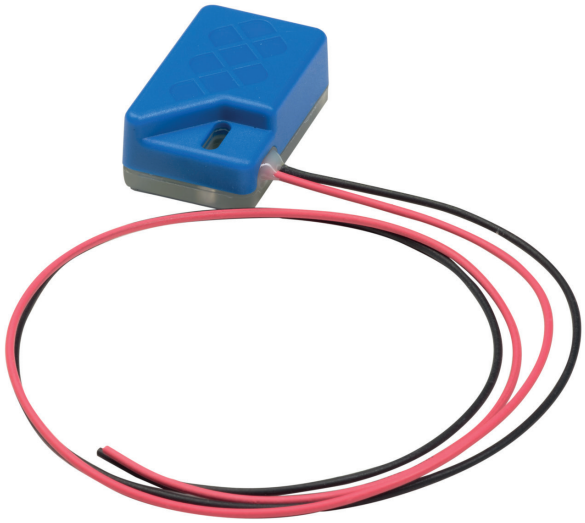
Neuron VDC Digitizer & Precision VDC Digitizer

The Neuron VDC 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
- 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

	VDC Digitizer	Precision VDC Digitizer
Measuring Range	0 – 30VDC	0 – 30VDC
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 VDC Digitizer is a battery-powered device that can convert an analogue 0-30 VDC 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 0 V may represent 0 Bar and 10V may represent 100 Bar for example.

The sensor provides an accuracy of up to ±40mV, and a resolution of up to 10mV.

Principle of Operation

The Neuron VDC 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 0-10V control outputs, make analogue sensor systems "smart" by sending its data to the cloud and condition and remote monitoring.

Every 10 seconds the sensor measures the voltage and if the voltage has changed more than 2V since the last transmission (or 200mV depending on the version), the sensor reports immediately. Otherwise, it reports every 2 minutes.

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

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

	VDC Digitizer	Precision VDC Digitizer
Measuring Range***	0 – 30VDC	0 – 30VDC
Resolution	0.1V	0.01V
Accuracy	+/- 120mV	In range: 0-10V: +/- 40 mV In range: 10-30V: +/- 120 mV
Input Impedance	100kΩ	
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*	2V	200mV
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*

*** *Voltage outside the range 0-30VDC 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
VDC Digitizer 0–30V	422236	422461
Precision VDC Digitizer 0-30VDC	422381	422441

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.

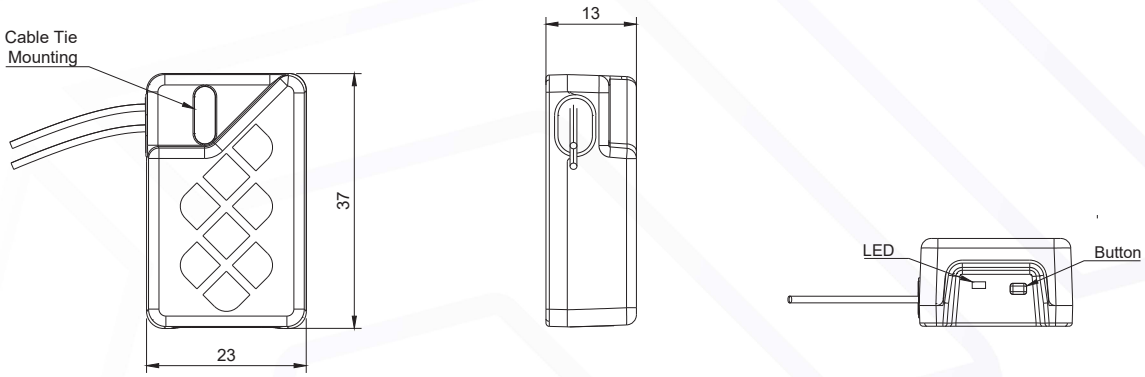
Place elevated with distance to fixed objects

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