



**Carbon Monoxide Gas Sensor**

**(Model: ME2-CO-  $\Phi$  14x14)**

# **Manual**

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**Zhengzhou Winsen Electronics Technology Co., Ltd**

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

Zhengzhou Winsen Electronics Technology CO., LTD

## ME2-CO-Φ14x14 Carbon Monoxide Gas Sensor

### Profile

ME2-CO-Φ14x14, fuel cell type sensor, detects gas concentration by measuring current based on the electrochemical principle, which utilizes the electrochemical oxidation process of target gas on the working electrode inside the electrolytic cell, 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



### Main Applications

Widely used in commercial and civilian area to detect CO concentration.

### Technical Parameters

Item	Parameter
Detection gas	Carbon Monoxide (CO)
Measurement Range	0~1000ppm
Max detecting concentration	2000ppm
Sensitivity	>0.8nA/ppm
Resolution ratio	1ppm
Response time(T90)	<30S
Load resistance(recommended)	(500/1k/2k) Ω
Repeatability	<3% output value
Output Linearity	linear
Zero drift(-20°C~40°C)	≤10ppm
Temperature Range	-20°C~50°C
Humidity Range	15%~90%RH
Pressure range	Normal atmosphere±10%
Anticipated using life	3 years

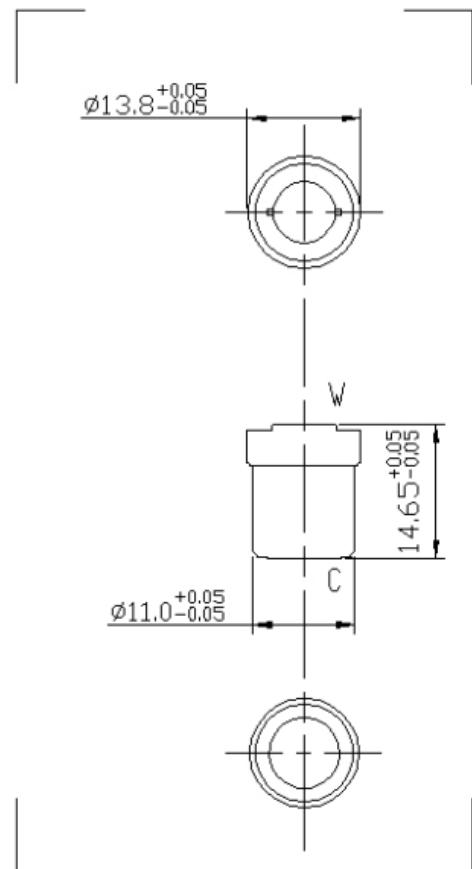


Fig1.Sensor structure

## Basic Circuit

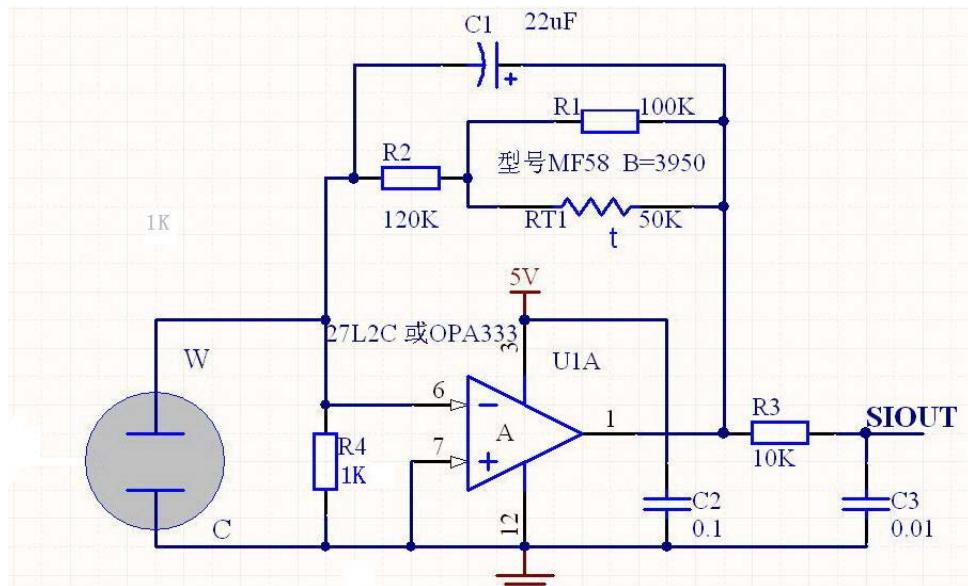


Fig2. Test circuit

## Characterization

Fig3. Features of Sensitivity, response and output signal features

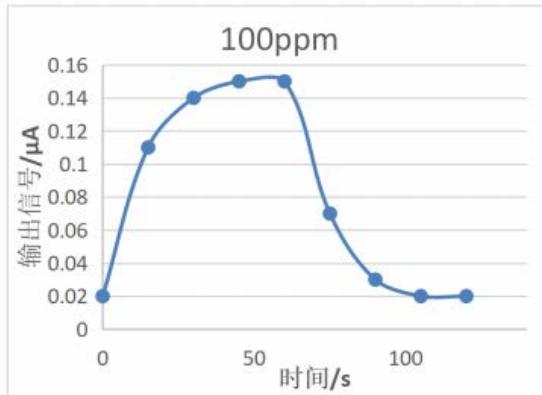


Fig4. Data graph of concentration linearity

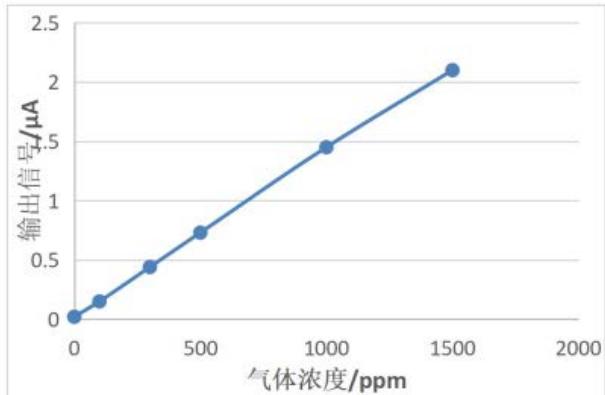


Fig5. Sensitivity upon variable temperature

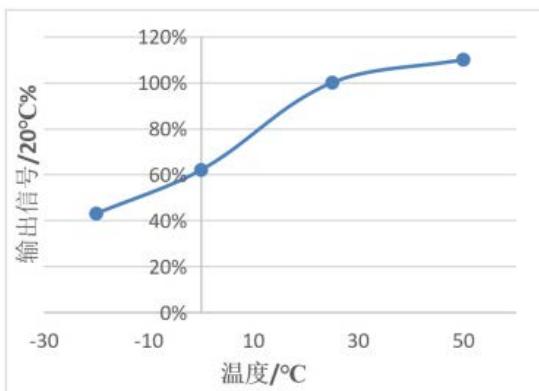
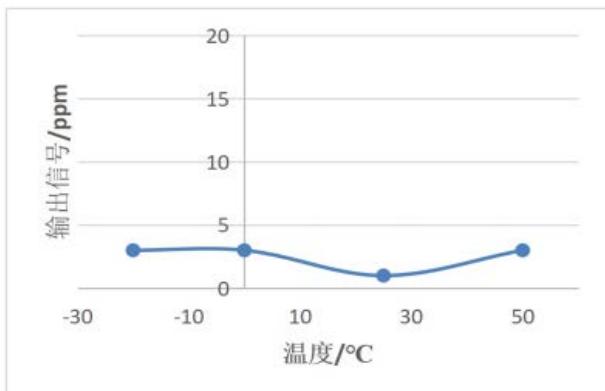


Fig6. Zero point upon variable temperature



