

Description	ThermoVault140-PT-1
Temperature Sensor	100 Ω Platinum RTD
Temperature Resolution	0.01 °C
Memory	32,700 readings
Sample Rate	1 seconds up to 24 hours
Required Interface Package	IFC400
Baud Rate	125,000
Typical Battery Life	1 year (1 minute reading rate at +25 °C/+77 °F)
Data Logger Operating Environment	-40 °C to +140 °C (-40 °F to +284 °F), 0%RH to 100%RH
Operating Environment with Thermal Barrier	Refer to the Time vs. Temperature Chart
Material	Enclosure: 300 Series Stainless Steel Seals: PTFE & Silicone Rubber Insulation: Dewar Flask & PTFE
Enclosure Dimensions	2.50 in OD x 6.5 in L (63.5 mm OD x 165 mm L)
Probe Dimensions	Probe Tip: 1.7 in x 0.125 in dia. (42 mm x 3.2 mm dia.) Flexible Portion: 22 in x 0.062 in dia. (559 mm x 1.6 mm dia.)
Weight	2.5 lb (1135 g)
Approvals	CE

#### ThermoVault140 Time vs. Temperature Chart

Ambient	Time in Air to Max Internal Temp	Time in Liquid to Max Internal Temp
150 °C	525 minutes	285 minutes
175 °C	360 minutes	165 minutes
200 °C	285 minutes	120 minutes
225 °C	240 minutes	95 minutes
250 °C	205 minutes	80 minutes
275 °C	180 minutes	n/a
300 °C	165 minutes	n/a
325 °C	150 minutes	n/a
350 °C	140 minutes	n/a

#### 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 140 °C (284 °F).**

*Specifications subject to change.*

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

**MadgeTech, Inc.**  
6 Warner Road • Warner, NH 03278  
Phone 603.456.2011 • Fax 603.456.2012  
[www.madgetech.com](http://www.madgetech.com) • [info@madgetech.com](mailto:info@madgetech.com)

DOC-1283035-00 REV 3 2015.04.10

# Product Information Card

## ThermoVault140 ThermoVault140-PT-1



**ThermoVault140**  
Thermal Barrier

**ThermoVault140-PT-1**  
Thermal Barrier System with  
HiTemp140-PT-1

## Product Notes

The ThermoVault140-PT-1 data logging system includes a HiTemp140-PT-1 data logger and a thermal barrier. The HiTemp140-PT-1 may be used alone as a standalone data logger. The HiTemp140 series is rated up to +140 °C. When used with the thermal enclosure, the data logger can withstand a higher temperature for a specific period of time. Please refer to the Time vs. Temperature Chart for more information.

### Getting Started

#### Required Materials: ½" open-ended wrench

To start the data logger, the device must be removed from the thermal enclosure.

1. Unscrew the end of the thermal enclosure and carefully remove the data logger. The lid of the thermal barrier will be attached to the probe of the data logger by a compression fitting.
2. To remove the lid of the thermal barrier from the data logger, loosen the compression fitting using a ½" open-ended wrench and then remove it from the probe.

**Notes:** 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

The HiTemp140 series is rated for use in an environment of -40 °C to +140 °C. Please refer to the Time vs. Temperature Chart for operating environment specifications of the system.

### O-Rings

O-Ring maintenance is a key factor when properly caring for the HiTemp140 and ThermoVault140. 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 the o-ring is installed. When used in wet applications the maximum operating environment cannot exceed +250 °C. Remove the O-Ring for dry applications.

## Installation

### Installing the Software

Insert the MadgeTech 4 Software Flash Drive into an open USB port on the PC. If the autorun does not appear, locate the drive on the computer and double click on **Autorun.exe**. Follow the instructions provided in the Installation Wizard to install the MadgeTech Software. Software can also be downloaded from the MadgeTech website at the following link: [www.madgetech.com/software-download](http://www.madgetech.com/software-download).

### Installing the Interface Cable

#### - IFC400:

Follow the instructions provided in the Installation Wizard to install the USB Interface Drivers. Drivers can also be downloaded from the MadgeTech website at the following link: [www.madgetech.com/software-download](http://www.madgetech.com/software-download)

## Device Operation

### Connecting and Starting the data logger

- Once the software is installed and running, plug the interface cable into the docking station.
- Connect the USB end of the interface cable into an open USB port on the computer.
- Place the data logger into the docking station.
- The data logger will automatically appear under **Connected Devices** within the software.
- 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 docking station 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.*

### Stopping and Downloading Data from the Data Logger

- Place the logger into the docking station.
- 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: ER1425S-HT Battery

- Unscrew the bottom of the logger and remove the battery.
- Place the new battery into the logger. Note the polarity of the battery.
- Screw the cover back onto the logger.

### Recalibration

The HiTemp140-PT-1 standard calibrations are two points at +30 °C and +140 °C.

#### Pricing:

Recalibration traceable to NIST	\$90.00
Recalibration	\$40.00

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](http://www.madgetech.com)

To send devices to MadgeTech for calibration, service or repair, please use the MadgeTech RMA Process (next section).