

# Extra-Long Temperature Probe

(Order Code TPL-BTA)



This probe is designed for outdoor temperature sensing or for measuring temperature at various depths in lakes and rivers. It has a 30 m (100 ft) cable that can be submersed in water up to the cable box.

**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.

## What's Included

- Extra-Long Temperature Probe

## Compatible Software and Interfaces

See [www.vernier.com/manuals/tpl-bta](http://www.vernier.com/manuals/tpl-bta) for a list of interfaces and software compatible with the Extra-Long Temperature Probe.

## 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 continue your experiment.

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/tpl-bta](http://www.vernier.com/start/tpl-bta)

## Using the Product

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

## Videos

View videos related to this product at [www.vernier.com/tpl-bta](http://www.vernier.com/tpl-bta)

## Calibration

You should not have to perform a new calibration when using the Extra-Long Temperature Probe. The sensor is custom calibrated before it is shipped. However, a two-point calibration can be performed and saved on the sensor, if desired.

## Specifications

Range	-50 to 150°C
Maximum temperature the sensor can tolerate without damage	200°C
Accuracy	±1.0°C at 25°C
12-bit resolution	0.07°C
Response time (in moving water from 25 to 50°C)	60 seconds
Stored calibration values (Celsius)	intercept ( $k_0$ ): -53.073 slope ( $k_1$ ): 58.341
Stored calibration values (Fahrenheit)	intercept ( $k_0$ ): -63.531 slope ( $k_1$ ): 105.01

## How the Sensor Works

The Extra-Long Temperature Probe uses a transducer to produce a current that is directly proportional to its absolute temperature. The sensor is plugged into a signal conditioning box, producing an output voltage that is linear with temperature over the range of -50 to +150°C.

The transducer is at the tip of the brass tube. The entire probe is covered with Teflon® FEP heat-shrink tubing. This coating protects the probe from damage in most environments.

For use in anything other than air or water, see [www.vernier.com/til/3742](http://www.vernier.com/til/3742)

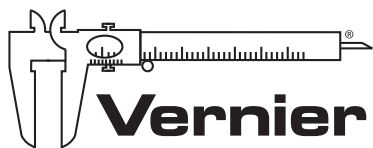
The Extra-Long Temperature Probe is designed so that it can be submerged in a water environment for extended periods of time. If the Teflon coating is damaged, however, liquid may get into the probe and cause errant readings.

## Repair Information

If you have watched the related product video(s), followed the troubleshooting steps, and are still having trouble with your Extra-Long Temperature Probe, contact Vernier Technical Support at [support@vernier.com](mailto: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.



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