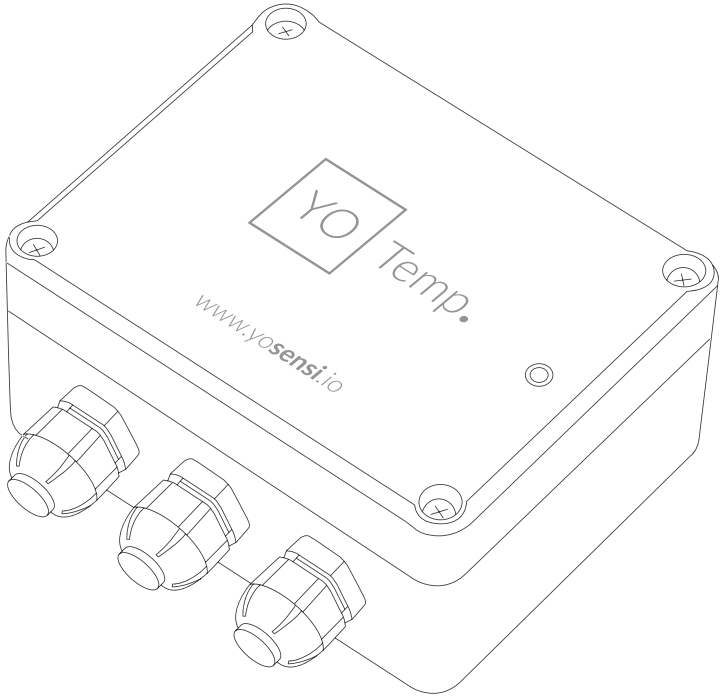
YO

Temp.

Datasheet



YOSENSI.IO

LoRa Alliance™ Member CE

YO Temp.

Application

- YO Temp is a LoRaWAN device for measuring temperature at three external points.
- Additionally, the device contains sensors that measure temperature, and relative humidity.

Components

- The device consists of a microcontroller (with Bluetooth Low Energy), communication modules (LoRa), sensors and batteries.
- YO Temp is equipped with an enclosure made of ABS with IP67 protection class.
- The enclosure of the device has IP68 buffers for which measurement probes can be installed.
- No temperature probes are attached to the device. Our offer includes temperature sensors designed for outdoor use with various wire lengths (1 m, 2 m, 3 m, 5 m, 10 m, 15 m, 20 m).
- The enclosure is designed to be easily mounted on the wall.
- YO Temp is equipped with a diode that indicates the operating status.

Operation of the device

- A LoRaWAN network is required for data transmission.
- The device does not require an external power supply.
- Place the device at the location for temperature measurement and configure/reconfigure the device via BLE.
- The device takes measurements at the interval specified in the configuration parameters.
- Yosensi provides access to the Yosensi Configuration Web Tool as part of the Yosensi Management Platform comprehensive solution, allowing device configuration and firmware updates.
- 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 trials **ABP** • Device address • Network session key • Application session key
Bluetooth Low Energy (BLE) settings	Transmission power Advertising frame interval
Device settings	Measuring interval (of external temperature)

Advantages

- Production quality – made in the European Union by qualified engineers.
- YO Temp is a wireless device that uses LoRaWAN technology.
- The device works based on the radio, so there is no need for additional wires.
- As a complementary solution, Yosensi offers the purchase of external temperature sensors. These sensors have a silicone wire and a metal sensor enclosure, which makes them resistant to oil, alcohol and some solvents. They are also designed to work in higher temperatures.
- Very low power consumption.
- Depending on the version, the LoRa radio can operate in different regions (e.g., EU868, US915, AU915, AS923 etc.) adapted to different 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 OTA,
  – very low energy consumption.
- Supported LoRaWAN network type: private or public and connection over ABP or OTAA.
- Access to the Yosensi Management Platform for device configuration, firmware updates and infrastructure management.

