

Temperature Sensor

PS-2125



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| Included Items |
| Temperature Sensor |
| Stainless Steel Temperature Probe PS-2153 |
| Polyurethane tubing, 1/4" O.D. (not shown) |

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| Required Items* |
| PASCO Interface |
| PASCO Data Acquisition Software |

*See the PASCO catalog or the PASCO web site at www.pasco.com for more information.

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| Other Items* |
| Teflon Sensor Covers CI-6549 (pack of 10) |
| PASPORT Sensor Extension Cable PS-2500 |

Introduction

The PS-2125 Temperature Sensor measures temperature in degrees fahrenheit (°F) or celsius (°C), or in kelvin (K). The included Stainless Steel Temperature Probe has a wide range, and the included tubing allows the probe to fit inside a standard 0.25" diameter stopper hole.

The sensor is designed to work with a PASPORT-compatible interface (such as the UI-5100 850 Universal Interface) and PASCO data acquisition software (such as PASCO Capstone or SPARKvue) to measure temperature.

Optional Temperature Probes

The sensor can also be used with other temperature probes. (See the PASCO catalog or visit www.paseo.com for more information.)

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| Other Temperature Probes |
| Fast Response Temperature Probe PS-2135 |
| Skin/Surface Temperature Probe PS-2131 |

The Fast Response Temperature Probe has a smaller size and thermal mass and a range from -30 to 105 °C. The Skin/Surface Temperature Probe has a range from -10 to 70 °C.

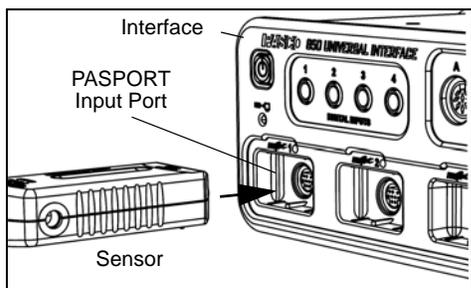
Sensor Usage

- Do not place the sensor box or the cable of the probe in liquids.
- Do not place the probe in a flame or on a hot plate.
- Do not use the probe in liquids other than water or mildly acidic solutions*.

(*Put a Teflon Sensor Cover - available separately - on the probe if you plan to use it with strong acids, etc. The cover has a Chemical Resistance Classification of "E" (acetaldehyde to zinc stearate.))

Setup the Sensor

- Plug the sensor into a PASPORT input port of a PASCO PASPORT-compatible interface.

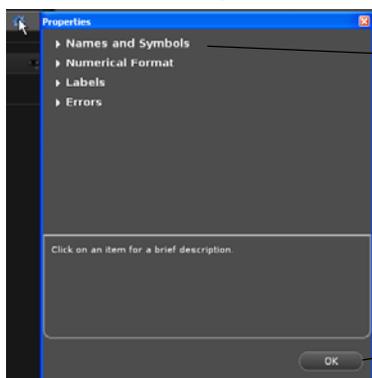


NOTE: If more distance is needed between the sensor and the interface, plug the sensor into a Sensor Extension Cable (PS-2500), and then plug the cable into the interface.

- Connect the temperature probe to the sensor box.
- Start the PASCO data acquisition software. Set up a data display in the software.

Using PASCO Capstone Software

- Click the “Hardware Setup” icon in the Tools palette to open the “Hardware Setup” panel. Confirm that the Temperature Sensor icon appears with the interface’s icon.
- Click the “Data Summary” icon in the Tools palette to open the “Data Summary” panel.
- Click the “Properties” icon (that looks like a small gear) in the “Data Summary” panel to see the “Properties” panel. Click “Names and Symbols” to change the default unit from degrees celsius.



Click “Names and Symbols” to change the default unit.

Click “OK” to close the Properties panel

- Click one of the display templates in the Capstone workbook page, or double-click an icon in the “Displays” palette to select a specific data display.

