Neuron Temperature IP67

The Neuron Temperature IP67 is a small and compact sensor for measuring temperature and suited for a wide range of applications. Both surface temperatures when attached directly to the object, or as an air temperature sensor in wet or dusty areas due to IP67 encapsulation. The sensor is mounted using double-sided tape or cable ties.

Features

- 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

Essentials

Measuring Range	-40 - 85 °C
Measuring Frequency	Every 3 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

- Surface temperature on equipment
- Surface temperature on cables
- Ambient temperature in wet or dusty areas

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

el·watch

General Description

Temperature is a crucial parameter in many different applications, from HVAC systems and industrial process maintenance to freezers. Accurate measurement of temperature is therefore essential for maintaining optimal conditions and ensuring proper functioning of these systems.

The Neuron Temperature IP67 sensor is a high-precision device designed specifically for measuring the temperature of surfaces or air. With a wide temperature range of -40°C to 85°C and an accuracy of ±0.5°C, this sensor is ideal for a variety of applications where temperature needs to be monitored and controlled with a high degree of accuracy.

Compact in size at just 37mm x 23mm x 14m, the sensor is easy to integrate into any system. It operates on a non-replaceable internal battery allowing it to operate up to 10 years.

Whether you need to monitor the temperature in a warehouse, control the temperature in a refrigerator, or monitor cable temperatures, the Neuron Temperature IP67 sensor is the perfect choice for reliable and accurate temperature measurement.

Principle of Operation

In the Neuron Temperature IP67 sensor, an NTC thermistor is used as the sensing element. The thermistor is placed in direct contact with a thermally conductive surface in the IP67 enclosure, allowing it to accurately measure the temperature. The thermistor's resistance is measured by passing a small current through it and measuring the voltage across it. This voltage is then used to calculate the thermistor's resistance, and from that the ambient temperature can be inferred. The Temperature IP67 sensor has high accuracy, wide temperature range, robust IP67 enclosure, and fast response time.

Every three second the sensor measures the temperature and if the temperature has changed more than 2 degrees 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	-40 - 85°C
Resolution	0.1°C
Accuracy	0.5°C (-5 - 75 °C)
Measuring Frequency*	Every 3 sec
Report Frequency*	Reports every 2 min. Or immediately if trigger for critical data transmission is reached, see below
Trigger for Critical Data Transmission*	2°C
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*

Physical Specification

Materials	POLYblend 65 FS / TPU
Measuring point	Silicone pad on side of sensor
Dimensions LxWxH	37x23x14mm

Ordering Information

	Europe/The Middle East/Africa Part number	**North America/Australia/ New Zealand** Part number
Temperature IP67	421839	422407

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.

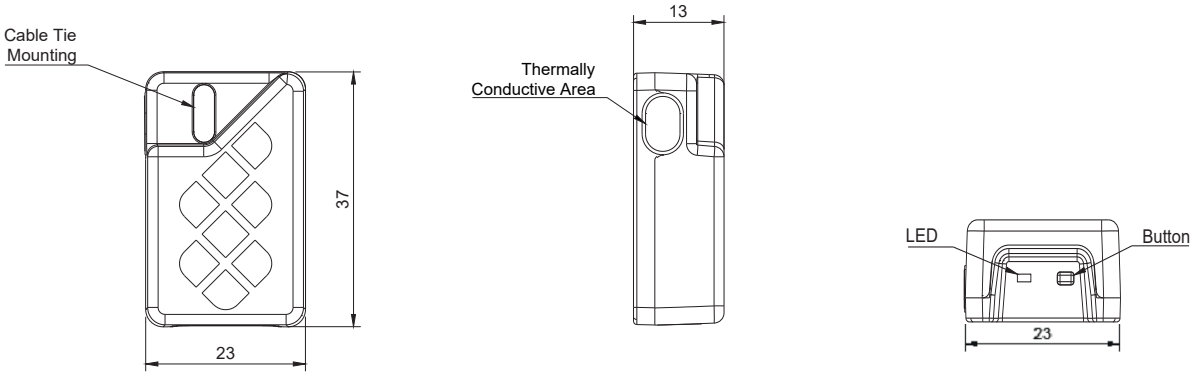
Place elevated with distance to fixed objects


Keep antenna clear off the metallic surface


Sensors with IP21 Enclosure


Sensors with IP67 Enclosure

Dimensions



El-Watch AS • Rindalsvegen 6 • 6657 Rindal • (+47) 71 66 69 08
2022 - All rights reserved

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