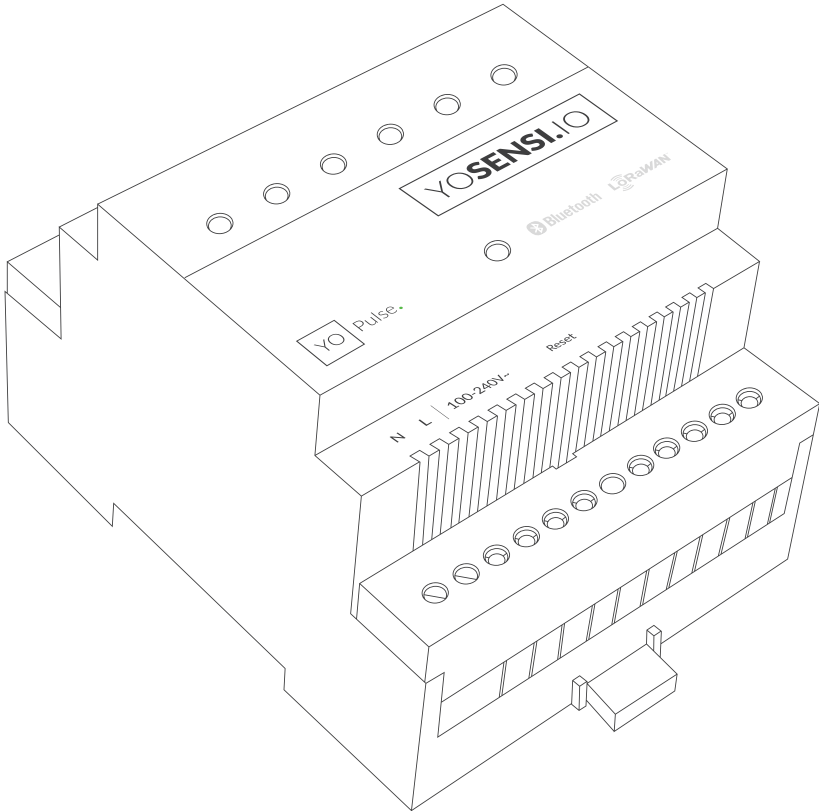




Pulse.  
Datasheet



## Application

- The YO Pulse is used for monitoring logical states, alarm detection or pulse counting.
- Based on the data collected by the device, it is possible to:
  - Monitor the states of devices and processes in automation
  - Collect the number of pulses from measuring devices, for example, from water meters.
- The device includes six configurable measuring inputs, each of which can operate in one of the three modes: normally open contact monitoring, normally closed contact monitoring, pulse counter.

## Components

- The device consists of a microcontroller, communication modules (LoRa, Bluetooth Low Energy), power supplies and digital inputs.
- The enclosure of the device is adapted for installation in power panels or automation cabinets on standard 35 mm DIN rails.
- On special request, the YO Pulse can be prepared in an IP67-rated protective enclosure.
- The device comes with an RGBW diode that indicates the operating status of the device. In addition, each channel has an orange diode indicating the input status.
- The device is tailored to the customer's needs. At the order stage, the customer determines the demand for contact type to be potential-free or potential.

## Operation of the device

- A LoRaWAN network is required for data transmission.
- The device must be powered from the mains.
- When connected, the individual digital inputs record logical states at specific time intervals in the case of no state changes and immediately whenever input states or pulse rates change.
- Device parameters can be configured or reconfigured at any time via BLE.
- Yosensi can provide access to a mobile application as a part of a comprehensive solution, allowing the device to be configured and connected to the LoRaWAN network. Additionally, it offers a preview of the operating parameters via BLE.
- It is recommended that the device be added to the Yosensi Suite system, which allows for the easy management of the data transmitted by the devices.

## Device configuration

<b>Device settings</b>	Measuring interval Input type configuration (Normally Closed, Normally Open, Pulse Meter)
<b>Bluetooth Low Energy (BLE) settings</b>	Transmission power Advertising frame interval
<b>LoRaWAN settings</b>	Operating mode selection (OTAA or ABP)

<b>OTAA</b>	<b>ABP</b>
<ul style="list-style-type: none"><li>• Device EUI</li><li>• Application EUI</li><li>• Application key</li><li>• Number of trials</li></ul>	<ul style="list-style-type: none"><li>• Device address</li><li>• Network session key</li><li>• Application session key</li></ul>

# Advantages

- Production quality - made in the European Union by qualified engineers.
- The YO Pulse is protected by galvanic isolation consisting of input paths to detect external potentials (external voltages).
- Detects external voltages regardless of polarity.
- Wireless communication without the need for additional cabling or modifications to existing installations.
- Low energy consumption.
- Depending on the version, the LoRa radio can operate in different regions (e.g., EU868, US915, AU915 etc.) adapted to different ISM frequency bands.
- Specific mechanisms have been used in the software that enable all recorded data from the measuring inputs to reach the server on time.
- Using Bluetooth Low Energy (BLE) provides:
  - Configuration convenience
  - Live preview of the data collected
  - Possibility of firmware update via OTA
  - Very low energy consumption
  - Wide range
- Supported LoRaWAN connection over ABP or OTAA.
- Mobile application for convenient device configuration and network monitoring.
- Access to the Yosensi Suite system for configuring devices and managing infrastructure.

