

Anemometer

(Order Code ANM-BTA)



The Anemometer is a device for measuring wind speed.

How the Anemometer Works

The Vernier Anemometer is an impeller-type anemometer with the axis of rotation parallel to the direction of the wind. It uses a magnet located in the impeller and an inductor. The wind causes rotation of the impeller, the magnet, and the shaft. The rotation of the magnet produces an electrical signal proportional to the wind speed.

Using the Anemometer

To use the Anemometer, hold it so that the wind blows directly into the Anemometer. This will cause the impeller to spin. The Anemometer also has a standard 1/4 – 20 mount that will connect to any standard camera mount on a tripod.

Potential Uses for this Sensor

The following is a partial list of activities and experiment that can be performed using this sensor.

- Measure the wind speed of air generated by a variable speed fan.
- Use an Anemometer and an Energy Sensor to investigate the effect of design, number, and size of rotors and blades of a windmill's electrical energy output.
- Use an Anemometer and an Infrared Thermometer to determine how wind speed affects the rate of cooling of an object.
- Investigate why wind speed is slower over land than it is over the ocean.
- Use an Anemometer and a compass to determine wind direction.

Collecting Data with the Anemometer

This sensor can be used with the following interfaces to collect data:

- Vernier LabQuest[®] 3, LabQuest 2, or original LabQuest as a standalone device or with a computer
- Vernier LabQuest[®] Mini with a computer
- Vernier LabPro[®] with a computer or TI graphing calculator
- Vernier Go![®]Link
- Vernier EasyLink[®]
- Vernier SensorDAQ[®]
- CBL 2[™]
- TI-Nspire[™] Lab Cradle

Here is the general procedure to follow when using the Anemometer:

1. Connect the Anemometer to the interface.
2. Start the data-collection software.
3. The software will identify the Anemometer and load a default data-collection setup. You are now ready to collect data.

Data-Collection Software

This sensor can be used with an interface and the following data-collection software.

- **LabQuest App** This program is used when LabQuest 3, LabQuest 2, or original LabQuest is used as a standalone device. The Anemometer requires LabQuest App 1.5 or newer.
- **Vernier Graphical Analysis[®] App** This app is used with a LabQuest interface, LabPro, or Go!Link connected to a computer, Chromebook[™], or mobile device.
- **Logger Pro** This computer program is used with LabQuest interfaces, LabPro, or Go!Link. The Anemometer requires Logger Pro 3.8.3 or newer.
- **Logger Lite** This computer program is used with LabQuest interfaces, LabPro, or Go!Link.
- **DataQuest[™] Software for TI-Nspire[™]** This calculator application for the TI-Nspire can be used with the EasyLink or TI-Nspire Lab Cradle.
- **EasyData App** This calculator application for the TI-83 Plus and TI-84 Plus can be used with CBL 2, LabPro, and Vernier EasyLink. We recommend v2.0 or newer, which can be downloaded from the Vernier web site, www.vernier.com/easy/easydata.html, and then transferred to the calculator. See the Vernier web site, www.vernier.com/calc/software/index.html for more information on the App and Program Transfer Guidebook.
- **LabVIEW** National Instruments LabVIEW[™] software is a graphical programming language sold by National Instruments. It is used with SensorDAQ and can be used with a number of other Vernier interfaces. See www.vernier.com/labview for more information.

NOTE: Vernier products are designed for educational use. Our products are not designed nor recommended for any industrial, medical, or commercial process such as life support, patient diagnosis, control of a manufacturing process, or industrial testing of any kind.

Calibration Information

You should not have to perform a new calibration when using the Anemometer. We have set the sensor to match our stored calibration before shipping it.

Specifications

Operational range:	0.5–30 m/s
Power:	18 mA @ 5VDC
Operating temperature:	0°C to 50°C
Storage temperature:	–20°C to 60°C

Available Supporting Curricula

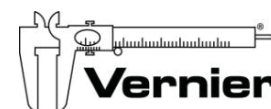
The *Renewable Energy with Vernier* lab book has the following two experiments for the Anemometer:

Experiment 12 – Turbine Efficiency

Experiment 13 – Power Curves

Warranty

Vernier warrants this product to be free from defects in materials and workmanship for a period of five years from the date of shipment to the customer. This warranty does not cover damage to the product caused by abuse or improper use.



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