

# HITEMP140-TSK

## HITEMP140 DATA LOGGER WITH THERMAL SHIELD

### Features

- Withstands Temperatures between -200 °C up to 250 °C
- Small Diameter: 2.0 in (51 mm)
- Submersible
- Immediate or Delay Start
- Up to 1 Second Reading Rate

### Benefits

- Validate a Wide Range of Temperature Processes Using One Data Logger
- HiTemp140 can be used With or Without Thermal Shield
- Durable Thermal Shield Protects Probe and Allows for a Fast Response Time

### Applications

- Peanut Roasting
- Food Processing
- Meat Processing
- Autoclave Validation
- Conveyor Ovens
- Dishwasher Testing
- Incubator Validation

The HiTemp140-TSK is a kit that includes a HiTemp140 data logger with either a 5.25 in probe or a 7 in probe style, housed in a thermal shield. The combined features of the +0.1 % accuracy of the HiTemp140 and the properties of the durable thermal shield allow the device to be used for a wide range of validation applications. This rugged system can be placed in and withstand temperature from -200 °C to 250 °C, making it ideal for use in autoclave validation, monitoring food processing and dishwasher testing.

Using the MadgeTech 4 software, the data logger is fast and easy to setup. Remove the thermal shield and place the HiTemp140 into the IFC400 or IFC406 docking station (*sold separately*). Using the software, an immediate or delay start can be chosen, as well as the reading rate. Select Start to program the settings and start the data logger. Place the thermal shield around the HiTemp140 and screw it back together. The device is ready to be deployed.

The HiTemp140-TSK can be completely submerged and is built for applications that require extreme temperature monitoring.

The HiTemp140-TSK flush style is designed to have the probe entirely exposed while the data logger is protected by the thermal shield. This allows full use of the length of the probe for applications that require internal temperature monitoring. The Vented style offers more probe protection and is designed for shorter probe lengths in applications where the data logger might be subject to movement in a fully submerged application.



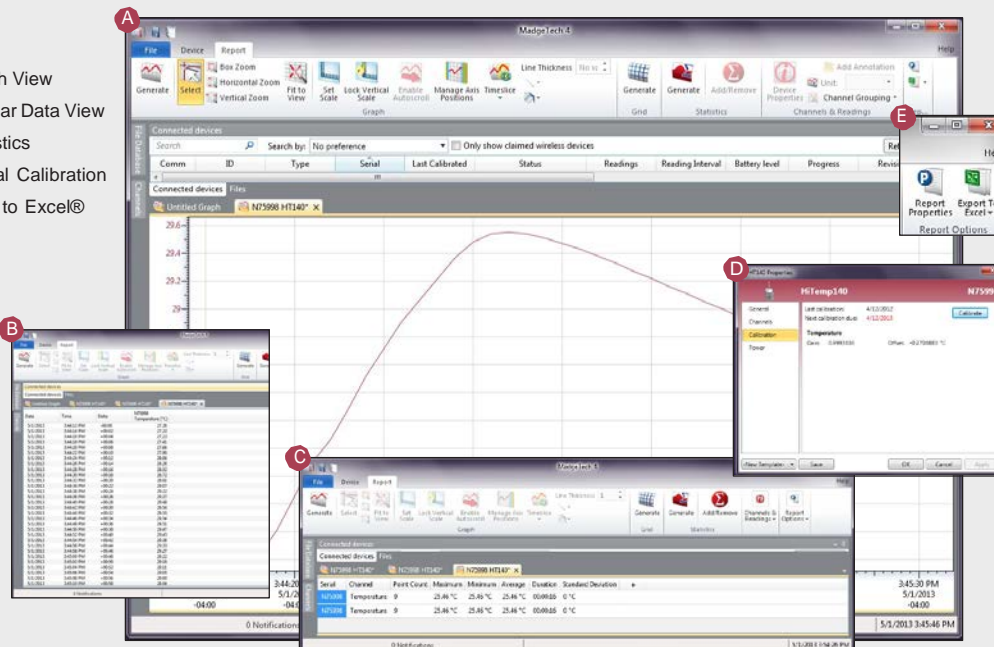
Vented

Flush

## MADGETECH DATA LOGGER SOFTWARE

### Key

- A** Graph View
- B** Tabular Data View
- C** Statistics
- D** Digital Calibration
- E** Copy to Excel®



