

**Heat Stress Monitor
&
Datalogging
Heat Stress Monitor**

800034 & 800035
Instruction Manual

SPER
SCIENTIFIC

Environmental Measurement Instruments

**Heat Stress Monitor 800034 &
Datalogging Heat Stress Monitor 800035**

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INTRODUCTION

Large display continually monitors temperature, RH & all heat stress indicators: TA (Air Temperature), RH, Heat Index, Dew Point, Wet Bulb

Government organizations such as OSHA have set recommended heat stress limits for various activities. Continually monitor all heat stress indicators. Both models recall min/max RH & temperature. 800034 provides visual & audible alarms for user selectable hi/lo temperature & RH thresholds, while 800035 provides visual & audible alarms for user selectable hi/lo temperature thresholds. Datalogging Model records up to 32,000 data points that can be downloaded using the USB cable and software that come with the unit. Both models include 4 AAA batteries and stand on a desk-top or wall mount.

An AC Adaptor is included with Datalogger 800035 and available as an optional accessory for Monitor 800034.

FEATURES

- Displays readings of TA (Air Temperature), RH, heat index, dew point, wet bulb, month and date calendar, and time on a large LCD display
- Easy-to-understand icons
- Recalls minimum and maximum readings
- Visual & Audible Alarms
- Desktop or wall mount capability

MATERIALS SUPPLIED

- Monitor
- Instruction Manual
- AAA Batteries (4)
- USB Cable (800035 only)
- AC Adaptor (800035 only)
- CD (USB Driver and Datalogger Software) (800035 only)

FRONT PANEL DESCRIPTION & LCD DISPLAY



1. POWER - Power on/off, enter setting mode
2. MODE - Min/Max
3. SEL/R - Change Value /
enter Key Start mode (800035 only)
4. TRH/M - Select Mode
5. UNIT - Change Temp. Unit
6. REC/ALRM LIGHTS
7. Air Temp - Ambient Temperature (°C / °F selectable)
8. Alarm indicator:
Upper Bell: Temperature alarm is set
Lower Bell: RH alarm is set
9. Humidity: Relative Humidity
10. Selectable parameters: Heat Index, Dew Point (DPT),
WBT (Wet Bulb Temp) - (All units °C / °F selectable)
11. H M : Hour: Minute / M D : Month: Day

MONITOR SETUP (800034)

Monitor Setup: Date and Time

1. Turn the unit on.
2. Press **POWER** and **MODE** to enter Setup Mode.
3. The day of month will flash on the LCD. Press **SEL/R** to increase the number and press **TRH/M** to decrease the number.
4. Press **UNIT** to save the selection and move to the next setting.
5. The month will flash. Press **SEL/R** to increase the number and press **TRH/M** to decrease the number.
6. Press **MODE** to save the selection and move on to the next setting.
7. The hour will flash. Use **SEL/R** and **TRH/M** to select the current hour.
8. Press **UNIT** to save the selection and move to the next setting.
9. The minutes will flash. Use **SEL/R** and **TRH/M** to select the current minute.
10. Press **POWER** and **MODE** to save the selection.

Temperature / RH Alarm - ON/OFF

1. Press **MODE** and **UNIT** to switch the alarm on and off. By pressing **MODE** and **UNIT** again, you can cycle through the options of :

- a. Temperature (only) On (Upper Bell)
- b. RH (only) On (Lower Bell)
- c. Temperature & RH On (Both Bells)
4. All alarms off

Temperature Hi/Lo Alarm Settings

1. Press **SEL/R** and **POWER** to enter Settings
2. Press **MODE** to switch between editing Hi and Low
3. Press **SEL/R** to increase the number and press **TRH/M** to decrease the number.
4. Press **UNIT** to select a different digit.
5. Press **SEL/R** and **POWER** to save the selection.

RH Hi/Lo Alarm Settings

1. Press **TRH/M** and **POWER** to enter Settings
2. Press **MODE** to switch between editing Hi and Low
3. Press **SEL/R** to increase the number and press **TRH/M** to decrease the number.
4. Press **UNIT** to select a different digit.
5. Press **TRH/M** and **POWER** to save the selection.

Min/Max Readings Recall

1. Press **MODE**, max reading of temperature & humidity appear.
2. Press **MODE** again for the minimum reading of temperature & humidity

Note...

The minimum & maximum readings are taken while the unit has been on.

