

# Neuron Vibration Sensor

The Neuron Vibration measures vibration level and surface temperature every two minutes. The sensor has an embedded magnet at the back for easy installation. Temperature measurement is done through the magnet.



## Features

- Long life battery - up to 10 years lifetime
- Continuous measurement and instant alarm
- Adjustment of parameters such as measurement frequency on request
- Define your own alarm levels in the Neuron app
- Receive alerts as push notifications, emails or SMS
- Easily connect the sensor to the system with the QR-code on the sensor. Ensures immediate and accurate registration in the app on your phone/PC/tablet
- The sensor transmits data to your nearby Neuron Gateway which then again communicates with the Neuron Cloud

## Typical Applications

- Anomaly detection and predictive maintenance
- Machine status and optimization
- Uptime hours and usage-based maintenance
- Structural health monitoring

## Neuron System Benefits

Sensor - Gateway - Cloud - App



- **Robust sensors**  
Suitable for rough environments
- **Wireless**  
Wireless sensor with integrated battery
- **Long lifetime**  
Typical 10 years battery life
- **Quick installation**  
Wireless, installed and operational in minutes
- **Collect and deliver data**  
Data delivery through API and app
- **Broad offering**  
More than 50 different sensor types available

## Essentials

Measuring Range	0 - 12 g rms acceleration (sum of X,Y and Z axis)
Measuring Frequency	80ms every 2 min
Report Frequency	Every 2 min
Expected Operating Time*	Up to 10 years

\*Depends on measurement frequency, amount of critical data transmissions and ambient temperature


## General Description

The Neuron Vibration sensor is a battery-powered, wireless device that senses and transmits RMS acceleration processed from its triaxial accelerometer to the Neuron Cloud. The sensor provides a measurement range of 0 – 12 g RMS in a resolution of 1 mg. It also has a temperature sensor mounted on its magnet, measuring the object's ambient temperature over the range -40 to 85°C.

The device is housed in an IP67 rated enclosure that provides protection against dust and water ingress, making it suitable for use in harsh industrial environments. Its small size and light weight, paired with its magnetic mounting makes it a very powerful device, ideal for use in predictive maintenance and monitoring of vibration levels on a variety of industrial equipment and machinery.

## Principle of Operation

The Neuron Vibration sensor measures acceleration across three axes during a period of 80 ms every 2 minutes. The sensors calculates the RMS g value of the acceleration and transmits the data, including the temperature data, to a nearby Neuron Gateway. The gateway sends the data to the Neuron Cloud, where the user can view and analyze the vibration data across their assets.

The symbol  on the product label refers to this data sheet for important information regarding intended use, requirements for the operating environment etc. If the equipment is used in a manner not specified by El-Watch, the protection provided by the equipment may be impaired.

## Technical Specification

### Operational Specification

Measuring Range	0 - 12 g rms acceleration (sum of X,Y and Z axis)
Measuring Range Temperature	-40 – 85°C
Resolution	0.001 g
Measuring Frequency*	Every 2 min
Report Frequency*	Reports every 2 min
Operating Environment	Ambient temperature: -40 - 85 °C Relative humidity: 0-100% Altitude < 2000m above sea level Pollution degree: 4
IP Grade	IP 67, wet conditions, indoor use.
Cleaning	Wipe clean with a damp cloth
Radio Frequency	863-870 MHz / 902-928 MHz
Battery Type	Li-SOCI2, 3.6V
Expected Operating Time**	Up to 10 years

\* Adjustable on request

\*\* Depends on measurement frequency, amount of critical data transmissions and ambient temperature



### Physical Specification

Materials	Polyuretan / Neodymium magnet
Dimensions DxH	51x15mm

### Ordering Information

	Europe/The Middle East/Africa Part number	North America/Australia/New Zealand Part number
Neuron Vibration	422249	422412

### Regulatory

Certifications	Directives/Standard
	RED 2014/53/EU Radio Equipment Regulations 2017
	FCC Part 15C
Safety	IEC 61010-1:2010

## Installation

Neuron sensors are ready for use out of the box and will start logging data after registering the sensor in the app. Even though Neuron sensors deliver great range and long battery life, following some simple guidelines for mounting of the sensor and gateway can greatly improve signal coverage and lifetime of the sensor.

To ensure optimal antenna performance and signal strength, the sensor should be placed elevated with some distance to fixed objects. Keep in mind that RF-signals are greatly affected by close metallic surfaces.

For sensors with an external antenna, the antenna should be clear off the metallic surface.

You can find all you need to get started with Neuron Sensors at our support site: [support.el-watch.com](https://support.el-watch.com) »

For sensors operating in environments with greatly varying temperatures, care should be taken to avoid putting the sensor in unnecessary stress. Very high or low temperatures will affect the battery life and the signal strength of the sensor. While some sensors must be close to the source of heat or cold, other sensors have external probes which allow the sensor to be placed at a distance.

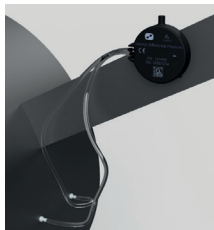
## Fastening

The small, compact blue Neuron sensors are fitted with fastening holes for use with cable ties. The sensors are also delivered with double-sided tape that may be used for fastening of the sensors.

All the black Neuron sensors, like the Neuron Infrared 380 and Neuron Vibration, are fitted with a **strong magnet** at the back for easy fastening. If there is no magnetic surface, then double-sided tape is a good solution.



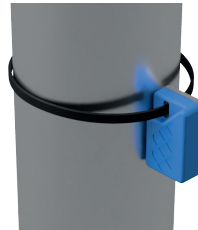
Place elevated with distance to fixed objects



Keep antenna clear off the metallic surface



Sensors with IP21 Enclosure



Sensors with IP67 Enclosure



Vibration sensor with magnet for easy fastening

## Dimensions