### Software Features:

- 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
- Data table view
- Automatic report generation
- Summary view
- Multilingual

# HITEMP140 SPECIFICATIONS\*

\*SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Temperature Sensor:	100 Ω Platinum RTD
Probe Measurement Range:	-200 °C to +260 °C (-328 °F to +500 °F)
Temperature Resolution:	0.01 °C (0.02 °F)
Calibrated Accuracy:	<ul style="list-style-type: none"> <li>±0.1 °C/±0.18 °F (20 °C to +140 °C/68 °F to +284 °F)</li> <li>±0.3 °C/±0.54 °F (-20 °C to +19.99 °C/-4 °F to +67.98 °F)</li> <li>±0.4 °C/±0.72 °F (-40 °C to -20.01 °C/-40 °F to -4.02 °F)</li> </ul>
Start Modes:	<ul style="list-style-type: none"> <li>Software programmable immediate start</li> <li>Delay start up to 18 months in advance</li> </ul>
Stop Modes:	Manual or Timed (specific date and time)
Real Time Recording:	May be used with PC to monitor and record data in real time
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.
Memory:	32,700 readings
Wrap Around:	Yes
Reading Rate:	1 reading every second up to 1 reading every 24 hours

Battery Type:	3.6V high-temperature lithium battery included; user replaceable
Battery Life:	1 year typical (1 minute reading rate at 25 °C/77 °F)
Calibration:	Digital calibration through software
Calibration Date:	Automatically recorded within device
Data Format:	Date and time stamped °C, °F, K, °R
Time Accuracy:	±1 minute/month at 20 °C to 30 °C (68 °F to 86 °F) (Stand alone mode)
Computer Interface:	IFC400 OR IFC406 USB docking station required; 125,000 baud
Software:	XP SP3/Vista/Windows 7/Windows 8 (MadgeTech 4 Only)
Operating Environment:	-40 °C to +140 °C (-40 °F to +284 °F), 0 %RH to 100 %RH
Dimensions (Body):	1.9 in x 0.97 in dia. (48 mm x 24.6 mm dia.)
Model Number:	Dimensions (Probe)
HITEMP40-5.25	5.25 in x 0.188 in dia. (133 mm x 4.8 mm dia.)
HITEMP140-5.25-TD	5.25 in x 0.125 in dia. (0.188 in transitional dia.)
	133 mm x 3.2 mm dia. (4.8 mm transitional dia.)
HITEMP140-7	7.0 in x 0.188 in dia. (178 mm x 4.8 mm dia.)
Weight:	4.2 oz (120 g)
Material:	316 Stainless Steel
Approvals:	CE

## HITEMP140-TSK SPECIFICATIONS\*\*

Operating Environment:	-200 °C to +250 °C (-328 °F to +482 °F) (Time limited) 0 %RH to 100 %RH
Dimensions:	<ul style="list-style-type: none"> <li>Flush Top: 2.75 in x 2.0 in dia. (69.85 mm x 51 mm dia.)</li> <li>Vented Top: 4.3 in x 2.0 in dia. (109.2 mm x 50.8 mm dia.)</li> </ul>
Material:	Enclosure: PTFE
Weight:	<ul style="list-style-type: none"> <li>Flush: 6.7 oz (190 g) (not including data logger)</li> <li>Vented: 9.5 oz (270 g) (not including data logger)</li> </ul>

