

## NEULOG DROP COUNTER LOGGER SENSOR GUIDE



### NeuLog drop counter logger sensor NUL-223

The NeuLog drop counter sensor can be used for any science experiment which utilizes fluid drip rates, particularly in the fields of Chemistry and Biology.

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

The NeuLog drop counter sensor excels in the laboratory but can also be used in the field for a number of experiments in various configurations. For example, titrations become much more accurate as you can determine both the total number of drops and the total volume which has passed through the drop counter sensor.

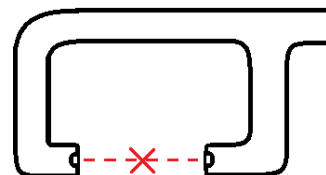
The drop counter sensor's measurement units are:

- Drops: The number of times a drop of liquid passes through the drop counter sensor.
- Milliliters (mL): The SI unit of volume. The NeuLog drop counter sensor calculates the rough volume of drops which pass through it.

### Setting up the drop counter sensor:

There are a number of ways to set up the NeuLog drop counter sensor to give accurate readings. The drop counter gate includes three threaded holes and a threaded utility rod which can be attached to various lab equipment to offer many different orientations.

The most important aspect while setting up the drop counter sensor is to ensure that the drops of liquid are passing through the sensor correctly. As in the figure below, you will want to orient the sensor so that drops pass through the infrared beam transmitted between the ends of the drop counter sensor.



### Resetting the drop counter sensor:

In order to reset the drop number to zero, click on the sensor module box on the left of the screen, click on the Extra command button and then on the Reset button.

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### Included with the sensor:

- NeuLog General Guide
- Durable plastic drop counter probe attached directly to the sensor's body by a rubber-coated wire
- Threaded rod for easy connection to retort stands or other labware

### Sensor's specifications

	Drops	Drop Counter signal
Range and operation modes	0 to 6,500 drops	0 to 6,500 drops X vol. in mL
ADC resolution	Digital	
Resolution	1 drop	
Max Sample Rate (S/sec)	100	

**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

### 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 drop counter sensor's page, choose "Products" on the main menu and then "Drop counter logger sensor".
- In order to access the drop counter sensor's experiments, choose "Example Labs":
  - Titration of a Strong Acid and a Strong Base (C-10)

### 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 drop counter sensor uses an infrared beam which passes between the two endpoints of the sensor probe to count drops. As liquid passes through the infrared beam, infrared light is scattered and not noticed by the infrared detector on the opposing side.

Regardless of the liquid's opacity or color, the infrared light bends away from the detector. Each time there is a break in the infrared beam, a drop is counted.

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### Maintenance and storage:

- Never submerge the NeuLog plastic body in any liquid.
- Do not allow liquid into the drop counter sensor's body and probe.
- After use, gently wipe away any foreign material from the drop counter 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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