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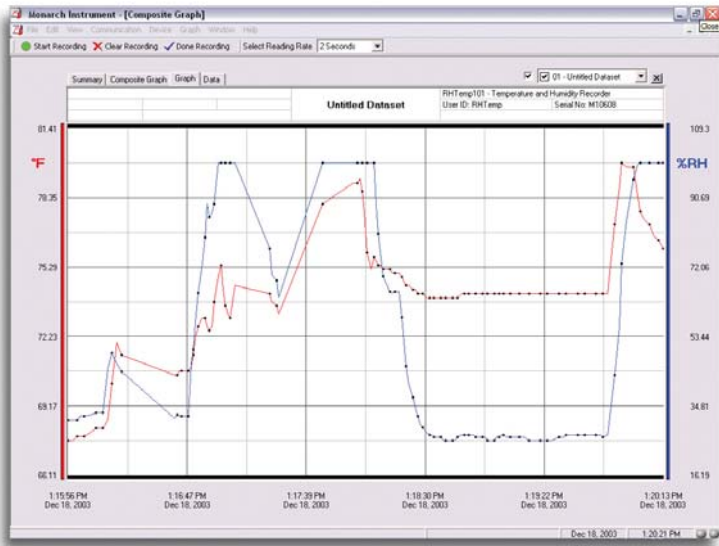


**MONARCH INSTRUMENT**

*Innovation in Instrumentation*

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# DATA LOGGER SOFTWARE



The heart of our all of our data loggers is our Windows-based software package which allows the user to collect, display and analyze data effortlessly. A variety of powerful tools allow the user to examine, export and print professional looking reports with just the click of a mouse. Our cutting-edge software is designed for the continuous monitoring and alarming of all Data Chart data loggers. The software can collect and display real-time data from any logger directly connected to the user's PC, a local area network, or even remotely through the use of our radio frequency transceivers.

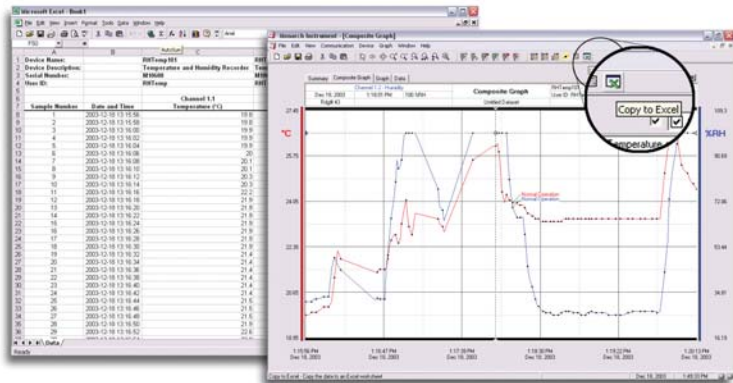
## Key Features

- **Annotation:** Easily annotate specific data points on the graph with a click of the mouse.
- **Real-Time Recording:** Collect and display data and continue to log.
- **Scaling Options:** Autoscale function fits data to the screen or allows user to manually enter their own values
- **Overlay Multiple Graphs:** Simultaneously analyze data from several units or deployments; easily switch to a single data series.
- **Automatic Time Synchronization:** Automatically aligns and synchronizes data from multiple loggers on a single graph.

## Other Features

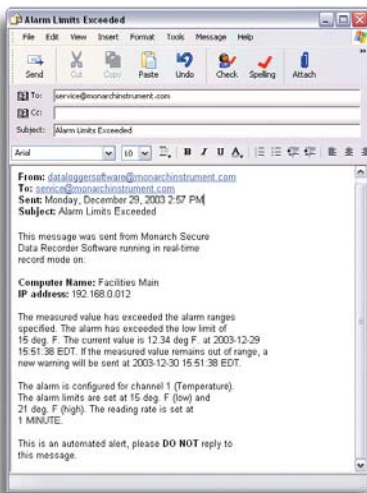
### Export to Excel®:

Excel button on toolbar allows simple **one click** data export to Microsoft Excel. One click of the Excel Icon will automatically open Excel and format the data into a spreadsheet. This command will automatically synchronize, in time, data from multiple data loggers and store the data in an Excel spreadsheet. It doesn't get any simpler than that....



### Alarm Notification:

Our data logger software offers a real-time alarm notification function which lets the user monitor user defined alarm limits. This is ideal for applications where notification of out-of-range conditions is required. Alarm messages can be sent in real-time right to your desktop or sent remotely via email or pager.



- **Summary:** View statistics and alarm information in a simplified report format.
- **Data Table:** Instantly access tabular view for detailed dates, times, values, and annotations.
- **Zoom:** Magnify data of interest with powerful zoom and drag tools. Supports multiple zoom in and zoom out. Features extended zoom capabilities; box zoom, vertical zoom, and horizontal zoom as well as point and click.
- **Formatting Options:** Change colors, line styles, plotting options, show or hide channels in an instant.
- **Engineering Units:** Define the type of units to be displayed on the graph using the Engineering Units Wizard. User defined engineering units may be applied to voltage, current, pulse, event and state loggers.
- **Menu Accessibility:** Right click on the graph for easy access to all formatting, measurement units and graphing tools menu options.
- **Printing:** Automatically print graphical or tabular data.
- **Communications:** Automatically sets up communications port or lets user set configuration.
- **Logger Configuration:** Easy set up and launch of data loggers with immediate or delayed start, preferred sample rate, and device ID.
- **Calibration:** Fully digital calibration function automatically stores parameters in device. A calibration wizard is provided in the software to simplify the calibration procedure.
- **Uninterrupted Data Retrieval:** Data may be downloaded from the logger without interrupting the operation of the unit as it continues to log data.
- **Statistics:** Automatically calculates averages, minimum, maximum, standard deviation, and mean kinetic temperature.

### PC Requirements:

Pentium or higher processor, Win 95/98/NT/2000/XP, 16MB Extended RAM, Color 800 x 600 monitor, 10MB free disk space, CDROM drive Available 9 pin male serial (COM) port 2400 Baud. 57,600 Baud for 110 and EB Models.

This Short Form Catalog contains only the most popular models. For complete product information please visit our website at: [www.monarchinstrument.com](http://www.monarchinstrument.com)

# TEMPERATURE

All of our Temperature Data loggers are miniature, battery powered, reusable, stand alone devices. These all-in-one compact, portable, easy to use recorders will measure and record up to 32,767 measurements, depending upon model. The storage medium is non-volatile, solid state memory, providing maximum data security even if the battery becomes discharged. As with all our data loggers, these devices are programmed, started/stopped with a PC and our graphical Windows® compatible software. Check each model for unique features and specifications.



### TEMP101 FEATURES

Memory	32,767
Form Factor	A
Battery Factor	1
Battery Life	2 yr.
Weight	2 oz (60 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0101	Temp101	Miniature Temperature Recorder



### TEMP110 FEATURES

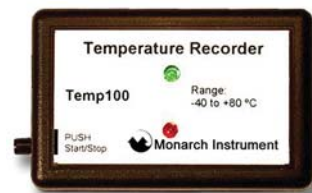
Memory	32,767
Form Factor	B
Battery Factor	2
Battery Life	10 yr.
Weight	2 oz (60 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0116	Temp110	Miniature Temperature Recorder

### TEMP100 SERIES GENERAL SPECIFICATIONS

<b>Temperature Sensor:</b>	Semiconductor
<b>Calibration:</b>	Digital calibration with software
<b>Temperature Range:</b>	-40 °C to +80 °C
<b>Calibration Date:</b>	Automatically recorded in device
<b>Temperature Resolution:</b>	0.1 °C
<b>Calibrated Accuracy:</b>	±0.5 °C (0 to +50°C)
<b>Data Format:</b>	Date/ time stamped °C, °F, °K, °R
<b>Time Accuracy:</b>	±1 minute/month (RS232 cable not in use)
<b>Real Time Recording:</b>	May be used with PC.
<b>Operating Environment:</b>	-40 to +80 °C, 0 to 95 %RH non-condensing
<b>Reading Interval:</b>	1 every 2 sec. to 1 every 12 hrs.
<b>Alarm:</b>	Programmable high and low limits; activated when temp. reaches or exceeds set limits
<b>Computer Interface:</b>	PC serial or RS232C COM (cable required). 2400 baud. 56,700 baud for 110 models.



### TEMP100 FEATURES

Memory	32,767
Form Factor	A
Battery Factor	1
Battery Life	1 yr.
Weight	2 oz (60 g)
<b>External Start/Stop Button</b>	

### ORDERING INFORMATION

Item No.	Name	Description
5399-0102	Temp100	Same as Temp101 with push button Start/Stop.

