

Device Maintenance

**Battery Replacement**

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

- Open the ThermoVault and remove the data logger.
- Puncture the center of the back label with the screw driver and unscrew the enclosure.
- Remove the battery by pulling it perpendicular to the circuit board.
- Insert the new battery into the terminals and verify it is secure.
- Screw the enclosure back together securely.

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

**Battery Warning (TC4000-ST)**

**WARNING: FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 80°C (176°F).**

**Recalibration**

The ThermoVault standard calibration is one point at 25°C for the internal temperature sensor and 0mV for the thermocouple channel.

**Pricing:**  
Recalibration traceable to NIST      \$60.00  
Recalibration                                \$40.00

**Additional:**  
As Found Data                                \$15.00  
Additional Points                               \$15.00 per point  
Channel (1st)                                    \$30.00 at 25°C  
    \$45.00 at custom point  
Additional Channels                            \$3.00 at 25°C  
    \$4.50 at custom point

To send the devices back, visit [www.madgetech.com](http://www.madgetech.com), select Services then RMA Process.

Part Number	ThermoVault
Internal Channel Temperature Sensor	Semiconductor
Internal Channel Temperature Sensor	0.1°C
Internal Channel Calibrated Accuracy	±0.5°C
Remote Channel Temperature Sensor Range, Resolution & Accuracy	*See Table for Details
Cold Jct. Compensation	Automatic
Channels	1 internal & 1 remote
Memory	16,383/channel
Sample Rate	2 seconds up to 12 hours
LED Indicator	None
Required Interface Package	IFC110 or IFC200
Baud Rate	2,400
Typical Battery Life	1 year
Operating Environment	**See Table on Inner Flap, 0 to 95%RH (non-condensing)
Material	304 stainless steel w/ PTFE insulation
Dimensions	4.8" x 4.8" x 2.5", (122mm x 122m x 65mm)
Approvals	CE

\* Remote Channel Range, Resolution & Accuracy

Thermocouple	Range (°C)	Resolution	Accuracy
J	-210 to +760	0.1°C	±0.5°C
K	-270 to +1370	0.1°C	±0.5°C
T	-270 to +400	0.1°C	±0.5°C
E	-270 to +980	0.1°C	±0.5°C
R	-50 to +1760	0.5°C	±2.0°C
S	-50 to +1760	0.5°C	±2.0°C
B	+50 to +1820	0.5°C	±2.0°C
N	-270 to +1300	0.1°C	±0.5°C

Specifications subject to change.

See MadgeTech's terms and conditions at [www.madgetech.com](http://www.madgetech.com)

ThermoVault



**ThermoVault**  
Single Channel Oven Temperature Recorder

**MadgeTech, Inc.**

PO Box 50 • 879 Maple Street, Contoocook, NH 03229  
Phone 603.456.2011 • Fax 603.456.2012  
[www.madgetech.com](http://www.madgetech.com) • [info@madgetech.com](mailto:info@madgetech.com)

## Product Notes

### Operating Environment

The ThermoVault is an oven temperature recorder that consists of a TC4000-ST data logger inside a thermal enclosure.

The thermal enclosure prevents the data logger from heating up for a certain period of time. The chart below outlines the maximum temperature and time duration to which the device can be exposed.

\*\*Operating Environment: Maximum Exposure Time

Ambient Temperature	Exposure Time
100°C (212°F)	110 min
150°C (302°F)	62 min
200°C (392°F)	45 min
250°C (482°F)	35 min
260°C (500°F)	33 min
300°C (572°F)	30 min
350°C (662°F)	25 min

### Thermocouples and the Software

To change the thermocouple type in the MadgeTech software:

- Select **Thermocouple Type** from the **Device Menu**.
- Click on the **Change** button in the Thermocouple Type window.
- Select the correct thermocouple type from the drop down list.
- Click on the **Save** button to store the thermocouple type in the device.
- Click **OK**.

## Installation Guide

### Installing the Interface cable

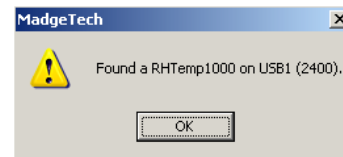
- IFC200, IFC202 or IFC300  
Refer to the "Quick Start Guide" included in the package.
- IFC110, IFC102 or IFC103  
Plug the serial cable into the port and verify it is secure.
- USB-1 or USB-101  
Install the USB drivers from the CD provided in the kit, then plug the USB cable into the computer and the serial cable into the serial port.

### Installing the software

Insert the Software CD in the CD-ROM Drive. If the autorun does not appear, locate the drive on the computer and double click on **Autorun.exe**. Follow the instructions provided in the Wizard.

### Connecting the data logger

- Once the software is installed and running, plug the interface cable into the data logger.
- Click the **Communication Menu**, then **Auto Configure Port**.
- After a moment, a box similar to the following will appear;



- Click **OK**. The **Device Status** box will appear. Click **OK**.
- At this point, communications have been configured for your logger. These settings can be found under the **Communication Menu**.

**Note:** For additional installation instructions refer to your "Data Logger & Software Operating Manual".

## Device Operation

### Starting the data logger

- Click **Device Menu** then **Start Device**.
- Choose the desired start method.
- Choose the start parameters by selecting a **Reading Rate** suitable for your application.
- Enter in any other desired parameters and click **Start**.
- A box will appear stating the data logger has been started. Click **OK**.



- 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

- Connect the data logger to the interface cable.
- Click the **Device Menu** then **Read Device Data**. This will offload all recorded data onto the PC.

## Technical Support

Visit [www.madgetech.com](http://www.madgetech.com), or call (603) 456-2011. Technical support is also available by e-mailing [support@madgetech.com](mailto:support@madgetech.com)

Additional product information is available by e-mailing [info@madgetech.com](mailto:info@madgetech.com).