

Topic Page: [Barometers](#)

Definition: **barometer** from *Dictionary of Energy*

Measurement. an instrument for measuring atmospheric pressure; used in determining height above sea level and predicting changes in the weather.

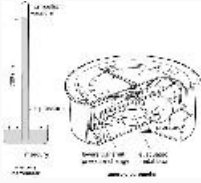


Image from:

[barometer in The Macmillan Encyclopedia](#)

Summary Article: **barometer**

From *The Columbia Encyclopedia*

(bərŏm'ətər), instrument for measuring atmospheric pressure. It was invented in 1643 by the Italian scientist Evangelista Torricelli, who used a column of water in a tube 34 ft (10.4 m) long. This inconvenient water column was soon replaced by mercury, which is denser than water and requires a tube about 3 ft (0.9 m) long. The mercurial barometer consists of a glass tube, sealed at one end and filled with pure mercury. After being heated to expel the air, it is inverted in a small cup of mercury called the cistern. The mercury in

the tube sinks slightly, creating above it a vacuum (the Torricellian vacuum). Atmospheric pressure on the surface of the mercury in the cistern supports the column in the tube, which varies in height with variations in atmospheric pressure and hence with changes in elevation, generally decreasing with increases in height above sea level. Standard sea-level pressure is 14.7 lb per sq in. (1,030 grams per sq cm), which is equivalent to a column of mercury 29.92 in. (760 mm) in height; the decrease with elevation is approximately 1 in. (2.5 cm) for every 900 ft (270 m) of ascent. In weather forecasting, barometric readings are usually measured on electronically controlled instruments often tied to computers. The results are plotted on base maps so that analyses of weather-producing pressure systems can be made. At a given location a storm is generally anticipated when the barometer is falling rapidly; when the barometer is rising, fair weather may usually be expected. The aneroid barometer is a metallic box so made that when the air has been partially removed from the box the surface depresses or expands with variation of air pressure on it; this motion is transmitted by a train of levers to a pointer which shows the pressure on a graduated scale. A barograph is a self-recording aneroid barometer; an altimeter is often an aneroid barometer used to calculate altitude.

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barometer. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/barometer>



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