

Neuron Liquid Level

The Neuron Liquid Level is a battery-powered wireless sensor designed for accurate monitoring of liquid levels across a wide range of applications.

The pressure sensor is housed in a rugged, compact stainless-steel enclosure and connected via a 5-meter cable to an external radio transmitter.



An integrated long-life battery enables up to 10 years of maintenance-free operation, ensuring long-term reliability even in demanding environments.

All measurement data are easily accessible through a web interface, mobile app, or API, allowing for seamless integration and real-time monitoring.

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	0-4.5 meter
Measuring Frequency	Every 30 sec
Report Frequency	Every 2 min, or immediately after measurement 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

- Water reservoir level
- Liquid level in barrels and IBC containers

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 Liquid Level utilizes a submersible 0–1 bar gauge pressure transducer to measure liquid pressure. The pressure transducer is connected to the wireless radio transmitter via a 5-meter cable, which represents the maximum allowable distance between the two components.

To maintain accurate level measurements, a pressure relief valve located near the transmitter compensates for variations in atmospheric pressure.

Because this valve must remain above the liquid surface, the sensor can accurately measure liquid level changes up to approximately 4.5 meters.

Although the total liquid depth may exceed 4.5 meters, only variations within the top 4.5m are detected.

The conversion from pressure to level is handled in the app. Use the configuration helper tool for easy conversion. You can also apply an offset if you wish to include the level below the sensor's position.


The sensing element supports media temperatures from –40°C to +125°C and is compatible with liquids suitable for 304 stainless steel.

Principle of Operation

The Neuron Liquid Level Sensor consists of two components: a pressure transducer and a radio transmitter.

The pressure transducer is completely sealed and can be submerged. 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 trigger 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*	0 - 4.5 meter
Resolution	1 cm
Accuracy	5 cm
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**	1 m
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	Radio transmitter: IP67 Pressure transducer: IP68
Radio Frequency	863-870 MHz / 902-928 MHz
Battery Type	Lithium Manganese Dioxide, 3.0V
Expected Operating Time***	Up to 10 years

* Range is limited by cable length

** Adjustable on request

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

Physical Specification






Materials	Stainless Steel 304 / Polyurethane
Dimensions LxWxH	Transducer: 150mm x 24mm Radio transmitter: 50mm x 15mm Cable length: 5 m - (pressure relief to pressure sensor)

Ordering Information

Discription	Europe/The Middle East/Africa Part number	North America/Australia/ New Zealand Part number
Neuron Liquid Level	422804	422805

Installation and fastening accessories can be supplied on request

Regulatory

Certifications	Directives/Standard
 	RED 2014/53/EU Radio Equipment Regulations 2017
  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 operating in environments with greatly varying temperatures, care should be taken to avoid

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

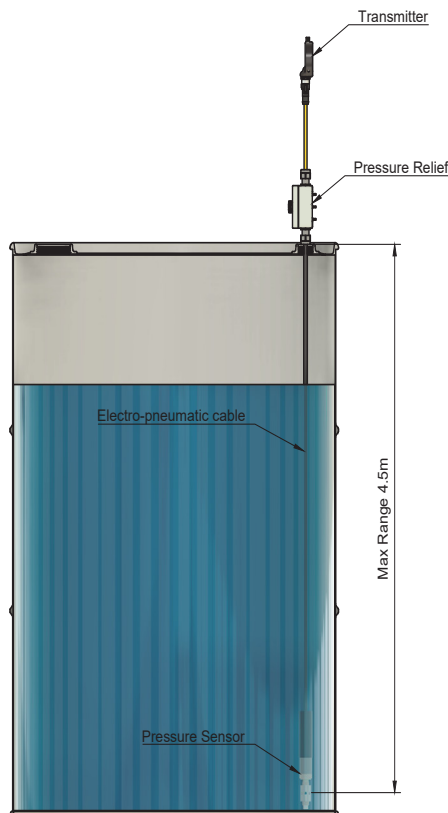
putting the sensor in unnecessary stress. Very high or low temperatures will affect the battery life and the signal strength of the sensor. While some sensors must be close to the source of heat or cold, other sensors have external probes which allow the sensor to be placed at a distance.

Fastening

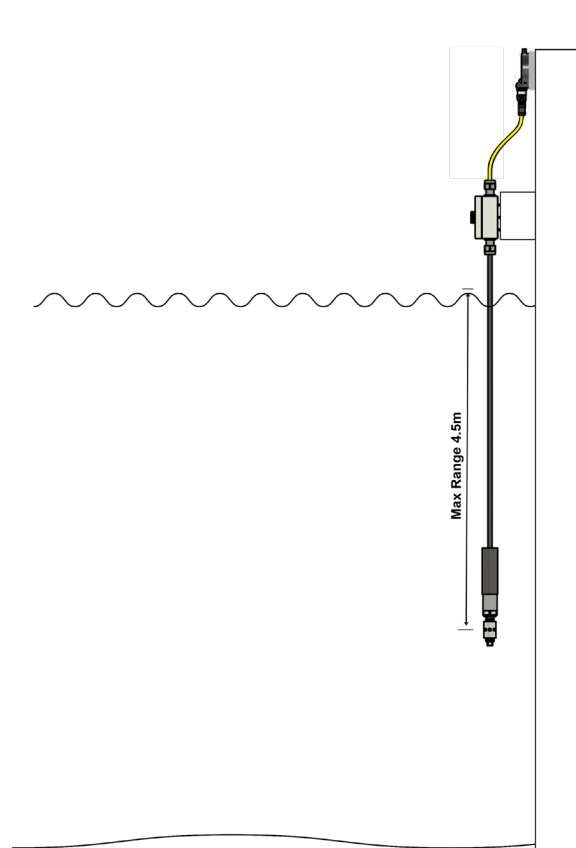
In a barrel or IBC container, the pressure sensor can either rest on the bottom or hang vertically from its cable. If you choose to suspend it, we recommend installing a cable gland in the lid for proper support and sealing.

When installing the pressure sensor in a dam, it may be suspended from the pressure relief box or secured using the cable. Avoid letting the sensor rest in bottom sediment, as this can cause clogging and affect measurement accuracy.

Please contact El-Watch for help in installing and fastening the sensor.



Installation in barrel



Installation in dam

