

# Neuron Actuator

The Neuron Actuator is a DIN-mounted, easy-to-use device that controls a SPDT relay remotely using the Neuron app. The app provides real-time status updates and notifications. The relay is capable of switching loads at 250VAC/30VDC up to 10A, has an input voltage range of 24VDC and has a maximum power consumption of 5W. This device is suitable for a wide range of applications such as industrial control and monitoring, and remote-control systems.



## Features

- Choose between two modes, on / off functionality, and timer functionality with adjustable activation time.
- Easily connect the actuator to the system with the QR-code on the sensor. Ensures immediate and accurate registration in the app on your phone/PC/ tablet
- The actuator communicates with your nearby Neuron Gateway which then again communicates with the Neuron Cloud
- SPDT-relay for both NO and NC operation
- DIN-rail mounting

## Essentials

Relay rated current	10A @ 25 °C (8A @ 75 °C) resistive-inductive load, PF=0.75
Relay rated voltage	30VDC, 250VAC
Response time	Approx 5 sec
Update Frequency	Reports status every 15 min. Or immediately if activated

## Typical Applications

- Reset electric equipment
- Open/Close gates
- Light management
- Small to medium size motors
- Industrial fans
- Valves

## 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 Actuator is a versatile and easy-to-use device that allows you to control a SPDT (Normally Open and Normally Closed) relay remotely with the Neuron app. With its long-range communication capabilities and low power consumption, the Neuron Actuator can be used in a wide range of applications, including industrial control and monitoring, and remote-control systems.

The Neuron Actuator can be easily controlled using the Neuron app which allows you to monitor and control the relay in real-time. The app supports selection of a simple on/off mode or timer activation with adjustable duration.


The board uses a relay rated for 250VAC / 30VDC up to 10A which can be used to control a wide range of devices, including lights, fans, and motors. The compact size and wireless connection of the Neuron Actuator makes it easy to integrate into existing systems.

## Principle of Operation

The Neuron Actuator communicates wirelessly with a Neuron Gateway that connects the device to the Neuron Cloud. This allows the user to monitor and control the state of the relay in near real-time. The app provides an easy-to-use interface for controlling the relay and displaying its current state.

Once the Actuator is registered in the app, the user can monitor and control the Actuator. The Actuator can be in two modes: 1) A simple on/off toggle mode or 2) A timed activation mode where the user inputs the duration of the activated relay. The relay can be used to control various loads such as lights, fans or motors, depending on the specific application.

It is important to note that the specific implementation and details of the device may vary and should be confirmed with the manufacturer.

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

Relay Rated Current	10A @ 25 °C (8A @ 75 °C) resistive-inductive load, PF=0.75
Relay Rated Voltage	30VDC, 250VAC
Report Frequency	Reports status every 15 min. Or immediately
Response Time	Approx 5 sec
Operating voltage	22-26 VDC, Max. 5W
Operating Environment	Temperature: -40 - 75 °C Relative humidity: 0-80% (non-condensing) Altitude < 2000m above sea level Pollution degree 3 Indoor use, not for wet locations
Radio Frequency	863-870 MHz

### Physical Specification

Materials	Polyamid
Mounting	DIN rail
Dimensions LxWxH	118x25x139mm
Cleaning	Wipe clean with a damp cloth

### Ordering Information

	Europe/The Middle East/Africa Part number
Neuron Actuator	422401

### Accessories

DIN Rail Power Supply 85-264V AC Input, 24V DC Output, 1A 20W	311055
DIN Rail 100mm x 35mm x 7.5mm	422605
ISM Antenna, Industrial adhesive-mount, IP67, 2 meters cable	422607
Antenna cable, coaxial, SMA male-female, 10 meters	422608
Antenna cable, coaxial, SMA male-female, 20 meters	422609

### Regulatory

Certifications	Directives/Standard
	RED 2014/53/EU Radio Equipment Regulations 2017
Safety	IEC 61010-1:2010 IEC 61010-2-201:2017

## Installation

The device has a DIN-mounting capability which means it can be easily installed in a control panel or enclosure by sliding it onto a 35mm standard DIN rail. This feature makes it easy to integrate the device into existing systems and allows for a secure and stable installation. It is important to note that the specific requirements of your application should be considered before installing, including the amount of space available in the enclosure.

## Antenna

The Neuron Actuator is ready for use and requires only a 24 VDC power supply and the antenna. Connect the Neuron antenna to the SMA-connector. If the cabinet is made of metal, we recommend mounting the antenna on the outside of the cabinet.

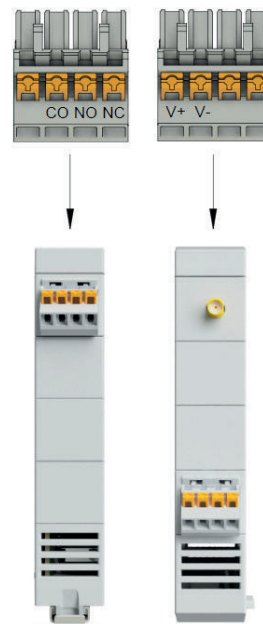
You can find all you need to get started with Neuron Sensors at our support site:  
[support.el-watch.com](https://support.el-watch.com)



## Connectors

Connect the power supply to the spring-loaded terminals as shown in the image. (Fig 1) The load should be connected to the CO-NO and/or CO-NC terminals according to the desired Actuator function.

Fig 1



## Dimensions

