YO Airflow Pro Dual.

DATASHEET

EQUIPPED 2 DIFFERENTIAL PRESSURE SENSORS

This device can be used to measure airflow and/or differential pressure in fan coil units.

- 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
27.03.2023	1.0	Initial release.

Content

Release notes 2
Content 3
Application 4
Components 4
Operation of the device 4
Device configuration 5
Advantages 5
Technical details 7
Enclosure of the device 8
Parameters 9
- Temperature 9
- Humidity 9
- Differential pressure: 9

Sample charts 10
Revision history **13**

Application

YO Airflow Pro Dual is a device equipped with two differential pressure sensors.

This device can be used to measure airflow and/or differential pressure in fan coil units.

Components

The device consists of a microcontroller (with Bluetooth Low Energy), communication modules (LoRa) and sensors.
YO Airflow Pro Dual is equipped with an IP67-rated sealed enclosure made of ABS plastic.

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.
- The device is installed by connecting silicone hoses to the YO Airflow Pro Dual sensor and involves running an installation where you want to measure differential pressure.
- The device measures at the interval specified in the configuration parameters
- 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

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**.
- By using YO Airflow Pro Dual you can replace local differential pressure reading from an analogue sensor with a remote reading transmitted over a long distance.
- Air pressure measurement range: from –500 Pa to 500 Pa .
- The device is equipped with a compact, small enclosure for easy installation.
- Very-low power consumption — the device can run on batteries for a long time.
- Depending on the version, the LoRa radio can operate in different regions (e.g. EU868, US915, AU915, AS923) 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 OTTA*
  - *Very low energy consumption*
- **Supported LoRaWAN** network type: private or public and connection over **ABP** or **OTAA**.
- **Yosensi Configuration Web Tool** for convenient **firmware** updates and device **configuration**
- Access to the **Yosensi Suite system** for configuring devices and managing infrastructure.

YOSENSI.IO
Dashboard
Applications
Activity
Monitoring
Billing
DETAILS
SENSORS
PARAMETERS
EXTERNAL API
KEYS
POLICIES
PM2.5
PM4
CO
9/18 08:00
9/18 12:00
9/18 16:00