### THERMOCOUPLE RECORDERS SPECIFICATIONS

#### Internal Channel

**Temperature Range:** -40 °C to +80 °C

**Temperature Resolution:** 0.1 °C

**Calibrated Accuracy:** ±0.5 °C (0 to +50°C)

#### External Channel(s)

**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

**Reading Interval:** 1 every 2 sec. to 1 every 12 hrs.

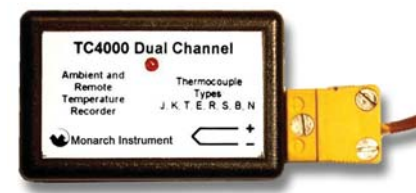
**Calibration:** Digital Calibration through software

**Calibration Date:** Automatically recorded within device

**Data Format:** Date/ time stamped °C, °F, °K, °R

**Time Accuracy:** ±1 min/mon (at 20 °C, no RS232 in use)

**Environment:** -40 to +80 °C, 0 to 95%RH non-condensing

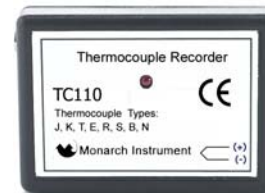


### TC4000 FEATURES

Channels	1 internal, 1 external
Memory	16,383/channel
Form Factor	A
Battery Factor	1
Battery Life	2 yr.
Weight	2 oz (60 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0104	TC4000	Thermocouple-based Temperature Recorder.



### TC110 FEATURES

Channels	1 internal, 1 external
Memory	16,383/channel
Form Factor	A-2
Battery Factor	1
Battery Life	10 yr.
Weight	2 oz. (60 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0117	TC110	Same as TC4000 with 10 Yr. Battery

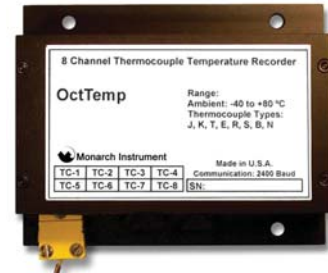


### QUADTEMP FEATURES

Channels	1 internal, 4 external
Memory	26,214/channel
Form Factor	B
Battery Factor	2
Battery Life	1 yr.
Weight	13 oz. (370 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0113	QuadTemp	4 Channel Thermocouple Recorder.



### OCTTEMP FEATURES

Channels	1 internal, 8 external
Memory	14,563/channel
Form Factor	B-1
Battery Factor	2
Battery Life	1 yr.
Weight	17 oz. (480 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0114	OctTemp	8 Channel Thermocouple Recorder.



### THERMOVAULT FEATURES

Memory	16,383
Form Factor	G
Battery Factor	1
Battery Life	1 yr.
Weight	32 oz. (910 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0115	ThermoVault	Oven Thermal Profiler Temp. Recorder. Insulated box w/ TC4000

Maximum Exposure Time for THERMOVAULT	
Ambient Temperature	Max Duration in Minutes
100 °C (212 °F)	52
150 °C (302 °F)	30
200 °C (392 °F)	22
250 °C (482 °F)	17
260 °C (500 °F)	16
300 °C (572 °F)	15
350 °C (662 °F)	12
400 °C (752 °F)	10

# TEMPERATURE

The MicroTemp is a miniature, submersible, self-contained temperature recorder made of 316L food grade stainless steel. At just 2.66" tall this recorder fits most beverage bottles and can be submersed to 150 feet. The versatile software allows viewing of data in degrees F, C, Kelvin and Rankine. Automatically calculate Pasteurization or Sterilization Units and even Mean Kinetic Temperature.



## MICROTEMPFEATURES

**Memory** 32,767  
**Form Factor** AA-1  
**Battery Factor** 10  
**Battery Life** 1 yr.  
**Weight:** 1.8 oz (50 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0122	MicroTemp	Miniature Temperature Recorder with Stainless Steel Case.

## MICROTEMP SPECIFICATIONS

**Temperature Sensor:** Semiconductor (internal)  
**Temperature Range:** -40 to +80 °C  
**Temperature Resolution:** 0.1 °C  
**Calibrated Accuracy:** ± 0.5 °C  
**Reading Interval:** 2 sec. to 12 hrs.  
**Baud Rate:** 38,400

TEMP1000 SERIES temperature loggers are rugged, water proof, battery powered, stand alone devices. We offer numerous models based upon this compact, portable, easy to use device. Storage medium is nonvolatile solid state memory, providing maximum data security even if the battery becomes discharged.

## TEMP1000 GENERAL SPECIFICATIONS

**Temperature Sensor:** Semiconductor  
**Temperature Range:** -40 °C to +125 °C  
**Temperature Resolution:** 0.1 °C  
**Calibrated Accuracy:** ±0.5 °C (0 to +50°C)  
**Start Time:** Software programmable start time and date.

**Real Time Recording:** When used with PC.  
**Reading Interval:** 1 every 2 sec. to 1 every 12 hrs.  
**Calibration:** Digital calibration in software  
**Calibration Date:** Automatically recorded in device.

**Replaceable Battery:** 1 year typical at 25 °C, 1 min. reading intervals  
**Data Format:** Date and time stamped °C, °F, °K, °R  
**Time Accuracy:** ±1 minute/month at 20°C (RS232 cable not in use)  
**Computer Interface:** PC serial or RS232C COM (Interface cable required); 2400 baud  
**Operating Environment:** -40 to +80 °C, 0 to 100 %RH  
**Dimensions:** 4.3" x 1.0" Dia.(108mm x 26mm)  
**Weight (Aluminum):** 4 oz (110 g)  
**Weight (Stainless):** 8 oz (230 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0106	Temp 1000	Submersible Temp. Recorder Aluminum Case.
5399-0107	Temp1000SS	Same as above with Stainless Steel Case.
5399-0109	Temp1000IS	Intrinsically Safe version of 5399-0106 in Aluminum Case.
5399-0121	Temp1000IS-SS	Same as above in Stainless Steel Case.



## TEMP1000 FEATURES

**Memory** 32,767 readings  
**Form Factor** D  
**Battery Factor** 4  
**Battery Life** 1 yr.

## TEMP1000P SPECIFICATIONS

**Temperature Sensor:** 100 Ohm Platinum RTD  
**Temperature Range:** -40° to +125 °C  
**Temperature Resolution:** 0.05 °C  
**Calibrated Accuracy:** ±0.5 °C (0 to +50°C)  
**Start Time:** Software programmable start time/date. Up to six months in advance  
**Real Time Recording:** Used with PC to monitor and record data in real time  
**Reading Interval:** 1 every 2 sec. to 1 every 12 hrs.  
**Calibration:** Digital calibration through software  
**Calibration Date:** Automatically recorded within device.

**Memory:** 32,767 readings  
**Power:** 3.6V lithium battery included  
**Replaceable Battery:** 1 yr. (1 reading/min. at 25 °C)  
**Data Format:** Date and time stamped °C, °F, °K, and/or °R  
**Time Accuracy:** ±1 minute/month at 20°C (RS232 cable not in use)  
**Computer Interface:** PC serial or RS232C COM (Interface cable required); 2,400 baud  
**Operating Environment:** -40 °C to +125 °C, 0 to 100 %RH  
**Dimensions:** 4.5" + probe x 1.0" dia (292mm + probe x 26mm)  
**Weight:** 8 oz (225g)

TEMP1000S temperature logger is a rugged, water proof, battery powered, stand alone device which can be used to automatically record temperatures between -40 °C and 150 °C. The TEMP1000S features a 1" rigid external probe and is ideal for use in harsh environments.



## TEMP1000S FEATURES

**Memory** 32,767 readings  
**Form Factor** E  
**Battery Factor** 7  
**Battery Life** 1 yr.

## ORDERING INFORMATION

Item No.	Name	Description
5399-0112	Temp1000S	Same as Temp 1000 w/1" rigid Probe

TEMP1000P temperature logger is a rugged, water proof, battery powered, device. Automatically record temperatures between -40 °C and 125 °C. The TEMP1000P features a 7" rigid external probe and is ideal for use in harsh environments. 304 stainless steel.



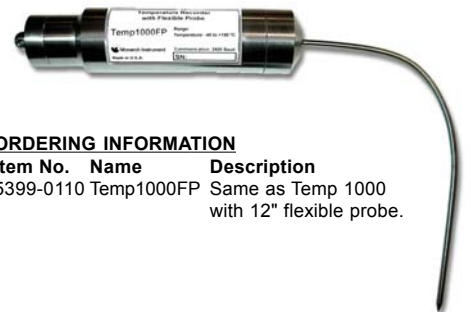
## TEMP1000P FEATURES

**Memory** 32,767 readings  
**Form Factor** F  
**Battery Factor** 4  
**Battery Life** 1 yr.

## ORDERING INFORMATION

Item No.	Name	Description
5399-0108	Temp1000P	Same as TEMP 1000 with a 7" rigid probe.

