MADGETECH
WE BUILD DATA LOGGERS

ThermoVault

Oven Temperature Profiling System

The ThermoVault is a thermally insulated, battery powered, stand alone, thermocouple-based temperature data logger used for the thermal profiling of ovens. The device records temperature data inside an oven to be later downloaded to the user's PC.

The ThermoVault will measure and record over 1,000,000 measurements per channel. It can withstand an oven temperature of up to 350 °C (662 °F) for up to 30 minutes when properly sealed. The devices real time clock ensures that all data is time and date stamped. The storage medium is non-volatile solid state memory, providing maximum data security even if the battery becomes discharged. The device can be started and stopped directly from your computer. The ThermoVault makes data retrieval quick and easy. Plug it in using an IFC200 (sold separately) and our user-friendly software does the rest.

Features

- 10 Year Battery Life
- 1 Second Reading Rate
- Multiple Start/Stop Function
- Ultra High Speed Download
- 1,047,552 Reading Storage Capacity
- Memory Wrap
- Battery Life Indicator
- Optional Password Protection
- Programmable High and Low Alarms
- Field Upgradeable

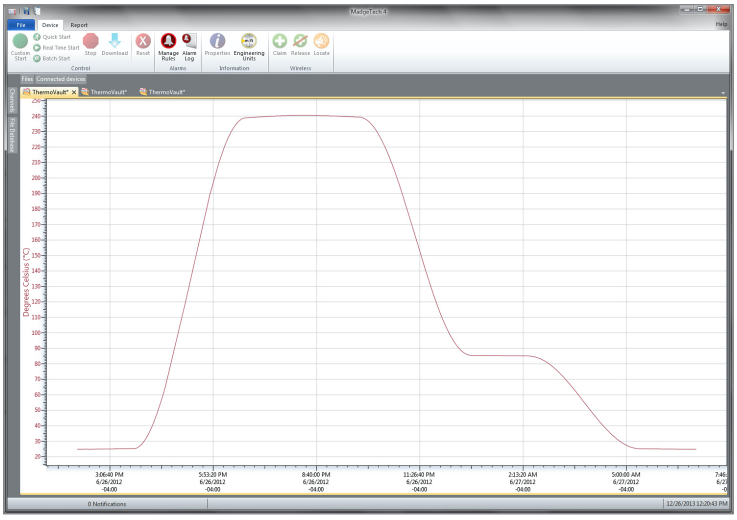
Benefits

- Simple Setup and Installation
- Minimal Long-Term Maintenance

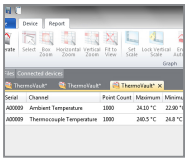
Applications

- Extreme Temperature Monitoring
- Oven Profiling
- Powder Coating Cure Ovens
- Wet Coating Cure Ovens
- Conveyor Ovens
- Food Processing

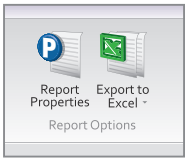
MadgeTech 4 Software Features



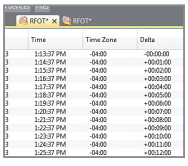
Graph View



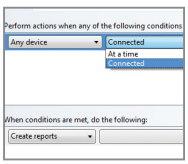
Statistics



Export to Excel



Tabular Data View



Automation

- Multiple graph overlay
- Statistics
- Digital calibration
- Zoom in/ zoom out
- Lethality equations (F0, PU)
- Mean Kinetic Temperature
- Full time zone support
- Data annotation
- Min./Max./Average lines
- Summary view

SPECIFICATIONS

Specifications are subject to change without notice. Specific warranty remedy limitations apply.

INTERNAL CHANNELS	
Temperature Range	-40 °C to +80 °C (-40 °F to +176 °F)
Temperature Resolution	0.1 °C (0.18 °F)
Calibrated Accuracy	±0.5 °C (0 °C to 50 °C)

REMOTE CHANNELS	
Thermocouple Included	Type K, 36 inch length
Thermocouple Connection	Fixed screw terminal (ST model)
Cold Junction Compensation	Automatic, based on internal channel

MAXIMUM EXPOSURE TIME
(based on initial temperature of 25 °C/77 °F)

Ambient Temperature	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 (482 °F)	44
275 °C (527 °F)	39
300 °C (572 °F)	36
325 °C (617 °F)	32
350 °C (662 °F)	30

GENERAL	
Start Modes	Immediate start Delay start up to 18 months Multiple pushbutton start/stop
Memory	1,047,552 readings 523,776 readings in multiple start/stop mode
LEDs	1 per channel and 2 status LEDs
Reading Rate	1 reading every second up to 1 reading every 24 hours
Alarm	Programmable high and low limits; alarm is activated when temperature reaches or exceeds set limits
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.
Calibration	Digital calibration through software
Calibration Date	Automatically recorded within device
Battery Type	3.6 V lithium battery included, **user replaceable**
Battery Life	10 years typical at a 15 minute reading rate
Data Format	Date and time stamped °C, °F, K, °R, µV, mV, V
Time Accuracy	±1 minute/month at +20 °C (+68 °F), stand alone data logging
Computer Interface	IFC200 USB Interface Cable; 115,200 baud
Operating System Compatibility	Windows XP SP3 or later
Operating Environment	**Data Logger:** -40 °C to +80 °C (-40 °F to +176 °F), 0 %RH to 95 %RH non-condensing **System:** -40 °C to +350 °C (-40 °F to +662 °F) time limited, 0 %RH to 95 %RH non-condensing
Dimensions	5.1 in x 4.5 in x 2.5 in (129 mm x 113 mm x 64 mm)
Weight	3.5 lbs (1590 g)

BATTERY 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).

Disclaimer & Terms of Use

Listed specifications can be used to determine maximum allowable exposure times for the TC101A with ThermoVault. The barrier extends the operating temperature of the logger up to 350 °C (662 °F).

Both the data logger and ThermoVault must be at ambient temperature, approximately 25 °C (77 °F) before being placed in the extreme temperature environment. Immediately following exposure to high temperature, the data logger should be removed from the ThermoVault, using appropriate precautions, as it could be VERY hot. Failing to remove the data logger may allow heat trapped in the ThermoVault to continue to heat the data logger to potentially unsafe levels.

The ThermoVault may take hours to fully cool down. Even if the exterior of the ThermoVault is cool to the touch, the interior of the barrier and its contents may still be VERY hot. Allow the entire system to cool down to approximately 25 °C (77 °F) before successive cycles.

Ordering Information

ThermoVault	PN 901724-00	TC101A Thermocouple-based temperature data logger, thermal insulated enclosure, 24 AWG type K thermocouple (0 °C to +482 °C)
IFC200	PN 900298-00	USB interface cable
LTC-7PN	PN 900352-00	Replacement battery for TC101A used inside ThermoVault