

# HITEMP140X2-FP

## HIGH TEMPERATURE DUAL PROBE DATA LOGGERS WITH TWO REMOTE TEMPERATURE PROBES



### Features

- $\pm 0.1^{\circ}\text{C}$  ( $\pm 0.18^{\circ}\text{F}$ ) Accuracy
- Flexible Probe Measures from  $-60^{\circ}\text{C}$  to  $+260^{\circ}\text{C}$  ( $-76^{\circ}\text{F}$  to  $+500^{\circ}\text{F}$ )
- Bendable Probe Measures from  $-200^{\circ}\text{C}$  to  $+350^{\circ}\text{C}$  ( $-328^{\circ}\text{F}$  to  $+662^{\circ}\text{F}$ )
- Submersible (IP68)
- User Replaceable Battery
- Trigger Settings
- Programmable Start and Stop Time
- Battery Life Indicator

### Benefits

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

### Applications

- Autoclave Verification
- Implement HACCP Programs
- Food Preparation & Processing
- Environmental Studies
- Well Monitoring
- Washer Disinfectors
- Pasteurization



The HiTemp140X2-FP series of dual probe high temperature data loggers are comprised of a stainless steel data logger body and offers four sizes (6 inch, 12 inch, 36 inch and 72 inch) of flexible FP probes or are available with one flexible probe and a stainless steel bendable PT probe combination.

The dual probes of this HiTemp140X2 series allow for simultaneous temperature monitoring and provide flexibility in applications such as oven mapping, surface temperature monitoring, autoclave validation and sterilization processes.

The HiTemp140X2-FP model offers lightweight, flexible RTD probes coated with PFA insulation. The FP probe design allows the probe to be easily maneuvered and is ideal for temperature monitoring inside test tubes, small vials, and other delicate applications. The narrow thermistor probe tip is compatible for use with the MicroDisc probe attachment allowing for precise surface temperature monitoring of shelving and more.

The HiTemp140X2-FP-PT-1 and HiTemp140X2-FP-PT-5 models feature a 24 inch stainless steel bendable probe with the option of either a 1 inch or 5 inch probe tip (*sheath*). The stainless steel probe can be bent, angled, and coiled in any direction and formed into position as needed. The sharp probe tip allows for easy insertion and has an extended measurement range of  $-200^{\circ}\text{C}$  to  $+350^{\circ}\text{C}$ .

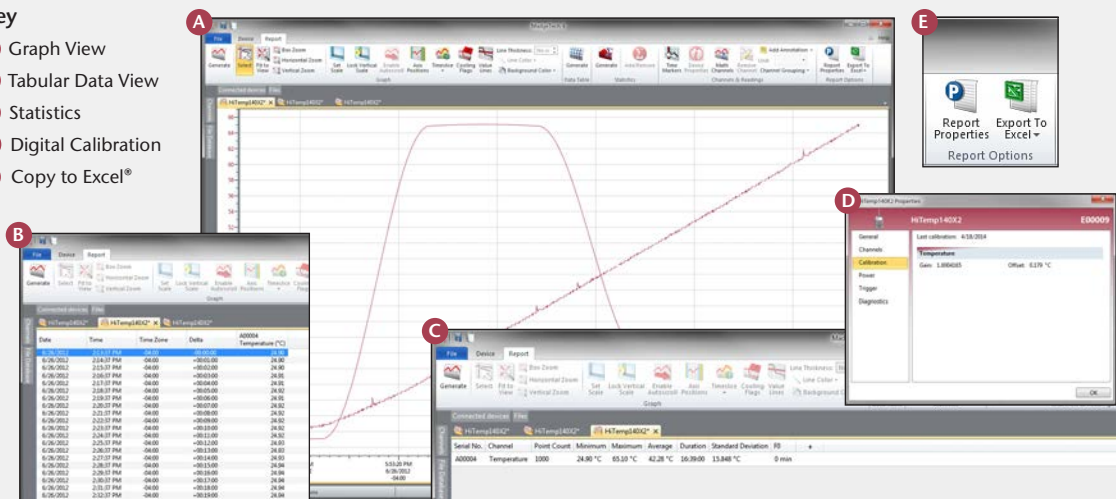
The body of the HiTemp140X2-FP is capable of operating in temperatures from  $-40^{\circ}\text{C}$  to  $140^{\circ}\text{C}$ . All models have the capacity to store up to 32,700 time and date stamped readings and feature non-volatile solid state memory that will retain data even if the battery becomes discharged.

