

LoRaWAN Oxygen Sensor



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

SKU: WSLRW-O2

LoRaWAN OXYGEN SENSOR WSLRW-O2



WSLRW-O2-H1.JPG



WSLRW-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. With Ultra-low Power design and smart firmware allow the sensor can last up to 10 years with 02 x AA-type battery (depends on configuration). The sensor will transmit data in kilo-meters distance to LoRaWAN gateway, any brand on the market. 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.
- Use the Rain-guard of Splash-guard for outdoor installation or where water jets exist.



LoRaWAN communication

LoRaWAN communication standard to allow sensor connect to any LoRaWAN Gateway on the market



5-10 years battery

Ultra-low power sensing technology from Daviteq with Ultra-low power wireless technology allows the sensor can last up to 5-10 years with 02 x AA batteries



Not affected by other gases

Virtually no influence from CO₂, CO, H₂S, NO, H₂ (Version O2-02)



Not affected by temperature changes

Temperature compensation circuit included

MONITORING OXYGEN IN FRUIT STORAGE



WSLRW-O2-H2.JPG

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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 O2-02 and 2 years for O2-01


COMMUNICATION

SF Factors	SF7~SF12
Antenna	Internal Antenna 2.0 dbi
Battery	02 x AA size 1.5VDC, battery not included
RF Frequency and Power	860~930MHz, 14~20dBm, configurable for zones: EU868, IN865, RU864, KR920, AS923, AU915, US915
Protocol	LoRaWAN, class A
Data sending modes	Interval time and when alarm occurred
RF Module complies to	ETSI EN 300 220, EN 303 204 (Europe) FCC CFR47 Part15 (US), ARIB STD-T108 (Japan)
Vietnam Type Approval	TBA soon
Working temperature	-40~60°C (with AA L91 Energizer®)
Housing/Protection	Aluminum + Polycarbonate/ IP67
Dimension and Net weight	H180xW73xD42, < 400g

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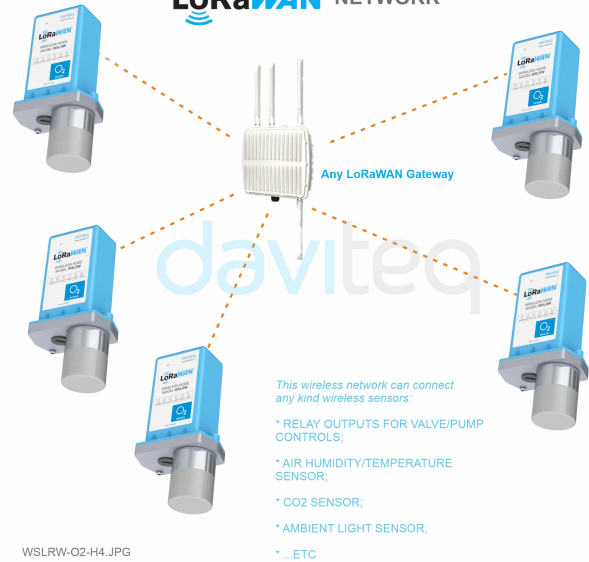
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MONITORING OXYGEN IN DRY AGRICULTURAL PRODUCTS STORAGE SUCH AS RICE, GREEN BEAN COFFEE,...



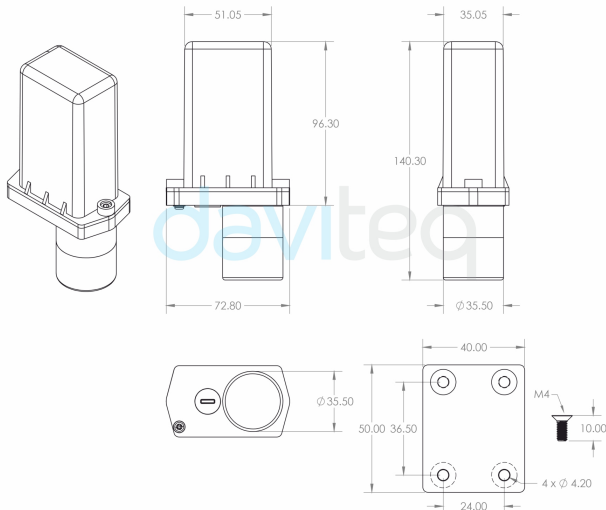
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LoRaWAN NETWORK



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DIMENSION DRAWING OF WIRELESS SENSOR (Unit: mm)



WSLRW-O2-H5.JPG

RECOMMENDED BATTERIES FOR LoRaWAN SENSOR

E91 AA Alkaline battery



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

L91 AA Lithium battery

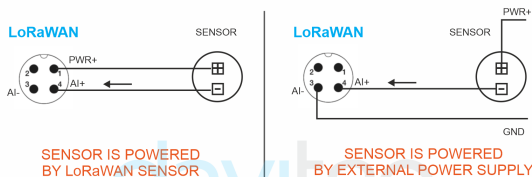


-40 .. + 60 oC working temperature
20-year shelf life
3500 mAh Capacity
Price: 3.5X

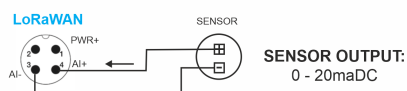
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WIRING FOR LoRaWAN SENSOR WITH CURRENT INPUT

CASE 1 - WORK WITH LOOP POWERED SENSOR



CASE 2 - WORK WITH NON - LOOP POWERED SENSOR



WSLRW-MA-H7.PNG

RECOMMENDED BATTERIES

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

WSLRW-MA-H8.PNG

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Ordering Information

ITEM CODE	DESCRIPTIONS
WSLRW-O2-01	LORAWAN OXYGEN SENSOR, Internal antenna, 0-25%, for CO ₂ < 25%, AA 1.5VDC BATTERY, IP67, 860-930MHz for all regions
WSLRW-O2-02	LORAWAN OXYGEN SENSOR, Internal antenna, 0-25%, for CO ₂ up to 100%, AA 1.5VDC BATTERY, IP67, 860-930MHz for all regions