

HITEMP140-FP

HIGH TEMPERATURE DATA LOGGER

WITH A FLEXIBLE RTD PROBE



Features

- $\pm 0.1^{\circ}\text{C}$ (0.18°F) Accuracy
- Probe Operates up to 260°C
- Submersible (IP68)
- User-Replaceable Battery
- Durable
- Programmable Start and Stop Time
- Two probe lengths, 36 inches & 72 inches
- Battery life indicator

Benefits

- Simple Setup and Installation
- Minimal Long-Term Maintenance
- Long-Term Field Deployment

Applications

- Autoclave Verification and Mapping
- Lyophilization
- Monitoring High-Temperature Surfaces
- Container Mapping
- Measurements Inside Small Vials & Tubing

HiTemp140-FP-TSK Features

- Withstands Temperatures between -200°C up to 250°C
- Submersible
- Vented or Flush Enclosure Options

The HiTemp140-FP is a durable, user friendly high temperature data logger featuring a long, flexible RTD probe with a narrow diameter, making it ideal for use in steam sterilization and lyophilization processes.

Commonly used for mapping, validation and monitoring of high temperature surfaces and environments, this stainless steel data logger is available in two models, the HiTemp140-FP-36 and the HiTemp140-FP-72, which feature either 36 inch or 72 inch flexible probe lengths, respectively. The flexible probe is coated with PFA insulation and can withstand temperatures up to 260°C with an accuracy of $\pm 0.1^{\circ}\text{C}$. The HiTemp140-FP is also available with an optional thermal shield enclosure to extend the operating range of the data logger to -200°C to $+250^{\circ}\text{C}$ (-328°F to $+482^{\circ}\text{F}$). The HiTemp140-FP-TSK (Thermal Shield Kit) comes with either a vented or flush top enclosure to accommodate a multitude of applications.

The HiTemp140-FP probe design is narrow and lightweight making it ideal for placement within small vials, tubing, test tube and other small diameter or delicate applications. Because of the flexible probe, the risks of breakage (*both vial and probe*) generally associated with stainless steel probe loggers are diminished and the location and placement of the probe is easy to manipulate. The device records and stores up to 32,700 time stamped readings and is equipped with non-volatile solid state memory which retains data even if the battery becomes discharged.

The HiTemp140-FP can be configured for delayed start and is capable of reading rates as often as 4 times per second, up to once every 24 hours.

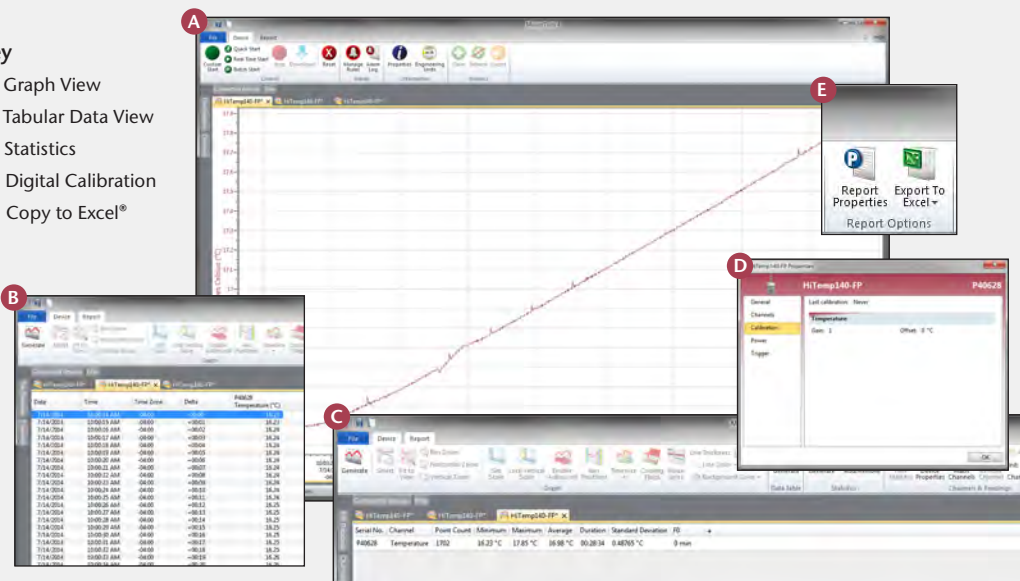
Compatible with the latest MadgeTech Data Logger Software, starting, stopping, and downloading data is simple and reporting capabilities are abundant. The device connects to a PC with the IFC400 interface or the IFC406 docking station (*sold separately*). Downloaded data can be viewed in graphical, tabular, and summary data form in the MadgeTech software, and all data can be exported to Excel® for further analysis and calculations.



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-FP SPECIFICATIONS*

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

Temperature

Temperature Sensor:	Flexible RTD Probe
Probe Measurement Range:	-60 °C to +260 °C (-76 °F to 500 °F)
Temperature Resolution:	0.01 °C (0.02 °F)
Calibrated Accuracy:	±0.1 °C (0.18 °F)

General

Data Logger Response Time:	In Air	In Water
	(hours : minutes : seconds : fractions of a second)	
	t ₆₀ - 00:00:30:00 t ₉₀ - 00:01:10:00	t ₆₀ - 00:00:03:50 t ₉₀ - 00:00:06:50
Reading Rate:	4 readings every second up to 1 reading every 24 hours	
Memory:	32,767 readings	
Start Modes:	- Software programmable immediate start - Delay start up to 18 months in advance	
Stop Modes:	Manual or Timed (<i>specific date and time</i>)	
Trigger Settings:	High and Low limits may be set. Once data meets or exceed sets limits, the device will record to memory. Bi-level start and stop triggers can also be programmed. Users can specify the number of readings to take after the device triggers.	
Readings in Trigger Settings Mode:	10,922 readings	
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 Wrap Around:	Yes
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, °R, K,
Time Accuracy:	1 minute/month at 25 °C (77 °F) - Extended Operation: ±20 minutes/month at 140 °C (±450 ppm)
Computer Interface:	IFC400 or IFC406 USB docking station required; 125,000 baud
Operating System Compatibility:	XP SP3/Vista/Windows 7/Windows 8
MadgeTech Software Compatibility:	- MadgeTech Standard Software version 4.2.1.1 - MadgeTech Secure Software version 4.2.0.1 or later
Operating Environment:	-40 °C to +140 °C (-40 °F to +284 °F) 0 %RH to 100 %RH, 0.002 PSIA to 60 PSIA
IP Rating:	IP68
Dimensions (body):	2.95 in x 0.97 in x 0.97 in (75 mm x 24.6 mm x 24.6 mm)
Dimensions (probe):	- HiTemp140-FP-36: 36 in x 0.10 in (914 mm x 2.5 mm) - HiTemp140-FP-72: 72 in x 0.10 in (1829 mm x 2.5 mm)
Weight:	85 g (3 oz)
Materials:	- Body: 316 Stainless Steel - Probe: PFA Insulated Cable
Approvals:	CE

Notice: Steam Sterilization Applications

The pervasive nature of pressurized steam creates a very difficult environment for electronics. Please refer to the following preventative maintenance procedure when using this device in steam sterilization applications. Additionally, this device is not ideal for steam sterilization applications above 121 °C/1.1 bar.

PREVENTATIVE MAINTENANCE

After every 3 hours of steam exposure:

1. Remove the endcap and battery from the device (ref. battery change procedure on Product User Guide)
2. Place open logger (minus battery) in an oven at 120°C (250°F) for a minimum of 30 minutes
3. Remove logger from oven and allow to cool to room temp
4. Re-assemble the logger with the battery (note polarity) and endcap