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WE BUILD DATA LOGGERS

| Description | ThermoVault1000-FP* | ThermoVault1000-P |
|---|---|---|
| Temperature Sensor | 100 Ω Platinum RTD | |
| Temperature Sensor | 0.1 °C | |
| Calibrated Accuracy | ±0.5 °C | |
| Memory | 32,767 | |
| Reading Rate | 1 reading every 2 seconds up to 1 reading every 12 hours | |
| LED Indicator | None | |
| Required Interface Package | IFC200 | |
| Baud Rate | 2,400 | |
| Typical Battery Life | 1 year | |
| Data Logger Operating Environment | Temp1000FP: -40 °C to +150 °C, 0 %RH to 100 %RH, submersible up to 150 ft | Temp1000P: -40 °C to +80 °C**, 0 %RH to 100 %RH, submersible up to 150 ft |
| Operating Environment with Thermal Barrier | -200 °C to +350 °C (230 °C with O-Ring), 0 %RH to 100 %RH | |
| Material | 304 stainless steel w/ PTFE insulation | |
| Enclosure Dimensions | 9.3 in x 2.6 in dia. (236 mm x 66 mm dia.) | |
| Probe Dimensions | 10.8 in x 0.125 in dia. (275 mm x 4 mm dia.) | 6.75 in x 0.1875 in dia. (172 mm x 5 mm dia.) |
| Weight | 3.2 lb | 3.2 lb |
| Approvals | CE | |

*The minimum bend radius of the probe is 2 inches, bending only once. Avoid bending the probe anywhere along the first 2.5 inches from the tip.

**Extended operating temperature ranges available. Contact factory for details.

| Ambient Temperature | Time in Air to Max Internal Temp | | Time in Liquid to Max Internal Temp | |
|---|---|---|---|---|
| | *Temp1000FP* | *Temp1000P* | *Temp1000FP* | *Temp1000P* |
| 100 °C | n/a | 600 min | n/a | 130 min |
| 150 °C | n/a | 315 min | n/a | 120 min |
| 200 °C | 540 min | 240 min | 130 min | 75 min |
| 250 °C | 390 min | 180 min | 120 min | 60 min |
| 300 °C | 300 min | 165 min | n/a | n/a |
| 350 °C | 270 min | 150 min | n/a | n/a |

## *Battery Warnings*

***Temp1000P: 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).***

***Temp1000FP: WARNING: FIRE, EXPLOSION, AND SEVERE BURN 3B5700: HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 150 °C (302 °F).***

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

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# Product Information Card

## ThermoVault1000-FP and ThermoVault1000-P


**ThermoVault1000-FP**
Thermal Barrier System with Temp1000FP

**ThermoVault1000-P**
Thermal Barrier System with Temp1000P

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# Product Notes

## Getting Started

- The ThermoVault1000FP consists of a Temp1000FP data logger and a thermal enclosure. The ThermoVault1000P consists of a Temp1000P data logger and thermal enclosure. Both the Temp1000FP and Temp1000P may be used alone as standalone data loggers. The Temp1000FP (without thermal enclosure) is rated up to 150 °C, and the Temp1000P (without thermal enclosure) is rated up to 125 °C. When used with the thermal enclosure, the data logger can withstand a higher temperature for a specific period of time. The chart on the first page of this card lists the temperature vs. time durations.
- To access the communication port, unscrew the end of the thermal enclosure and carefully remove the data logger. The lid will be attached to the probe of the data logger by a compression fitting. Unscrew the key-ring end cap of the data logger to access the communication port.
- To remove the lid from the data logger, loosen the compression fitting by unscrewing it and then remove it from the probe.
- The logger must be removed from the barrier immediately after removal from the heated environment. Be careful, the logger may be very hot. Never quench the barrier in a cool liquid to cool it down.
- The thermal enclosure is very fragile. The primary insulation is a glass dewar flask.

## Operating Environment

Both devices can be used in environments between -200 °C and 350 °C.

## O-Rings

O-ring maintenance is a key factor when properly caring for the Temp1000P. The o-ring ensures a tight seal which prevents liquid from entering the inside of the device.
Please refer to the application note "O-Rings 101: Protecting Your Data Logger", found on the MadgeTech website, for information on how to prevent O-ring failure.

## Wet vs. Dry Applications

When being used in wet applications ensure the compression fitting is secure and o-ring is installed and does not exceed 260 °C. Remove the o-ring for dry applications.

# Installation Guide

## Installing the Interface cable

- IFC200
  Refer to the "Quick Start Guide" included in the package.

## 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

*ThermoVault1000-FP:* The Temp1000FP in the ThermoVault1000-FP system must be sent to MadgeTech for battery replacement.

*ThermoVault1000-P*: The Temp1000P in the ThermoVault1000-P system does have a user replaceable battery.

**Materials for ThermoVault1000-P battery replacement**:
Small Needle Nose Pliers and a Replacement Battery (TLH-5902)

- Carefully unscrew the sensor end cap and pull the electronics out.
- The battery is the purple cylinder on the circuit board. Gently pull out the old battery.
- Insert the new battery one lead at a time, using pliers to 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.***

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

## Recalibration

The ThermoVault1000-FP standard calibration is two points at 50 °C and 150 °C. The ThermoVault1000-P standard calibration is two points at 30 °C and 80 °C.

**Pricing:**

| | |
|---|---|
| Recalibration traceable to NIST | $70.00 |
| Recalibration | $40.00 |

**Additional Services:**

| | |
|---|---|
| Verification Point | $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 |

***Prices and specifications subject to change. See MadgeTech's terms and conditions at www.madgetech.com***
***To send the devices back, visit www.madgetech.com, select* Services *then* RMA Process.**