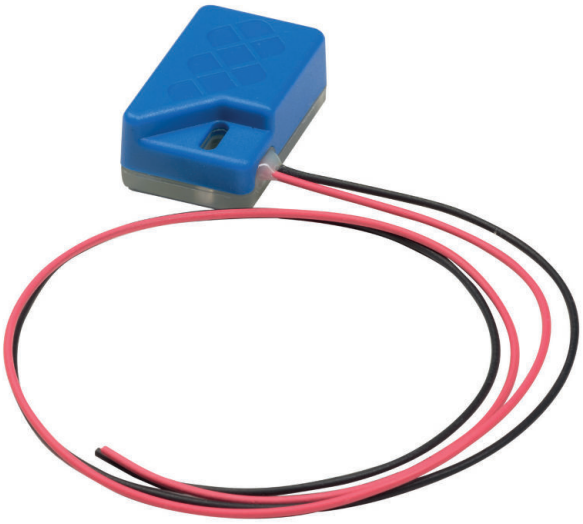
Neuron mA Digitizer & Precision mA Digitizer



The Neuron mA Digitizer converts your analogue signal into a digital measurement. Integrated battery ensures up to 10 years of battery life. All measurements are easily accessible from web, app or API.

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

- Digitization of existing sensors
- Industry processes
- Predictive maintenance
- 4-20mA current loops

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

	mA Digitizer	Precision mA Digitizer
Measuring Range	0 – 25mA	0 - 25mA
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*

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General Description

The Neuron mA Digitizer is a battery-powered device that can convert an analogue 4-20mA industrial 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, where 4 mA may represent 0 Bar and 20 mA may represent 10 Bar for example.

The sensor provides an accuracy of up to 0.1% of full scale, and a resolution of up to 0.003 mA.

Principle of Operation

The Neuron mA Digitizer reads the analogue DC-current 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.

Some common use cases include: Digitizing 4-20 mA control loops, make analogue sensor systems "smart" by sending its data to the cloud and condition and remote monitoring.

Every 10 seconds the sensor measures the current and if the current has changed more than 2 mA since the last transmission, the sensor reports immediately. Otherwise, it reports every 2 minutes.

The product is available in two versions, mA and Precision mA.

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

	mA Digitizer	Precision mA Digitizer
Measuring Range***	0 – 25mA	0 - 25mA
Resolution	0.1mA	0.003mA
Accuracy	0,5% of Full Scale	0,1% of Full Scale
Loop Resistance	10Ω	
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*	2mA	
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	
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*

*** *Current outside the measuring range may permanently damage the device*

Physical Specification

Materials	POLYblend 65 FS / TPU
Connection	2 x 40 cm RADOX 155 0.25 mm²
Dimensions LxWxH	37x23x14mm

Ordering Information

Measuring Range	**Europe/The Middle East/Africa** Part number	**North America/Australia/ New Zealand** Part number
mA Digitizer 0–25 mA	422237	422460
Precision mA Digitizer 0-25mA	422380	422408

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.

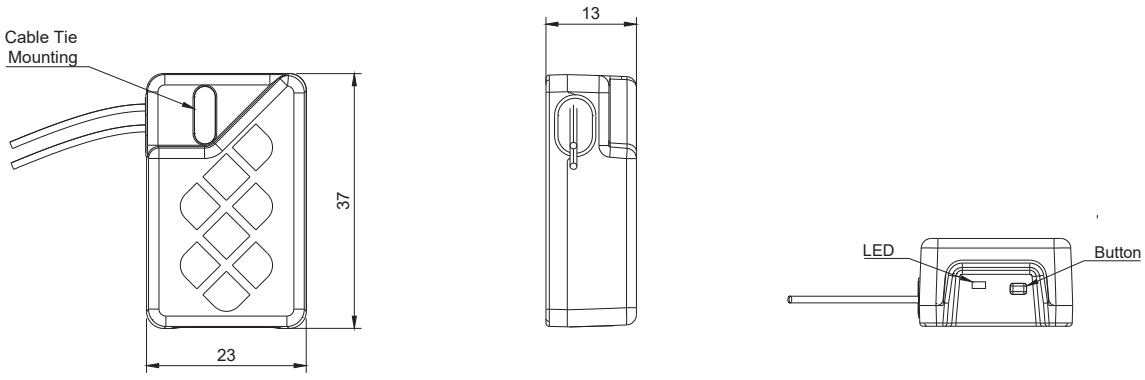
Place elevated with distance to fixed objects


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