Datalogging
RH / Temperature Pen

800013
Instruction Manual

SPER
SCIENTIFIC
Environmental Measurement Instruments

Datalogging RH / Temperature Pen 800013

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INTRODUCTION

This Sper Scientific RH/Temperature Datalogger Pen 800013 is an extremely fast and accurate meter with multiple functions. The meter reads and records relative humidity, air temperature, dew point, and wet bulb.

The datalogger records up to 32,000 data points which can be downloaded by plugging the pen directly into a USB port. No cradle or cable is necessary. Green and red LED lights indicate datalogging and alarms.

MATERIALS SUPPLIED

- Datalogging RH/Temperature Pen with USB Cap and Sensor Cap
- Go to **www.sperdirect.com** and find **800013 - Datalogging RH/Temperature Pen** or search for **800013** and download from product page.
- One 3.6v ½ AA Lithium Battery
- Wrist Strap
- Instruction Manual

FEATURES

- Displays current readings of RH & Temperature, can be programmed to log date, time, humidity, air temperature, dew point, and wet bulb readings.

- Highly accurate microcomputer circuit

- Direct upload of data to Excel

- Manual datalogger option

- LEDs indicate datalogging and alarms

- Tripod mounting screw

METER COMPONENTS
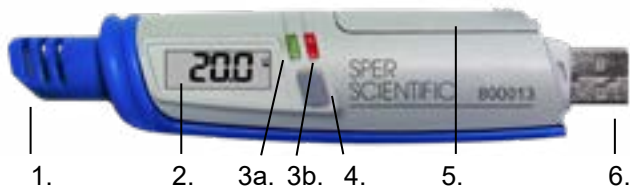
1. Sensor
2. LCD Display
3. LED Indicators
   a. Green LED flashing:
      Logging is in progress
   b. Red LED flashing:
      Reading exceeds Hi/Lo alarm threshold
4. Power Button / Key Start
5. Battery Compartment
6. USB Drive
7. Sensor Cap (not shown)
8. Tripod Mounting Screw (on back, not shown)

WRIST STRAP INSTALLATION

1. Grasp the thinner thread loop attached to the wrist strap so that your thumb and forefinger press the end of the loop flat.

2. Guide the closed loop into the small receptacle on the underside of the datalogger pen near the USB. Pull the loop through until it is stopped by the plastic fastener.

3. Hold the loop open and guide the thicker end of the wrist strap through the open loop.

4. Pull the wrist strap all the way through the loop.

SOFTWARE INSTALLATION

Software Download

You can download the software that came with your meter directly. Go to the **www.sperdirect.com** and find your meter or search for you meter (**800013**) and download from product page.

Installing the Software Package

1. Open the Downloaded software file.

2. Open the Volume File.

3. Open the Setup Application.

4. When the dialog box appears, Click Run.

5. Click **YES** to allow setup.exe to make changes to your computer.

6. Click **NEXT**.

7. Click **FINISH**.

8. Restart your computer.

RUNNING THE SOFTWARE

1. Insert the USB drive into the USB port.
2. Open the Start Menu and select the "Data Logger" Icon from the programs list.
3. The USB Data Logger Monitor screen displays.

Note…

If the datalogger is not plugged into the USB port, an error message will appear. Make sure that the logger 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 display opens in a new window.
2. Select the correct port number. Click "OK" to finish.
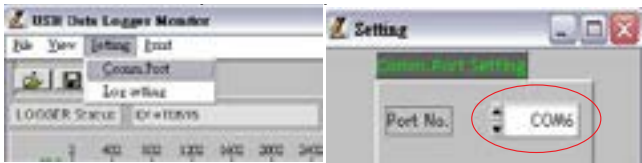
Troubleshooting the Communication Port Setting

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 intial 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. 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. Select this port number 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 etting options. The Logger Setting menu appears.
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 meter's current date and time.

Logger Alarm and Sensor Setting

This menu allows you to set minimum and maximum values for temperature and humidity. If a reading is outside these parameters, the red LED will flash a warning.

1. Select "Log Setting" from the Setting options. The Logger Setting menu appears.
2. Select the "Alarm & Sensor" tab.

3. Use the mouse to select the alarms you want to set. Once you have selected the desired alarm(s), specify the desired values using the ▲ or ▼ indicators.

4. Select the parameters you wish to record. The meter can take readings for temperature, humidity, dew point, and wet bulb.

Note…

The meter has a 16K memory capacity. If you chose multiple parameters, the amount of memory will be divided evenly between each choice. For example, if you select both temperature and relative humidity, there will be 8K of data storage available for each parameter.