Technical details

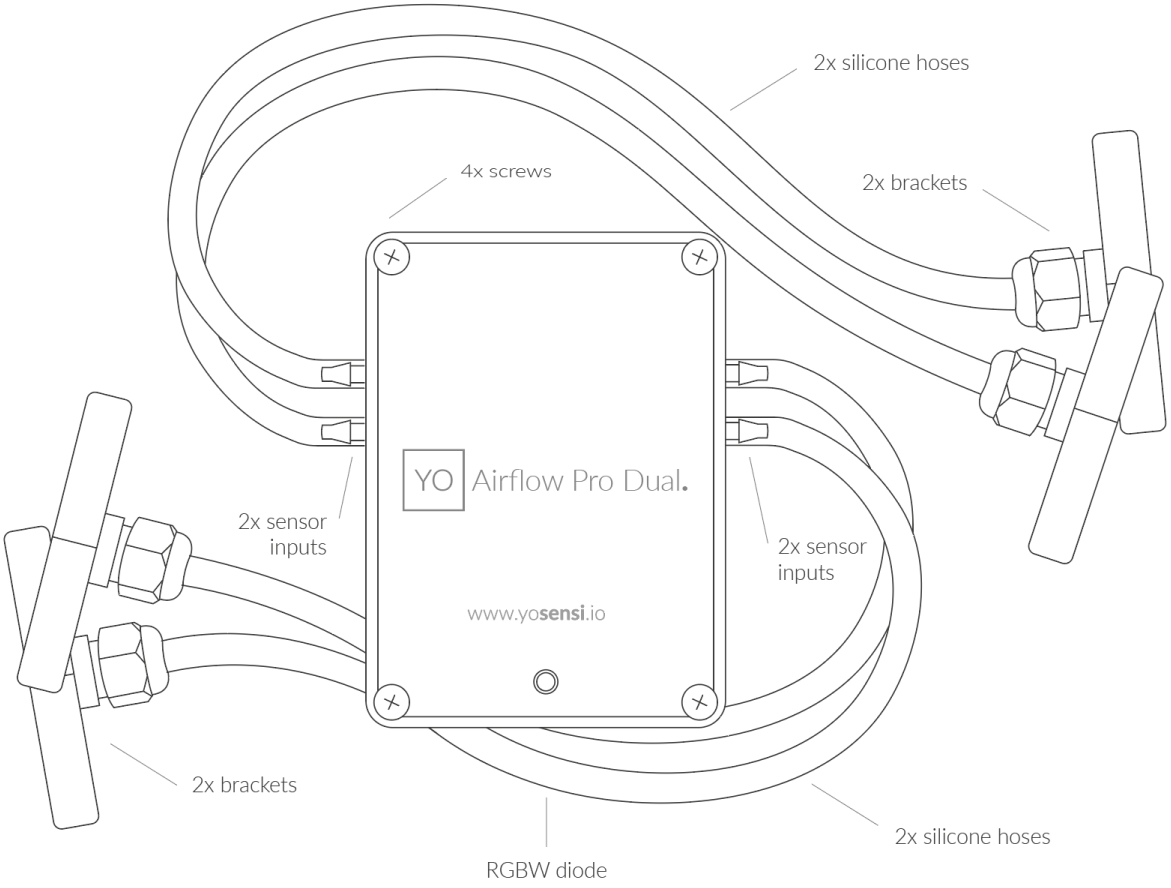

Figure 1 Top view of the device.

Enclosure of the device

Dimensions	Height: 25.5 mm Width: 86 mm Depth: 86 mm
Colour	White
Installation	Horizontal Vertical (can be screwed to the wall or ceiling)
Enclosure material	ABS
Level of protection	IP67

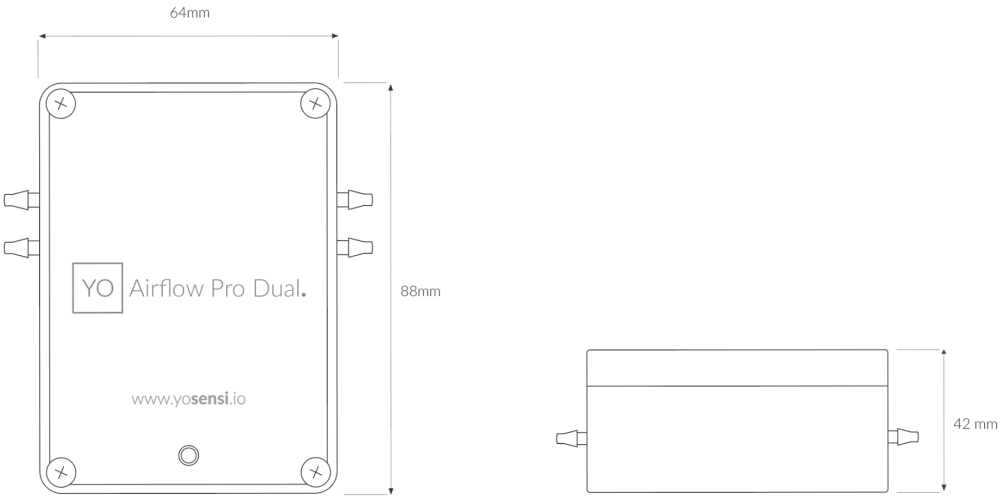

Figure 2 *Dimension of the device.*

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	3 × AA battery (3 x 1,5 V)
Power consumption	Maximum 120 mA
Measuring range	Temperature Measuring range: –40°C to 125°C (-40°F to 257°F) Accuracy: ±0,2°C (at temperatures between 5°C and 60°C (41°F to 140°F) Humidity Measuring range: 0% to 100% Accuracy: ±2% (relative humidity from 20% to 80% Differential pressure: Measuring range : -500 Pa to 500 Pa Accuracy: 0,1 Pa +3% of reading (temperature dependent) Media compatibility: Air, N_2, O_2
Weight	104 g
Certificates	CE