Using the latest version of MadgeTech Data Logger Software, the device can be started, stopped, and data can be downloaded quickly and easily. Once in the software, the data can be reviewed in graphic, tabular, or summary form as well as 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

# HITEMP140X2-FP SPECIFICATIONS\*

## Temperature

|                          |   |
|--------------------------|---|
| Temperature Sensor:      | <ul style="list-style-type: none"><li>• HiTemp140X2-FP: Flexible RTD Probe</li><li>• HiTemp140X2-FP-PT: Flexible RTD Probe &amp; Bendable RTD Probe</li></ul>             |
| Probe Measurement Range: | <ul style="list-style-type: none"><li>• Flexible Probe: -60 °C to +260 °C (-76 °F to +500 °F)</li><li>• Bendable Probe: -200 °C to +350 °C (-328 °F to +662 °F)</li></ul> |
| Temperature Resolution:  | 0.01 °C (0.02 °F)   |
| Calibrated Accuracy:     | ±0.1 °C (±0.18 °F)  |

## General

|                                    |  |
|------------------------------------|--|
| Reading Rate:                      | 1 reading every second up to 1 reading every 24 hours  |
| Memory:                            | 32,767 readings  |
| 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 ( <i>specific date and time</i> )  |
| 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.   |
| Readings in Trigger Settings Mode: | 16,383 readings  |
| 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. ( <i>Triggering on channel #1 only</i> ) |
| Wrap Around:                       | Yes  |
| Battery Type:                      | 3.6V high-temperature lithium battery included; <b>user replaceable</b>  |
| Battery Life:                      | 1 year typical<br>(1 minute reading rate at 25 °C/77 °F)   |

**BATTERY 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  |
|-------------------------|--|
| HiTemp140X2-FP          | High temperature dual probe data logger with four different flexible probe length options. (6 inch, 12 inch, 36 inch and 72 inch).         |
| HiTemp140X2-FP-PT-1     | High temperature dual probe data logger with one 24 inch bendable stainless steel probe with a 1 inch probe sheath and one flexible probe. |
| HiTemp140X2-FP-PT-5     | High temperature dual probe data logger with one 24 inch bendable stainless steel probe with a 5 inch probe sheath and one flexible probe. |
| 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 HiTemp140X2-FP Series  |
| Calibration Certificate | Calibration Certificate available for data logger  |

|                                   |   |
|-----------------------------------|---|
| Calibration:                      | Digital calibration through software  |
| Calibration Date:                 | Automatically recorded within device  |
| Data Format:                      | Date and time stamped °C, °F, °R, K,  |
| Time Accuracy:                    | <ul style="list-style-type: none"><li>• 1 minute/month at 25 °C (77 °F)</li><li>• Extended Operation: ±20 minutes/month at 140 °C (±450 ppm)</li></ul>  |
| 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: | <ul style="list-style-type: none"><li>• MadgeTech Standard Software version 4.2.1.0 or later</li><li>• MadgeTech Secure Software version 4.2.0.0 or later</li></ul>   |
| Operating Environment:            | -40 °C to +140 °C (-40 °F to +284 °F)<br>0 %RH to 100 %RH, 0.002 PSIA to 60 PSIA  |
| IP Rating:                        | IP68  |
| Dimensions (body):                | 1.89 in x 0.97 in x 0.97 in (48 mm x 24.6 mm x 24.6 mm)   |
| Dimensions (probe):               | <ul style="list-style-type: none"><li>• HiTemp140X2-FP:<br/>Flexible Probe: 6 in x 0.10 in (152 mm x 2.5 mm)<br/>Flexible Probe: 12 in x 0.10 in (305 mm x 2.5 mm)<br/>Flexible Probe: 36 in x 0.10 in (914.4 mm x 2.5 mm)<br/>Flexible Probe: 72 in x 0.10 in (1829 mm x 2.5 mm)</li><li>• HiTemp140X2-FP-PT 1 Inch Bendable Probe:<br/>Probe tip: 1.7 in x 0.125 in dia. (42 mm x 3.2 mm dia.)<br/>Bendable portion: 22 in x 0.062 in dia. (559 mm x 1.6 mm dia.)</li><li>• HiTemp140X2-FP-PT 5 Inch Bendable Probe:<br/>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)<br/>Bendable portion: 22 in x 0.062 in dia. (559 mm x 1.6 mm dia.)</li></ul> |
| Weight:                           | <ul style="list-style-type: none"><li>• HiTemp140X2-FP: 4.1 oz (115 g)</li><li>• HiTemp140X2-FP-PT: 3.9 oz (110 g)</li></ul>  |
| Materials:                        | <ul style="list-style-type: none"><li>• Body: 316 Stainless Steel, PEEK</li><li>• Bendable Probe: 316 Stainless Steel</li><li>• Flexible Probe: PFA Insulated Cable</li></ul>   |
| 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