Technical details

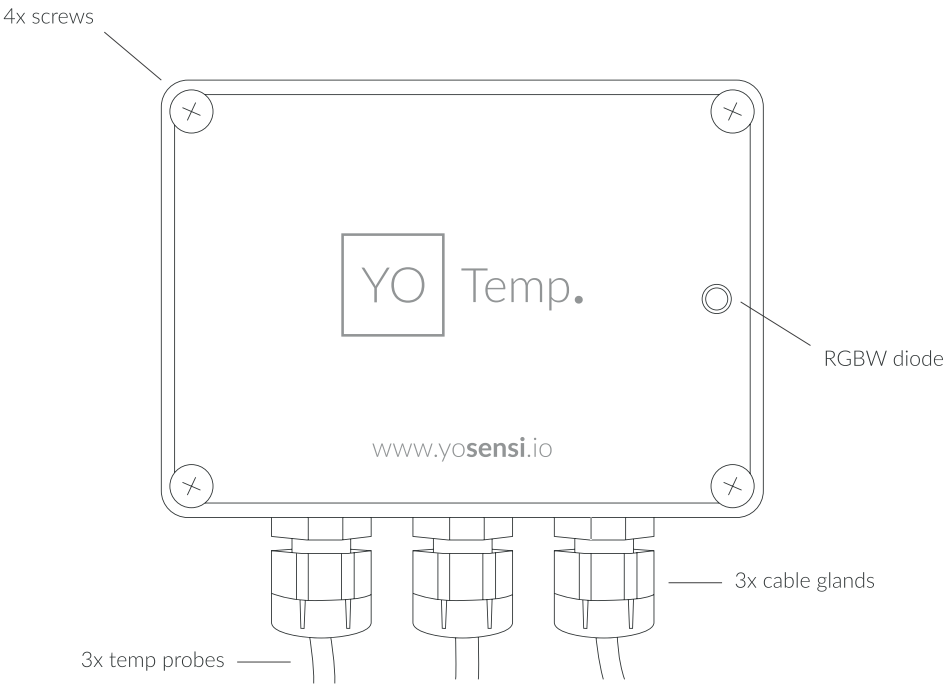


Figure 1. Top view of the device.

Enclosure of the device

Dimensions	Height: 42 mm Width: 88 mm Depth: 64 mm
Colour	Light grey
Installation Choose from	Horizontal Vertical (can be screwed to the wall)
Enclosure material	ABS
Level of protection	IP67

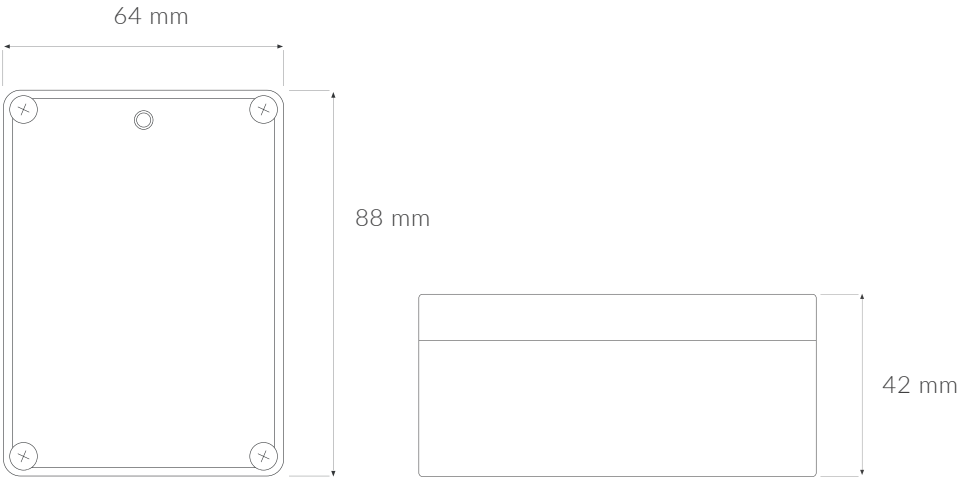
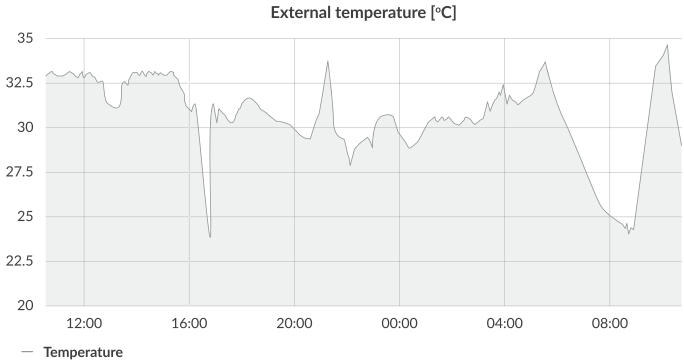