TEMP1000FP temperature logger is a rugged, water proof, battery powered, stand alone devices. The TEMP1000FP features a 12" flexible external probe and is ideal for use in harsh environments. Features are similar to the TEMP1000S.



## TEMP1000FP FEATURES

**Memory** 32,767 readings  
**Form Factor** F  
**Battery Factor** 4  
**Battery Life** 1 yr.  
**Dimensions:** 5.6" + probe x 1.25" dia (143 mm + probe x 31.75 mm)  
**Weight:** 9 oz (250 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0110	Temp1000FP	Same as Temp 1000 with 12" flexible probe.

# TEMPERATURE

All of our RTD-based temperature recorders are miniature, battery powered, stand alone, precision devices. As with all our designs, these are all-in-one compact, portable, easy to use and fully supported by our Windows® based graphical software. The storage medium is non-volatile solid state memory, providing maximum data security even if the battery becomes discharged.

## GENERAL RTDTEMP SPECIFICATIONS

**Temperature\*\***  
**Measurement Range:** -200 to +850 °C  
**Resolution:** 0.01 °C  
**Calibrated Accuracy:** ±0.05°C @ 25 °C  
**Specified Accuracy Range:** -200 to +850 °C

**Resistance**  
**Nominal Range:** 0 to 5000 Ohm  
**Resolution:** 0.001 Ohm  
**Calibrated Accuracy:** ±0.015 Ohm  
**Specified Accuracy Range:** 0 to 500 Ohm @ 25 °C  
**Input Connection:** Removable screw terminal; 2,3 or 4 wire interface

**Temp. Effect on Span:** < 25 ppm/°C; < 10 ppm/°C typical  
**Temp. Effect on Offset:** < 10 ppm cumulative over -40 °C to +80 °

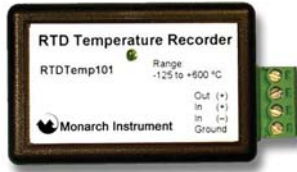
**Real Time Recording:** When used with PC.  
**Memory:** 21,845 readings  
**Reading Interval:** 1/2 sec. to 1 every 12 hrs.  
**Calibration:** Digital through software  
**Calibration Date:** Automatically recorded in device

**Replaceable Battery:** 1 year typical (1 minute reading rate at 25 °C)  
**Data Format:** Date and time stamped °C, °F, °K, °R, Ohm  
**Time Accuracy:** ±1 min/month (at 20 °C, (RS232 not in use)

**Computer Interface:** PC serial or RS232C COM (Interface cable required); 2,400 baud

**Operating Environment:** -40 to +80 °C, 0 to 95%RH non-condensing

\*\*Temperature specifications based on 100 ohms Pt RTD compliant with IEC 751 (1983) and ITS-90.



## RTDTemp101 FEATURES

**Memory** 21,845  
**Form Factor** A-1  
**Battery Factor** 1  
**Battery Life** 1 yr.  
**Weight:** 2 oz (60 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0111	RTDTemp101	RTD Temp Recorder with 2,3 or 4 wire RTD's. External RTD required.

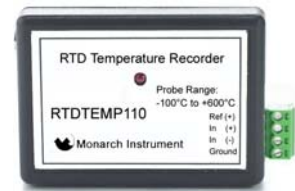


## QUADRTD FEATURES

**Memory** 21,845/channel  
**Form Factor** B  
**Battery Factor** 2  
**Battery Life** 1 yr.  
**Weight:** 13 oz (370 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0119	QUADRTD	4 channel RTD Temp Recorder with 2,3 or 4 wire RTD's. External RTD required.

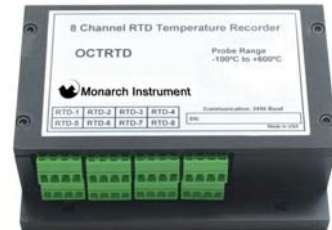


## RTDTemp110 FEATURES

**Memory** 21,845  
**Form Factor** A-2  
**Battery Factor** 6  
**Battery Life** 10 yr.  
**Weight:** 2 oz (60 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0118	RTDTEMP110	RTD Temp Recorder with 2,3 or 4 wire RTD's. External RTD required.



## OCTRTD FEATURES

**Memory** 21,845/channel  
**Form Factor** B-1  
**Battery Factor** 2  
**Battery Life** 1 yr.  
**Weight:** 13 oz (370 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0120	OCTRTD	8 channel RTD Temp Recorder with 2,3 or 4 wire RTD's. External RTD required.

# RELATIVE HUMIDITY/TEMPERATURE

## GENERAL RHTEMP SPECIFICATIONS

**Temperature Sensor:** Semiconductor  
**Temperature Range:** -40 °C to +80 °C  
**Temperature Resolution:** 0.1 °C  
 ±0.5 °C (0 to +50 °C)  
 ±1.0 °C (-10 to +80 °C)  
 ±2.0 °C (-40 to +80 °C)

**Humidity Sensor:** Semiconductor  
**Humidity Range:** 0 to 100% RH  
**Humidity Resolution:** 0.5% RH  
**Calibrated Accuracy:** ±3%RH (±2% RH typical at 25 °C)

**Response Time:** 90% change in 60 sec., slow moving air.

**Start Time:** Software programmable start time and date. Up to six months in advance

**Real Time Recording:** When used with PC.  
**Reading Interval:** 1/2 sec. to 1 every 12 hrs  
**Calibration:** Digital, through software  
**Calibration Date:** Automatically recorded within device

**User Replaceable Battery:** 1 year typical  
**Data Format:** Date and time stamped °C, °F, °K, °R; %RH, mg/ml water vapor concentration  
**Time Accuracy:** ±1 minute/month (at 20 °C, RS232 cable not in use)

**Computer Interface:** PC serial or RS232C COM (Interface cable required); 2,400 baud min.

**Operating Environment:** -40 °C to +80 °C, 0 to 95% RH non-condensing)



## RHTEMP101 FEATURES

**Memory** 21,845  
**Form Factor** A  
**Battery Factor** 6  
**Battery Life** 1 yr.  
**Weight:** 1 oz (30 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0201	RHTEMP101	Humidity & Temperature Recorder

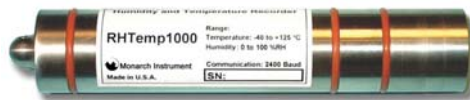


## RHTEMP110 FEATURES

**Memory** 21,845  
**Form Factor** A-2  
**Battery Factor** 6  
**Battery Life** 10 yr.  
**Weight:** 2 oz (60 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0207	RHTEMP110	Humidity & Temperature Recorder



## RHTEMP1000 SERIES FEATURES

**Memory** 21,845  
**Form Factor** E-1  
**Battery Factor** 4  
**Battery Life** 1 yr.  
**Dimensions:** 5.4 x 1.0" dia. (138 x 26mm dia.)  
**Weight (Aluminum):** 5 oz (145 g)  
**Weight (Stainless):** 10 oz (285 g)

## ORDERING INFORMATION

Item No.	Name	Description
5399-0203	RHTemp1000	Rugged Humidity & Temp Recorder with Aluminum Case
5399-0204	RHTemp1000SS	Same as RHTemp1000SS with Stainless Steel Case
5399-0205	RHTemp1000IS	Intrinsically Safe Rugged Humidity & Temp Recorder with Aluminum Case
5399-0206	RHTemp1000IS-SS	Intrinsically Safe Rugged Humidity & Temp Recorder with Stainless Steel Case

## RELATIVE HUMIDITY/TEMPERATURE

MICRORHTEMP Series are the world's smallest, battery powered, stand alone humidity and temperature recorders. It's ultra-miniature size allows the user the ability to use the device in the smallest spaces.

### MICRORHTEMP SERIES SPECIFICATIONS

<b>Temperature Sensor:</b>	Semiconductor
<b>Temperature Range:</b>	0 °C to +50 °C
<b>Temperature Resolution:</b>	0.1 °C
<b>Calibrated Accuracy:</b>	±0.5 °C
<b>Humidity Sensor:</b>	Semiconductor
<b>Humidity Range:</b>	0 to 100% RH
<b>Humidity Resolution:</b>	0.5% RH
<b>Calibrated Accuracy:</b>	±3%RH (±2% typical at 25 °C)
<b>Accuracy Range:</b>	10 to 80% RH, +10 to +40°C
<b>Real Time Recording:</b>	When used with a PC.
<b>Response Time:</b>	90% change in 60 sec. in slow moving air.
<b>Accuracy Range:</b>	10 to 80% RH, +10 to +40°C

### MICRORHTEMP FEATURES

<b>Memory</b>	<b>16,383/channel</b>
<b>Form Factor</b>	<b>AA</b>
<b>Battery Factor</b>	<b>3</b>
<b>Battery Life</b>	<b>10 months</b>
<b>Weight</b>	<b>1 oz (30 g)</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-0202	MicroRHTEMP	Miniature RH & Tem. Recorder



## pH/TEMPERATURE

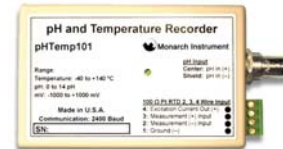
The pHTEMP101 shares all the characteristics of our other Compact data loggers. It will directly connect to many commonly used pH electrodes, and ORP electrodes. Sensor and probe not included.

