Neuron Vacuum Pressure Sensor

The wireless vacuum pressure sensor measures from -1 bar to +1 bar.

The pressure transducer comes in a rugged stainless steel housing and can be used in a wide range of applications.

Features

- Integrated long life battery - up to 10 years lifetime
- Built-in magnet for easy and secure fastening on the asset
- 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

Essentials

Measuring Range	-1 - 1 bar
Measuring Frequency	Every 30 sec
Report Frequency	Every 2 min. Or immediately if trigger for critical data transmission is reached
Expected Operating Time*	Up to 10 years

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

Typical Applications

- Industry processes

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

General Description

The Neuron Vacuum Pressure sensor measures the ±1 Bar pressure of a liquid or gas relative to ambient atmospheric pressure. It has an accuracy of ±0.5% of full scale with a resolution 1 mBar.

The transducer element transmits the pressure digitally to the Neuron wireless transmitter over a 50cm M12 5-pin cable. The transducer can measure media from -40 – 125°C and is compatible with liquids and gases that are compatible with 304 stainless steel. It has a process connection of 1/4" G and the assembly has an IP67 protection class for rugged and rough measuring environments.

Principle of Operation

The Neuron Vacuum Pressure consists of two components: a pressure transducer and a radio transmitter.

The pressure transducer is equipped with a G ¼" Male process connection and a round M12 connector for electrical connection to the radio transmitter.

The radio transmitter powers the pressure transducer and read the pressure signal thru the provided cable and sends the data wirelessly to the Neuron Gateway.

The radio transmitter has a strong build-in magnet for secure fastening on magnetic materials.

Every 30 seconds the sensor measures the pressure and if the pressure has changed more than the critical value (depending on pressure range) since the last transmission, the sensor reports immediately. Otherwise, it reports every 2 minutes.

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	-1–1 bar
Resolution	0.001 bar
Accuracy	< 0.5 % of FS
Overpressure / Burst Pressure ***	2x rated / 5x rated pressure
Measuring Frequency*	Every 30 sec
Report Frequency*	Reports every 2 min. Or immediately if trigger for critical data transmission is reached, see below
Trigger for Critical Data Transmission*	0.04 bar
Operating Environment	Measuring medium: -40 - 125 °C Ambient transducer: -40 - 105 °C Ambient Radio Transmitter: -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-SOCl2, 3.6V
Expected Operating Time**	Up to 10 years

* *Adjustable on request*

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

*** *Pressure outside the overpressure range may permanently damage the device*

Physical Specification

Materials	Stainless Steel 304 / Polyurethane
Connection	Type G ¼" male
Dimensions LxWxH	Transducer: 66mm x 22mm Radio transmitter: 50mm x 15mm Cable length: 50cm (M12 connector)

Ordering Information

	Europe/The Middle East/Africa Part number	**North America/Australia/ New Zealand** Part number
Neuron Vacuum Pressure	422516	422517

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

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 »

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 IR380 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

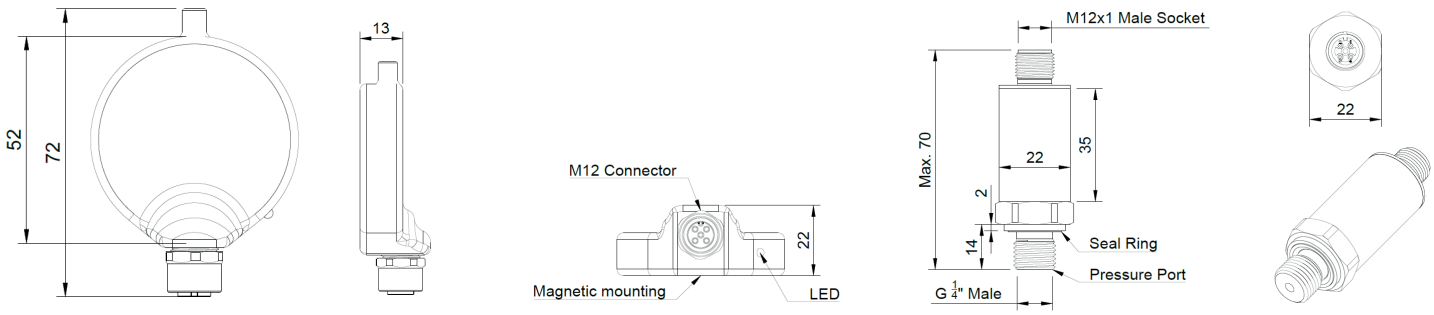
Place elevated with distance to fixed objects


Keep antenna clear off the metallic surface


Sensors with IP21 Enclosure


Sensors with IP67 Enclosure

Dimensions



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