MADGETECH
WE BUILD DATA LOGGERS

ThermoVault

Description	ThermoVault
Internal Channel Temperature Sensor	Semiconductor
Internal Channel Temperature Resolution	0.1 °C (0.018 °F)
Internal Channel Calibrated Accuracy	±0.25 °C (±0.45 °F)
Remote Channel Temperature Sensor Range, Resolution & Accuracy	*See Table for Details
Cold Jct. Compensation	Automatic
Channels	1 internal & 1 remote
Memory	500,000 readings; software configurable memory wrap 250,000 readings in multiple start/stop mode
Reading Rate	1 reading every second up to 1 reading every 24 hours
LED Indicator	Red and Green
Required Interface Package	IFC200
Baud Rate	115,200
Typical Battery Life	10 years typical at a 15 minute reading rate
Operating Environment	**See Table on Inner Flap, 0 %RH to 95 %RH (non-condensing)
Material	304 stainless steel w/ PTFE insulation
Dimensions	5.1 in x 4.5 in x 2.5 in (129 mm x 113 mm x 64 mm)
Weight	3.5 lb (1590 g)
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

Battery Warning

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).

Specifications subject to change.
See MadgeTech's terms and conditions at www.madgetech.com

ThermoVault
Single Channel Oven Temperature Data Logger

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visit our website at www.madgetech.com.

Product Notes

Operating Environment*

The ThermoVault is an oven temperature recorder that consists of a TC101A-ST data logger inside a thermal enclosure. The thermal enclosure acts as a buffer and allows the device to be placed in higher operating environments for certain durations 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 (°C)	Maximum Duration in Minutes
100 °C (212 °F)	136
125 °C (257 °F)	100
150 °C (302 °F)	80
175 °C (347 °F)	66
200 °C (392 °F)	56
225 °C (437 °F)	49
250 °C (500 °F)	44
275 °C (527 °F)	39
300 °C (572 °F)	36
325 °C (617 °F)	32
350 °C (662 °F)	30

LEDs

- 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

Thermocouple Type

To change the thermocouple type in the MadgeTech software:
- In the Connected Devices panel, click the device desired.
- On the Device Tab, in the Information Group, click Properties. Or, right-click the device and select Properties in the context menu.
- On the General Tab, change the Thermocouple type in the drop down menu.
- Apply these changes, there will be a prompt to reset the device, select yes.

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.

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.

Alarm

Programmable high and low limits; LED alarm is activated when temperature reaches or exceeds set limits.

Installation Guide

Installing the Interface cable

- IFC200
  Insert the device into a USB port. The drivers will install automatically.

Installing the software

Insert the Software USB Stick in an open USB port. 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.

Device Operation

Connecting and Starting the data logger

- Once the software is installed and running, plug the interface cable into the data logger.
- Connect the USB end of the interface cable into an open USB port on the computer.
- The device will appear in the Connected Devices list, highlight the desired data logger.
- 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.)
- The status of the device will change to "**Running**", "**Waiting to Start**" or "**Waiting to Manual Start**", depending upon your start method.
- 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 logger to the interface cable.
- Highlight the data logger in the Connected Devices list. Click "**Stop**" on the menu bar.
- Once the data logger is stopped, with the logger highlighted, click "**Download**". You will be prompted to name your report.
- Downloading will offload and save all the recorded data to the PC.

Device Maintenance

Battery Replacement

Materials: Small Phillips Head Screwdriver and 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.

Recalibration

The ThermoVault standard calibration is two points at 25 °C and 60 °C for the internal temperature sensor and 0 mV for the thermocouple channel.

Additional Services:

Custom calibration and verification point options available, please call for pricing.

Call for custom calibration options to accommodate specific application needs.
Prices and specifications subject to change. See MadgeTech's terms and conditions at www.madgetech.com
To send devices to MadgeTech for calibration, service or repair, please use the MadgeTech RMA Process by visiting www.madgetech.com, then under the services tab, select RMA Process.