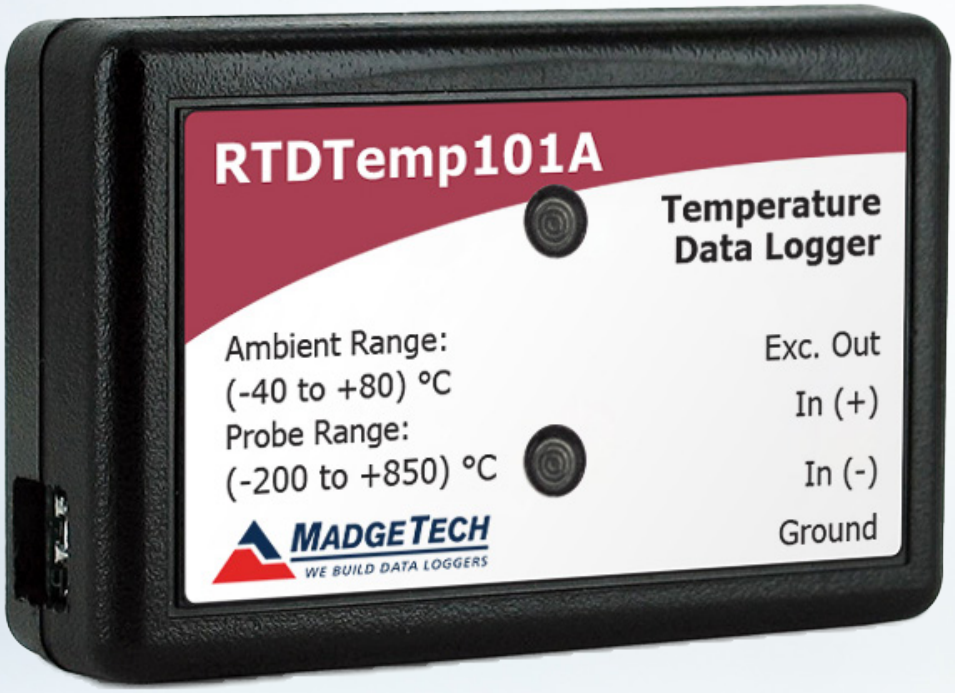
RTDTemp101A

RTD-Based Temperature Data Logger



Product User Guide

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Product Overview

Don't be fooled by the small size, the RTDTemp101A temperature data logger offers a wealth of features with a compact form factor about the size of a matchbox. When used with an external RTD probe, this data logger measures temperatures from -200 °C to 850 °C (-328 °F to +1562 °F).

The low power design of this data logger provides a battery life of up to 10 years but still delivers ultra-fast download speeds. The RTDTemp101A can store over a million readings and offers a software configurable memory wrap option. In addition to having a pushbutton start stop, the device also can be programmed to a delay start up to 18 months in advance.

Installation Guide

Installing the Interface Cable

IFC200 (sold separately) — 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.

Wiring the Data Logger

Wiring Options

For 4-wire RTD probes, connect the four lead wires to your RTD logger as shown in the figure.

For 3-wire RTD probes, short inputs 3 and 4 together, then connect the lead wires to inputs 1, 2 and 3.

For 2-wire RTD probes, short inputs 3 and 4 together and inputs 1 and 2 together, then connect the RTD lead wires to inputs 2 and 3.

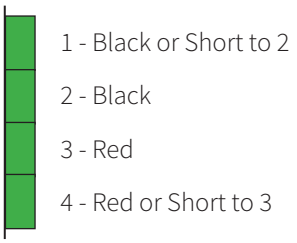
Warning: *Note the polarity instructions. Do not attach wires to the wrong terminals.*

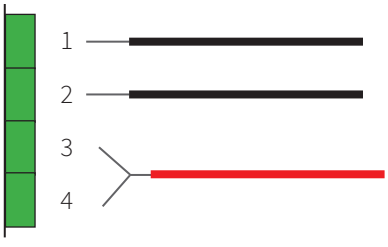
100 Ω, 2 or 4 wire RTD probes are recommended for the most accurate performance. Most 100 Ω, 3 wire RTD probes will work, but MadgeTech cannot guarantee the accuracy. To determine whether or not the 3-wire RTD probe will work, the resistance between the two same colored wires should be less than 1 Ω.

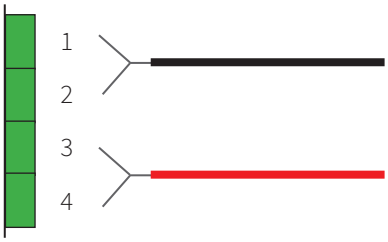
Note: *Please contact the manufacturer of the RTD probe for questions on the resistance*

Key

1. Ground
2. Measurement (-) Input
3. Measurement (+) Input
4. Exitation Current Out (+)







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.*

Download Data from the Data Logger

1. Connect the data 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**.
4. Downloading will offload and save all the recorded data to the PC.

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.

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.*

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**.

LED Status Indicators

- **Green LED blinks:** 10 seconds to indicate logging and 15 seconds to indicate delay start mode.
- **Red LED blinks:** 10 seconds to indicate low battery and/or memory and 1 second to indicate an alarm condition.

Multiple Start/Stop Mode Activation

1. **To start device:** Press and hold the pushbutton for 5 seconds, the green LED will flash during this time. The device has started logging.
2. **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.

Device Maintenance

Battery Replacement

Materials: Small Phillips Head Screwdriver and a Replacement Battery (LTC-7PN)

1. Puncture the center of the back label with the screw driver and unscrew the enclosure.
2. Remove the battery by pulling it perpendicular to the circuit board.
3. Insert the new battery into the terminals and verify it is secure.
4. 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.**

Need Help?

Product Support & Troubleshooting

- Visit our Resource Library online at **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**.
- Contact our friendly Customer Support Team at **(603) 456-2011** or **support@madgetech.com**.

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