### pHTEMP101 SPECIFICATIONS

<b>Temperature</b>	
<b>Measurement Range:</b>	-200 to +850 °C (0 to +5000 ohms)
<b>Resolution:</b>	0.01°C (0.001 ohms)
<b>Calibrated Accuracy:</b>	±0.1°C @25 °C ambient (±0.015 ohms)
<b>Input Connection:</b>	Removable screw terminal; 2, 3 or 4-wire interface for 100 ohm Pt RTD
<b>Reading Interval:</b>	1 every 2 sec. to 1 every 12 hrs.
<b>Calibration:</b>	Digital, through software

### pH

<b>Measurement Range:</b>	0.00 to 14.00 pH (-1000 to +1000 mV)
<b>Resolution:</b>	0.01 pH (0.1 mV)
<b>Calibrated Accuracy:</b>	±0.1 pH (±1 mV)
<b>Input Connection:</b>	Female BNC jack
<b>Input Resistance:</b>	10 <sup>12</sup> ohms ( typical)
<b>Data Format:</b>	Date and time stamped °C, °F, °K, °R, ohms, pH, V, mV, engr. units specified through software
<b>Time Accuracy:</b>	±1 minute/month (at 25 °C; RS232 cable not in use)
<b>Operating Environment:</b>	-5 to +50 °C, 5 to 95%RH (non-condensing)



### pHTEMP101 FEATURES

<b>Memory</b>	<b>13,107 per channel</b>
<b>Form Factor</b>	<b>C-1</b>
<b>Battery Factor</b>	<b>2</b>
<b>Battery Life</b>	<b>1 yr.</b>
<b>Weight</b>	<b>4 oz (120 g)</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-0401	pHTEMP101	pH and Temperature Recorder

## VOLT

### GENERAL VOLT SPECIFICATIONS

**Input Connection:** Removable screw terminals.

Model:	100 mV (Diff)	2.5V	15V	30V
<b>Voltage Range:</b>	±100 mVDC	-0.25 to +2.75	-1.0 to +16.0	-2.0 to +32.0
<b>Resolution:</b>	5 µVDC	0.1 mV	0.5 mV	1.0 mV
<b>Calibrated Accuracy:</b>	±0.01% FS	±0.01 %FS	±0.10 % FS	±0.10 %FS
<b>Input Impedance:</b>	>1 Kohm*	>1 Kohm*	>10 Kohm	>10 Kohm
<b>Overload Protection:</b>	5 VDC	±5 V	±30 V	± 48 V
<b>Temperature Coefficient:</b>	< 25 ppm/°C	< 25 ppm/°C	< 250 ppm/°C	< 250 ppm/°C

**User Analog Conversion Time:** 133 ms  
**Frequency Rejection:** 60 Hz  
**Temperature Coefficient:** < 25 ppm/°C; <10ppm/°C typical  
**Specified Accuracy Range:** Nominal range @ 25 °C  
**Engineering Units:** User may define up to 10 characters. This value is stored in the device.  
**Reading interval:** 1 per sec. to 1 per 12 hrs.  
 \*1 Mohm during acquisition.

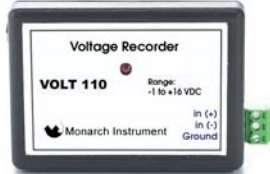
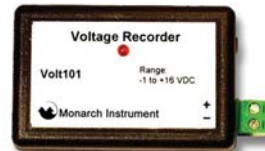
Our Volt Recorders are all miniature, battery-powered, stand alone devices. These all-in-one compact, easy to use devices will measure and record up to 32,767 measurements. The storage is non-volatile, solid state. Each device may be started/stopped from a PC. They all interface with our Windows-compatible software.

### VOLT101 FEATURES

<b>Memory</b>	<b>32,767</b>
<b>Form Factor</b>	<b>A-1</b>
<b>Battery Factor</b>	<b>1</b>
<b>Battery Life</b>	<b>1 yr.</b>
<b>Weight</b>	<b>1 oz (30 g)</b>
<b>Terminal</b>	<b>2 except 100 Mv is 3 wire</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-0507	VOLT101-100mV	±100 mV Differential Voltage
5399-0509	VOLT101-2.5	2.5 Vdc Voltage Recorder
5399-0510	VOLT101-15	15 Vdc Voltage Recorder
5399-0511	VOLT101-30	30 Vdc Voltage Recorder

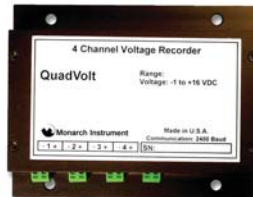


### VOLT110 FEATURES

<b>Memory</b>	<b>32,767</b>
<b>Form Factor</b>	<b>A-3</b>
<b>Battery Factor</b>	<b>1</b>
<b>Battery Life</b>	<b>10 yr.</b>
<b>Weight</b>	<b>2 oz (60 g)</b>
<b>Terminals</b>	<b>2 except 100 mV (3-wire)</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-0508	VOLT110-100mV	±100 mV Differential Voltage
5399-0519	VOLT110-2.5	2.5 Vdc Voltage Recorder
5399-0520	VOLT110-15	15 Vdc Voltage Recorder
5399-0521	VOLT110-30	30 Vdc Voltage Recorder



### QUADVOLT FEATURES

<b>Memory</b>	<b>32,767</b>
<b>Form Factor</b>	<b>B</b>
<b>Battery Factor</b>	<b>2</b>
<b>Battery Life</b>	<b>1 yr.</b>
<b>Weight</b>	<b>13 oz (370 g)</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-0515	QUADVOLT-2.5	4 channel 2.5Vdc Voltage Recorder
5399-0503	QUADVOLT-15	4 channel 15 Vdc Voltage Recorder
5399-0516	QUADVOLT-30	4 channel 30 Vdc Voltage Recorder



### OCTVOLT FEATURES

<b>Memory</b>	<b>16,383</b>
<b>Form Factor</b>	<b>B-1</b>
<b>Battery Factor</b>	<b>2</b>
<b>Battery Life</b>	<b>1 yr.</b>
<b>Weight</b>	<b>17 oz (480 g)</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-0517	OCTVOLT-2.5	8 channel 2.5 Vdc Voltage Recorder
5399-0505	OCTVOLT-15	8 channel 15 Vdc Voltage Recorder
5399-0518	OCTVOLT-30	8 channel 30 Vdc Voltage Recorder

# CURRENT

SPECIFICATIONS	110/QUAD & OCTPROCESS			Process 101
Nominal Range	±1 mA	±25 mA	±100 mA	+100 mA
Measurement Range	±1.5 mA	±30 mA	±120 mA	-20 to +120 mA
Max. Common Mode Input Range	0 to 2.5 V	0 to 2.5 V	0 to 2.5 V	0 to 1 V
Resolution	0.05 µA	1.0 µA	5.0 µA	10 µA
Calibrated Accuracy	±0.5% FSR	±0.1% FSR	±0.1% FSR	±0.1% FSR
Specified Input Impedance	50 ohm	10 ohm	2 ohm	10 ohm
Overload Protection	±20 mA	±100 mA	±125mA	±125mA

The Process Series data loggers range from one to eight channels. They are engineered for unequalled accuracy and flexibility in the 4-20mA loop sensor and control industry.



**PROCESS101 FEATURES**

Memory	32,767
Form Factor	A
Battery Factor	1
Battery Life	1 yr.
Weight	1 oz (30 g)

**ORDERING INFORMATION**

Item No.	Name	Description
5399-0502	PROCESS101	Low Level Current Recorder 100 mA



**PROCESS110 FEATURES**

Memory	32,767
Form Factor	A-3
Battery Factor	1
Battery Life	10 yr.
Weight	2 oz (60 g)

**ORDERING INFORMATION**

Item No.	Name	Description
5399-0512	PROCESS110-1	Low Level Current Recorder
5399-0513	PROCESS110-25	Low Level Current Recorder
5399-0514	PROCESS110-100	Low Level Current Recorder



**QUADPROCESS FEATURES**

Memory	32,767 readings/channel
Form Factor	B
Battery Factor	2
Battery Life	1 yr.
Weight	13 oz (370 g)

**ORDERING INFORMATION**

Item No.	Name	Description
5399-0504	QUADPROCESS 4-ch.	Current Recorder 100 mA



**OCTPROCESS FEATURES**

Memory	16,383 readings/channel
Form Factor	B-1
Battery Factor	2
Battery Life	1 yr.
Weight	17 oz (480 g)

**ORDERING INFORMATION**

Item No.	Name	Description
5399-0506	OCTPROCESS	8-ch. Current Recorder 100mA

# STATE

All our STATE recorders are devices which sense input transitions or contact closures from external sources such as transducers and/or state initiators. STATE recorders time stamp when any change of state (+ and -) occurs. Memory is nonvolatile solid state. The device can be started and stopped directly from your PC and is fully supported by our graphical Windows® based software.

