

HITEMP140-PT-TSK

HITEMP140-PT DATA LOGGER WITH THERMAL SHIELD



Features

- Withstands Temperatures between -200 °C up to 250 °C
- 24 in Flexible Probe
- 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-PT 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
- Conveyer Ovens
- Dishwasher Testing
- Incubator Validation

The HiTemp140-PT-TSK is a kit that includes a HiTemp140-PT data logger housed in a thermal shield. The combined features of the +/-0.1 °C accuracy of the HiTemp140-PT and the properties of the durable thermal shield allow the device to be used for a wide range of validation applications. The built in 24 in RTD probe can be bent or spiraled in any direction, making it easy to log temperatures in hard to reach places. This rugged system can be placed in and withstand temperatures from -200 °C to 250 °C, making it ideal for use in autoclave validation, monitoring food processing and dishwasher testing.

Using the MadgeTech software, the data logger is fast and easy to setup. Remove the thermal shield and place the HiTemp140-PT 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. Start the data logger and place the thermal shield around the HiTemp140-PT. The device is ready to be deployed.

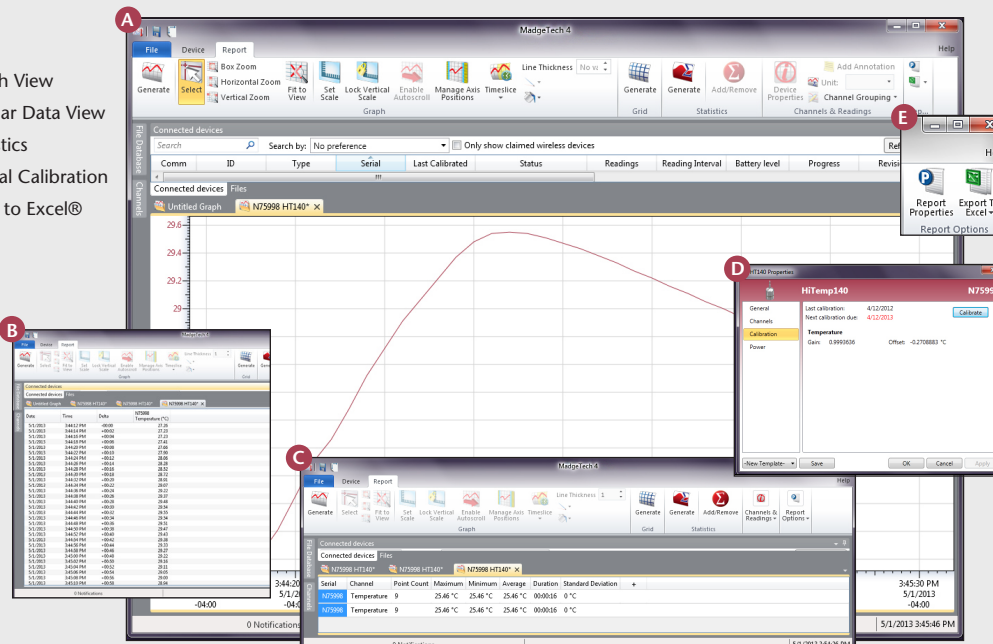
The HiTemp140-PT-TSK can be completely submerged and is built for applications that require extreme temperature monitoring.



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-PT SPECIFICATIONS*

*SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. SPECIFIC WARRANTY REMEDY LIMITATIONS

| | |
|---------------------------------|--|
| Temperature Sensor: | 100 Ω Platinum RTD |
| Probe Measurement Range: | -200 °C to +350 °C (-328 °F to +662 °F) |
| Temperature Resolution: | 0.01 °C (0.02 °F) |
| Calibrated Accuracy: | <ul style="list-style-type: none"> ±0.1 °C/±0.18 °F (20 °C to +140 °C/68 °F to +284 °F) ±0.3 °C/±0.54 °F (-20 °C to +19.99 °C/-4 °F to +67.98 °F) ±0.4 °C/±0.72 °F (-40 °C to -20.01 °C/-40 °F to -4.02 °F) |
| Start Modes: | <ul style="list-style-type: none"> Software programmable immediate start Delay start up to 18 months in advance |
| Stop Modes: | <ul style="list-style-type: none"> Manual through software 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 (<i>MadgeTech 4 Only</i>) |
| 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.) |
| Dimensions (PT-1 Probe): | <ul style="list-style-type: none"> 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.) |
| Dimensions (PT-5 Probe): | <ul style="list-style-type: none"> Probe tip: 4.8 in x 0.125 in dia. with 1 in x 0.188 in dia. handle (121 mm x 3.2 mm dia. with 25 mm x 4.8 mm dia. handle) Flexible portion: 22 in x 0.062 in dia. (559 mm x 1.6 mm dia.) |
| Weight: | 4.2 oz (120g) |
| Material: | 316 Stainless Steel |
| Approvals: | CE |

HITEMP140-PT-TSK SPECIFICATIONS*

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

| Maximum Exposure Time Chart Ambient Temperature | HiTemp140-TS (<i>Flush</i>) | | HiTemp140-TS (<i>Vented</i>) | |
|--|--------------------------------------|---|--------------------------------------|---|
| | Exposure Time in Air (150 °C/302 °F) | Exposure Time in Liquid (150 °C/302 °F) | Exposure Time in Air (150 °C/302 °F) | Exposure Time in Liquid (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 data logger 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 data logger 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).

ORDERING INFORMATION

| MODEL | DESCRIPTION |
|-----------------------|---|
| HITEMP140-PT-1-TSK | HiTemp140-PT-1 data logger and vented thermal shield |
| HITEMP140-PT-1-TSK-FL | HiTemp140-PT-1 data logger and flush thermal shield |
| HITEMP140-PT-5-TSK | HiTemp140-PT-5 data logger and vented thermal shield |
| HITEMP140-PT-5-TSK-FL | HiTemp140-PT-5 data logger and flush thermal shield |
| 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-PT |
| *NIST | NIST Calibration Certificate |

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