Maximum Exposure Time Chart	HiTemp140-TS (Flush)		HiTemp140-TS (Vented)	
	Ambient Temperature	Exposure Time in Air (150 °C/302 °F)	Exposure Time in Liquid (150 °C/302 °F)	Exposure Time in Air (150 °C/302 °F)
-200 °C (-328 °F)	12 minutes	N/A	14 minutes	N/A
-180 °C (-292 °F)	13 minutes	N/A	15 minutes	N/A
-160 °C (-256 °F)	15 minutes	N/A	16 minutes	N/A
-140 °C (-220 °F)	17 minutes	N/A	18 minutes	N/A
-120 °C (-184 °F)	19 minutes	N/A	21 minutes	N/A
-100 °C (-148 °F)	22 minutes	N/A	24 minutes	N/A
-80 °C (-112 °F)	27 minutes	N/A	30 minutes	N/A
-60 °C (-76 °F)	37 minutes	22 minutes	42 minutes	25 minutes
-40 °C to +140 °C (-40 °F to +284 °F)	Indefinitely	Indefinitely	Indefinitely	Indefinitely
150 °C (302 °F)	59 minutes	34 minutes	66 minutes	40 minutes
160 °C (320 °F)	51 minutes	29 minutes	57 minutes	34 minutes
170 °C (338 °F)	43 minutes	25 minutes	48 minutes	29 minutes
180 °C (356 °F)	37 minutes	23 minutes	42 minutes	26 minutes
190 °C (374 °F)	34 minutes	20 minutes	38 minutes	23 minutes
200 °C (392 °F)	31 minutes	18 minutes	34 minutes	21 minutes
210 °C (410 °F)	29 minutes	17 minutes	32 minutes	19 minutes
220 °C (428 °F)	27 minutes	16 minutes	30 minutes	18 minutes
230 °C (446 °F)	25 minutes	15 minutes	27 minutes	17 minutes
240 °C (464 °F)	23 minutes	14 minutes	26 minutes	16 minutes
250 °C (482 °F)	22 minutes	13 minutes	24 minutes	15 minutes

### Disclaimer and Terms of Use

Listed specifications can be used to determine maximum allowable exposure times for the HiTemp140 with Thermal Shield at different temperatures beyond the normal operating range of the logger. Both the data logger and Thermal Shield must be at ambient temperature (approximately 25 °C) before being placed in the extreme temperature environment.

Immediately following exposure to high temperature, the data logger should be removed from the thermal shield (using appropriate precautions, as it could be VERY hot) OR the datalogger and shield should be placed in a water bath (approximately 25 °C) for at least 15 minutes to allow it to cool. Failing to do this may allow heat trapped in the Thermal Shield to continue to heat the datalogger to potentially unsafe levels.

If your application involves a ramp up to a temperature above 140 °C and/or any complex temperature profile that isn't simply a constant temperature, please contact MadgeTech to determine whether the HiTemp140 with Thermal Shield is suitable.

Please provide MadgeTech with a detailed description of your temperature profile, including temperatures, durations, ramp times, and process media (air, steam, oil, water, etc.) If MadgeTech is unable to definitively calculate the suitability of our product for your application, we can provide a test unit outfitted with a high temperature indicator sticker. This sticker has an indicator dot which will turn black if exposed to temperatures above 143 °C. Apply the sticker to the bottom of the data logger itself (not the thermal shield), remove the battery for safety, place the data logger into the thermal shield and run the assembly through the proposed temperature program. The first indicator dot on the sticker will turn black at 143 °C. If that happens, the HiTemp140 with thermal shield is not appropriate for the application and we will work to find a solution that is.

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

\*\*Other probe lengths up to 7" available. Contact Valutemp for details.

## ORDERING INFORMATION

MODEL	DESCRIPTION	ENCLOSURE
HITEMP140-5-TSK	HiTemp140-5.25 in data logger and thermal shield	Flush or Vented
HITEMP140-7-TSK	HiTemp140-7 in data logger and thermal shield	Flush or Vented
IFC400	Docking station with USB cable, software and manual	
IFC406	6 Port, Multiplexer docking station with USB cable, software and manual	
ER1425S-HT	Replacement battery for the HiTemp140	
*NIST	NIST Calibration Certificate	

\*To order the product with the NIST certificate add -CERT to the end of the part number.

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