**GENERAL STATE SPECIFICATIONS**

- Input Connection:** Removable screw terminal
- Input Low:** < 0.4 V
- Input High:** > 2.7 V
- Input Range:** 0 to 30 V
- Input Impedance:** > 1Kohm
- Time Resolution:** 1 second (reading rate dependent)
- Visual Indicator:** LED flashes at selected reading rate.
- Engineering Units:** User may define units up to 10 characters in length. This value is stored in device.
- Scale Factor:** User may program any desired scaling factor from ±1.000E-31 to ±9.999E+31. The scaling factor is stored within the device.
- Real Time Recording:** When used with PC.
- Reading Interval:** 1/second to 1 every 12 hours.
- Replaceable Battery:** 1 year typical life at 25 °C
- Data Format:** Date and time stamped state changes (on/off)
- Time Accuracy:** ±1 minute/month at 20 °C, no RS232 in use.
- Computer Interface:** PC serial or RS232C COM (Interface cable required); 2400 baud Windows 95/98/ME/NT/2000/XP compatible.
- Operating Environment:** -40 to +80 °C, 0 to 95 %RH non-condensing. Quad and Oct: -20° to 60°C



**STATE101 FEATURES**

Memory	13,107
Form Factor	A-1
Battery Factor	1
Battery Life	1 yr.
Weight	1 oz (30 g)

**ORDERING INFORMATION**

Item No.	Name	Description
5399-0707	STATE101	State Recorder



**STATE110 FEATURES**

Memory	13,107
Form Factor	A-2
Battery Factor	1
Battery Life	10 yr.
Weight	1 oz (30 g)

**ORDERING INFORMATION**

Item No.	Name	Description
5399-0708	STATE110	State Recorder



**QUADSTATE FEATURES**

Memory	52,428 state changes
Form Factor	B
Battery Factor	2
Battery Life	1 yr.
Weight	13 oz (370 g)

**ORDERING INFORMATION**

Item No.	Name	Description
5399-0704	QUADSTATE	4 Channel State Recorder



**OCTSTATE FEATURES**

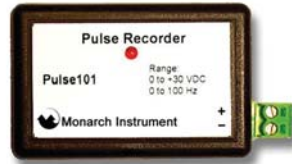
Memory	52,428 state changes
Form Factor	B-1
Battery Factor	2
Battery Life	1 yr.
Weight	17 oz (480 g)

**ORDERING INFORMATION**

Item No.	Name	Description
5399-0705	OCTSTATE	8 Channel State Recorder

## PULSE/EVENT

PULSE101 senses and records the number of pulses/contact closures that occur over the user defined period. Store user defined units such as gallons/min. as well as scale factors and offset values. Easily linearize and scale any transducer that provides a pulse or contact closure output. EVENT records time stamp when predefined unidirectional change (+ or -) occurs.



### PULSE101 SPECIFICATIONS

**Maximum Pulse Rate:** 100 per second (10 ms)  
**Minimum Pulse Width/Contact Closure Time:** 1 ms  
**Input Signal:** TTL, Internal pull-up, +30 Volts max  
**Input Connection:** Removable screw terminal  
**Input Impedance:** >1 Kohm  
**Start Time:** Software programmable start time and date, up to six months in advance.  
**Real Time Recording:** When used with a PC.  
**Engineering Units:** Software programmable. User may program any desired units up to 10 characters. Value is stored in device.  
**Real Time Recording:** When used with a PC.  
**Scale Factor:** Software programmable to any desired scaling factor from  $\pm 1.0000E-31$  to  $\pm 9.9999E+31$ . The factor is stored in the device.  
**Offset Value:** Software Programmable to any value from  $\pm 1.0000E-31$  to  $\pm 9.9999E+31$ . The factor is stored in the device.  
**Reading Interval:** 1/sec. to 1 every 12 hours  
**Visual Indicator:** LED flashes at reading rate.  
**Data Format:** Date and time stamped, V, mV,  $\mu$ V, user defined engineering units.  
**Time Accuracy:**  $\pm 1$  minute/month (at 20 °C (RS232 cable not in use)  
**Operating Environment:** Same as EVENT101

### PULSE101 FEATURES

**Memory** 16,383  
**Form Factor** A-1  
**Battery Factor** 1  
**Battery Life** 1 yr.  
**Weight:** 1 oz (30 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0701	PULSE101	Pulse Recorder



### EVENT101 FEATURES

**Memory** 13,107  
**Form Factor** A-1  
**Battery Factor** 1  
**Battery Life** 1 yr.  
**Weight** 1 oz (30 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0703	EVENT101	Event Recorder

### GENERAL EVENT SPECIFICATIONS

**Input Connection:** Removable screw terminal  
**Input Low:** < 0.4 V  
**Input High:** > 2.7 V  
**Input Range:** 0 to 30 V  
**Input Impedance:** > 1Kohm  
**Min. Input Active (Low) Time:** 1 ms; 4ms (Event 110)  
**Time Resolution:** 1 second (reading rate dependent)  
**Visual Indicator:** LED flashes at selected reading rate  
**Engineering Units:** User defined units up to 10 characters in length. This value is stored in device  
**Scale Factor:** User may program any desired scaling factor from  $\pm 1.000E-31$  to  $\pm 9.999E+31$ . The scaling factor is stored within the device.  
**\*Reading Interval:** 1 every second to 1 every 12 hours.  
**Data Format:** Date and time stamped events (true/false)  
**Time Accuracy:**  $\pm 1$  minute/month (at 20 °C, no RS232 use.)  
 \*Device records one event per user defined reading interval.



### EVENT110 FEATURES

**Memory** 13,107  
**Form Factor** A-2  
**Battery Factor** 1  
**Battery Life** 10 yr.  
**Weight** 1 oz (30 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0706	EVENT110	Event Recorder

## PRESSURE/TEMPERATURE

Both these miniature, battery powered, stand alone pressure and temperature recorders measure and record up to 13,107 measurements per channel. Storage is non-volatile solid state. Start/stop from your PC. Compact size fits almost anywhere.

### PRTEMP SERIES SPECIFICATIONS

**Temperature Range:** -40 to +80 °C  
**Temperature Resolution:** 0.1 °C  
**Calibrated Accuracy:**  $\pm 0.5$  °C (0 to +50°C)  
**Pressure Range:** 0 to 30 PSIA  
**Pressure Resolution:** 0.002 PSIA  
**Calibrated Accuracy:**  $\pm 1.0\%$  FSR at 25 °C;  $\pm 0.2\%$  typical  
**Real Time Recording:** When used with a PC.  
**Reading Interval:** 1 per 5 sec. to 1 every 12 hrs.  
**Calibration:** Digital through software  
**Calibration Date:** Auto recorded in device  
**Data Format:** Date and time stamped °C, °F, °K, °R ; PSIA, inHg, mmHg, bar, atm, Torr, Pa, kPa, MPa, altitude  
**Time Accuracy:**  $\pm 1$  min/mon (20 °C, no RS232)  
**Operating Environment:** -40 to +80 °C, 0 to 95%RH



### PRTEMP101 FEATURES

**Memory** 13,107  
**Form Factor** A-1  
**Battery Factor** 1  
**Battery Life** 1 yr.  
**Weight:** 2 oz (60 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0301	PRTEMP101	Pressure/Temp. Recorder



### PRTEMP110 FEATURES

**Memory** 13,107  
**Form Factor** A-2  
**Battery Factor** 1  
**Battery Life** 10 yr.  
**Weight:** 2 oz (60 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0306	PRTEMP110	Pressure/Temp. Recorder

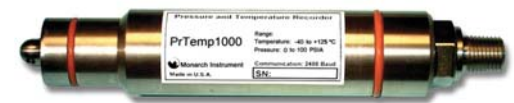
### PRTEMP 1000 SERIES SPECIFICATIONS

**Temperature Sensor:** Semiconductor  
**Temperature Range:** -40 °C to +125 °C  
**Limited Temp. Range:** 80 °C to 125 °C; 15 minutes  
**Temperature Resolution:** 0.1 °C  
**Calibrated Accuracy:**  $\pm 0.5$  °C  
**Pressure Sensor:** Semiconductor strain gauge  
**Pressure Range:** 0 to 30 psia, 100 psia, 300 psia, 500 psia  
**Pressure Resolution:** .002, .005, .02 and .05 psia/g  
**Calibrated Accuracy:** 0.2 % FSR, .25 % @ 25 °C typical  
**Pressure Response Time:** 0.1 ms (10% to 90% FSR)  
**Repeatability:**  $\pm 0.5$  % FSR;  $\pm 0.2$  % typical  
**Adaptor:** 1/4" male NPT or fully submersible  
**Start Time:** Software programmable start time and date.  
**Real Time Recording:** When used with PC.  
**Memory:** 16,383  
**Reading Interval:** 1 every 2 sec. to 1 every 12hrs  
**Calibration:** Digital through software.

