AOP10 Oxygen Sensor User Manual

- Low detection limit
- High resolution
- Fast response
- Excellent stability

Product Overview

SUCH-AOP10 PPM oxygen sensor is an electrochemical sensor that detects oxygen concentration based on the partial-pressure electrochemical principle. It determines oxygen concentration by measuring output current. Featuring fast response speed and excellent stability, it can accurately detect trace oxygen concentration at PPM and even PPB levels in gas, meeting the requirements for high-precision measurement.

Application

The AOP10 PPM oxygen sensor requires no external power supply during operation. It is widely applied in industrial process control, medical treatment, gas separation, natural gas and other industries, and can be assembled into oxygen analyzers, gas alarms and other instruments.

Figure 1. AOP10 Oxygen Sensor

1. Sensor Specifications

Table 1.AOP10 Specifications

Technical Parameters	
Working Principle	Partial-pressure Electrochemistry
Output Current①	295~700 μA (in ambient air)
Measuring Range	Minimum: 0-10 ppm Maximum: 0-10000 ppm
Response Time (T90)	＜7 s
Accuracy②	±2% F.S.
Linearity	±2% F.S.
Drift (% per month)	<1%
Temperature Effect	3.0%/℃
Electrical Parameters	
Electrical Interface	Gold-plated ring (inner ring: negative pole; outer ring: positive pole)
Mechanical Parameters	
Housing Material	HDPE (High Density Polyethylene)
Environmental Conditions	
Operating Temperature Range	0~45 ℃
Operating Pressure Range	0.8~1.2 bar
Operating Humidity Range	0~99% RH(non-condensing)
Recommended Storage Temperature	0~40 ℃
Other Indicators	
Expected Service Life③	18~24 months

①In air at 25° C and 1013 mBar (oxygen concentration: 20.9%);
②Under constant temperature and constant pressure;
③In an environment at 25° C, oxygen concentration below 1000 ppm and 1013 mBar.

2. Temperature Characteristic Curve

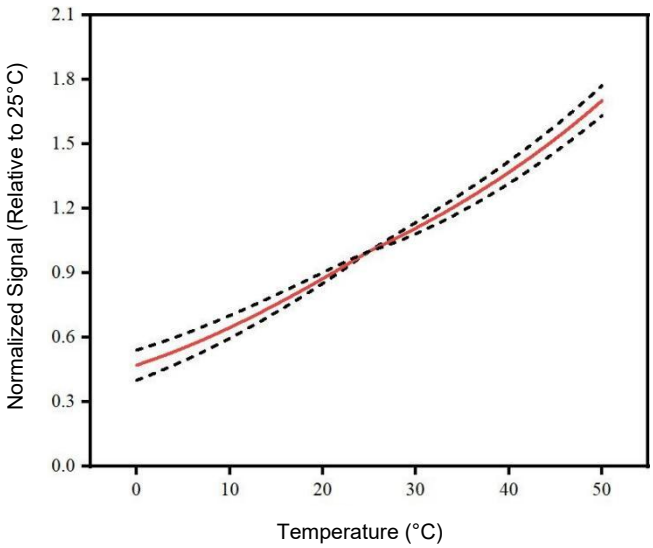

Figure 2. Temperature Performance

Figure 2 shows the normalized signal curve of the AOP10 output current (referenced to 25°C) at different temperatures, as well as the minimum and maximum deviation ranges. The AOP10 delivers stable output within the temperature range of 0°C~50°C and features excellent temperature characteristics.

3. Product Dimensions

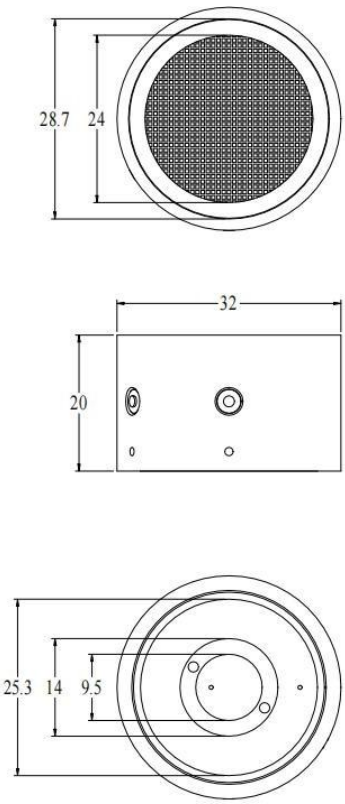

Figure 3 Outline Dimension Drawing of AOP10 PPM Oxygen Sensor
(Unit: mm, Tolerance for all unspecified dimensions: ±0.2 mm)

4. Installation and Usage

4. 1 Installation Requirements

When installing the sensor, ensure sound contact between connection points and the sensor, and check the testing setup for air leakage. Perform calibration under stable conditions with parameters as close to sample conditions as possible; the sensing surface shall face downward during sensor assembly.

4. 2 Storage and Operation

The AOP10 PPM oxygen sensor is sealed in an anti-static bag and packaged under nitrogen atmosphere. Avoid damage to the anti-static bag during storage, as air ingress will degrade the service life and performance of the product.

During operation, prevent the sensor from prolonged exposure to ambient air and high-concentration CO_2 atmosphere, which will impair its service life and performance.

4. 3 Cleaning

If the sensor housing is contaminated, rinse it with distilled water and let it air-dry naturally. Steam sterilization is prohibited, and long-term exposure to environments containing ethylene oxide, hydrogen peroxide and other chemical agents is not allowed.

4. 4 Electrode Definition

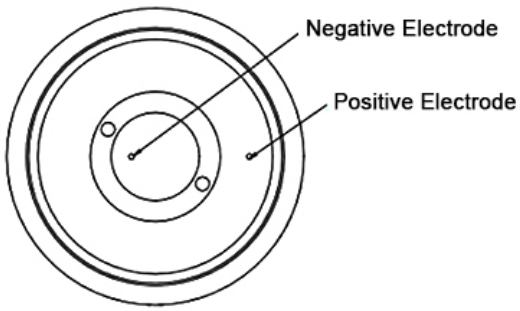

Figure 4 Electrode Definition Diagram of AOP10 PPM Trace Oxygen Sensor

The interface of the AOP10 PPM oxygen sensor adopts gold-plated concentric annular structure. As shown in Figure 4, the inner ring is the negative electrode, and the outer ring is the positive electrode.

WARNING & PERSONAL INJURY DISCLAIMER

Do not apply this product to safety protection devices, emergency stop equipment, or any other applications where product malfunction may cause personal injury, unless for specific designated purposes or with official authorization.

Please refer to the product manual prior to installation, handling, operation or maintenance. Failure to comply with these instructions may result in severe bodily injury or death. Our company shall not be liable for any compensation arising from personal injury or death caused by non-compliance, and shall be indemnified against all related claims against the company's management, employees, affiliated agents and distributors, including but not limited to various operating costs, claim fees, legal fees and attorney fees.