

OSensor



ADVANCED AIR QUALITY SENSOR

- TEMPERATURE (T)
- HUMIDITY (H)
- ATMOSPHERIC PRESSURE (P)
- CARBON DIOXIDE (CO₂)
- TOTAL VOLATILE ORGANIC COMPOUNDS (TVOC)
- CARBON MONOXIDE (CO)
- FORMALDEHYDE (CH₂O)
- PARTICULATE MATTER (PM₁, PM_{2.5}, PM₁₀)

RoHS



The OSensor is an advanced indoor air quality monitoring device that measures 10 parameters simultaneously in real-time to ensure environmental comfort and occupant health. The OSensor readings include temperature, humidity, atmospheric pressure, carbon dioxide, volatile organic compounds, carbon monoxide, formaldehyde and particulate matter (PM 1, 2.5 and 10). The OSensor can interact with third-party devices with 4 programmable interfaces: 2 digital lines (customizable as Digital IN, Digital OUT, mixed), 1 analog IN and 1 analog OUT). The device is also equipped with a button and a programmable LED ring which allows interaction with users. Available also for installation in outdoor environments.

DATA SHEET

MODEL	OSENSOR
PRODUCT CODE	OSN
CERTIFICATIONS	RoHS, CE UAE RoHS, ECAS
SIZE	95x35mm
WEIGHT	140g
POWER SUPPLY	12÷15 Vdc
BUS COMMUNICATION	EDS
CURRENT DRAW	max 50mA
PROGRAMMABLE ANALOG INPUT	0-10Vdc o 4-20mA
PROGRAMMABLE ANALOG OUTPUT	0-10Vdc
OTHER INTERFACES	2 programmable digital interfaces: <ul style="list-style-type: none"> Digital inputs, Digital outputs (open collector, maximum voltage 48Vdc, maximum current 250mA)
OPERATING TEMPERATURE	min -20°C max +60°C
WAREHOUSING TEMPERATURE	min -40°C max +125°C

SENSORS

	RANGE	RESOLUTION	ACCURACY
TEMPERATURE (T)	-20 ÷ +65 °C	0.1°C	± 0,3 °C
HUMIDITY (H)	20 ÷ 80 % RH	1%	± 3 % RH
ATMOSPHERIC PRESSURE (P)	300 ÷ 1100 hPa	1 hPa	± 1 hPa
CARBON DIOXIDE (CO ₂)	400 ÷ 5000 ppm	2 ppm	±50 ppm + 3%
TOTAL VOLATILE ORGANIC COMPOUNDS (TVOC)	0 ÷ 5500 ppb	2 ppb	± 20%
CARBON MONOXIDE (CO)	1 ÷ 500 ppm	1ppm	± 10%
FORMALDEHYDE (CH ₂ O)	0 ÷ 5000 ppb	10 ppb	± 20%
PARTICULATE MATTER (PM ₁ , PM _{2,5} , PM ₁₀)	1 ÷ 999 µg/m ³	1 µg/m ³	1-100 µg/m ³ : ± 5µg/m ³ + 15% 101-999 µg/m ³ : ±15%

EDS BUS SPECIFICATIONS

MAXIMUM BUS LENGTH	1200m linear over the whole system	BUS LENGTH	<10m	<30m	<100m	>100m
BUS TOPOLOGY	Star, series or promiscuous	RECOMMENDED MINIMUM SECTION	0,50 mm ²	0,75 mm ²	1,5 mm ²	2,5 mm ²

1,5mm² is recommended for implants, a value which however depends on the location of the modules

INSTALLATION INSTRUCTIONS

SAFETY

In order to maintain these conditions and ensure safe use, the user must follow indications and markings contained in the following instructions.

Warning: Failure to follow these instructions below can result in death.



