

NEULOG PRESSURE LOGGER SENSOR GUIDE



NeuLog pressure logger sensor NUL-210

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

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

Both the pressure and barometer sensors measure pressure however, the pressure sensor is much easier to connect to labware such as syringes, beakers and test tubes. The sensor's probe and the additional hose are designed to allow easy connections to various openings.

Among hundreds of possible experiments that can be performed with the NUL-210 sensor are: Boyle's Law, Gay-Lussac's Law for ideal gases, etc.

The pressure sensor is capable of measuring in four different units of measure:

- Kilopascal (kPa): The SI unit of pressure
- Atmospheres (atm): 101.325 kPa
- Pounds per square inch (psi)
- Bar: A non-SI unit equal to exactly 100 kPa

Included with the sensor:

- NeuLog General Guide
- A probe with an attachment at the end
- A hose that can be attached to the probe, for easy connections (to a syringe for example)

Sensor specifications

	atm	psi	kPa	bar
Range and operation modes	0 to 7	0 to 100	0 to 700	0 to 7
ADC resolution	16 bit			
Accuracy	±1%			
Resolution	0.01	0.1	0.1	0.01
Max sample rate (S/sec)	100			

The accuracy regards a working interval between 20 °C and 30 °C

Experiment Duration: 1 second to 31 days.

Sensor features:

- Fully digital data
 - Rugged plastic ergonomic case
 - Push button switch for Start/Stop experiments in off line mode and a LED indicator of experiment status (blinks while collecting data)
 - Pre-calibrated internal 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.
- In order to access the pressure sensor's page, choose "Products" on the main menu and then "Pressure logger sensor".
- In order to access the pressure sensor's experiments, choose "Example Labs":
 - Gay-Lussac's Law (C-14)
 - Boyle's Law (C-30)
 - Enzyme Activity (B-7)

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 ($^{\circ}\text{C}$, $^{\circ}\text{F}$, 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 pressure sensor uses the piezoresistive effect. The transducer is based on silicon between metal foils that changes its resistance according to pressure. One side of it is at complete vacuum that enables to measure 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 NeuLog plastic body.
- After using the probe, wipe off all excess material, liquid or residue from the 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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