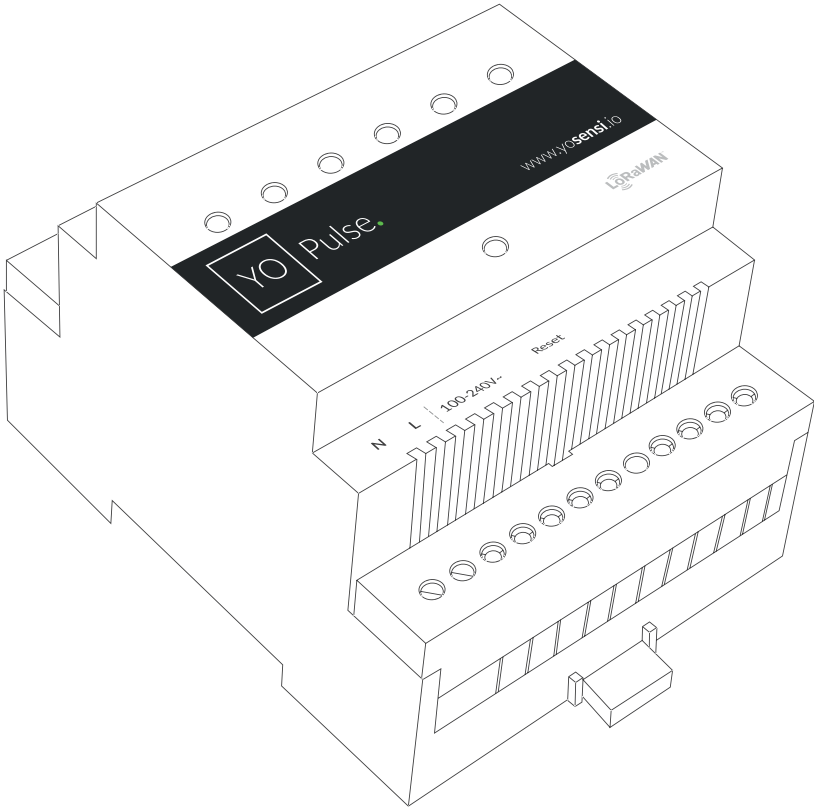




Pulse.
Datasheet



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

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

OTAA

- Device EUI
- Application EUI
- Application key
- Number of trials

ABP

- Device address
- Network session key
- Application session key

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

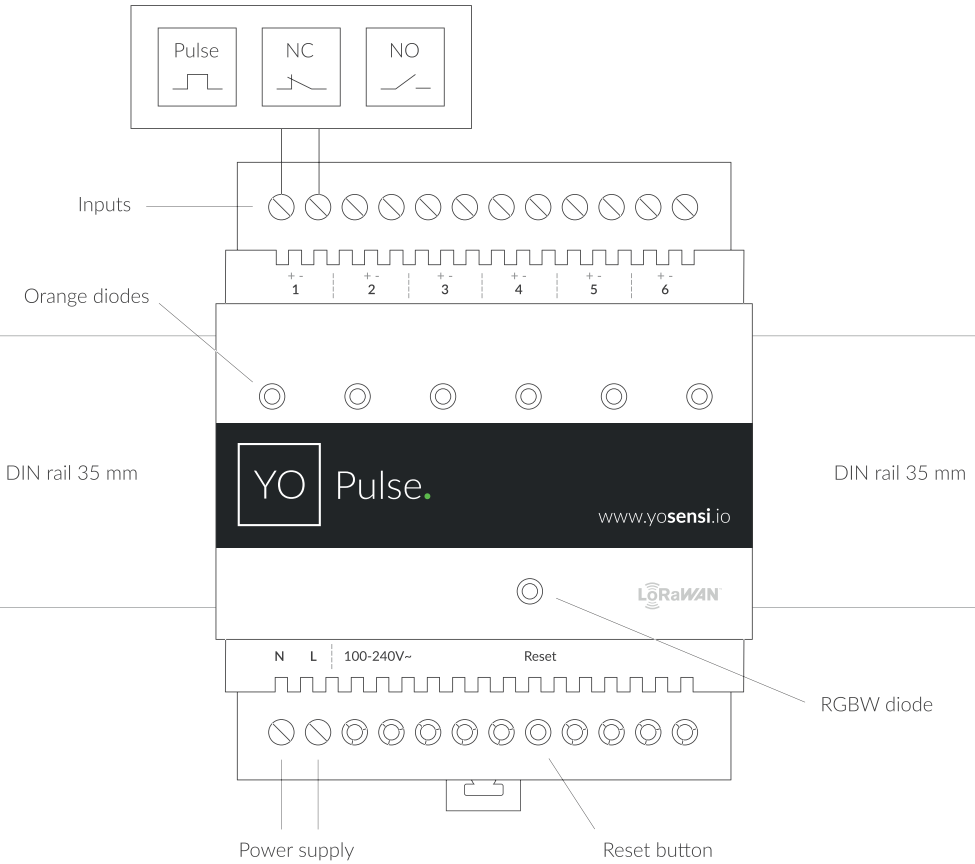


Figure 1. Top view of the device.