**Calibration Date:** Automatically recorded in device  
**Power:** 3.6V lithium battery included  
**Replaceable Battery:** 1 year typical  
**Data Format:** Date and time stamped °C, °F, °K, °R PSIA(g), inches, feet, mmHg, bar, Torr, kPa,  
**Time Accuracy:**  $\pm 1$  minute/month (at 20°C, RS232 port not in use )  
**Computer Interface:** PC serial or RS232C COM (Interface cable required); 2,400 baud.  
**Operating Environment:** -40 °C to +125 °C, 0 to 99% RH  
**Weight:** 10 oz. (285 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0303	PRTemp1000-30	Pressure/Temperature Recorder
5399-0308	PRTemp1000-100	Pressure/Temperature Recorder
5399-0309	PRTemp1000-300	Pressure/Temperature Recorder
5399-0310	PRTemp1000-500	Pressure/Temperature Recorder
5399-0304	PRTemp1000P-30	Pressure/Temperature Recorder
5399-0311	PRTemp1000P-100	Pressure/Temperature Recorder



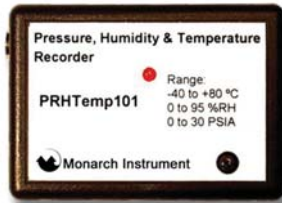
PRTEMP 1000 SERIES accommodate numerous adaptors for various pressure ranges and pipe fittings. Stainless Steel construction includes water resistant o-rings. The real time clock ensures that all data is time and date stamped. The storage medium is non-volatile solid state memory. PRTEMP1000P has a 1" rigid probe with platinum 100 ohm RTD. \*1000 and 5000 psi units are available, specify PSIA or PSIG.

Item No.	Name	Description	Range	Form Factor	Battery	Form
5399-0303	PRTemp1000-30	Pressure/Temperature Recorder	0-30 psia, -40 to +125°C	EE-4		4
5399-0308	PRTemp1000-100	Pressure/Temperature Recorder	0-100 psia, -40 to +125°C	EE-4		4
5399-0309	PRTemp1000-300	Pressure/Temperature Recorder	0-300 psia, -40 to +125°C	EE-4		4
5399-0310	PRTemp1000-500	Pressure/Temperature Recorder	0-500 psia, -40 to +125°C	EE-4		4
5399-0304	PRTemp1000P-30	Pressure/Temperature Recorder	0-30 psia, -40 to +150°C	EE-5		4
5399-0311	PRTemp1000P-100	Pressure/Temperature Recorder	0-100 psia, -40 to +150°C	EE-5		4

# PRESSURE/HUMIDITY/TEMPERATURE

## PRHTEMP SERIES GENERAL SPECIFICATIONS

**Temperature Range:** -40 to +80 °C  
**Temperature Resolution:** 0.1 °C  
**Calibrated Accuracy:** ±0.5 °C (0 to +50°C)  
**Humidity Range:** 0 to 100% RH  
**Humidity Resolution:** 0.5% RH  
**Calibrated Accuracy:** ±3%RH (±2% RH at 25 °C)  
**Pressure Range:** 0 to 30 PSIA  
**Pressure Resolution:** 0.002 PSIA  
**Calibrated Accuracy:** ±1.0% FSR at 25 °C; ±0.2% typical  
**Real Time Recording:** When used with a PC.  
**Reading Interval:** 1 per 5 sec. to 1 every 12 hrs.  
**Calibration:** Digital through software  
**Calibration Date:** Auto recorded in device  
**Data Format:** Date and time stamped °C, °F, °K, °R ; %RH, mg/ml water vapor concentration; PSIA, inHg, mmHg, bar, atm, Torr, Pa, kPa, MPa, altitude  
**Time Accuracy:** ±1 min/mon (20 °C, no RS232)  
**Operating Environment:** -40 to +80 °C, 0 to 95%RH



### PRHTEMP101 FEATURES

**Memory** 13,107  
**Form Factor** A-2  
**Battery Factor** 1  
**Battery Life** 1 yr.  
**Weight** 2 oz (60 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0302	PRHTEMP101	Pressure/Humidity/Temp. Recorder



### PRHTEMP110 FEATURES

**Memory** 13,107  
**Form Factor** A-2  
**Battery Factor** 1  
**Battery Life** 10 yr.  
**Weight** 2 oz (60 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0307	PRHTEMP110	Pressure/Humidity/Temp. Recorder

# SHOCK

Our shock devices are battery powered, stand alone 3-axis shock recorders. They measure and record shock as the peak acceleration levels over the user defined interval. Designed for documenting dynamic environments such as moving vehicles, trucks, containers, ships, etc. These devices are valuable in characterizing environments such as production and assembly lines of delicate equipment, IC fabrication, communications and computer components.

## SHOCK100 SERIES SPECIFICATIONS

**Acceleration Range:** ±50 g\*  
**Acceleration Resolution:** 0.05g (12 bit)  
**Calibrated Accuracy:** ±1 g  
**Sampling Rate:** 2 millisecond (> 500 Hz)  
**Reading Interval:** 8 readings every sec. to 1/hr.  
**Real Time Recording:** When used with a PC.  
**Calibration:** Digital, through software  
**Calibration Date:** Automatically recorded in device  
**Data Format:** Date and time stamped g  
**Time Accuracy:** ±1 minute/month (at 20 °C, RS232 port not in use)  
**Operating Environment:** -20 to +70 °C, 0 to 90%RH



### SHOCK101 FEATURES

**Memory** 43,690 per axis  
**Form Factor** B  
**Battery Factor** 2  
**Battery Life** 7 days  
**Weight** 15 oz (435 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0601	SHOCK101	Tri-axial Shock Recorder

\* 3 RANGES AVAILABLE. ±5, ±50 AND ±100g



### SHOCK101-EB FEATURES

**Memory** 43,690 per axis  
**Form Factor** B-2  
**Battery Factor** 8  
**Battery Life** 60 days  
**Weight** 5 lbs (2.3 kg)

### ORDERING INFORMATION

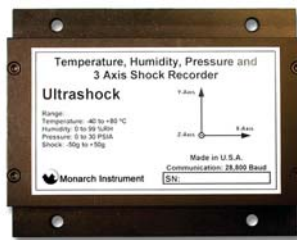
Item No.	Name	Description
5399-0606	SHOCK101-EB	Tri-axial Shock Recorder

ULTRASHOCK is a battery powered, stand alone temperature, pressure, humidity and 3-axis shock recorder. The ULTRASHOCK measures and records temperature, pressure and humidity at the selected reading rates, while shock is recorded as the peak acceleration levels over the same interval. Measure and record up to 23,831 measurements per channel. Non-volatile solid state memory, Device is compatible with our software.

## ULTRASHOCK SPECIFICATIONS

Measure 3 axis Shock, Temperature, Pressure and Humidity

**Temperature Range:** -40 °C to +80 °C  
**Temperature Resolution:** 0.1 °C  
**Calibrated Accuracy:** ±0.5 °C (0 to +50°C)  
**Humidity Range:** 0 to 100% RH  
**Humidity Resolution:** 0.5% RH  
**Calibrated Accuracy:** ±3%RH (±2% RH at 25 °C)  
**Pressure Range:** 0 to 30 PSIA  
**Pressure Resolution:** 0.002 PSIA  
**Calibrated Accuracy:** ±1.0% FSR at 25 °C; ±0.2% typical  
**Acceleration Range:** ±50 g  
**Acceleration Resolution:** 0.1g (12 bit)  
**Calibrated Accuracy:** ±0.5 g  
**Sampling Rate:** 2 millisecond (> 500 Hz).  
**Operating Environment:** -20° to +70 °C, 0 to 90%RH non-condensing



### ULTRASHOCK FEATURES

**Memory** 23,831 per channel  
**Form Factor** B  
**Battery Factor** 9  
**Battery Life** 7 days  
**Weight** 15 oz (435 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0603	ULTRASHOCK	Tri-axial Shock Recorder



### ULTRASHOCK-EB FEATURES

**Memory** 23,831 per channel  
**Form Factor** B-2  
**Battery Factor** 8  
**Battery Life** 60 days  
**Weight** 15 oz (435 g)

### ORDERING INFORMATION

Item No.	Name	Description
5399-0605	ULTRASHOCK-EB	Tri-axial Shock Recorder

## TILT

Tilt101 is a 3-axis, battery powered, stand-alone, programmable tilt recorder. Tilt101 records tilt angles along with date and times of readings. Ideal for documenting dynamic environments such as moving vehicles, trains, containers, ships, etc. It is also useful in characterizing environments such as production and assembly lines of delicate electronics, IC fabrication, communications and computer components. Measure and record 43,690 time-tagged tilt angle levels per axis. Memory is non-volatile solid state.