Sample charts

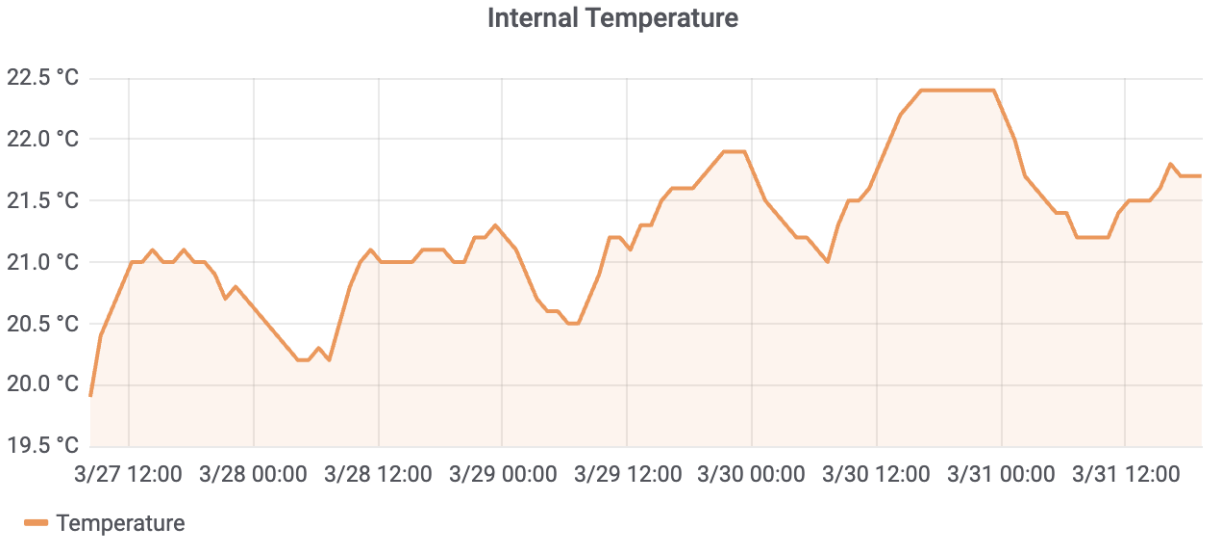

Figure 3 Example chart of temperature.

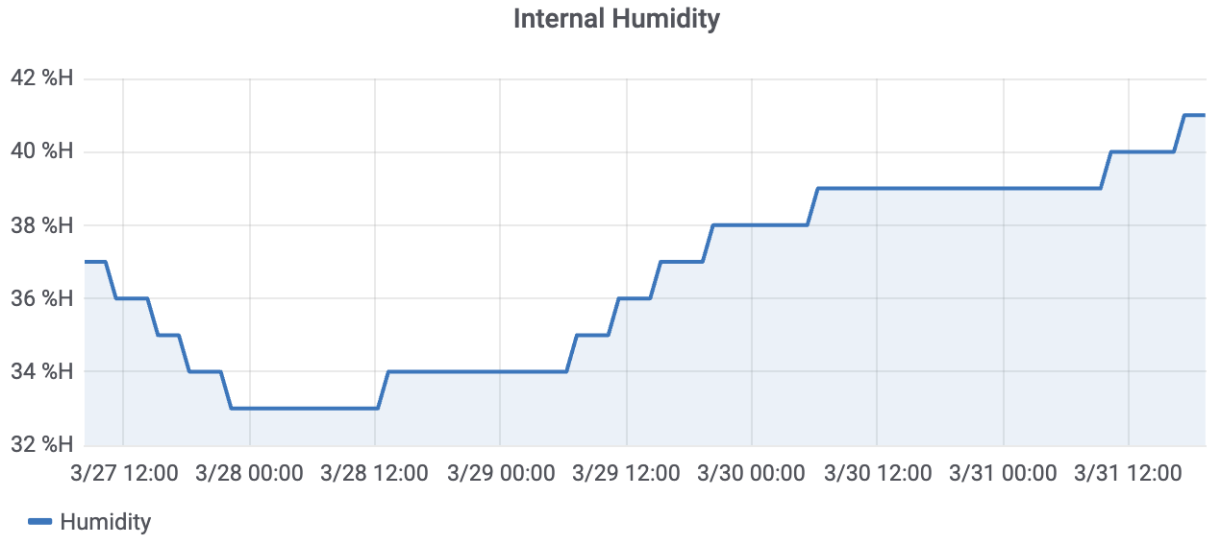

Figure 4 Example chart of internal humidity.

