# TCTemp1000
## Thermocouple-Based Temperature Data Logger



# PRODUCT USER GUIDE

To view the full MadgeTech product line, visit our website at **madgetech.com**.

CE

MADE IN THE USA

**MADGETECH**
*WE BUILD DATA LOGGERS*

# PRODUCT USER GUIDE

## Product Overview

The TCTemp1000 is a rugged, submersible, battery powered, thermocouple-based temperature data logger. This is a stand-alone, compact portable, easy to use device to measure and record up to 16,383 measurements per channel. The storage medium is non-volatile solid state memory, providing maximum data security even if the battery becomes discharged.

### Water Resistance

The TCTemp1000 is fully submersible and is rated IP68. It can be placed in environments with up to 140 feet (42 m) of water.

## Installation Guide

### Installing the Software

The Software can be downloaded from the MadgeTech website at **madgetech.com**. Follow the instructions provided in the Installation Wizard.

### Installing the Interface Cable

IFC200 (sold separately) — Connect the device into a USB port with the interface cable and install the drivers.

### Ordering Information

- 901620-00 — TCTemp1000
- 900298-00 — IFC200
- 901747-00 — TLH-5902 Replacement Battery

## 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 data logger will automatically appear under **Connected Devices** within the software.
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** or **Waiting to 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, unless user selectable memory wrap is enabled. 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 data logger to the computer with 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.

# PRODUCT USER GUIDE

## Device Operation (cont'd)

### Thermocouple Type

To change the thermocouple type in the MadgeTech software:

1. Select the **Device Menu**, then **Identify Device** and **Read Status**.

2. Select the **Device Detail** tab, then **Thermocouple Type**.

3. Click on the **Change** button in the Thermocouple Type window.

4. Select the correct thermocouple type from the drop down list.

5. Click on the **Save** button to store the thermocouple type in the device then click **OK**.

### Changing the Thermocouple

1. Loosen the dome nut on the cable gland.

2. Unscrew the large diameter end cover.

3. Unplug the thermocouple and pull it through the cable gland.

4. Plug in the new thermocouple and screw the cover back onto the device.

5. Tighten the dome nut on the cable gland to ensure the device is secure.

## Device Maintenance

### O-Rings

O-ring maintenance is a key factor when properly caring for the TCTemp1000. The O-rings ensure a tight seal and prevent liquid from entering the inside of the device. Please refer to the application note **O-Rings 101: Protecting Your Data**, found at **madgetech.com**, for information on how to prevent O-ring failure.

### Battery Replacement

**Materials:** Small Needle Nose Pliers and TLH-5902 Battery

1. Carefully unscrew the sensor end cap and pull the electronics out.

2. The battery is the purple cylinder on the circuit board. Gently pull out the old battery.

3. Insert the new battery one lead at a time, using pliers to fully push the leads into the sockets. *Note: The battery should be flat against the circuit board, and the positive lead should be closest to the communications jack.*

4. Ensure the circuit board is inserted into the white plastic bushing. The sensor cable should not be twisted, or kinked. From the connection to the circuit board, it should run up towards the battery, then down to the sensor.

5. Insert the electronics back into the tube and carefully screw the cap on.

### Recalibration

MadgeTech recommends annual recalibration. To send devices back for calibration, visit **madgetech.com**.

# NEED HELP?

## Product Support & Troubleshooting

- Visit our Resource Library online at **madgetech.com/resources**.

## 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**.

**MADGETECH**
*WE BUILD DATA LOGGERS*