

Neuron Precision mV Digitizer

The Neuron Precision mV Digitizer converts your analogue signal into a digital measurement.

The sensor is optimized for high temperature applications and can operate in ambient temperatures up to 85°C. The sensor comes with a standard IEC miniature connector for easy connection.



Features

- Integrated 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

- Collector current measurement
- Industry processes
- Predictive maintenance
- DC voltage measurement

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

	Precision mV Digitizer
Measuring Range	0 - 250mV
Measuring Frequency	Every 10 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

General Description

The Neuron mV Digitizer is a battery-powered device that can convert an analogue mV signal into a digital signal. The device then transmits the converted digital signal via a wireless radio signal.

It is designed to be used in industrial environments, where the wireless transmission capability makes it easy to collect data from remote locations and the battery power makes it convenient to use in areas where power supply is not available.


The digital output signal can be configured in the app depending on the user need. The sensor provides a range of 0 – 250mVDC and an accuracy of up to 0.4% of full scale at a resolution of 0.1 mV.

Please note the +/- of the device wiring.

Principle of Operation

The Neuron mV Digitizer reads the analogue DC-voltage signal and converts it into a digital measurement. Due to wireless transmission of the signal, it is also easy and timesaving to install. The sensor is a versatile device that can be used in a wide range of industrial applications.

Every 10 seconds the sensor measures the voltage and if the voltage has changed more than 20 mV 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

	Precision mV Digitizer
Measuring Range***	0 – 250mVDC
Resolution	0.1mV
Accuracy	0,4% of Full Scale
Input Impedance	470kΩ
Measuring Frequency*	Every 10 sec
Report Frequency*	Reports every 2 min. Or immediately if trigger for critical data transmission is reached, see below
Trigger for Critical Data Transmission*	20mV change in measurement
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	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

*** Voltage outside the range -250mV to 250mV may permanently damage the device



Physical Specification

Materials	Polyurethane
Connection	IEC Miniature Connector RTD
Dimensions LxWxH	53x71x14 mm

Ordering Information

	Europe/The Middle East/Africa Part number	North America/Australia/New Zealand Part number
Precision mV Digitizer	422698	422699

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



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.

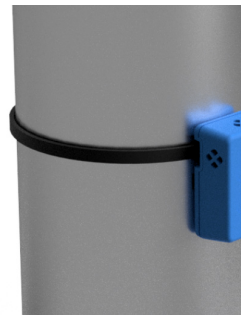
All the black Neuron sensors, like the Neuron IR380 and Neuron Vibration, are fitted with a strong magnet at the back for easy fastening. If there is no magnetic surface, then double-sided tape is a good solution.



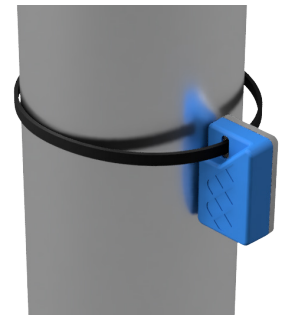
Place elevated with distance to fixed objects



Keep antenna clear off the metallic surface



Sensors with IP21 Enclosure



Sensors with IP67 Enclosure

Dimensions