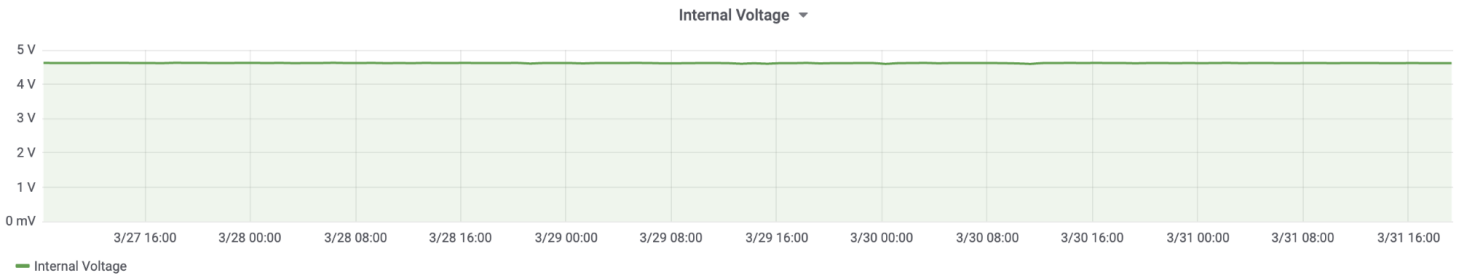

Figure 5 Example chart of battery voltage.

