


Wireless Temperature Link

PS-3222

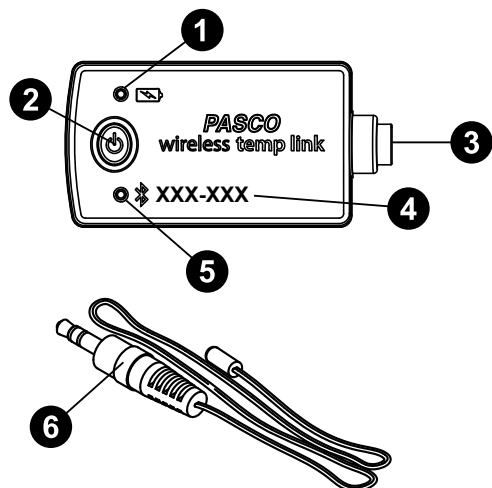
Introduction

The Wireless Temperature Link is a versatile measuring device that can connect to a computer or mobile device wirelessly via Bluetooth. It ships with a Fast Response Temperature Probe (PS-2135) with a wide temperature range (-30 to +105 °C). The sensor can also connect to a wide variety of other PASCO temperature probes and other apparatuses, listed under **Compatible equipment**. This temperature reading is transmitted wirelessly via Bluetooth and displayed on a computer or tablet by PASCO Capstone or SPARKvue data collection software.

The Wireless Temperature Link is powered by a replaceable three volt coin cell battery (included). Since each sensor has a unique device ID number, more than one sensor can be connected to a single computer or tablet at the same time.

 **NOTE:** The sensor housing is water-resistant but *not* waterproof. Immersing the sensor in water may cause a loss of wireless connection. To avoid this, place only the connected temperature probe into the substance being measured.

Components



1 Battery Status LED

Blinks red to indicate that the battery is low on power and will soon need to be replaced.

2 ON/OFF button

Press to turn the sensor on. Press and briefly hold to turn the sensor off. To preserve battery, the sensor automatically turns itself off after several minutes of inactivity if not connected.

3 3.5 mm diameter port

Connect the temperature port (or other device) to the sensor by plugging the device's 3.5 mm diameter plug into this port.

4 Device ID

Use to identify the sensor when connecting via Bluetooth.

5 Bluetooth Status LED

Indicates the status of the sensor's Bluetooth connection.

Bluetooth LED	Status
Red blink	Ready to pair
Green blink	Connected
Yellow blink	Logging data

For information on remote data logging, see the PASCO Capstone or SPARKvue online help.

6 Fast Response Temperature Probe

Connects to the 3.5 mm port on the sensor. Use to measure temperatures in the range of -30 °C to 105 °C.

Included equipment:

- Wireless Temperature Link (PS-3222)
- Fast Response Temperature Probe (PS-2135)

Required item:

- PASCO Capstone or SPARKvue data collection software

Compatible equipment:



- PASPORT Skin/Surface Temperature Probe (PS-2131)
- PASPORT Stainless Steel Temperature Probe (PS-2153)
- Absolute Zero Sphere (TD-8595)
- Ideal Gas Law Apparatus (TD-8596A)


Get the software

You can use the sensor with SPARKvue or PASCO Capstone software. If you're not sure which to use, visit [pasco.com/products/guides/software-comparison](https://www.pasco.com/products/guides/software-comparison).

SPARKvue is available as a free app for Chromebook, iOS, and Android devices. We offer a free trial of SPARKvue and Capstone for Windows and Mac. To get the software, go to [pasco.com/downloads](https://www.pasco.com/downloads) or search for **SPARKvue** in your device's app store.

If you have installed the software previously, check that you have the latest update:

 **SPARKvue:** Main Menu  > Check for Updates

 **PASCO Capstone:** Help > Check for Updates

Check for a firmware update

SPARKvue

1. Press the power button until the LEDs turn on.
2. Open SPARKvue, then select **Sensor Data**.



3. From the list of available devices, select the sensor that matches your sensor's device ID.
4. A notification will appear if a firmware update is available. Click **Yes** to update the firmware.
5. Close SPARKvue once the update is complete.

PASCO Capstone

1. Press the power button until the LEDs turn on.
2. Open PASCO Capstone and click **Hardware Setup** from the Tools palette.



3. From the list of available wireless devices, select the sensor that matches your sensor's device ID.
4. A notification will appear if a firmware update is available. Click **Yes** to update the firmware.
5. Close Capstone once the update is complete.

Connect the temperature probe

To connect the temperature probe (or other apparatus) to the Wireless Temperature Link, plug the 3.5 mm diameter plug of the probe into the 3.5 mm diameter port on the sensor. Ensure the connection is secure to prevent potential disconnection during data collection.


Set up the software

SPARKvue

Connecting the sensor to a tablet or computer via Bluetooth:


1. Turn on the Wireless Temperature Link. Check to make sure the Bluetooth Status LED is blinking red.
2. Open SPARKvue, then click **Sensor Data**.
3. From the list of available wireless devices on the left, select the device which matches the device ID printed on your sensor.