# Technical details

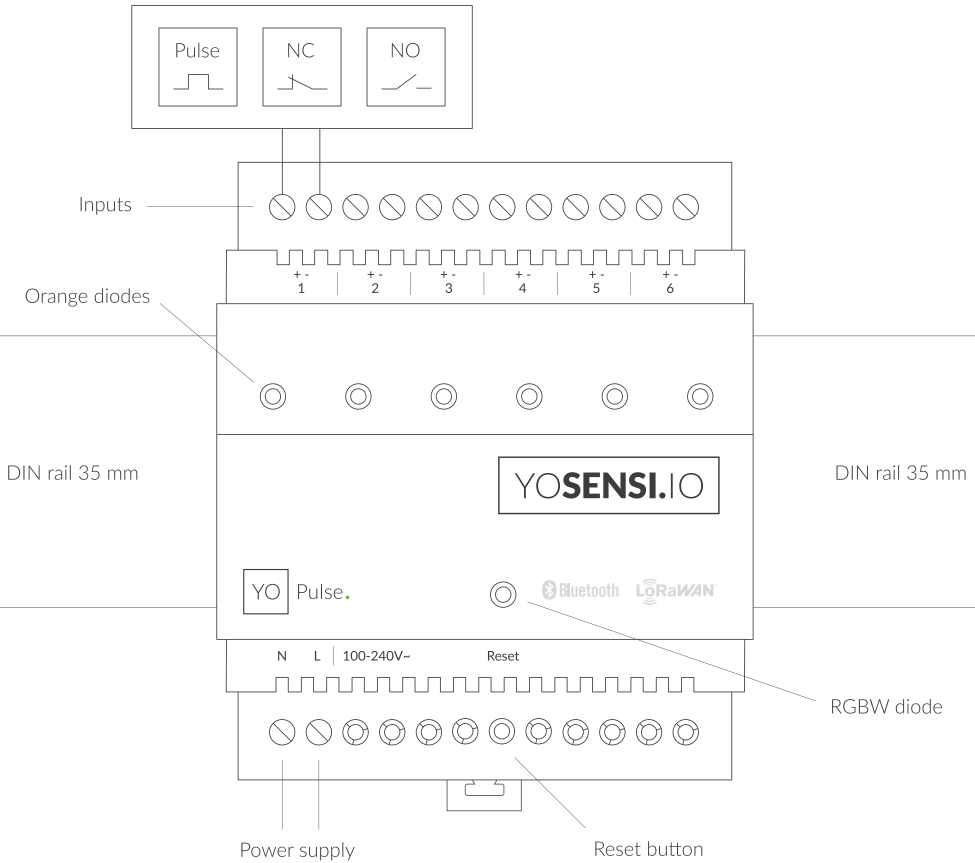


Figure 1. Top view of the device.

# Enclosure of the device

<b>Dimensions</b>	Height: 90 mm Depth: 58 mm	Width: 71,2 mm (4 pole)
<b>Colour</b>	Light grey (RAL 7035)	
<b>Installation</b>	35 mm DIN rail standard	
<b>Enclosure material</b>	Polycarbonate	
<b>Fire resistance class</b>	UL94-VO	
<b>Level of protection</b>	IP20	