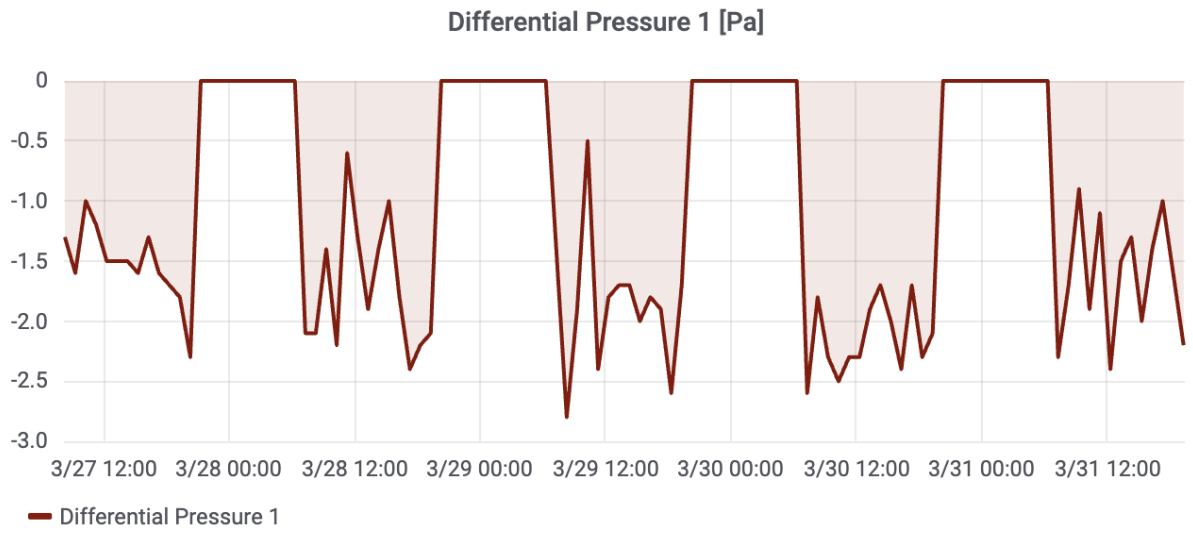

Figure 6 *Example chart of differential pressure on first sensor.*

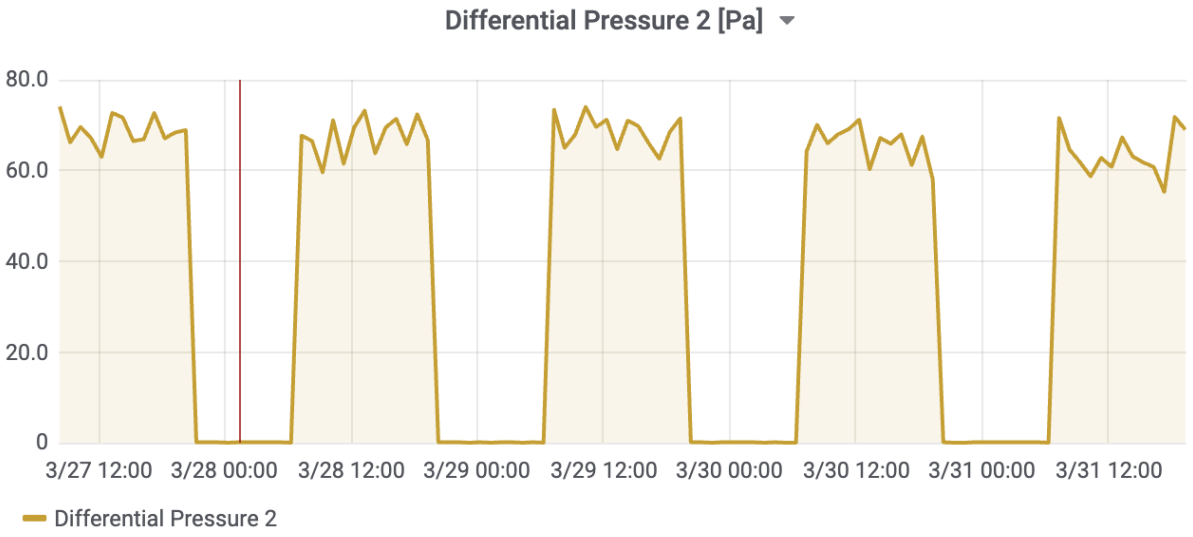

Figure 7 *Example chart of differential pressure on second sensor.*

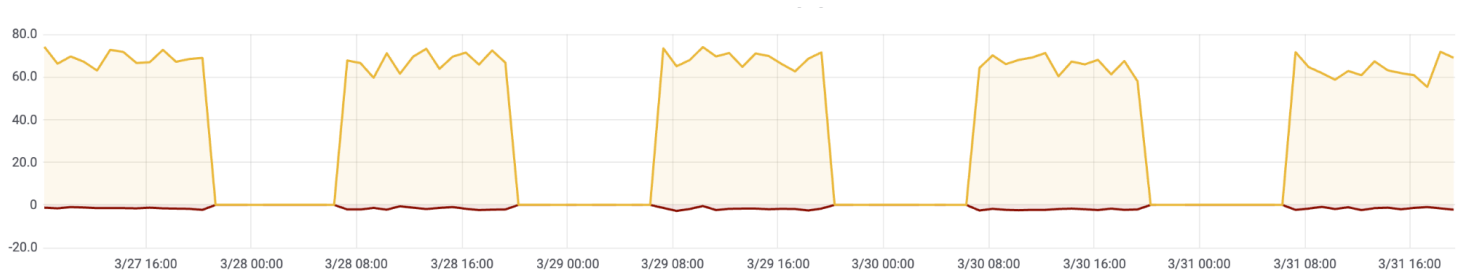

Figure 8 *Example chart compared differential pressure of both sensors.*

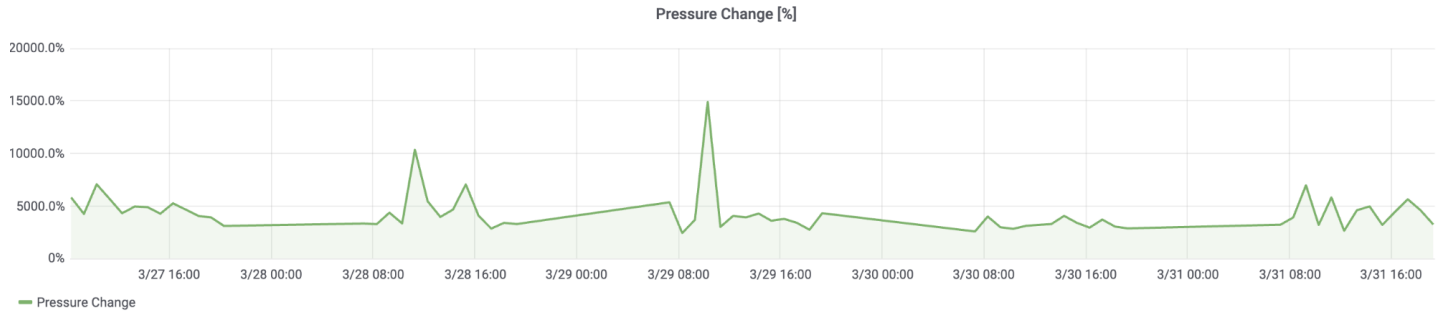

Figure 9 *Example chart of differential pressure change in [%].*

Revision history

Date	Version	Page(s)	Changes
March 2023	1	All	Initial version

YOSENSI.IO

Contact us

www.yosensi.io

contact@yosensi.io

+48 884 980 357

Zurawia 71A, Bialystok, Poland

LoRa Alliance Member CE