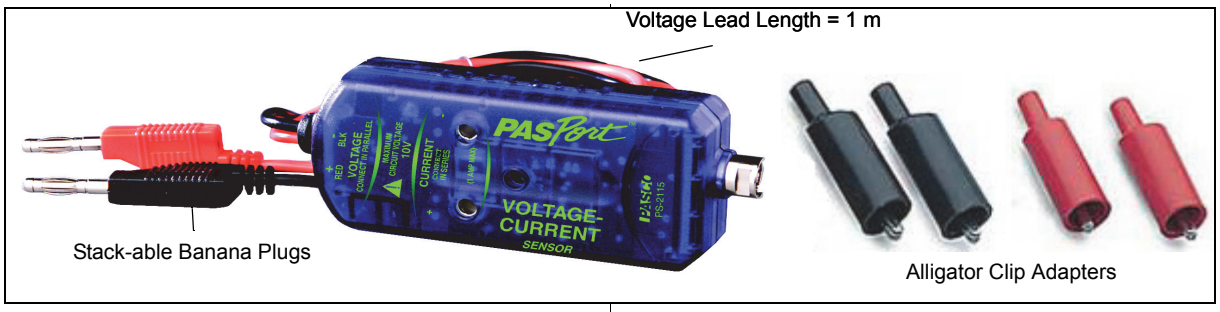
Voltage-Current Sensor

PS-2115



Included Parts

- Voltage-Current Sensor
- 4 mm banana plug patch cords, (set of 2)
- Alligator clip adapters, 4 pieces (3 red, 1 black)

Additional Equipment Required

- PASPORT-compatible interface or datalogger

Introduction

The Voltage-Current Sensor measures voltage and current simultaneously and calculates power.

Set-up

Connecting the Voltage-Current Sensor to an Interface

1. Connect the sensor's plug to any port of a PASPORT-compatible interface or datalogger.

2. If you are using a computer, connect the PASPORT-compatible interface to it and start the PASCO data collection software.

Connecting the Voltage-Current Sensor to a Device

To Measure Voltage

Connect the voltage leads across a battery (Figure 1), power source, or circuit element. The sensor measures the potential difference between the positive (red) and negative (black) leads. The measurable potential difference range is -10 V to +10 V.

The voltage anywhere in the connected circuit or device should not exceed 10 V above or below earth ground.

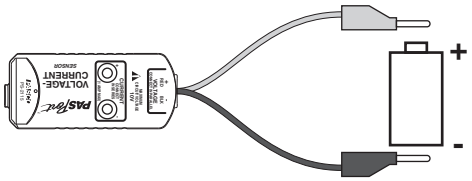


Figure 1: Measuring voltage

To Measure Current

Use the included patch cords to insert the sensor into a circuit as illustrated in Figure 2. The sensor measures current flowing through it with current flowing from the positive terminal to the negative terminal measured as positive current. The measurable current range is -1 A to +1 A.

The voltage anywhere in the connected circuit or device should not exceed 10 V above or below earth ground.

Connect the sensor in series with the load. Do not connect the current terminals of the sensor to a battery or power supply without a load (such as a resistor) to avoid a short circuit.

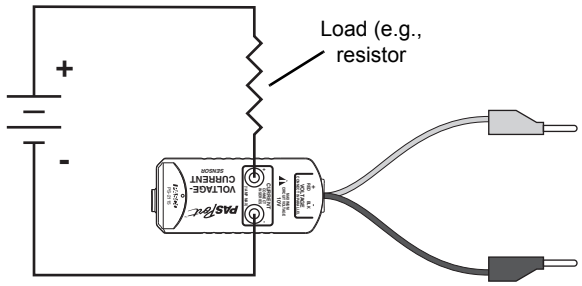


Figure 2: Measuring current

Collecting Data

Press or click the start button to begin recording data.

About the Measurements

Voltage, Current, and Power

The sensor measures voltage and current. From these two measurement, it calculates power, which is the product of voltage and current. All three of these measurement are recorded by the computer or datalogger. To view any measurement, select it in software or on the datalogger.

Sampling Rate

By default, data is recorded at a rate of 10 samples per second. The sampling rate can be decreased or increased in software or on the datalogger.

Overcurrent Protection

The sensor has built-in overcurrent protection. If the current through the sensor exceeds ±1 A, the overcurrent alarm sounds. Reduce the applied current.

If the current exceeds ±1.1 A, the sensor's resettable fuse trips. Disconnect the leads from the current terminals for a few seconds to reset the fuse. Correct the problem that caused the overcurrent before reconnecting the sensor.

Specifications

Voltage	
Range	-10 V to +10 V
Accuracy	±50 mV at ±10 V (±10 mV at 0 V)
Resolution	5 mV
Maximum overvoltage without damage	±30 V
Input impedance	1 MΩ
Current	
Range	-1 A to +1 A
Accuracy	±5 mA at ±1 A (±1 mA at 0 A)
Resolution	0.5 mA
Maximum overcurrent without tripping resettable fuse	±1.1 A
Series resistance	< 0.9 Ω at room temperature, 0.8 Ω typical

Technical Support

For assistance with any PASCO product, contact PASCO at:

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

Phone: +1 916 462 8384 (worldwide)
800-772-8700 (U.S.)

Web: www.pasco.com

Email: support@pasco.com

For more information about the Voltage-Current Sensor and the latest revision of this Instruction Sheet, visit the PASCO web site and enter PS-2115 in the Search window.

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.