SENSOR PARTNERS 422650 Vibration RMS Owner's Manual

Contents

SENSOR PARTNERS 422650 Vibration RMS

Specifications

- **Measuring Range:** 0 – 12 g RMS acceleration (sum of X, Y, and Z axis)
- **Measuring Frequency:** 80 ms every 2 min
- **Report Frequency:** Every 2 min
- **Expected Operating Time:** Up to 10 years (depends on measurement frequency, data transmissions, and ambient temperature)
- **Operational Environment:** IP Grade IP 67, \suitable for wet conditions and indoor use
- **Battery Type:** Lithium Manganese Dioxide, 3.0V
- **Radio Frequency:** 863-870 MHz / 902-928 MHz
- **Dimensions:** 36x26mm

Product Usage Instructions

General Description

The Neuron Vibration RMS measures acceleration across three axes every 2 minutes. It calculates the RMS g value of the acceleration and transmits the data, including temperature, to a Neuron Gateway. The data is then sent to the Neuron Cloud for analysis.

Installation

Neuron sensors are ready for use out of the box. Register the sensor in the app to start logging data. For optimal performance, place the sensor elevated with some distance to fixed objects. Avoid close proximity to metallic surfaces as they can affect RF signals.

FAQ

- **Q: How do I register the sensor in the app?**
  - A: To register the sensor in the app, follow the instructions provided in the user manual or app guide. Typically, you will need to create an account, add the sensor, and follow the on-screen prompts to complete the registration process.

- **Q: Can the sensor be used outdoors?**
  - A: The sensor is designed for indoor use and wet conditions with an IP Grade of IP 67. It is not recommended for prolonged outdoor exposure.
- **Q: What is the battery type used in the sensor?**
  - A: The sensor uses a Lithium Manganese Dioxide battery with a voltage of 3.0V for long-lasting operation.

PRroduct Information

The Neuron Vibration RMS 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 QRcode 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

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

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 are available

General Description

Neuron Vibration RMS 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. It's 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

Neuron Vibration RMS measures acceleration across three axes during a period of 80 ms every 2 minutes. The sensors calculate the RMS g value of the acceleration and transmit 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 Frequency*	80 ms every 2 min
Bandwidth*	1600 Hz
Measuring Range Temperature	-40 – 85ºC
Resolution	0.001 g / 0.1 ºC
Report Frequency*	Reports every 2 min
Operating Environment	Ambient temperature: -40 – 85 ºC 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	Lithium Manganese Dioxide, 3.0V
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 36x26mm

Ordering Information

	Europe/The Middle East/Africa Part number	**North America/Australia/ New Zealand** Part number
Neuron Vibration RMS	422650	422673

