

Wireless Ambient Oxygen Sensor



Smart Agriculture, Smart Building, Smart City, Smart Facility, Smart Factory, Smart Farm, Smart Healthcare, Smart Retail, Smart Transportation

SKU: WS433-O2

WIRELESS AMBIENT OXYGEN SENSOR WS433-O2



WS433-O2-H1.PNG



WS433-O2 is the Wireless Ambient Oxygen Sensor, it utilizes a galvanic cell type oxygen sensor that provides a linear output voltage signal relative to the percent oxygen present in a particular atmosphere. The sensor features no position dependency, excellent chemical durability, and it is not influenced by CO. The wireless portion is Sub-GHz technology from Texas Instruments allows long-range transmission at ultra-low power consumption. It will connect 2-way wirelessly to the wireless coordinator WS433-CL to send data and receive the configuration. It can be configured the operation parameters like data sending interval, health check cycle... remotely from Globiots platform or via ModbusRTU software (thru the WS433-CL). Its default data rate is 50 kbps, can be switched to 625bps to increase the communication range. It can last up to 10 years with a single AA battery.

There are a lot of applications as environment monitoring for office, hospital, cleanroom, agriculture, food warehouse...

Applications

Ambient Air Quality Monitor, Indoor Air Quality Monitor, Gas Analyzing, Warehouse Monitoring

Notes For Applications

- Select the suitable sensor range to get the highest accuracy v.s sensor life. Please consult our engineers.
- Electrochemical sensors need to be calibrated regularly (36 months), depending on actual operating conditions.
- Check carefully the working temperature and humidity of the application.

- ✔ **Reliable & Secured Wireless Connection**
Sub-GHz technology from Texas Instruments allows reliable wireless connection and secured data by AES-128
- ✔ **10-year with a single battery**
Ultra-low power sensing technology from Daviteq with Ultra-low power wireless technology from Texas Instruments allow the sensor can last up to 10 years with a single battery AA.
- ✔ **Not affected by other gases**
Virtually no influence from CO₂, CO, H₂S, NO, H₂ (Version O2-O2)
- ✔ **Not affected by temperature changes**
Temperature compensation circuit included

MONITORING OXYGEN IN FRUIT STORAGE



WS433-O2-H2.PNG

DAVITEQ TECHNOLOGIES INC

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Specification

Measuring range/ Max overload	0-25% O ₂ / 30% O ₂
Accuracy/ Resolution	±0.25% O ₂ / 0.01
Long term output drift	< 5% of reading per year
Interference gases for version O2-01	CO ₂ , not used in the environment with CO ₂ > 25% (1% of CO ₂ will increase 0.3% of O ₂ output)
Interference gases for version O2-02	Virtually no influence from CO ₂ , CO, H ₂ S, NO, H ₂ . Only influenced by NO ₂ (1% NO ₂ will increase 0.6% of O ₂ output)
Working Pressure	1013hPa ±20%
Working Temperature	-10~50°C for O2-02 and -30~50°C for O2-01
Storage Temperature	0~20°C
Working Humidity	0-99% RH non-condensation for O2-02 and 5-95%, non-condensation for O2-01
Response time	≤ 15s (Sensors should be used under conditions where the air exchange is greater than 200~300ml/ minute)
Life expectancy at 20°C in normal air	approx. 3 years for WS433-O2-02 and 2 years for WS433-O2-01
Transmission distance, LOS	400m (2-meter height)
Antenna Type/ Frequency	Internal Antenna/ ISM 433MHz, Sub-GHz technology from Texas Instrument, USA
Battery	01 x AA 1.5VDC, up to 10-year operation, depends on the configuration
Certificates	CE/EMC
Vietnam Type Approval Certification	QCVN 73:2013/BTTTT, QCVN 96:2015/BTTTT (DAVITEQ B00122019)
Operating temperature of Electronics	-40~60°C (with AA L91 Energizer®)
Housing	Poly-carbonate, IP67
Installation method	L-type bracket SUS304 , by M4 screws or double-sided 3M tape (included)
Dimensions & weight Product/ Package	125x30x30mm (wireless part only), < 50g (without battery)/ 190x50x50mm, < 90g

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MONITORING OXYGEN IN DRY AGRICULTURAL PRODUCTS STORAGE SUCH AS RICE, GREEN BEAN COFFEE,...



