DATASHEET

ThermoVaultX4

MadgeTech

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MADGETECH
WE BUILD DATA LOGGERS

ThermoVaultX Series

4 and 8-Channel Thermocouple Data Loggers

Oven temperature profiling can help ensure that a quality product is consistently produced. Profiling enables users to optimize their process, prove process control and make corrections to a process when required. The ThermoVaultX Series is a thermally insulated, battery powered, oven temperature data logger able to withstand extreme temperatures. It can withstand oven temperatures of up to 662 °F for up to 25 minutes when properly sealed. Its stainless steel enclosure and thermal properties lend itself to be the ideal temperature recording device for applications such as powder coating cure ovens, wet coating cure ovens, batch ovens and conveyor ovens. The external thermocouple probes provide accurate temperature measurements, with fast response times.

Our user-friendly software easily downloads the data to a computer, where the readings may be displayed in degrees Celsius, degrees Fahrenheit, Kelvin or Rankine. The software allows the user to view all data points or a range of data points and a summary of the data being viewed for calculations such as Mean Kinetic Temperature (MKT). If additional analysis of the data needs to be performed, the data can be easily exported to Excel® by simply clicking a button.

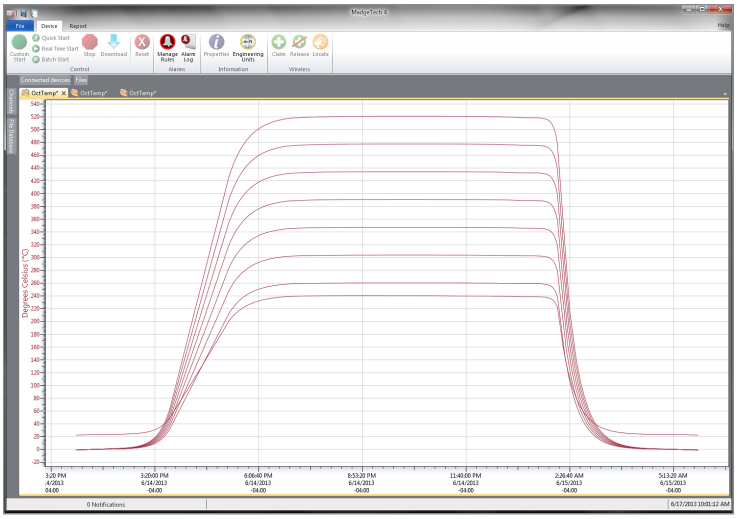
Features

- Programmable start time
- Reusable
- Convenient size
- User-friendly
- Ambient and thermocouple channels
- Automatic thermocouple linearization
- Type K thermocouples and power supply included

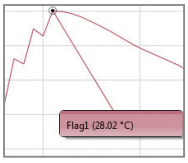
Applications

- Extreme temperature monitoring
- Oven profiling
- Powder coating cure ovens
- Wet coating cure ovens
- Batch ovens
- Conveyor ovens
- Implement HACCP programs

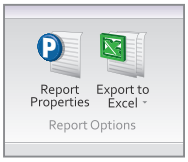
MadgeTech 4 Software Features



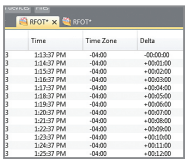
Graph View



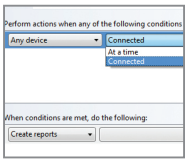
Cooling Flags



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

Disclaimer & Terms of Use

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

Both the data logger and ThermoVaultX 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 ThermoVaultX, using appropriate precautions, as it could be VERY hot. Failing to remove the data logger may allow heat trapped in the ThermoVaultX to continue to heat the data logger to potentially unsafe levels.

The ThermoVaultX may take hours to fully cool down. Even if the exterior of the ThermoVaultX 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.

SPECIFICATIONS

Specifications are subject to change without notice. Specific warranty remedy limitations apply. Call (603) 456-2011 or go to **madgetech.com** for details.

INTERNAL CHANNELS

Temperature Range	-20 °C to +60 °C (-4 °F to +140 °F)
Temperature Resolution	0.01 °C (0.018 °F)
Calibrated Accuracy	±0.5 °C (0 °C to 50 °C)

REMOTE CHANNELS

Remote Channel Thermocouple Types	J, K, T, E, R, S, B, N		
Thermocouple Connection	Female subminiature (SMP)		
Cold Junction Compensation	Automatic, based on internal channel		
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

*Thermocouple accuracy specified with 24 AWG diameter thermocouple wires.

MAXIMUM EXPOSURE TIME

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

GENERAL

Start Modes	Push button start and software programmable immediate start or delay start up to six months in advance
Memory (all channels enabled)	**4-channel:** 524,032 readings per channel **8-channel:** 262,016 readings per channel
LEDs	1 per channel and 2 status LEDs
Reading Rate	4 Hz up to 1 reading every 24 hours
Calibration	Digital calibration through software
Calibration Date	Automatically recorded within device
Battery Type	9 V lithium battery included, **user replaceable**
Battery Life	18 months typical
Data Format	Date and time stamped °C, °F, K, °R, mV, V
Time Accuracy	±1 minute/month
Computer Interface	USB-A to micro USB cable (included); 460,800 baud
Operating System Compatibility	Windows XP SP3 or later
Software Compatibility	Standard Software version 4.2.17.0 or later Secure Software version 4.2.16.0 or later
Internal TCTempX	-20 °C to +60 °C 0 %RH to 95 %RH non-condensing
ThermoVaultX System	-20 °C to +350 °C 0 %RH to 95 %RH non-condensing
Dimensions	12.3 in x 6.65 in x 2.45 in (312 mm x 168 mm x 62 mm) *[Includes handles, brackets and front enclosure latches]* 9.1 in x 5.9 in x 2.45 in (231 mm x 149 mm x 62 mm) *[Enclosure case only. Excludes handles, brackets and latches]*
Weight	**4-channel:** 8.85 lb (4.01 kg) **8-channel:** 8.98 lb (4.07 kg)

BATTERY WARNING: BATTERY MAY LEAK, FLAME OR EXPLODE IF DISASSEMBLED, SHORTED, CHARGED, CONNECTED TOGETHER, MIXED WITH USED OR OTHER BATTERIES, EXPOSED TO FIRE OR HIGH TEMPERATURE. DISCARD USED BATTERY PROMPTLY. KEEP OUT OF REACH OF CHILDREN.

The included USB cable and power adapter should not to be used at temperatures above 40 °C.

Ordering Information

ThermoVaultX4	PN 901350-00	Thermal Shield with a 4-channel temperature data logger, 72 inch 24 AWG type K thermocouples (0 °C to +482 °C); USB-A to micro USB cable and universal power adapter
ThermoVaultX8	PN 900437-00	Thermal Shield with an 8-channel temperature data logger, 72 inch 24 AWG type K thermocouples (0 °C to +482 °C); USB-A to micro USB cable and universal power adapter
U9VL-J	PN 901804-00	Replacement battery for TCTempX Series

For quantity discounts or information on other thermocouple types, call (603) 456-2011 or email **sales@madgetech.com**

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