YO Relay Switch.

DATASHEET

Telemetry experts

LoRaWAN-based communication

BLE 5.0 support

Efficient device deployment& management

Support for multiple LoRaWAN regions

High-quality products made in EU

YOSENSI.IO

LoRa Alliance Member CE

Release notes

Released	Version	Key changes
11.06.2024	1.0	Initial release.
08.07.2024	1.1	Changes in location of LEDs. Reset button relocation

Content

Application

- YO Relay Switch is a LoRaWAN device designed for versatile remote control applications. Equipped with two control channels, this wireless actuator can transmit the state of its input and control its output.
- Its applications include remote control of lighting, heating, and cooling systems; efficient management of HVAC, lighting, and security systems in buildings; automation of irrigation, lighting, and ventilation in agriculture; and monitoring and control of machinery and production lines in industrial settings.
- The device has two relays that can be controlled via Bluetooth and LoRa communication.
- The YO Relay Switch operates in LoRa **Class C**, meaning it can receive messages continuously except when it is sending data itself.
- **Important!** The YO Relay Switch is not a measuring device - a measuring device such as the YO Thermostat is needed to control the radiator, HVAC etc. in an automatic correlated manner with measurements of e.g. temperature.

Components

- The device consists of a **microcontroller** (with Bluetooth Low Energy), communication modules (LoRa) power supply systems and and a **circuit with two relays**
- The enclosure of the device is adapted for installation in power panels or automation cabinets on standard 35 mm DIN rails.
- The device is equipped with an RGBW diode that indicates the operating status of the device.

Operation of the device

- A LoRaWAN network is required for data transmission.
- It is possible to configure or reconfigure device parameters, **at any time**, via BLE.
- **Yosensi** provides access to a convenient **Mobile Application**, enabling adaptation, device configuration, as well as firmware updates and many other options to facilitate the use of Yosensi **devices.**
- It is recommended to add the device to the **Yosensi Management Platform**, which allows detailed and easy monitoring of the data transmitted by the devices.

Device configuration

LoRaWAN settings	Network type (private or public) operating mode selection (OTAA or ABP) **OTAA** • Device EUI • Application EUI • Application Key • Number of trails **ABP** • Device address • Network session key • Application key
Bluetooth Low Energy (BLE) settings	Transmission power Advertising frame interval
Device settings	Measuring interval

Advantages

- **Production quality** - made in the **European Union** by **qualified engineers**.
- YO Relay Switch features dual control channels for versatile application possibilities.
- Designed for remote control, it enhances operational efficiency by allowing the monitoring of input status and control of outputs.
- Suitable for various applications, including the control of lighting, heating, cooling, HVAC systems, security systems, irrigation, and industrial machinery.
- 35 mm DIN rail enclosure
- Low energy consumption
- Depending on the version, the **LoRa radio** can operate in different regions (e.g., EU868, US915, AU915, AS923) adapted to several ISM frequency bands.
- Using **Bluetooth** Low Energy (BLE) provides:
  - *Configuration convenience (in a user-friendly way via a JSON data exchange format)*
  - *Possibility of firmware update via OTAA*
  - *Very low energy consumption*
- **Supported LoRaWAN** network type: private or public and connection over **ABP** or **OTAA**.
- Access to the **Yosensi Management Platform** and **Yosensi Mobile Application** for device configuration, firmware updates and infrastructure management.

Technical details

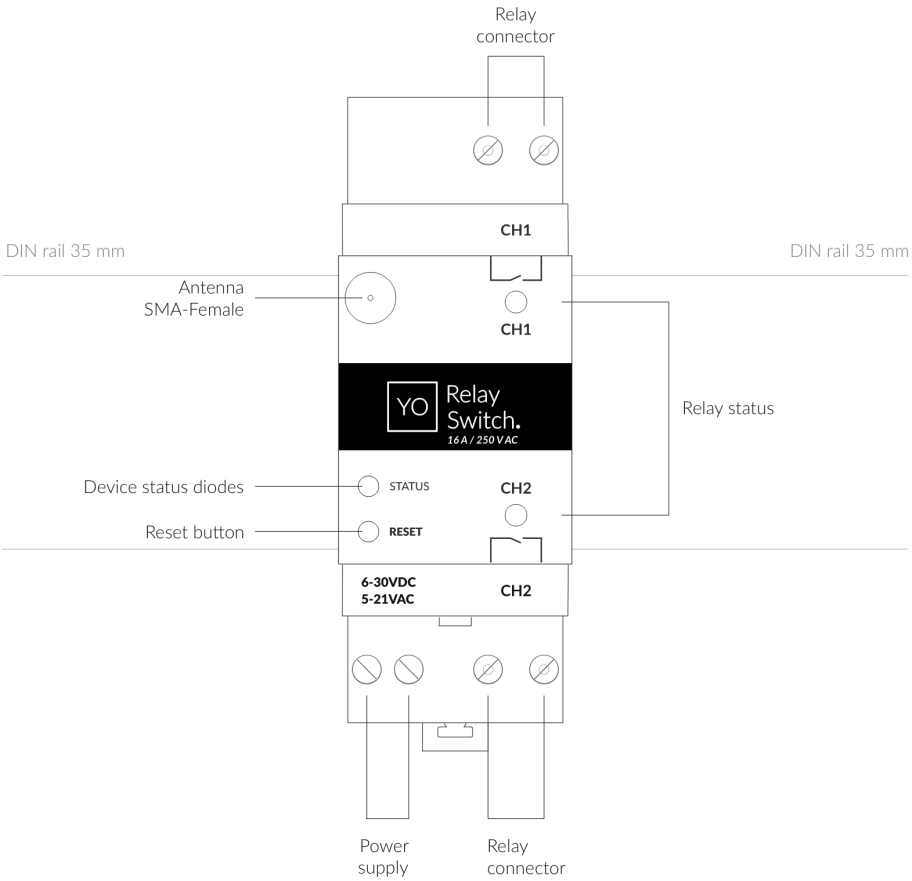

Figure 1 Top view of the device.