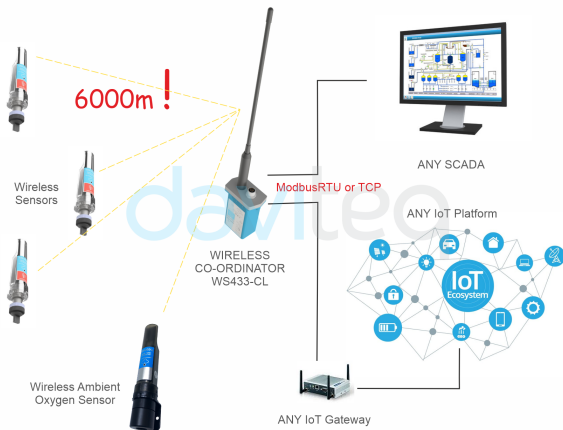
WS433-O2-H3.PNG

CONNECT WIRELESS SENSORS TO any PLC or HMI



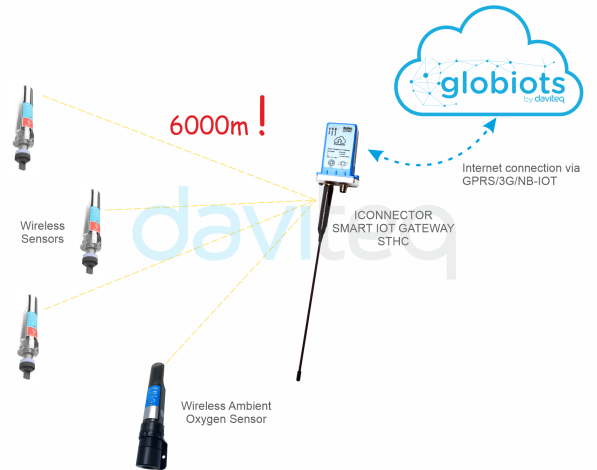
WS433-O2-H4.PNG

CONNECT WIRELESS SENSORS TO any SCADA or IoT Platform



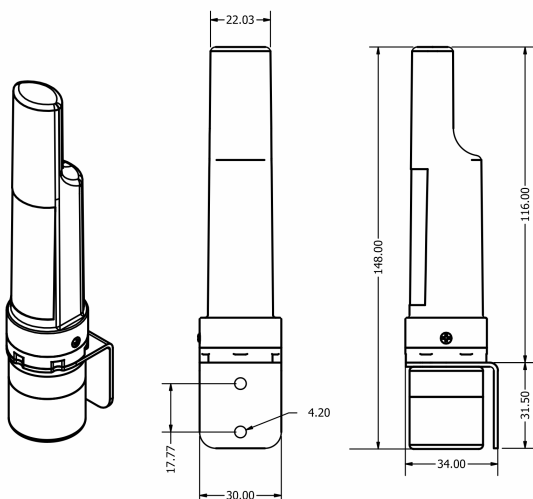
WS433-O2-H5.PNG

CONNECT WIRELESS SENSORS TO GLOBIOTS Platform



WS433-O2-H6.PNG

DIMENSION DRAWING OF WIRELESS SENSOR (Unit: mm)



WS433-O2-H7.PNG

RECOMMENDED BATTERIES FOR WIRELESS SENSOR WS433

E91 AA Alkaline battery



-18 .. + 60 oC working temperature
10-year shelf life
3000 mAh Capacity
Price: 1X

L91 AA Lithium battery



-40 .. + 60 oC working temperature
20-year shelf life
3500 mAh Capacity
Price: 3.5X

WS433-O2-H8.PNG

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Ordering Information

ITEM CODE	DESCRIPTIONS
WS433-O2-01	WIRELESS OXYGEN GAS SENSOR, 433MHZ, 0-25%, FOR CO ₂ < 25%, AA 1.5 - 3.6VDC BATTERY, IP67
WS433-O2-02	WIRELESS OXYGEN GAS SENSOR, 433MHZ, 0-25%, AA 1.5 - 3.6VDC BATTERY, IP67

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