Accessories

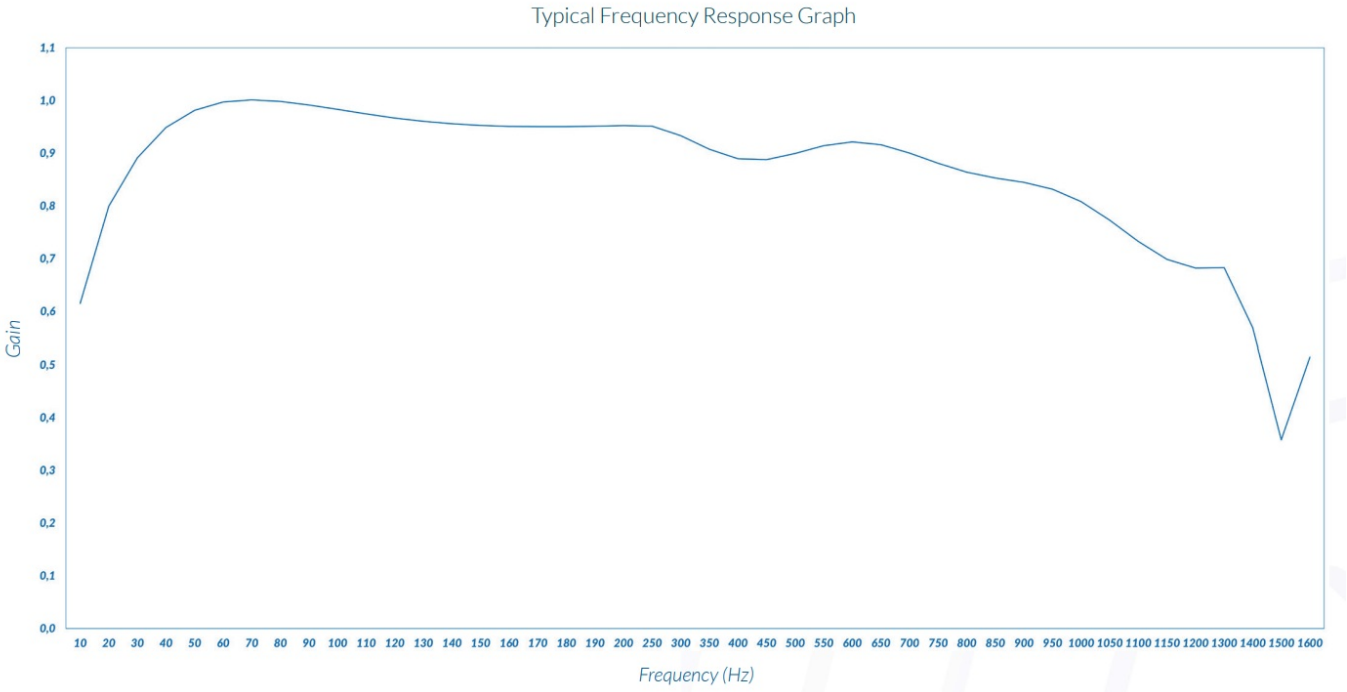
	Part number
Neuron Magnetic Mounting Assembly	422691

Regulatory

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

Typical Frequency Response Graph

The accelerometer response graph provides a visualization of the expected gain performance characteristics over the measureable bandwidth in reference to a 1G force.



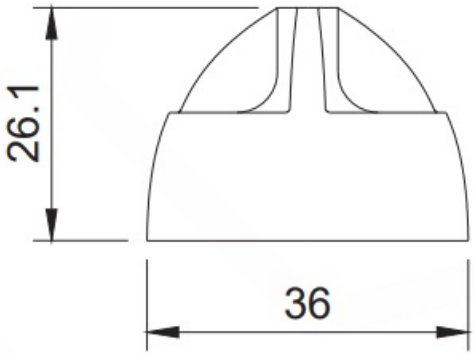
Installation

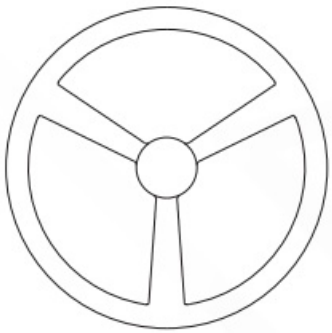
Neuron sensors are ready for use out of the box and will start logging data after registering the sensor in the \app. Even though Neuron sensors deliver great range and long battery life, following some simple guidelines for mounting of the sensor and gateway can greatly improve signal coverage and lifetime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

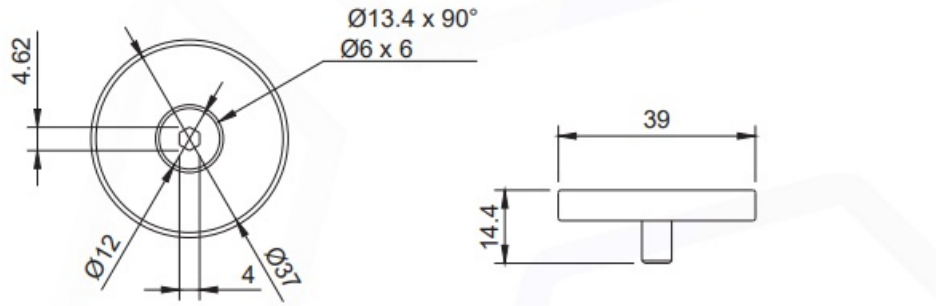
You can find all you need to get started with Neuron Sensors at our support site:
support.el-watch.com

