

## NEULOG CHARGE LOGGER SENSOR GUIDE



### NeuLog charge logger sensor NUL-246

The NeuLog charge sensor can be used for any science experiment which utilizes charge readings such as in the fields of Physics, Electronics, Chemistry, Biology, etc.

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

The NeuLog charge sensor measures electrostatic charges. It can also be used as a highly sensitive electroscopes – indicating whether a charge is positive or negative.

Just a few of the thousands of possible experimental subjects that can be studied with the NUL-246 sensor are: explore the nature of static charge, measurements of both charge and voltage, measurements of charge by induction, quantification of the charge on a capacitor, discover charge distribution of conducting spheres.

The charge sensor sensor's measurement units are:

Nanocoulombs (nC): A coulomb is the SI derived unit of electric charge.

Millivolts (mV): A volt is the SI derived unit of electric potential.

### Included with the sensor:

- NeuLog General Guide
- Power and ground wires connected directly to the sensor's body
- Alligator clips for both of the power and ground wires

### Sensor's specifications:

Range and operation modes	ADC resolution	Resolution	Max sample rate (S/sec)
±5.000 nC	16 bit	1 pC	100
±20.000 nC		10 pC	
±100.000 nC		100 pC	
±500.0 mV		0.1 mV	
±2000 mV		1 mV	
±10,000 mV		1 mV	

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

### Sensor's features:

- Fully digital data
- Rugged plastic ergonomic case
- Alligator clip power and ground tips for easy connectivity
- 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 charge sensor's page, choose "Products" on the main menu and then "Charge logger sensor".
- In order to access the charge sensor's experiments, choose "Example Labs":
  - Static Electricity (P-44)

### 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 NeuLog charge sensor houses a sensitive voltage sensor with several capacitors in series along the input. While an electric current flows through the circuit, the capacitors gain charge until they have a charge in equilibrium with the voltage level of the source.

### Maintenance and storage:

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

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### 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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