Enclosure of the device

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

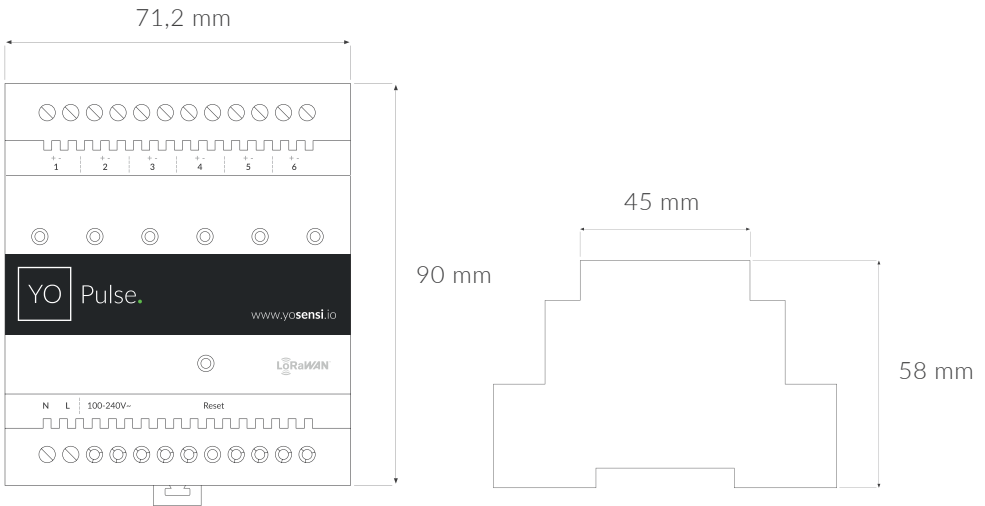


Figure 2. Dimensions of the device.

Parameters

Tx Power

LoRa EU868: to +14 [dBm]
LoRa US915, AU915, AS923: to +22 [dBm]
Bluetooth Low Energy (BLE): -20 to +6 [dBm]

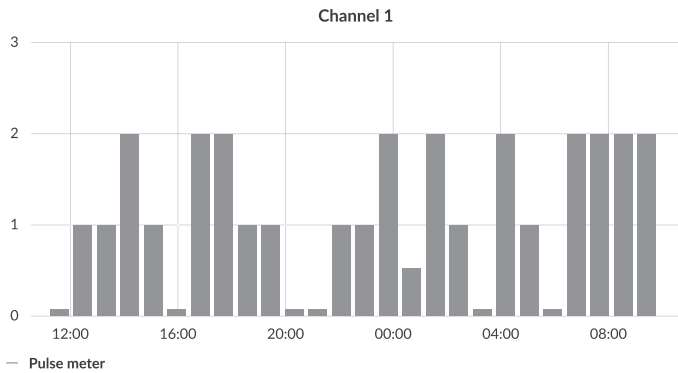
Power supply

100~240 V AC
50/60 Hz

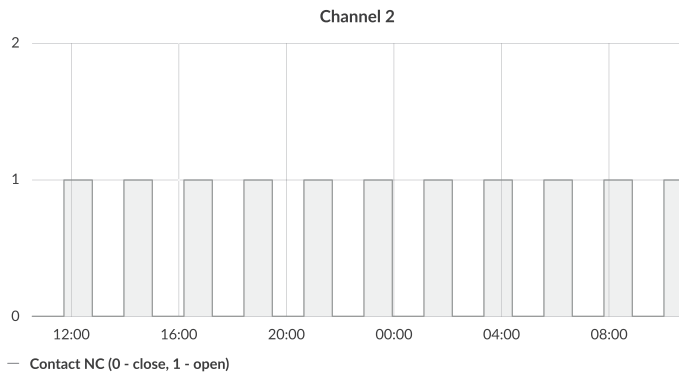
Weight

151 g

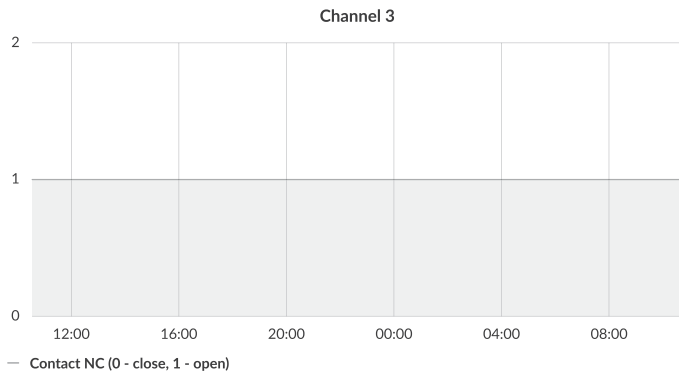
Sample charts



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.

 **LoRa Alliance** Member

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