

## NEULOG BAROMETER LOGGER SENSOR GUIDE



### NeuLog barometer logger sensor NUL-221

The NeuLog barometer sensor can be used for any science experiment which requires an accurate atmospheric pressure measurement such as in the fields of Physics, Biology, Physiology, Exercise Science, Environmental Science, Earth Science, Weather Science, Botany, etc.

The sensor comes pre-calibrated so you can start experimentation right out of the box using this guide.

Among hundreds of possible experiments that can be performed with the NUL-221 sensor are: demonstration of how pressure is related to altitude, effects of pressure changes on a plant's growth, weather experiments, and many more.

The barometer sensor can collect data using four different units of measurement:

- Kilopascal (kPa): The SI unit of pressure
- Atmospheres (atm): A pressure unit equal to one Earth atmosphere at sea level (101.325 kPa)
- Inches of mercury (in Hg): A non-SI unit of atmospheric pressure
- Millimeters of mercury (mm Hg): A non-SI unit of atmospheric pressure

### Included with the sensor:

- NeuLog General Guide

Range and operation modes	ADC resolution	Resolution	Max sample rate (S/sec)
30 to 110 kPa	15 bit	0.1 kPa	100
0.29 to 1.08 atm		0.01 atm	
8.85 to 32.48 in Hg		0.03 in Hg	
225 to 825 mm Hg		0.8 mm Hg	
-700 to 9165 m		1 m	

**Experiment Duration:** 1 second to 31 days.

### Sensor's features:

- Fully digital data
  - Rugged plastic ergonomic case
  - Push button switch for Start/Stop experiments in off line mode
  - LED indicator of experiment status (blinks while collecting data)
  - Pre-calibrated sensing equipment
- Note:** NeuLog products are intended for educational use.

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### Videos and experiment examples:

- Videos, literature and other probes can be found at [www.NeuLog.com](http://www.NeuLog.com).
- In order to access the barometer sensor's experiments, choose "Example Labs":
  - Air Pressure and Altitude (E-2)

### Technical background:

The philosophy behind NeuLog's plug and play technology is based on each sensor's ability to store its own data due to an internal flash memory chip and micro-controller in each plastic NeuLog body. This technology allows the sensor to collect and then store the digital data in the correct scientific units (°C, °F, Lux, %, ppm, for example).

The sensor is pre-calibrated at the factory. The built-in software in the logger can be upgraded for free at any time using the provided firmware update.

The barometer sensor uses the piezoresistive effect. The transducer is made of two metal foils separated by silicon; when pressure is applied on the transducer its resistance changes. One side of it is at complete vacuum which enables the measurement of the absolute pressure on its other side.

### Maintenance and storage:

- Never submerge the NeuLog plastic body in any liquid.
- Do not allow liquid into the barometer sensor's body.
- After use, gently wipe away any foreign material from the barometer sensor.
- Store in a box at room temperature out of direct sunlight.

### Warranty:

We promise to deliver our sensor free of defects in materials and workmanship. The warranty is for a period of 3 years from the date of purchase and does not cover damage of the product caused by improper use, abuse, or incorrect storage. Sensors with a shelf life such as ion selective probes have a warranty of 1 year. Should you need to act upon the warranty, please contact your distributor. Your sensor will be repaired or replaced.

**Thank you for using NeuLog!**



Flexible, simple, fast, forward thinking.

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