3. To reset min/max values unit must be turned **OFF**.

Appendix

Datalogging Heat Stress Monitor

800035

MONITOR SETUP (800035)

Monitor Setup: Date and Time / Alarm Adjustment

1. Turn the unit on.
2. Press **PWR** to enter settings mode.
3. The year will flash on the LCD. Press **SEL/R** to select the current year.
4. Press **TRH/M** to save the selection and move to the next setting (months, days, hours, minutes). Continue to use **SEL/R** to make the appropriate adjustments.

Note...

Continue to press **TRH/M** to enter the Hi/Lo Alarm Setting Adjustments

Hi/Lo Alarm Settings (Temperature Only)

1. A-off (for HI - note HI on the bottom of LCD next to date) will flash on the LCD.
2. Press **SEL/R** to turn the HI alarm ON.
3. Press **TRH/M** to display HI Alarm value setting.
4. Press **SEL/R** to change settings. Press and hold will adjust repeatedly.

5. Press **TRH/M** to show A-off (Lo Alarm Off)
6. Press **SEL/R** to turn the LO alarm ON.
7. Press **TRH/M** to display LO Alarm value setting.
8. Press **SEL/R** to change settings. Press and hold will adjust repeatedly.
9. Press **TRH/M** to save changes and exit.

Note...

HI/LO will appear on the bottom on the LCD to indicate alarms have been set.

Min/Max Readings Recall

1. Press **MODE**, max reading of temperature & humidity appear.
2. Press **MODE** again for the minimum reading of temperature & humidity.

Note...

The minimum & maximum readings are taken while the unit has been on.

3. To reset min/max values unit must be turned **OFF**.

SOFTWARE INSTALLATION

Software Download

With technology upgrading, some computers no longer have a disc drive for you to install the software that comes with your meter. You can now download the software that came with your meter directly. Go to the **www.sperdirect.com/software.htm** and find your meter or search for you meter (**800035**) and download from product page.

Installing the USB Logger Driver for Windows

1. Insert the CD into your computer's CD drive.
2. The Auto Play dialogue box appears. Click on "Open folder to view files" to view the file names on the disc.
3. The list of "Files Currently on the Disc" appears. Double click to select "Step1-USB Driver."
4. Double click to select "PL2303_Prolific_Driverinstaller_v110."
5. Select "yes" to allow the program Setup.exe to make changes to your computer.
6. The PL-2303 Driver Installer program opens. Select "Next" to start the installation.
7. Select "Finish" to complete the driver installation. Now you can install the logger software.

Installing the Logger Software for Windows

8. Press the back arrow ← to return to the list of files on the disc.
9. Double click to select “Datalogger_Products” Software.
10. Double click “Volume” to open the folder.
11. Double click to select “Setup” (Type: Application).
12. Select “yes” to allow the program Setup.exe to make changes to your computer.
13. The Destination Directory appears. This lists the target directories for the datalogger and software. Select “Next.”
14. Read the license agreement and select “I accept the License Agreement.” Click “Next.”
15. Select “Next” again to start the installation.
16. Select “Finish” to complete the software installation.
17. Restart the computer.

RUNNING THE SOFTWARE FROM WINDOWS

1. Connect the mini-USB end of the cable to the corresponding port on the side of the monitor.
2. Insert the USB cable into the USB port on your computer.
3. Open the Start Menu and select the “Data Logger” Icon from the programs list.
4. The USB Data Logger Monitor screen displays.

Note...

The monitor should be plugged into the USB port before the software is opened.

If the monitor is not plugged into the correct port, an error message will appear. Make sure that the monitor is plugged in correctly.

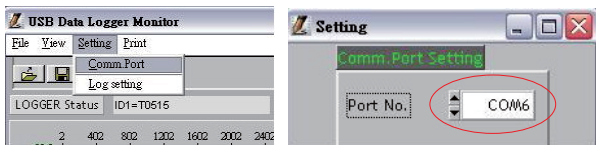
DATALOGGER SETTINGS

To Access Setting Options:

- Select “Setting” from the header options on the upper left-hand side of the USB Data Logger Monitor screen. “Comm. Port” and “Log Setting” options appear in a drop-down menu.

Communication (Comm.) Port Setting

1. Select “Comm. Port” from the Setting options. The Comm. Port Setting Menu displays.
2. The menu displays the port number, baud rate, data bits, parity, and stop bits. Select the correct port number.
3. Click “OK” to finish.