Enclosure of the device

Dimensions	Height: 90 mm Width: 36mm (2 pole) Depth: 58 mm
Colour	Light grey (RAL 7035)
Installation	35 mm DIN rail standard
Enclosure material	Polycarbonate
Fire resistance class	UL94-VO
Level of protection	IP20

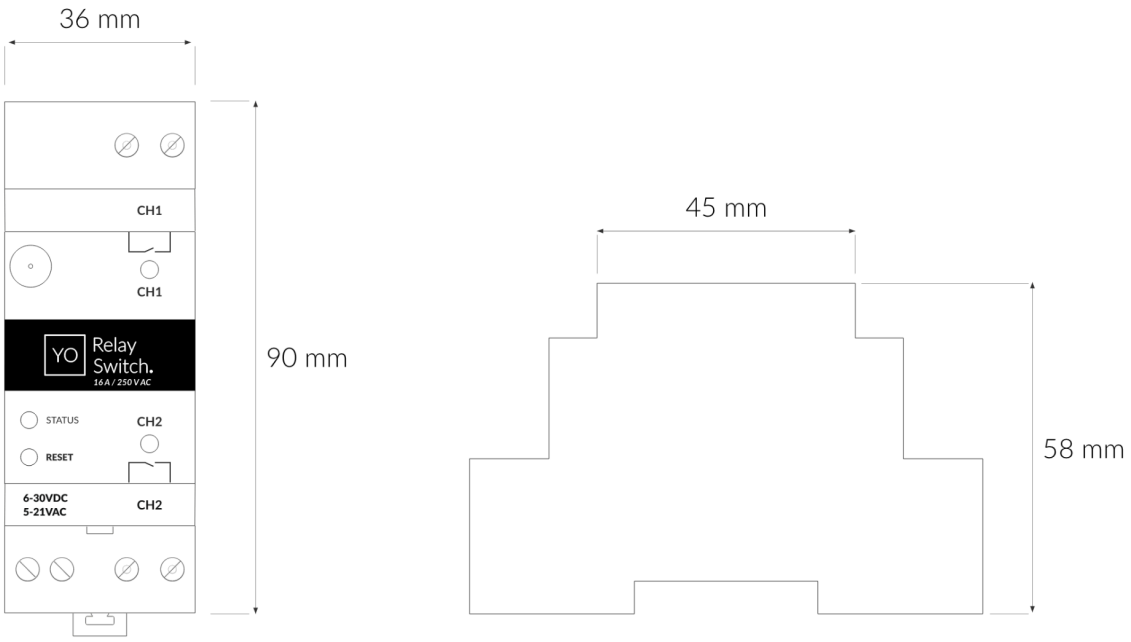

Figure 2 Dimension of the device.

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	6 - 30 V DC 5 - 21 V AC
Power consumption	Typical: 18 mA DC (12 V DC) Maximum: 250 mA DC (12 V DC)
Weight	120 g
Relay Type	Electromagnetic
Relay Rated Load	16 A , 250 V AC / 24 V DC
Certificates	CE

Sample chart

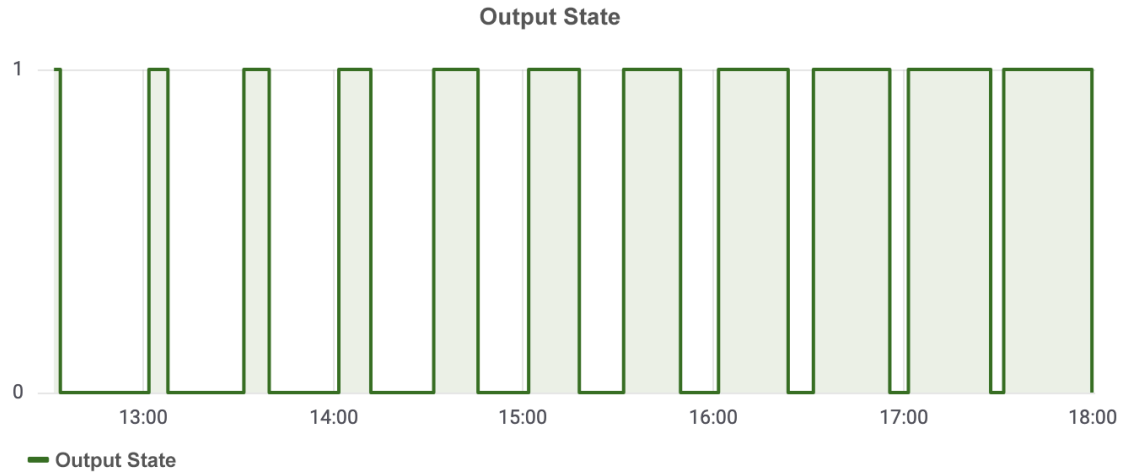

Figure 3 Example of temperature controller output state monitoring chart.

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