Collecting data using SPARKvue:



1. Select the measurement you intend to record from the **Select measurements for templates** column by clicking the check box next to the relevant measurement's name.
2. Click **Graph** in the **Templates** column to open the Experiment Screen. The graph's axes will auto-populate with the selected measurement versus time.
3. Click **Start**  to begin collecting data.

PASCO Capstone

Connecting the sensor to a computer via Bluetooth:

1. Turn on the Wireless Temperature Link. Check to make sure the Bluetooth Status LED is blinking red.
2. Open PASCO Capstone, then click **Hardware Setup**  in the Tools palette.
3. From the list of **Available Wireless Devices**, click the device which matches the device ID printed on your sensor.

Collecting data using Capstone:

1. Double-click the **Graph**  icon in the **Displays** palette to create a new blank graph display.
2. In the graph display, click the **<Select Measurement>** box on the y-axis and select an appropriate measurement from the list. The x-axis will automatically adjust to measure time.
3. Click **Record**  to begin collecting data.

Calibration

Calibration of the Wireless Temperature Link is not always necessary, especially if you are measuring a change in temperature rather than absolute temperature values. However, if necessary, it is possible to calibrate the sensor using PASCO Capstone or SPARKvue. For information on calibrating the Wireless Temperature Link, see the PASCO Capstone or SPARKvue online help and search for "**Calibrate a temperature sensor**".

Troubleshooting

- If the sensor loses Bluetooth connection and will not reconnect, try cycling the ON button. Press and briefly *hold* the button until the LEDs blink in sequence, then release the button.
- If the sensor stops communicating with the computer software or tablet application, try restarting the software or application. If the problem persists, press and *hold* the ON button for 10 seconds, then release the button and start the sensor in the usual way.
- If the above steps do not fix a connection problem, turn Bluetooth off and then back on for your computer or tablet, then retry.

Storing the sensor

If you will be storing the sensor for several months, we recommend that you remove the battery from the sensor and store it separately, in order to prevent damage to the sensor in the event of a battery leak. The temperature probe should be rinsed and dried prior to being stored.

Battery removal and replacement

The Wireless Temperature Link is powered by a CR2032 coin cell battery. If the sensor's Battery Status LED blinks red, the battery is low on power and will soon need to be replaced.

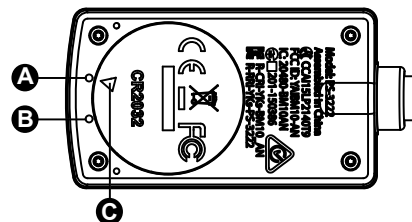


Figure 1. Wireless Temperature Link's battery compartment. **A:** First mark. **B:** Second mark. **C:** Indicator mark.

To replace the battery, follow these steps. The components are labeled in Figure 1 above.

1. Insert a coin into the slot in the battery compartment door. Turn counterclockwise until the indicator (C) is aligned with the second mark (B).
2. Remove the battery compartment door, O-ring gasket, and battery.

3. Insert a new CR2032 battery in the compartment, with the positive (+) side facing upward toward the door.
4. Insert the O-ring gasket into the compartment.
5. Place the door on the sensor, aligning the indicator with the sensor mark (B). Insert the coin back into the slot and turn the door clockwise until the indicator is aligned with the first mark (A).

Software help

The SPARKvue and PASCO Capstone Help provide information on how to use this product with the software. You can access the help from the software or online.

SPARKvue

Software: Main Menu > Help

Online: help.pasco.com/sparkvue

PASCO Capstone

Software: Help > PASCO Capstone Help

Online: help.pasco.com/capstone

Specifications and accessories


Visit the product page at pasco.com/product/PS-3222 to view the specifications and explore accessories. You can also download experiment files and support documents from the product page.


Experiment files

Download one of several student-ready activities from the PASCO Experiment Library. Experiments include editable student handouts and teacher notes. Visit pasco.com/freelabs/PS-3222.

Technical support

Need more help? Our knowledgeable and friendly Technical Support staff is ready to answer your questions or walk you through any issues.

 Chat pasco.com

 Phone 1-800-772-8700 x1004 (USA)
+1 916 462 8384 (outside USA)

 Email support@pasco.com

Limited warranty

For a description of the product warranty, see the Warranty and Returns page at www.pasco.com/legal.

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Product end-of-life disposal



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 or disposal service, or the place where you purchased the product. The European Union WEEE (Waste Electronic and Electrical Equipment) symbol on the product or its packaging indicates that this product must not be disposed of in a standard waste container.

CE statement

This device has been tested and found to comply with the essential requirements and other relevant provisions of the applicable EU Directives.

FCC statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Battery disposal



Batteries contain chemicals that, if released, may affect the environment and human health. Batteries should be collected separately for recycling and recycled at a local hazardous material disposal location adhering to your country and local government regulations. To find out where you can drop off your waste battery for recycling, please contact your local waste disposal service, or the product representative. The battery used in this product is marked with the European Union symbol for waste batteries to indicate the need for the separate collection and recycling of batteries.