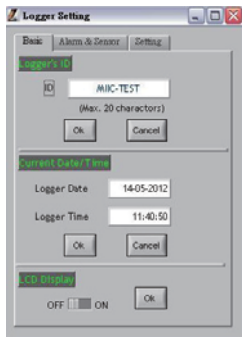
Troubleshooting the Communication Port Setting

If the software does not recognize that the logger is plugged into the USB port you should verify that the communications port number is correct.

Note...

The port information is found on the computer under “Device Manager.” However, depending upon your version of Windows, the first steps below to access “Device Manager” may differ slightly.

1. Open the “Start Menu” on the computer.
2. Select “Control Panel.”
3. Select “Hardware and Sound.”
4. Find the “Devices and Printers” option.
Select “Device Manager.”
5. Double click on the “Ports” option.
6. The correct port will list “Prolific USB-to-Serial Comm Port” followed by the communication port number in parentheses. This is the port number that should be selected in the Settings Options.



Basic Logger Setting

The basic menu allows you to designate a name for your logger and specify the current date and time.

1. Select “Log Setting” from the Setting options.
The Logger Setting menu displays.

2. Select the “Basic” tab.
3. Enter a name for your logger, consisting of up to 20 characters.
4. Select “OK” to save your entry.
5. The system will automatically show the current computer date and time. Select “OK” to save your entry and sync the monitor’s current date and time.

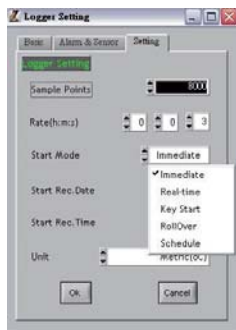
Logger Alarm Threshold Setting

Note...

In order to use the alarm feature during datalogging, the alarm must be turned on manually before the monitor is connected to the computer using the USB cable.

The software will override any manually set alarm threshold and default to 1000 ppm. To change the alarm threshold before datalogging:

1. Select “Log Setting” from the Setting options.
The Logger Setting menu displays.
2. Select the “Alarm & Sensor” tab.



3. The default alarm value of 1000 ppm displays. Adjust the ▲ or ▼ indicators to change the value. Alternatively, click on the field and type in the new value. Continue by setting the logger sampling parameters, below.

Logger Sampling Setting

1. Select the “Setting” tab.
2. The monitor sampling range is 1 second to 6:59:59. Adjust the ▲ or ▼ indicators to specify the sampling rate in hours, minutes, and seconds.
3. Adjust the ▲ or ▼ indicators to select Immediate, Roll Over, Schedule, Real Time or Key Start mode.

Setting Immediate Start Mode

This option will cause the monitor to begin taking readings as soon as the option is confirmed. Reading will continue when the monitor is detached from the USB port.

1. Adjust the ▲ or ▼ indicators to specify the number of sample points, in thousands, from 1000 to 32,000.
2. Adjust the ▲ or ▼ indicators to toggle between units: °C or °F.
3. Select “Ok” to save the settings and exit the menu, or “Cancel” to exit without saving the new settings.

Setting Roll Over Mode

This option allows for continued recording even when the monitor is full. After the data limit has been reached new readings will be recorded over the earliest record.

1. Adjust the ▲ or ▼ indicators to specify the number of sample points, in thousands, from 1000 to 32,000.
2. Adjust the ▲ or ▼ indicators to toggle between units: °C or °F.
3. Select “Ok” to save the settings and exit the menu, or “Cancel” to exit without saving the new settings.

Setting Schedule Mode

This option allows you to pre-set the date and time that the monitor will automatically begin recording.

Note...

The date and time formats must be Month/Day/Year and H:M:S.

1. Adjust the ▲ or ▼ indicators to specify the number of sample points, in thousands, from 1000 to 32,000.
2. Adjust the ▲ or ▼ indicators to toggle between units: °C or °F.
3. The fields for the start date and time and the stop date and time will be automatically populated with default values. Click on any of these fields and use the computer keyboard to make changes as desired.

4. Select “Ok” to save the settings and exit the menu, or “Cancel” to exit without saving the new settings.

Setting Key Start Mode

1. Adjust the ▲ or ▼ indicators to specify the number of sample points, in thousands, from 1000 to 32,000.
2. Adjust the ▲ or ▼ indicators to toggle between units: °C or °F.
3. Select “Ok” to save the settings and exit the menu.

DATA SAMPLING AND RECORDING

Note...