**Anti-Interference:**

ME2-CO-Φ14x14 sensor also responds to other gases besides CO. Below are the response characteristics of interferential gases for reference.

Gas	Concentration	ME2-CO-Φ14x14
H2S	100ppm	0ppm
C2H4	100ppm	80ppm
NO	35ppm	6ppm
NO2	5ppm	0ppm
C2H5OH	1000ppm	0ppm
CL2	10ppm	1ppm
SO2	20ppm	0.6ppm
H2	500ppm	43ppm
NH3	50ppm	1ppm
CH3CL	5ppm	0ppm
ETO	10ppm	0ppm
C6H6	100ppm	1.5ppm
C3H6O	100ppm	3.5ppm
CH3OH	200ppm	0ppm

**Application Notes:**

- Tin soldering is prohibited.
- Before using, power on to aging for more than 48 hours is necessary.
- Don't disassemble the sensor to avoid the damage caused by electrolyte leakage.
- Avoid contacting organic solvent (including Silicone rubber and other adhesive), coatings, medicine, oil and high concentration gases.
- All the electrochemical sensors shall not be encapsulated completely by resin materials, and shall not immerse in non-oxygen environment, otherwise, it will damage the function of sensor
- All electrochemical sensors shall not be applied in corrosive gas environment, or the sensor will be damaged
- Zero calibration should be finished in clean air.
- During test and usage, sensors should avoid the gas inflow vertically
- The side for inflow can't be choked and polluted.
- The laminating film above the sensor surface can't be uncovered and damage.
- Excessive impact or vibration should be avoided
- It takes some time for the sensor to return to normal state after it is applied in high concentration gas
- Working electrode and reference electrode of the sensor shall be in short circuit when stored

- ☒ Prohibit to use the hot cement or sealant of which the curing temperature is higher than 80°C to make the encapsulation for the sensor.
- ☒ Prohibit storage and usage for long time in alkaline gases with high concentration.
- ☒ Do not use the sensor when the shell is damaged

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