



# **Electrochemical O3 Sensor**

## **(Model: ME2-O3-16×15)**

### **Manual**

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Please keep the manual properly, in order to get help if you have questions during the usage in the future.

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## ME2- O3- 16x15 O3 gas sensor

ME2-O3-16x15 electrochemical gas sensor is fuel cell type, which utilizes the electrochemical oxidation process of O3 gas on the working electrode. The current produced in electrochemical reaction of the target gas are in direct proportion with its concentration while following Faraday law, then concentration of the gas could be get by measuring value of current.

### Features

- \* Low consumption
- \* High precision
- \* High sensitivity
- \* Wide linear range
- \* Good anti-interference ability
- \* Excellent repeatability and stability

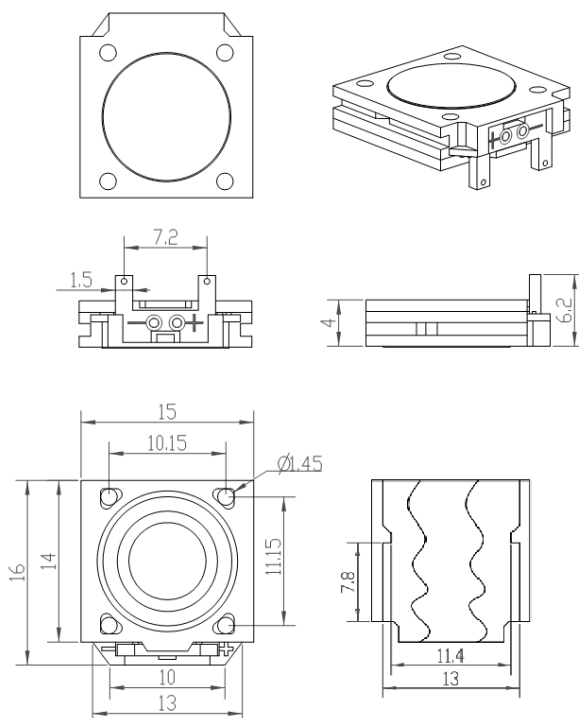


### Application

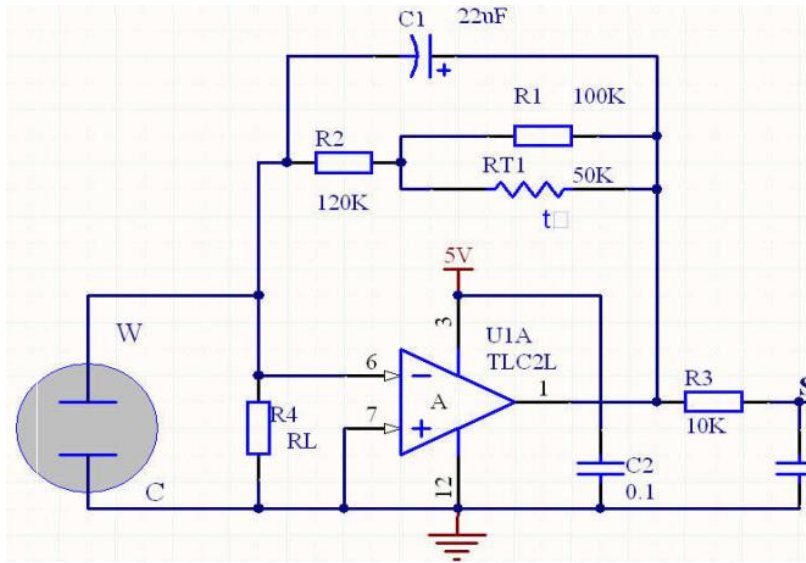
Widely used in the detection of ozone gas concentration for civilian and environmental protection fields

### Technical Parameter

Detection gas	O3
Measurement Range	0~10/0~100ppm
Max detecting concentration	200ppm
Sensitivity	$\geq 30\text{nA/ppm}$
Resolution ratio	$\leq 0.02\text{ppm}$
Response time (T90)	$\leq 120\text{s}$
Load resistance	200 $\Omega$ (recommended)
Repeatability	<2% output value
Output Linearity	linear
Zero drift (-20°C~40°C)	$\leq 0.2\text{ppm}$
Storage temperature	-20°C~50°C
Storage Humidity	15%~90%RH (no condensation)
Pressure range	Standard atmosphere pressure $\pm 10\%$
Anticipated using life	2 years (In air)

