



# **Dissolved Oxygen Water Quality Sensor**

**(Model: MW-O101)**

# **Manual**

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## MW-O101 dissolved oxygen water quality detection sensor

### Profile

MW-O101 sensor is a galvanic battery type dissolved oxygen water quality detection sensor. The oxygen molecules in the solution to be tested penetrate the selective membrane of the sensor, and corresponding reduction or oxidation reactions occur on the cathode and anode inside the sensor, and a current signal is generated at the same time. The magnitude of the current is proportional to the concentration of dissolved oxygen, Determine the concentration of dissolved oxygen by detecting the current.



Fig1. Sensor image

### Sensor characteristics

Low power consumption, high precision, linear output, no need to replace the breathable membrane, no need to replace the electrolyte.

### Main application

It is widely used in the detection of dissolved oxygen water quality in laboratory research, aquaculture, environmental protection and other fields.

### Technical indicators

Stable 1

Measure range	0~20 mg/L
Temperature range	0~40 °C
Minimum graduation value	0.01 mg/L
Response time (T 90)	<20 s
Temperature compensation	without
Zero point output (oxygen-free water)	<0.06 $\mu$ A (2% Na <sub>2</sub> SO <sub>3</sub> , 22°C)
Output	0.93 $\mu$ A -1.33 $\mu$ A
Measurement error	$\leq \pm 0.1$ mg/L
Zero error	$\leq 0.1$ mg/L
Repeatability	$\leq \pm 0.10$ mg/L
stability	$\pm 0.03$ mg/L
Sensitivity	0.6-1 mV/mg/L(O <sub>2</sub> )
Output impedance	About 15 K $\Omega$
Interface	2 connection wires

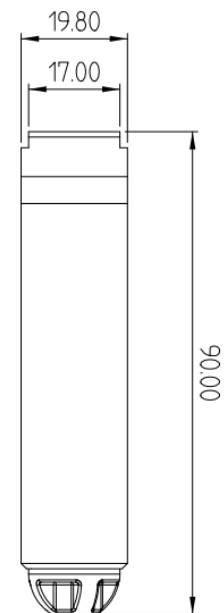


Fig2. Sensor structure diagram

## Sensor characterization

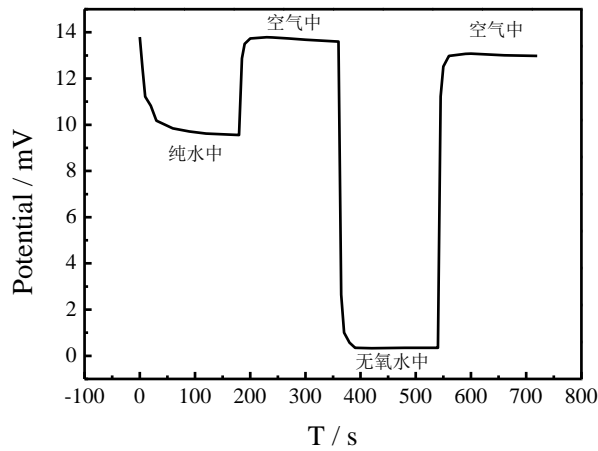


Fig3. Sensor sensitivity test curve (22 °C)

## Basic test circuit diagram

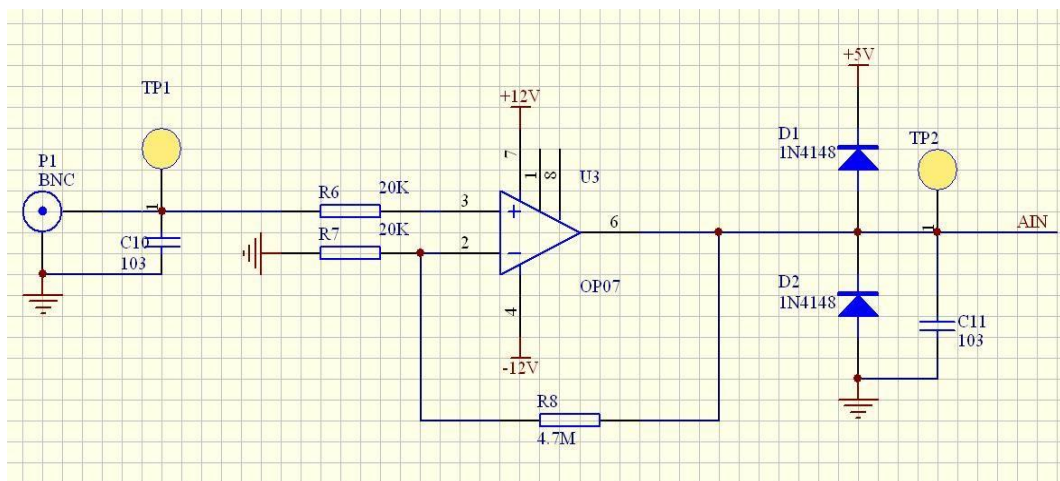


Fig4. Basic sensor test circuit

## Instructions

1. Prepare 9 mg/L and 0 mg/L standard solutions for calibration. For the preparation method, please refer to the product usage reminder card.
2. Connect the sensor interface end to the corresponding position of the module or instrument.
3. Remove the protective cover of the sensor test end and place it in the 9 mg/L and 0 mg/L standard solutions for calibration.
4. After the calibration is completed, place the sensor test end in the test liquid for testing.
5. Clean the sensor test terminal in time after use, and install a protective cover. Store at room temperature.

**Line connection****Stable 2**

Cable color	Lead definition
blue	positive electrode
Coffee	negative electrode
Network cable	Shielded wire (wire length of more than 10 meters needs to be connected)

**Precautions**

- It is forbidden for any sharp objects to directly touch the permeable membrane of the sensor's test end to avoid damage or contamination of the permeable membrane to affect product performance.
- It is forbidden to disassemble any accessories of the sensor.
- During the test, it is strictly forbidden to shake the sensor violently in the solution.
- After use, clean the sensor test end with pure water or deionized water in time to keep it clean.
- Keep a small amount of pure water or deionized water in the protective cover of the sensor test end when it is not working.
- If there are contaminants on the sensor test end, use the corresponding reagents for treatment. The scale can be soaked in 10% dilute hydrochloric acid for 3 minutes and then rinsed with water; for organic pollutants, it can be soaked with 80% alcohol for 10 minutes, and then rinsed with water.

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