

NEULOG SURFACE TEMPERATURE LOGGER SENSOR GUIDE



NeuLog surface temperature logger sensor NUL-233

The NeuLog surface temperature sensor can be used for any science experiment which requires accurate temperature measurements such as in the fields of Physics, Chemistry, Biology, Environmental Science, etc.

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

Using the surface temperature over the standard temperature sensor has its advantages:

1. It can be attached to surfaces easily with tape.
2. Its response time is faster due to the partially exposed thermistor.
3. It is more flexible and can fit into smaller areas.
4. A smaller surface area means you can accurately gauge the temperature of a specific point instead of that of a larger area.

Among hundreds of possible experimental subjects that can be studied with the NUL-233 sensor are: metabolism, heat and energy transfer, human temperature changes, effects of heat on enzyme function, material thermal conductance properties, etc.

This sensor is capable of measuring both in Celsius and Fahrenheit.

Celsius: The SI (International System of Units) unit of temperature.

Fahrenheit: The temperature measurement unit of the English System commonly used in the United States.

Included with the sensor:

- NeuLog General Guide
- Temperature sensor flexible probe attached by a durable rubber-coated wire to the sensor's body

Sensor's specifications

	Celsius	Fahrenheit
Range and operation modes	-40 to 120	-40 to 248
ADC resolution	12 bit	
Resolution	0.1	0.2
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 mod.
- LED indicator of experiment status (blinks while collecting data)
- Pre-calibrated sensing equipment
- Flexible surface temperature probe attached directly to the sensor's body by a durable rubber-coated wire

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 surface temperature sensor's page, choose "Products" on the main menu and then "Surface temperature logger sensor".
- In order to access the Surface temperature sensor's experiments, choose "Example Labs":
 - Light Absorption and Heat (P-31)

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 surface temperature sensor uses a 10KΩ NTC thermistor (Negative Temperature Coefficient variable resistor), which is a variable resistor that varies significantly with temperature.

Maintenance and storage:

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