

A2

A2-Vernier Barometer

Connection and Setup to LabQuest Interface

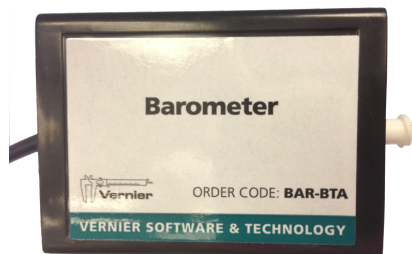


Figure A2.1: Vernier Barometer sensor with inlet shown on the right.

Station Pressure vs. Sea-level pressure

In its current setting, the barometer measures the actual pressure at your location and altitude (station pressure). This value may not be the same as reported by your nearest weather station or airport. Airports and television stations typically adjust their pressures to reflect what the pressure would be at sea-level (0 altitude) so they can make valid comparisons at locations with different altitudes.

LOCATION

Organic Chemistry Laboratory; 2232 DP.

CONNECTION TO LABQUEST

The barometer sensor must be connected to a Vernier interface such as the LabQuest (Figure A1.5) to obtain pressure data. There is no analog output on the Melt Station itself. To connect:

1. Insert the **POWER** cord into the LabQuest interface if unplugged.
2. Insert the **CH3 CABLE** into the **CH3 SENSOR PORT** on the LabQuest.
3. Disconnect the **CH1** and **DIG1** cables from the LabQuest interface. (These cables power the polarimeter. Disconnecting will extend the life of the polarimeter light source.)
4. Press the **POWER BUTTON** at the top left of the LabQuest interface.

DISPLAYING AND COLLECTING DATA

To display and collect the barometer data on the LabQuest or computer, follow the instructions for the Vernier Melt Station in Section A1 (page 15).

PRESSURE RANGE AND CALIBRATION

The pressure range of the barometer is 0.80 – 2.00 atm. It is meant to measure pressures close to atmospheric. Do not attach the barometer to a vacuum or pressurized source. Exceeding the pressure range will permanently damage the sensor. For a wider range, use the Vernier Gas Pressure sensor (0 – 4.0 atm).

There is no need to calibrate the barometer. It has been calibrated at the factory. Should calibration be required, an accurate mercury barometer is required. See the Vernier documentation for instructions.

Measuring Pressures Under Liquids

To measure pressures under liquids, connect tubing to the barometer inlet using a Luer-lock adapter. Insert the tubing into a vessel of water and measure the depth of the tubing with a ruler. Be sure to connect the tubing to the barometer before inserting it into the liquid. Also, keep the barometer above the liquid level to prevent liquid from draining into the sensor.