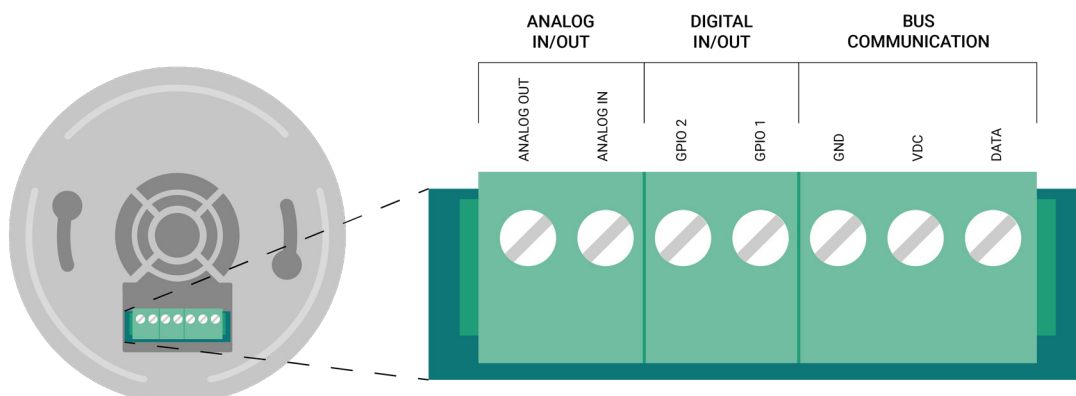
- Upon receipt of the instrument, before proceeding with the installation, check that it is intact and has not been damaged during transport.
- Check that the operating voltage and the mains voltage coincide and then proceed with the installation.
- The instrument power supply must not be grounded.
- The instrument does not have a fuse to protect the power supply, so it must be protected by the installer.
- Maintenance and/or repair operations must be carried out only by qualified and authorized personnel.
- If you suspect that the tool is no longer secure, take it out of service and make sure it is not used inadvertently.
- Dangerous voltages can be present on voltage and current transformers. Follow standard safety precautions before performing any installation or service activity.
- The instrument and its connections must be properly protected.
- The instrument must be installed following all local regulations.

Precautions: Failure to follow the instructions below can cause persistent damage to the instrument.

- The digital outputs and inputs are low voltage and cannot be connected to external power sources.

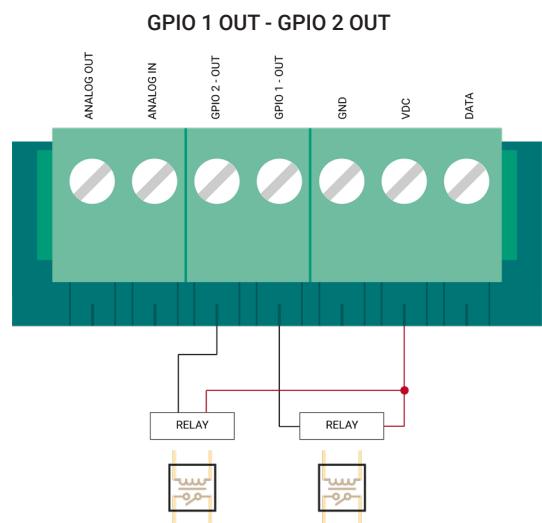
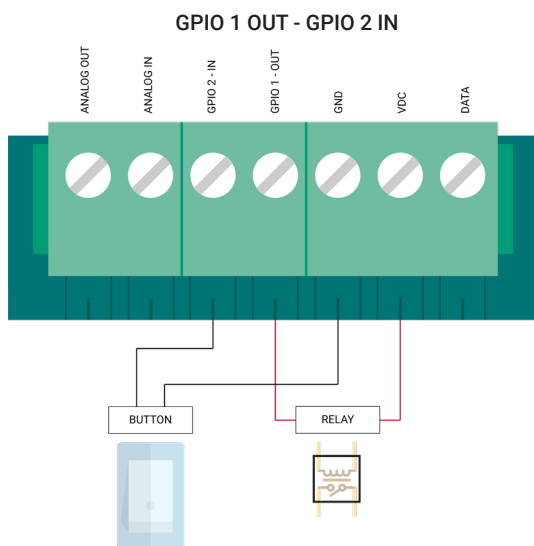
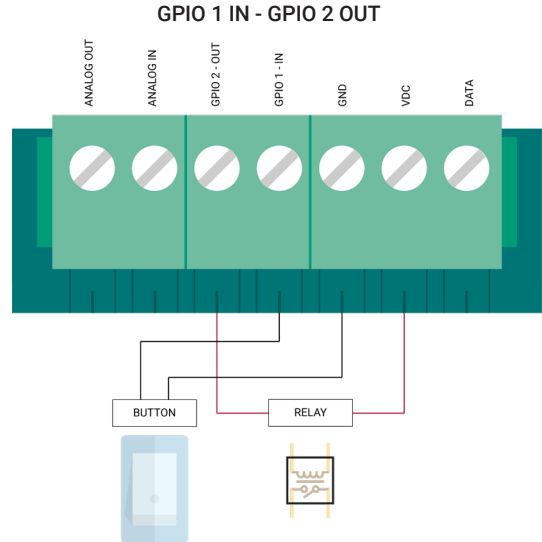
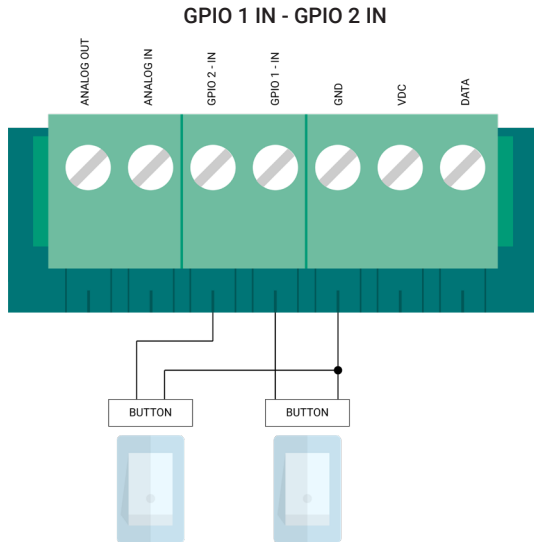
CONNECTION DIAGRAM