Logger Sampling Setting

1. Select "Log Setting" from the Setting options. The Logger Setting menu appears.

2. Select the "Setting" tab.

3. The meter sampling range is 1 second to 6:59:59. Adjust the ▲ or ▼ indicators to specify the sampling rate in hours, minutes, and seconds.

4. Adjust the ▲ or ▼ indicators to select Immediate, Real-Time, Key Start, Roll Over, or Schedule start mode.

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Setting Immediate Start Mode

This option will cause the meter to begin taking readings as soon as the option is confirmed. Reading will continue if the meter 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 Real-Time Start Mode

This option is used with the datalogger connected to the computer, through the USB port.

Note…

The meter may not be disconnected from the computer during real-time sampling.

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 Key Start Mode

This option allows you to take readings without having the datalogger connected to a computer. Measurement will not begin until the grey button is pressed.

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 meter is full. After the data limit has been reached, new readings will be recorded over the earliest previous records.

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 meter 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.
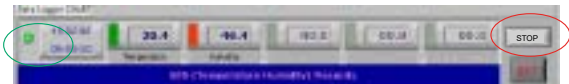
DATA SAMPLING AND RECORDING
Sampling and Recording in Immediate Mode

1. The green LED will flash to indicate that the logger is recording data.
2. Remove the datalogger from the computer as desired. Recording will continue.
3. The datalogger will record up to 32,000 data points. Once the memory is full, recording will stop.

Sampling and Recording in Real-Time Mode

1. Recording will begin automatically as soon as the setting is confirmed. A green indicator at the lower left of the screen will flash and the readings will appear on the display.
2. Press "Stop" to finish recording.
3. Click the "Save" button (floppy disc icon) to save the data.
4. Enter a unique name for the file.
5. Select "OK" to confirm. "Save file completed" displays.

Sampling and Recording in Key Start Mode

1. Remove the datalogger from the computer.
2. Press the grey button to begin logging data. You will hear a click when the button is pressed and the green LED will flash to indicate that the logger is recording data.

Note…

The grey on/off button requires a firm touch. This ensures that it will not accidently stop (or start) recording.

3. 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 logger is recording data.
2. Remove the datalogger from the computer as desired. Recording will continue.
3. The datalogger will record up to 32,000 data points. When the memory is full, the meter will continue recording over the oldest records.

Sampling and Recording in Schedule Mode
1. At the scheduled start date and time, the green LED will flash to indicate that the logger is recording data.
2. Remove the datalogger from the computer as desired. Recording will continue.
3. The datalogger will record up to 32,000 data points. Once the scheduled stop date and time are reached, recording will stop.

DOWNLOADING DATA

1. If the datalogger is not currently connected to the computer, insert the USB drive into the USB port.
2. Click the "LOGGER Status" button to stop recording. The datalogger ID, number of records sampled, and the sampling parameters and rate will display.
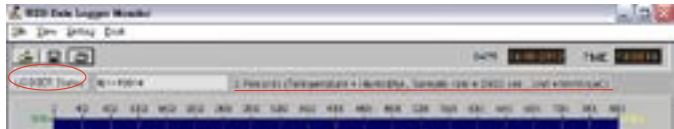
3. Click the "Download" button to download the data. A graph of the data will appear after the data has finished downloading.

Viewing the Graph

Note…

To display specific values for any data point, use the mouse to move the red cursor (located on the red vertical line) to the desired point on the graph.

• **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**:
  1. Click on the colored bar to the left of one of the data parameters under the graph (Temp., Humidity, Dew Point, or Wet Bulb).
  2. Move the mouse to select a new color and click on it.
  3. 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.

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.

BATTERY INSTALLATION AND REPLACEMENT

The meter is powered by one 3.6v ½ AA lithium battery. Battery life is approximately one year, depending on the ambient temperature, the sample rate, and the sample point setting. To change the battery:

1. Press and hold POWER for 2 seconds to turn the meter off.
2. Slide the battery cover in the direction of the arrow and remove it from the meter.
3. Remove the old battery and replace it with a new 3.6v ½ AA lithium battery, ensuring correct polarity.
4. Replace the battery cover.

SPECIFICATIONS

	Range	Resolution	Accuracy
Temp	-40 to 85°C -40 to 185°F	0.1 °C&°F	±0.6°C / 0.9°F (-20 to 50°C) otherwise ±1.2°C, ±2°F
RH	0.1 to 99.9%	0.1%	±5%

Display Type	LCD
Sampling Interval	1 second to 6 hours
Measurement Units	°C & °F
Operating Temp	0 to 50°C (32 to 122°F)
Operating RH	< 80% RH
Memory Capacity	32,000 data points
Dimensions	1" × 5¼" (25 × 133 mm)
Weight	1.2 oz (34 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
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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