

NEULOG ROTARY MOTION LOGGER SENSOR GUIDE



NeuLog rotary motion logger sensor NUL-226

The NeuLog rotary motion sensor can be used for any science experiment which involves rotary motion including angular velocity, angular acceleration and revolutions per second such as in the fields of Mechanics, Physics, Biomechanics, etc.

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

Among hundreds of possible experimental subjects that can be studied with the NUL-226 sensor are: rotary motion studies, angular velocity, angular acceleration, sine waves, torque, engine studies, and many more.

The rotary motion sensor's measurement units are:

- Degrees ($^{\circ}$): The standard unit for measuring angles
- Radians per second (rad/s): The angular displacement's rate of change
- Radians per second squared (rad/s^2): The angular velocity's rate of change
- Revolutions per second (rev/s): The total number of complete revolutions per second.

Using the rotary motion sensor:

The rotary motion sensor can be set up in your classroom or lab in many different configurations:

- Connecting the revolving head to a conveyor system
- Rolling the revolving head along a surface
- Spinning the revolving head manually.

Included with the sensor:

- NeuLog General Guide
- Rotary motion revolving head piece attached directly to the sensor's body by a durable rubber-coated wire.

Sensor's specifications

Range and operation modes		ADC resolution	Resolution	Max sample rate (S/sec)
$^{\circ}$	0 to 360	16 bit	0.09	100
Rad/s	± 345		0.6	
Rad/s²	$\pm 32,22$ 2		14	
Rev/s	± 55		0.03	

Experiment Duration: 1 second to 31 days.

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Sensor's features:

- Fully digital data
- Rugged plastic ergonomic case
- Rotary motion rotating head piece attached directly to the sensor's body by a durable rubber-coated wire
- 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.
- In order to access the rotary motion sensor's page, choose "Products" on the main menu and then "Rotary motion logger sensor".
- In order In order to access the rotary motion sensor's experiments, choose "Example Labs":
 - Simple Pendulum (P-46)

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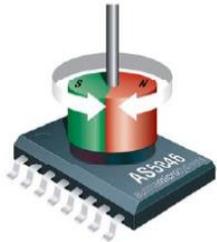


Technical background:

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 probe shaft is installed in a bearing and has a magnet at its end. A digital sensor based on The Hall Effect sensor, an analog circuit and a very sophisticated digital processor are located near the rotating magnet.



The analog and digital circuits analyze the rotating magnetic field and calculate the angle, rotation speed, acceleration and revolutions, transferring this data to the sensor's controller, upon its request.

Maintenance and storage:

- Never submerge the NeuLog plastic body in any liquid.
- Do not allow liquid into the rotary motion sensor's body.
- After use, gently wipe away any foreign material from the rotary motion 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!

NeuLog

Flexible, simple, fast, forward thinking.

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