When the monitor is disconnected from the computer, a “No port found” error message will display. This will not affect the data sampling and recording. Click “OK” to continue.

Sampling and Recording in Immediate Mode

1. The green LED will flash to indicate that the monitor is recording data.
2. Disconnect the USB cable from the computer and monitor. Recording will continue.
3. Place the monitor in the desired location for sampling.
4. The datalogger will record up to 32,000 data points. Once the memory is full, recording will stop.

Sampling and Recording in Roll Over Mode

1. The green LED will flash to indicate that the monitor is recording data.
2. Disconnect the USB cable from the computer and monitor. Recording will continue.
3. Place the monitor in the desired location for sampling.
4. The monitor will record up to 32,000 data points. When the memory is full, the monitor will continue recording over the oldest records.

Sampling and Recording in Schedule Mode

1. Disconnect the USB cable from the computer and monitor. Place the monitor in the desired location for sampling.
2. At the scheduled start date and time, the green LED will flash to indicate that the logger is recording data.
3. The datalogger will record up to 32,000 data points. Once the scheduled stop date and time are reached, recording will stop.

Sampling and Recording In Key Start Mode

1. Disconnect the USB cable from the computer and meter. Place the meter in the desired location for sampling.
2. At the desired start date and time, press and hold the Key Start Button for 3-5 seconds. The green LED will flash to indicate that the logger has started recording data.
3. The datalogger will record the number of data points formerly set up in the software (see page 22).
4. To stop the session early, press and hold the Key Start Button again for 3-5 seconds.

DOWNLOADING DATA

1. Connect the mini-USB end of the cable to the corresponding port on the side of the monitor.
2. Insert the USB cable into the USB port on your computer.
3. Open the Start Menu and select the “Data Logger” Icon from the programs list.
4. The USB Data Logger Monitor screen displays.
5. Click the “LOGGER Status” button to finish recording. The datalogger ID, number of records sampled, and the sampling parameters and rate will display.
6. Click the “Download” button to download the data. A graph of the data will display.

Viewing the Graph

Note...

To display the values for a specific data point, click the left mouse button to move the red cursor (located on the red vertical line) to the desired point on the graph. You may also hold down the left mouse button and drag the cursor to the desired point.

- To zoom in: Hold CTRL and click the left mouse button.
- To zoom out: Hold CTRL and click the right mouse button.
- To move the graph: Hold CTRL and Shift and then click and hold the left mouse button. Use the cursor to move the graph.
- To read each measurement: Use the left and right arrow keys.
- To reset the size of the graph to the default:
 - a) Click on the colored bar to the left of one of the data parameters under the graph (Temp., Humidity, Dew Point, or Wet Bulb).
 - b) Move the mouse to select a new color and click on it.
 - c) The selection will be saved and the graph size will return to the default.

Printing the Graph

1. Click the Printer Icon button to print the graph.
2. Click “OK” to confirm the selection.

Viewing and Printing Data Tables

1. Click the “View” button and select “Data Table” to view the data in table format.
2. To print data from the table, click the Printer Icon button. The Printing Table Data dialogue box will open.
3. Enter the record range you wish to print (for example, 1-2,350) or leave the field blank to print all the records.
4. Click “OK” to confirm your selection.
5. Click “OK” to start printing.

Saving the Data

1. Click the Save button (floppy disc icon) to save the data.
2. Enter a unique name for the file.
3. Click “OK” to confirm.

Retrieving Stored Files

1. Click the “File” button (open folder icon).
2. Select the file you want to open.
3. Click “OK” to confirm.

TROUBLESHOOTING

Note...

This meter is not drop resistant. Dropping the meter will cause damage and readings could be inaccurate.

Error Code Description

E-1: Low Battery / Sensor Failed

E-2: Measurement out of range

SPECIFICATIONS

	Range	Res.	Accuracy
Temperature	-20 to 50°C -4 to 121°F	0.1°C/F	±0.6°C ±1.2°F
RH	0.0 to 99.9%	0.1%	±3% fs @25°C
Dimensions	4½" × 4¼" × 1" (108 × 115 × 25 mm)		
Weight	5 oz (141 g)		

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of **five (5) years** from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover probes, batteries, battery leakage, or damage resulting from accident, tampering, misuse, or abuse of the product. Opening the meter to expose its electronics will void the warranty.

To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.
8281 E. Evans Rd., Suite 103
Scottsdale, AZ 85260

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days of purchase.



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