Figure 2. Dimensions of the device.

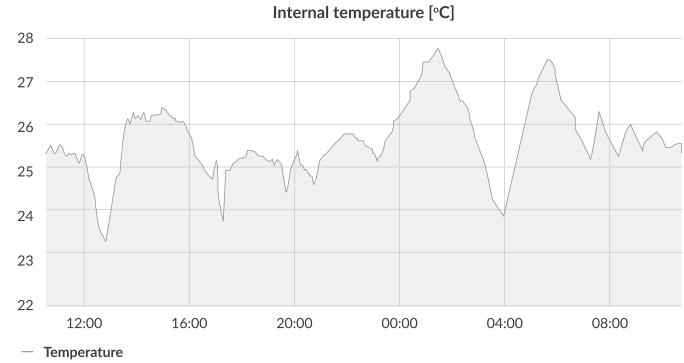
Parameters

Tx Power	LoRa EU868: to +14 [dBm] LoRa US915, AU915, AS923: to +22 [dBm] Bluetooth Low Energy (BLE): -20 to +6 [dBm]
Power supply	3 × AA battery (3 x 1,5 V)
Power consumption	Maximum: 120 mA DC (4,5 V DC)
Measuring range	**External temperature (external temperature sensor):** Measurement range: from -55°C to 125°C (-67°F to 257°F) Accuracy: ±0,5°C (32,9°F) (in temperatures from -10°C to 85°C (14°F to 185°F)) **Temperature:** Measurement range: from -40°C to 125°C (-40°F to 257°F) Accuracy: ±0,2°C (in temperatures from 5°C to 60°C (41°F to 140°F)) **Relative humidity:** Measurement range: from 0% to 100% Accuracy: ±2% (relative humidity from 20% to 80%)
Weight	134 g (wihtout batteries)
Certificates	CE

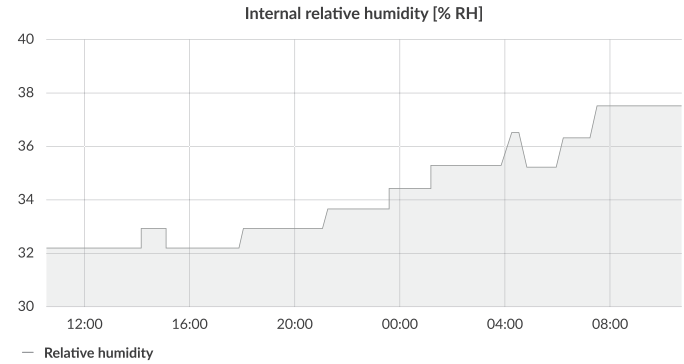
Sample charts



Example of an **external temperature** measurement chart for channel one.



Example of an **internal temperature** measurement chart.



Example of an **internal relative humidity** measurement chart.

Revision history

Date	Version	Page(s)	Changes
August 2020	1	All	Initial version
January 2022	2	2, 7	Removal of an accelerometer.
March 2022	2.1	3, 4	Changes are related to the firmware and apply to devices working with firmware version 2.0.0 and above.

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