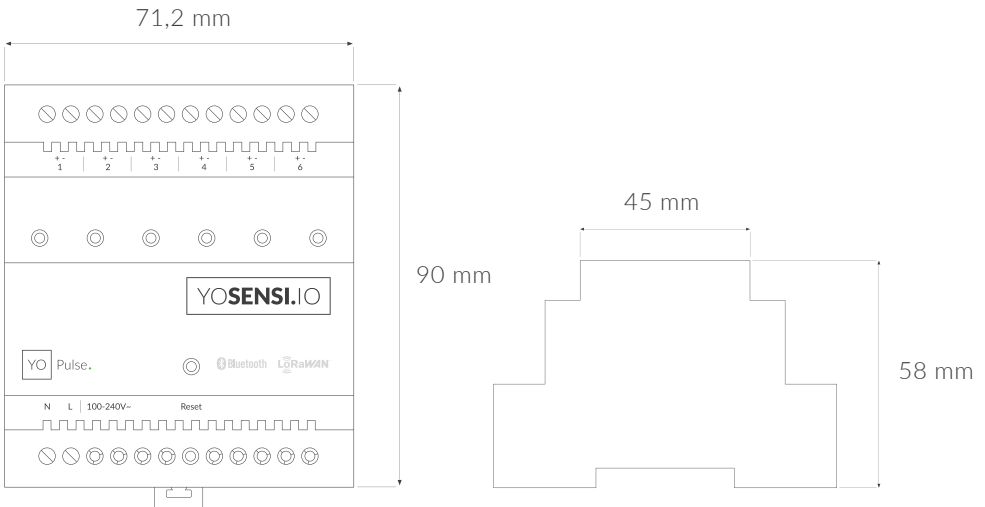
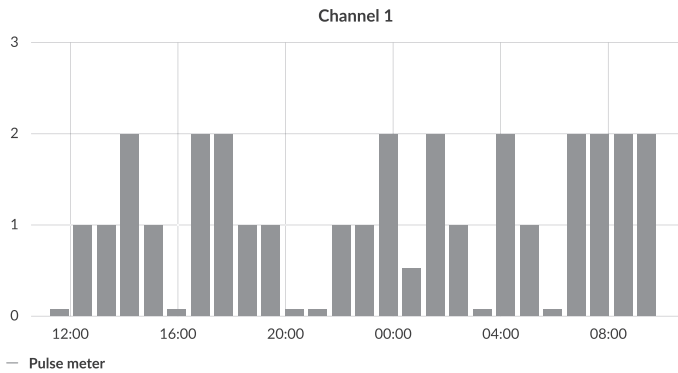


Figure 2. Dimensions of the device.

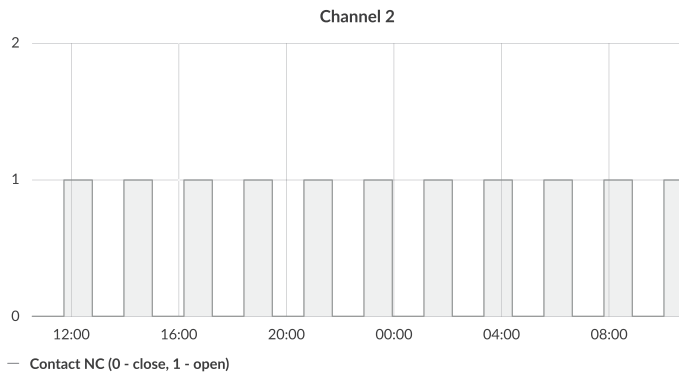
# Parameters

Tx Power	LoRa EU868: to +14 [dBm] LoRa US915, AU915, AS923: to +22 [dBm] Bluetooth Low Energy (BLE): -20 to +6 [dBm]
Power supply	100~240 V AC 50/60 Hz
Weight	151g

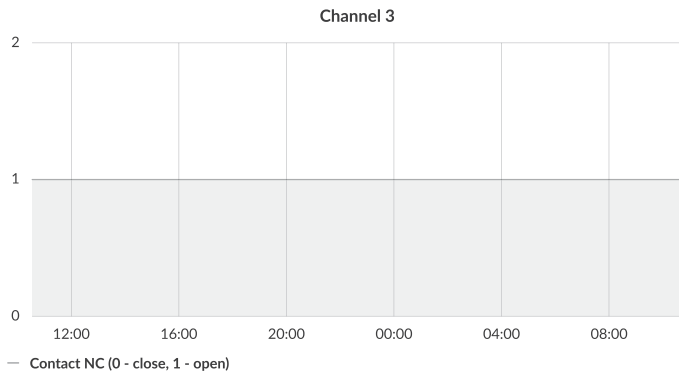
# Sample charts



Example of a **pulse counter** monitoring chart.



Example of a **normally closed contact** monitoring chart.



Example of a **normally open contact** monitoring chart.



# Revision history





Date	Version	Page(s)	Changes
August 2020	1	All	Initial version
February 2021	1.1	1, 2, 5, 6	Removal of one of the diodes. Change of diode type to RGBW (in the text and the device outline).

The logo for YOSSENSI.IO is displayed in a white rectangular box with a thin black border. The text 'YOSENSI' is in a bold, sans-serif font, and '.IO' is in a smaller, regular font. A small green dot is positioned above the 'I' in '.IO'. The background of the entire page is a stylized world map where the continents are filled with intricate white circuit board patterns.

YOSENSI.IO

LoRa Alliance Member

## Contact us

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