Relative Humidity Sensor

(Order Code RH-BTA)

The Relative Humidity Sensor can be used to measure relative humidity in the air as part of a weather station, or to do any of the following:

- Monitor indoor humidity
- Optimize conditions in a greenhouse or terrarium
- Determine when static electrical discharges will be a problem
- Study transpiration rates of plants by monitoring relative humidity in sealed jars containing plants

> **Note:** Vernier products are designed for educational use. Our products are not designed nor are they 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.

Compatible Software

See **www.vernier.com/manuals/rh-bta** for a list of software compatible with the Relative Humidity Sensor.

Getting Started

1. Connect the sensor to the interface (LabQuest Mini, LabQuest 2, etc.).
2. Start the appropriate data-collection software (Logger *Pro*, Logger Lite, LabQuest App) if not already running, and choose New from File menu. The software will identify the sensor and load a default data-collection setup. You are now ready to collect data.

If you are collecting data using a Chromebook™, mobile device such as iPad® or Android™ tablet, or a Vernier wireless sensor or interface, please see the following link for up-to-date connection information:

www.vernier.com/start/rh-bta

Using the Product

Connect the sensor following the steps in the Getting Started section of this user manual.

Calibration

Optional Calibration Procedure

You should not have to perform a new calibration when using the Relative Humidity Sensor. A calibration equation is stored on each Relative Humdity Sensor before they are shipped, which is used as default by Vernier software. If you would like to calibrate the Relative Humidity Sensor, you can find instructions at **www.vernier.com/til/4337**

Specifications

Range	0% to 95%
Power	200 µA @ 5 VDC
Response Time (time for a 90% change in reading)	In still air: 60 minutes (typical)
	With vigorous air movement: 40 seconds (typical)
Resolution:	0.04% RH
Stored calibration	slope: 30.43%/V
	intercept: –25.81%
Accuracy as shipped	±10% RH
Operating Temperature Range	0 to 85°C

Care and Maintenance

Do not wrap the cable tightly around the sensor for storage. Repeatedly doing so can irreparably damage the wires and is not covered under warranty.

The Relative Humidity Sensor should not be used in a condensing environment. Condensation can damage the probe and is not covered under warranty.

How the Sensor Works

This sensor uses a capacitive polymer to sense humidity. An integrated circuit then produces an output voltage which varies with relative humidity. The response time of the unit in moving air is much shorter than in still air. In some cases, you may want to create air currents (by moving the sensor or using a fan) to speed up the response of the sensor.

The sensor is slightly light sensitive. The housing is designed to minimize the amount of light that can penetrate the sensor opening. The sensor output is somewhat affected by temperature. This effect is negligible at low relative humidity readings, but increases at high humidities. If you want to correct for this error, you can create different calibration files for different temperatures. In most cases, this is unnecessary.

Troubleshooting

For troubleshooting and FAQs, see **www.vernier.com/til/1408**

Repair Information

If you have watched the related product video(s), followed the troubleshooting steps, and are still having trouble with your Relative Humidity Sensor, contact Vernier Technical Support at support@vernier.com or call 888-837-6437. Support specialists will work with you to determine if the unit needs to be sent in for repair. At that time, a Return Merchandise Authorization (RMA) number

will be issued and instructions will be communicated on how to return the unit for repair.
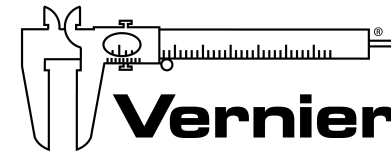
Warranty

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. This warranty covers educational institutions only.

Disposal

When disposing of this electronic product, do not treat it as household waste. Its disposal is subject to regulations that vary by country and region. This item should be given to an applicable collection point for the recycling of electrical and electronic equipment. By ensuring that this product is disposed of correctly, you help prevent potential negative consequences on human health or on the environment. The recycling of materials will help to conserve natural resources. For more detailed information about recycling this product, contact your local city office or your disposal service.

The symbol, shown here, indicates that this product must not be disposed of in a standard waste container.

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