Using SPARKvue Software

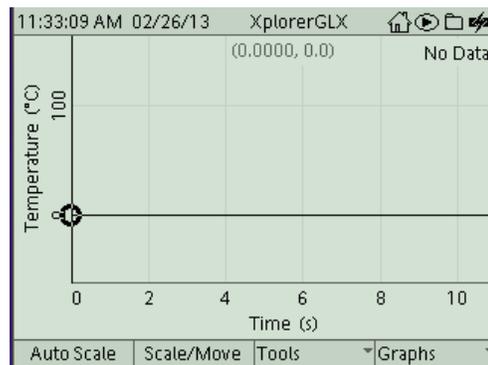
- Connect the sensor to a SPARK Science device and start the software. In SPARKvue, the sensor parameter screen opens and shows the list of measurements for the sensor.

- In the sensor parameter screen, touch a measurement to highlight it, and then touch ‘Show’ to open a graph display.



Using Xplorer GLX Datalogger

- When you connect the sensor to the Xplorer GLX Datalogger, a Graph display of temperature versus time automatically opens.



Record Data

- Click “Record”, touch ‘Start’, or press the ‘Record’ button to begin recording data.

Calibrating the Sensor

The Temperature Sensor is factory calibrated, but it can be calibrated using the following: ice water, hot water, thermometer.

Using PASCO Capstone Software

- Click the “Calibration” icon in the Tools palette to open the “Calibration” panel. For step 1, confirm that “Temperature” is selected and click “Next”.
- For step 2, confirm that the selected probe is “Temperature Measurement” and click “Next”.
- For step 3, confirm that “Two Standards” is the type of calibration, and click “Next”.
- For step 4, put the probe and the thermometer in ice water. When the temperature on the thermometer is at or close to 0 °C, enter the thermometer reading in the “Standard Value” text box. Click “Set Current Value to Standard Value” and click “Next”.

- For step 5, put the probe and thermometer into hot water (boiling hot, if available). When the thermometer reaches its highest point, enter the thermometer reading in the “Standard Value” text box. Click “Set Current Value to Standard Value” and click “Next”.
- In the final step, review your calibration and click “Finish”.

Using SPARKvue Software

After SPARKvue starts, the Sensor Parameter screen shows the measurements that the sensor can make.

- Touch “Temperature” and then touch “Show” to open a page with a graph display.
- In the graph page, touch the “SPARKvue Help” icon () to open the SPARKvue User’s Guide page.
- Touch “Setting up an experiment” and then touch “Calibrating sensors”.
- Touch “Performing a calibration” and then touch “Performing a 2-point calibration”.
- Put the probe and the thermometer in ice water. Follow the instructions in the SPARKvue Help page about “Calibration Point 1”. (Use the keypad window that opens to enter the thermometer reading and then touch “OK”).
- Put the probe and thermometer into hot water (boiling hot, if available). Follow the instructions in the SPARKvue Help page about “Calibration Point 2”.
- When finished, touch “OK” until you return to the graph page.

Using Xplorer GLX Datalogger

- Refer to the Xplorer GLX Datalogger User’s Guide for calibration instructions.

Specifications

| Item | Value |
|---------------|---|
| Range: | -35 to 135°C |
| Accuracy: | ±0.5°C |
| Resolution: | 0.01°C or better |
| Response Time | Wait 15 seconds for stable readings in liquids, and wait 30 to 60 seconds for stable readings in gases. |

More Information

For the latest information about the Temperature Sensor, visit the PASCO web site at www.pasco.com and enter “PS-2125” in the Search window.

Technical Support

For assistance with any PASCO product, contact PASCO at:

Address: PASCO scientific
10101 Foothills Blvd.
Roseville, CA 95747-7100

Phone: +1 916-786-3800 (worldwide)
800-772-8700 (U.S.)

E-mail: support@pasco.com

Web www.pasco.com

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Product End of Life Disposal Instructions:

This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle/disposal service, or the place where you purchased the product.

The European Union WEEE (Waste Electronic and Electrical Equipment) symbol (to the right) and on the product or its packaging indicates that this product must not be disposed of in a standard waste container.