On the back of the device there is a group of terminals for BUS communication, digital inputs/outputs, analog input and analog output.



POSSIBLE GPIO CONFIGURATIONS

The GPIOs can be configured both as digital inputs and as digital outputs, below are the configuration examples based on how the two GPIOs are set.



BUTTON

The front cover of the device can be pressed like a button. By pressing, it is possible to activate customizable and pre-programmed logics through the OVERBOARD, which depending on user's needs can also affect GPIOs, other OVER devices in the same BUS network or send an alert via the OVERBOARD.

Attention. For programming, it is necessary to connect the device via EDS BUS to the OBox and perform the procedure via a local web interface to the OBox or via OVER's Cloud portal.



FRONT PANEL



On the front cover of the device there are 16 LEDs placed along its circumference, distributed, as shown in the figure, in the area highlighted in blue. The LEDs light up in different ways to communicate the different states of the device. Below is the list of possible types of lighting and their associated meanings.

- 1 **Quick flashing:** As soon as it is connected to the power supply, the LEDs will flash rapidly to confirm correct power supply.
- 2 **Continuous power on:** The LEDs will light up once at a time, gradually and in a clockwise rotation indicating that the device is not calibrated. When this happens, please contact support.
- 3 **Rotation:** The LED strip lights up in a clockwise circular movement to indicate that the device has entered the programming mode.
- 4 **Double flash:** This indicates that the device has been pressed.

ASSISTANCE

WARRANTY

This product is guaranteed against any material and manufacturing defects according to the period established by law from the date of purchase, even if the product has not been installed. The warranty period starts from the moment of purchase. The buyer must report any defects in the delivered products in writing to OVER S.p.A.: the communication must contain a description of the reasons for defects and/or discrepancies, also indicating the serial number, the delivery date, the delivery number, and date of the transport document or invoice.

The supplier's warranty does not extend to products that are defective and/or damaged due to natural attrition or breakdown caused by improper use or an operating procedure not contemplated in this manual, of negligence, or are tampered with or repaired by third parties or accidentally damaged caused by atmospheric agents, or firmware updates.

The warranty intervention by the supplier remains subject to the buyer's compliance with the payment conditions as well as the technical evaluation of the existence of the warranty conditions verified by OVER S.p.A. During the warranty period, OVER S.p.A. undertakes to repair or replace, free of charge, those products that have manufacturing defects or bad quality at its headquarters.

RETURN AND REPAIR PROCEDURE

All returned products must meet the same condition in which they were supplied at the buyer's expense, to the headquarters of OVER S.p.A. in Viale Piemonte 37 - 20093 Cologno Monzese (MI) and packed by the buyer in order to avoid damages for which the buyer would be responsible.

No return goods will be accepted in the absence of authorization by OVER S.p.A. to the buyer.

No refund, even if authorized, will be accepted if the information regarding quantity, type of device returned and reason for return is not included in the transport document or the accompanying letter.

Products not covered by the warranty will be returned to the buyer at their own expense and charged the costs incurred, after quantification and communication, for the control and further testing and calibration of the same.

The replaced parts remain the property of OVER S.p.A.

DECLARATION OF CONFORMITY

OVER S.p.A. declares that its family of instruments complies with the directives EMC 89/336/ECC 73/23CE 93/68 CE and meets the requirements of the following product standards IEC 61326, IEC 61010.

The device was tested in the typical installation configuration and with peripherals complying with the directive EMC and the low voltage directive.

Device designed, produced, and distributed by OVER S.p.A.

This manual was last updated on 04/27/2021.

The latest updated version of the manual is available in digital format downloadable from the website www.overttechnologies.com

Check that the version of this manual, written on the front cover, corresponds to the updated version of the manual.