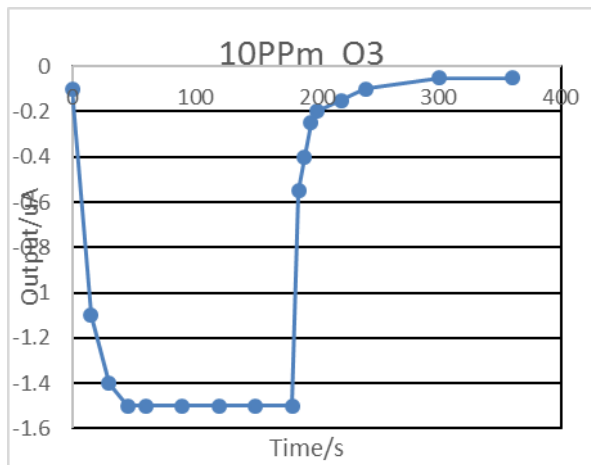


**Testing Circuit**

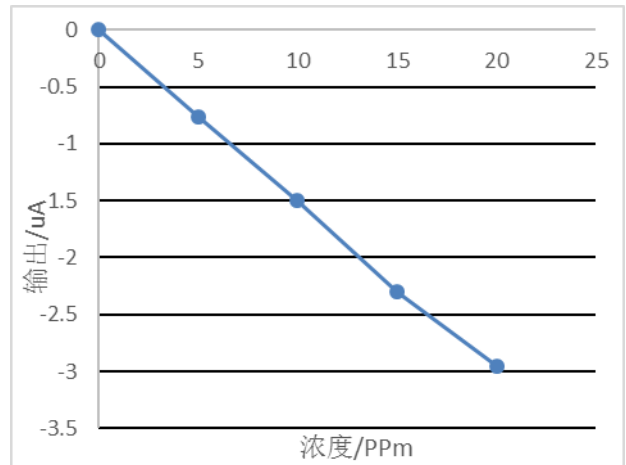


**Characterization**

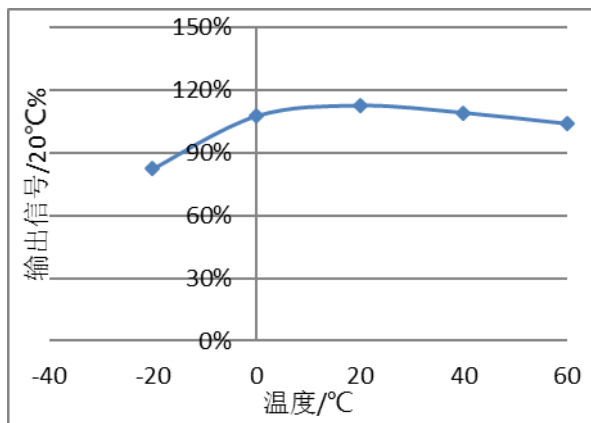
**Features of Sensitivity, response and resume**



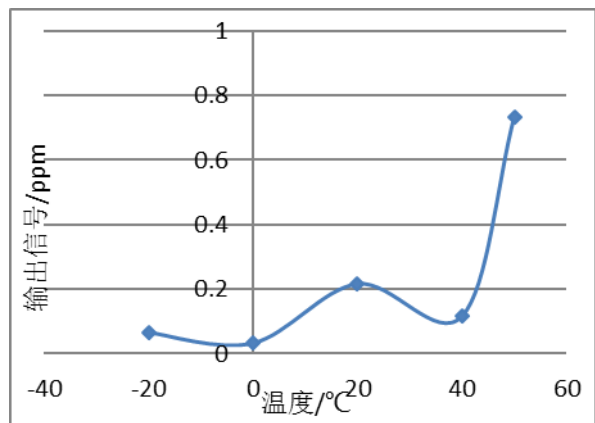
**Linearity features**



**Output upon variable temperature**



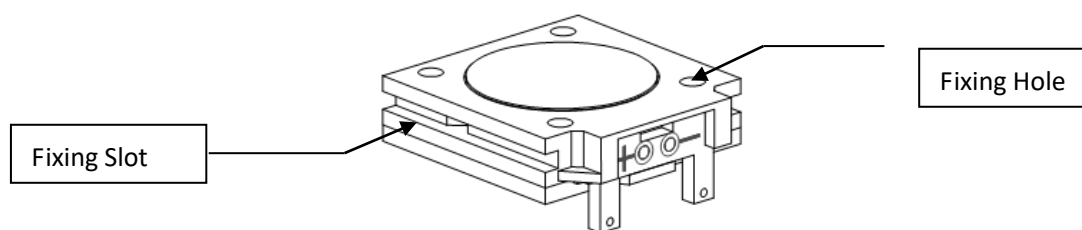
**Zero point output upon Variable Temperature**



### There are two ways to fix the ME2-O3-16×15 sensor

Fix the sensor in PCB or instrument shells through fixing hole by using nut

Fix the sensor through the fixing slot



### Cross interference gas:

ME2-O3-16x15 sensor also responds to other gases besides target gas. Below are the response characteristics of interferential gases

Gas	Concentration	ME2-O <sub>3</sub>
CL <sub>2</sub>	3ppm	1ppm
H <sub>2</sub> S	15ppm	<-1ppm
CO	300ppm	0ppm
SO <sub>2</sub>	5ppm	0ppm
HCN	10ppm	0ppm
HCL	5ppm	0ppm
NO	35ppm	0ppm
NO <sub>2</sub>	5ppm	2ppm
H <sub>2</sub>	500ppm	0ppm
C <sub>2</sub> H <sub>4</sub>	100ppm	0ppm

### 8. Application Notes:

- Do not break and bend the PCB terminals;
- To preheat for no less than 48hs before using;
- Do not take apart the sensor, otherwise electrolyte leakage can cause sensor damage;
- Sensor shall avoid organic solvent, coatings, medicine, oil and high concentration gases;
- All electrochemical sensors shall not be encapsulated completely by resin materials, and shall not immerse in pure oxygen environment, otherwise, it will damage the function of sensor;
- All ME sensors shall not be applied in corrosive gas environment, or the sensor will be damaged;
- Please test the zero point of gas sensors in clean atmosphere;

- Sensors shall be avoided to face the gas, which flow directly from front side;
- Blowhole of the sensor should not be blocked and polluted, which will cause the sensitivity decrease;
- Do not open and damage the above waterproof breathable membrane of the sensor;
- Excessive impact or vibration should be avoided;
- Do not use the sensor when the shell is damaged;
- It takes some time for the sensor to return to normal state after applied in high concentration gas;
- Working electrode and reference electrode of the sensor shall be in short circuit when stored;
- Please do not encapsulate the sensor using melt adhesive and sealant, whose curing temperature is higher than 80°C;
- Please do not expose and use the sensor in high concentration alkaline gas for a long time.

**Note: To keep continual product development, we reserve right to change design features without prior notice !**

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