### TILT101 FEATURES

<b>Memory</b>	<b>43,690 per channel</b>
<b>Form Factor</b>	<b>B</b>
<b>Battery Factor</b>	<b>6</b>
<b>Battery Life</b>	<b>1 week</b>
<b>Weight</b>	<b>15 oz (425 g)</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-0607	TILT101	Triaxial Recorder

### TILT101 SPECIFICATIONS

<b>Calibrate Angle Accuracy:</b>	±3 degrees
<b>Angular Resolution:</b>	0.5 deg. (12 bit)
<b>Tilt Range:</b>	-90 to +90 degrees
<b>Acceleration Calibration:</b>	Digital, through software.
<b>Recording Interval:</b>	1/second to 2/day selectable.
<b>Start Time:</b>	Start time/ date programmable with software.

<b>User-Replaceable Battery:</b>	9V battery, 1 week typical.
<b>Time Accuracy:</b>	±1 minute per month at 20°C when RS232 not in use.
<b>Data Format:</b>	Date and Time stamped, Degrees
<b>Computer Interface:</b>	RS232 Serial Port
<b>Operating Environment:</b>	0° to +80°C, 5 to 95% RH.

## BRIDGE/STRAIN

BRIDGE110 is a miniature, battery powered, stand alone, bridge/strain gauge recorder. The BRIDGE110 features a real-time clock module that extends the battery life to > 10 years and allows for high speed downloads. The storage medium is non-volatile solid state memory.

### BRIDGE110 SPECIFICATIONS

	Nominal Range (mV)			
	±10	±25	±100	±1000
Measurement Range:	±15	±37.5	±150	±1200
Resolution:	1 µV	2.5 µV	5 µV	50 µV
Calibrated Accuracy (%) @ 25° C	±0.25	±0.10	±0.05	±0.01
Reference and Input Range:	0 to 2.5 V			

**Input Connection:** 6-position screw terminal  
**Input Impedance:** >1 Mohm during acquisition, low impedance when inactive  
**Power Input:** 2.5 VDC, 2.5 mA (100 ohm) max. load  
**Maximum Input Signal Impedance:** 5 Kohm  
**Temperature Effect on Span:** < 25 µV over -40° to +80° C  
**Temperature Effect on Offset:** < 25 µV over -40° to +80° C  
**Engineering Units:** stored in device, user may define any desired scale and offset from ±1.0000E-31 to ±9.9999E+31

**Reading Interval:** 1 every sec. to 1 every 12 hrs.  
**Calibration:** Digital calibration through software  
**Calibration Date:** Automatically recorded in device  
**Data Format:** Date and time stamped %, ppm; strain, µstrain; V, mV, µV, engineering units specified through software  
**Time Accuracy:** ±1 minute/month (at 20° C to 30° C)  
**Computer Interface:** PC serial or RS232C COM (Interface cable required); 57,600 baud  
**Operating Environment:** -40° C to +80° C, 0 to 95 %RH non-condensing

\*\*350 ohm sensors may be used with series resistors to produce >1 Kohm; 120 ohm gauges may be used in half and quarter bridge configurations.



### BRIDGE110 FEATURES

<b>Memory</b>	<b>32,767</b>
<b>Form Factor</b>	<b>A-3</b>
<b>Battery Factor</b>	<b>1</b>
<b>Battery Life</b>	<b>10 years</b>
<b>Weight</b>	<b>2 oz (60 g)</b>

### ORDERING INFORMATION

Item No.	Name	Description	Accuracy	Resolution	Range
5399-1001	Bridge 110-10	10 mV Bridge/Strain Gauge Recorder	± 0.25%	1 uV	± 10 mV
5399-1002	Bridge 110-25	25 mV Bridge/Strain Gauge Recorder	± 0.10%	2.5 uV	± 25 mV
5399-1003	Bridge 110-100	100 mV Bridge/Strain Gauge Recorder	± 0.05%	5 uV	± 100 mV
5399-1004	Bridge 110-1000	1000 mV Bridge/Strain Gauge Recorder	± 0.01%	50 uV	± 1000 mV

## WATER LEVEL/TEMPERATURE

Both LEVEL1000 and 2000 are battery powered, stand alone, submersible and vented submersible water level and temperature recorders. The storage medium is non-volatile solid state memory, providing maximum data security even if the battery becomes discharged. The device can be started and stopped directly from your computer.



### GENERAL LEVEL SPECIFICATIONS

<b>Temperature Sensor:</b>	Semiconductor
<b>Range:</b>	-40° C to +80° C
<b>Resolution:</b>	0.1° C
<b>Calibrated Accuracy:</b>	±0.5° C(0 to +50°C)
<b>Pressure Sensor:</b>	Semiconductor strain gauge
<b>Media Compatibility:</b>	Must be compatible with 303 stainless steel
<b>Nominal Range:</b>	0 to 30 feet
<b>Resolution:</b>	0.05 inches
<b>Calibrated Accuracy:</b>	Nominal range ±0.3% max @ 25° C
<b>Response Time:</b>	90% change in 1 ms
<b>Repeatability:</b>	±0.5% FSR; ±0.2% typical
<b>Burst Pressure:</b>	75 PSIG
<b>Real Time Recording:</b>	When used with a PC.
<b>Reading Interval:</b>	1 every 2 sec. to 1 every 12 hrs.
<b>Calibration:</b>	Digital, through software
<b>Calibration Date:</b>	Automatically recorded in device
<b>Date and time stamped</b>	°C, °F, °K, °R; PSI, inches, feet, millimeters, centimeters, meters (of water column)
<b>Operating Environment:</b>	-40° to +80°C, 0 to 100%RH
<b>Allowable Over Range:</b>	0 to 100 feet (reduced specifications)

### LEVEL 1000 FEATURES

<b>Memory</b>	<b>16,383</b>
<b>Form Factor</b>	<b>E-2</b>
<b>Battery Factor</b>	<b>4</b>
<b>Battery Life</b>	<b>1 year</b>
<b>Weight</b>	<b>8 oz (220 g)</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-1101	LEVEL1000	Water Level/Temperature Recorder-Submersible

LEVEL 2000 incorporates a vent tube to compensate for atmospheric pressure fluctuations. The tube also allows for communication with the logger while measuring.

### LEVEL 2000 SPECIFICATIONS

Same as LEVEL1000 except:  
**Resolution:** 0.02 inches

### LEVEL 2000 FEATURES

<b>Memory</b>	<b>16,383</b>
<b>Form Factor</b>	<b>E-5</b>
<b>Battery Factor</b>	<b>4</b>
<b>Battery Life</b>	<b>1 year</b>
<b>Weight</b>	<b>3 lbs (1.4 kg)</b>

### ORDERING INFORMATION

Item No.	Name	Description
5399-1102	LEVEL2000	Water Level/Temperature Recorder-Vented

# DataChart® Compact Data Loggers available in a variety of form factors and materials.

## FORM AA Available in Stainless Steel

AA 1.5" x 0.6"(dia)  
AA-1 2.6" x 0.7"(dia)



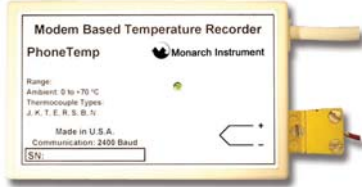
1.5"  
(39 mm)

0.6"  
(16 mm) diameter

## Form C

C 3.8"x2.4"x1.0"  
C-1 4.5"x2.4"x1.0"  
Available in ABS Plastic

3.8" (96 mm)



1.0" (26 mm) depth

2.4"  
(61 mm)

## Form F

F 4.5"x1.0"Dx7"Probe  
F-1 5.6"x1.25"Dx12"Probe

4.5" (114 mm)

Probe 7"  
(177 mm)



1.0" (26 mm) diameter

## Form A

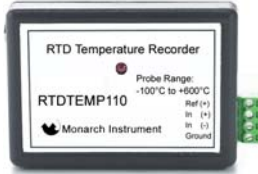
A 2.3" x 1.4" x 0.6"  
A-1 2.6" x 1.4" x 0.6"  
A-2 2.3" x 1.5" x 0.9"  
A-3 2.7" x 1.7" x 0.8"  
Available in ABS Plastic