Dimensions





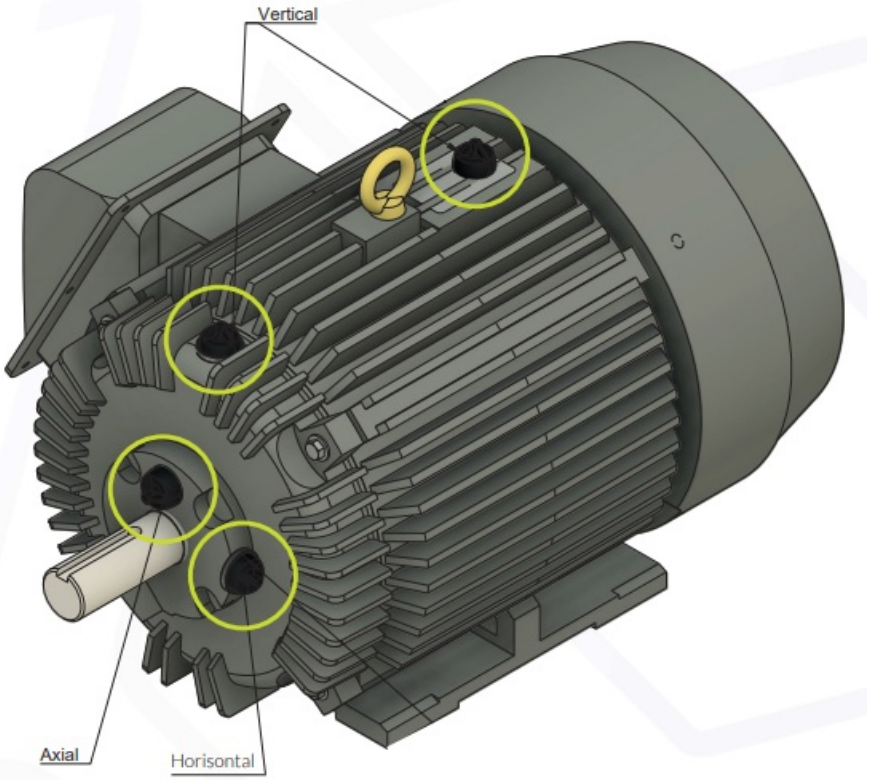
Neuron Magnetic Mounting Assembly

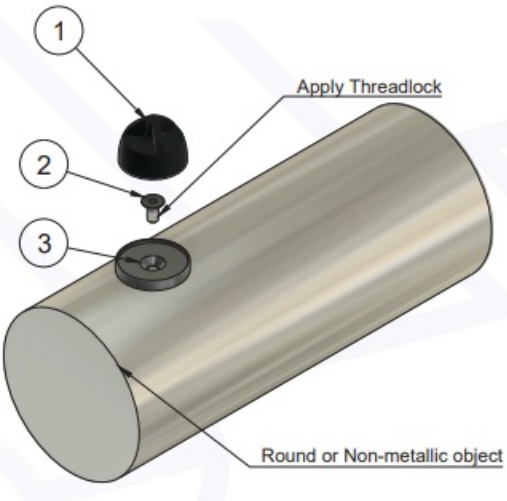


For sensors operating in environments with greatly varying temperatures, care should be taken to avoid putting the sensor in unnecessary stress. Very high or low temperatures will affect the battery life and the signal strength of the sensor. While some sensors must be close to the source of heat or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

Fastening

Neuron Vibration RMS is fitted with a strong magnet at the back for easy fastening. If there is a non-magnetic surface, PN 422691 Neuron Magnetic Mounting Assembly is a good solution. Epoxy glue can also be used to fasten the sensor to non-magnetic surfaces





PRODUCT SHEET // TECHNICAL SPECIFICATION

- El-Watch AS
- Rindalsvegen 6
- 6657 Rindal
- (+47) 71 66 69 08 2024

Additional information about Neuron sensors, installation, userguides, and more at our support website: **support.el-watch.com**

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Documents / Resources

	SENSOR PARTNERS 422650 Vibration RMS [pdf] Owner's Manual 422650 Vibration RMS, 422650, Vibration RMS, RMS

References

- Neuron Sensors
- User Manual