2.3" (55 mm)



1.4"  
(35 mm)

0.6" (16 mm) depth



## Form D

D 4.3"x1.0" D  
Available in 303 Stainless Steel

4.3" (108mm)

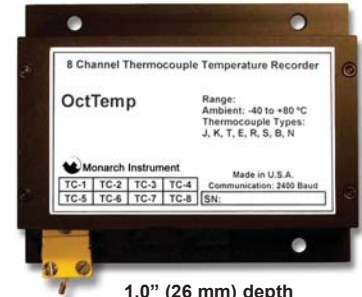


1.0"  
(26 mm) diameter

## Form B

B 4.4"x3.5"x1.0"  
B-1 4.4"x3.5"x1.5"  
B-2 6 x8.3x1.8"  
Available in Billet Aluminium

4.4" (111mm)



3.5"  
(89 mm)

1.0" (26 mm) depth

## Form E

E 5.8"x1.0"D  
E-1 5.4"x1.0"D  
E-2 5.5"x1.25"D  
E-3 7.5"x1.25"D  
E-4 6.4"x1.25"D  
E-5 9.1x1.25D and 7.1x1.2"D  
Available in 303 Stainless Steel



## Form G

G 4.9" x 4.9" x 2.5"  
ThermoVault Box available in 303 Stainless Steel

4.9" (125 mm)



2.5"  
(64 mm)

4.9" (125 mm) depth

## General Information

All our recorders require the purchase of an interface cable and our Windows® compatible software. Please keep this in mind when placing your order.

### Terms:

EB means extended battery life and you should consider these devices if your application requires longer recording

periods. If you plan to record and process a lot of data, consider the 110 Models, where available, as these devices provide much higher communication speeds for uploading recorded data, in addition to increased battery life.

## ACCESSORIES

Item No.	Name	Description
5399-9903	IFC110	Interface Cable and Software for all loggers except Micro models.
5399-9902	IFC102	Interface Cable and Software for Micro models.
5399-9940	pH-1	Gen. Purpose Laboratory pH Electrode.
5399-9904	RFEXT-KIT	Total Transceiver Package for PC and Logger sites. Includes (2) Transceivers, antennas, AC P/S, Serial and IFC Cables
5399-9905	RFEXT-REMOTE	Transceiver and cables for Logger site. Includes Transceiver, antenna, AC P/S and IFC Cable.
5399-9906	RFEXT-BASE	Transceiver for PC Site Only Includes Transceiver, antenna, AC P/S and Serial Cable.
5399-9907	RF EXT	Spare Transceiver and cables for either site Includes Transceiver, antenna, AC P/S, Serial and IFC Cables.
5399-9930	USB-1	USB to RS232 Converter
5399-9931	USB101	USB Kit includes USB-1 and IFC110 Cable
5399-9932	NET-1	Serial to Ethernet Converter
5399-9933	NET101	NET-1 package and IFC110 Cable
5399-9999	N.I.S.T.Cert	NIST Certificate of Calibration. Priced per parameter.



IFC110



RFEXT-KIT

## BATTERIES

Item No.	Name	Description	Battery Factor
5399-9913	LTC-7PN	3.6 Volt, Lithium Battery, 750 mAh	1
5399-9914	U9VL-J	9.0 Volt, Lithium Battery, 1200 mAh	2
5399-9912	TL-2150	3.6 Volt, Lithium Battery, 1/2 AA, Axial Leads, 950 mAh	4
5399-9911	LTC-3PN	3.6 Volt, Lithium Battery, 350 mAh	6
5399-9916	SB-5700	High Temperature 150C, Lithium Battery 1/2 AA, 800 mAh	7
5399-9917	SR-1154W	1.55 V, Silver Oxide Button Cell Battery, 175 mAh	8
N/A	D Cell	Alkaline Battery	9
5399-9918	CR14250SE	3.0 Volt Lithium Battery, 1/2 AA, 850 mAh	10

## EXTENDED WARRANTY for complete details visit [www.monarchinstrument.com](http://www.monarchinstrument.com)

To select a 2-Year Extended Warranty, locate the PRICE of the Data Logger in this Price List and use the corresponding ITEM NO. below.

PRICE of Data Logger	Warranty ITEM NO.	PRICE	DESCRIPTION
≥\$200	<b>5000-600</b>	\$28.00	2-year Extended Warranty combined with 1-year Standard Warranty provides 3 years of protection.
≥\$400	<b>5000-601</b>	56.00	2-year Extended Warranty combined with 1-year Standard Warranty provides 3 years of protection.
≥\$600	<b>5000-602</b>	84.00	2-year Extended Warranty combined with 1-year Standard Warranty provides 3 years of protection.
≥\$1,000	<b>5000-603</b>	140.00	2-year Extended Warranty combined with 1-year Standard Warranty provides 3 years of protection.

### LIMITED WARRANTY

SELLER warrants hardware products to be free from any defect in materials or workmanship for a period of one (1) year from date of shipment to BUYER. SELLER's entire liability and BUYER's sole and exclusive remedy resulting from any defect in workmanship or material in the hardware product covered by this limited warranty shall be limited to and fully discharged by the SELLER's option of repair of such item or replacement with the same or a like product without charge. The limited warranty provided in this clause is in lieu of all other warranties, expressed or implied, arising by law or otherwise. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. This limited warranty shall not be modified except by an arrangement signed by both parties specifically referencing this clause.

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IN NO EVENT SHALL SELLER BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE LOSSES OR DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSSES OR DAMAGES FOR ANY LOST PROFITS OR LOST DATA) AS THE RESULT OF ANY BREACH OR DEFAULT BY SELLER WITH RESPECT TO THE HARDWARE OR SOFTWARE, EVEN IF SELLER HAS BEEN ADVISED OR MADE AWARE OF THE POSSIBILITY OF ANY SUCH LOSSES OR DAMAGES AND REGARDLESS OF WHETHER THE CLAIM IS BASED ON CONTRACT, TORT, STRICT LIABILITY, OR OTHER THEORY OF LIABILITY.

This limited warranty does not extend or apply to damage resulting from: (a) misuse of the product; (b) use of the product in other than its normal and customary manner; (c) accident, neglect or contamination; (d) improper testing, operation, maintenance, service, repair, installation or storage; or (e) unauthorized alteration or modification of the product or software. This limited warranty does not extend or apply to consumables or accessories (including, but not limited to, reflective tape, lamps and batteries, if applicable) or equipment, instruments or accessory items which are warranted separately by the original manufacturer of these items.

### EXTENDED WARRANTY

The Extended Warranty is a time extension of SELLER's LIMITED WARRANTY from a period of one (1) year to a period of three (3) years from date of shipment to BUYER. All other aspects, features, coverages, limitations and exclusions remain the same as stated in SELLER's LIMITED WARRANTY.

## TERMS AND CONDITIONS

**Placing An Order:** Orders may be placed with your Monarch Instrument Distributor or directly with Monarch Instrument in Amherst, NH via fax, e-mail, U.S. Mail or at [www.monarchinstrument.com](http://www.monarchinstrument.com). Telephone orders must be confirmed in writing by one of these methods. The order should contain the Monarch model and item numbers, quantity, price, purchase order number, shipping and billing addresses, method of payment, preferred shipping method and required delivery date. Also include a contact name with a corresponding e-mail, phone and fax number. Upon receipt of the order, Monarch Instrument provides a confirmation of the order, if requested.

**Expedite Fee:** Orders received before 2:00 P.M. EST may be shipped same day, if the product is in stock, for a fee of \$25.00.

**Minimum Order:** A \$50.00 net minimum order amount applies to all orders.

**Credit Terms:** Credit terms are granted at the sole discretion of Monarch Instrument. Unless credit is approved in advance, Buyer agrees to accept delivery and pay by company check or cash for UPS C.O.D. shipments or utilize a credit card. New accounts seeking credit approval should include bank and three trade references with a purchase order. Credit approvals on new accounts are limited to orders over \$150.00 and may delay shipments by 5 days. If an account is established, full payment is due Net 30 Days after invoice date. Monarch Instrument accepts Visa, MasterCard, Discover and American Express to simplify the handling of orders.

**Repair and Calibration Service Policy:** All items being returned to Monarch Instrument for repair and/or calibration must have an RMA Number, be shipped prepaid by customer. Items accepted for Warranty repair are serviced at no charge in accordance with the terms of Monarch Instrument's Warranty policy. Physically damaged or out of warranty items will be repaired and returned on a time and materials basis. Payment for out of warranty repairs shall be in accordance with terms stated above. All items returned to Monarch, but found to have no problem, will be subject to a \$50.00 evaluation fee.