



# **Electrochemical Carbon Monoxide Sensor (Model:ME2-CO-Φ14x50-C)**

## **Manual**

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Zhengzhou Winsen Electronics Technology Co., Ltd

## ME2-CO-Φ14x50-C Carbon Monoxide sensor

ME2-CO-Φ14x15-C Carbon monoxide sensor is a fuel cell type sensor. Carbon monoxide and oxygen undergo corresponding REDOX reaction on the working electrode and the opposite electrode and release charge to form current. The current generated is proportional to the concentration of carbon monoxide and follows Faraday's law.

### Features

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



### Application

Widely used for home safety, underground garage, generator and other fields of carbon monoxide concentration detection.

### Technical Parameter Table1.

Detection gas	CO
Measurement Range	0~1000ppm
Max detecting concentration	2000ppm
Sensitivity	(0.8~4) nA/ppm
Resolution	1ppm
Response time (T <sub>90</sub> )	≤30S
Load resistance (recommended)	1000Ω
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	standard atmosphere ± 10%
Lifespan	7 years

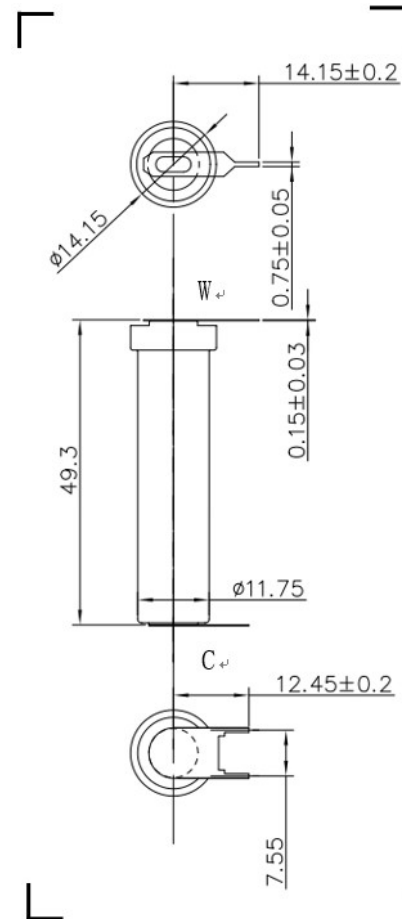


Fig1. Sensor Structure

Unit is mm, tolerance is ±0.15mm

**Basic circuit.**

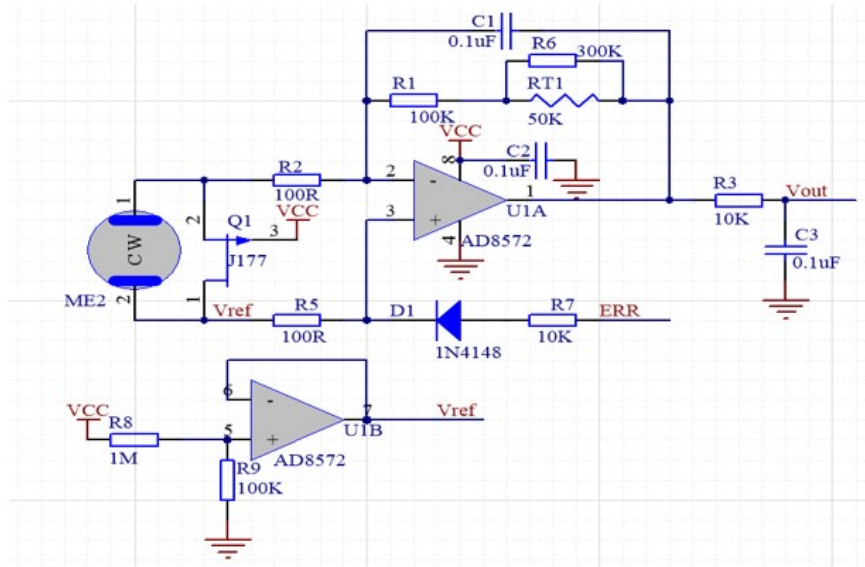
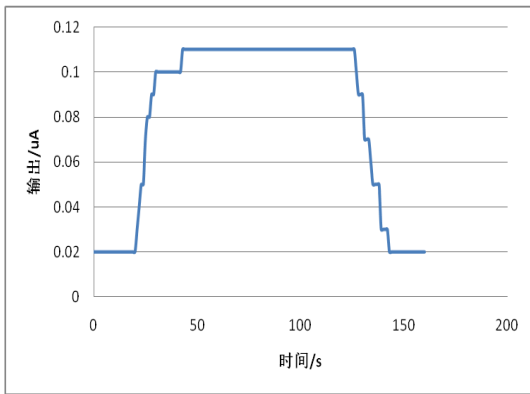


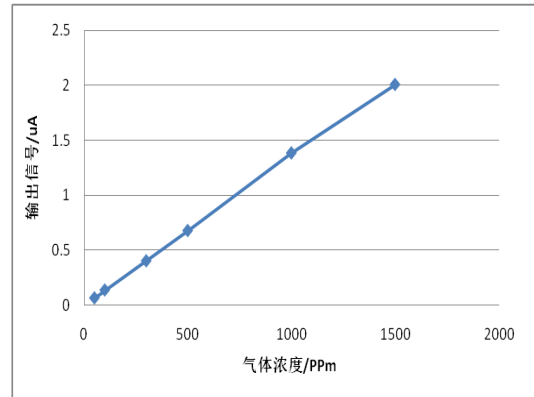
Fig2. Recommended circuit

**Characterization**

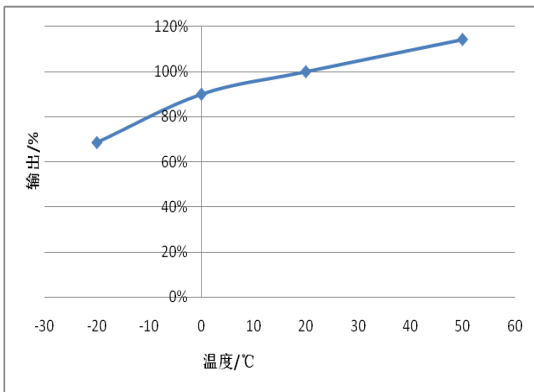
**Fig3.Features of sensitivity, response and recovery**



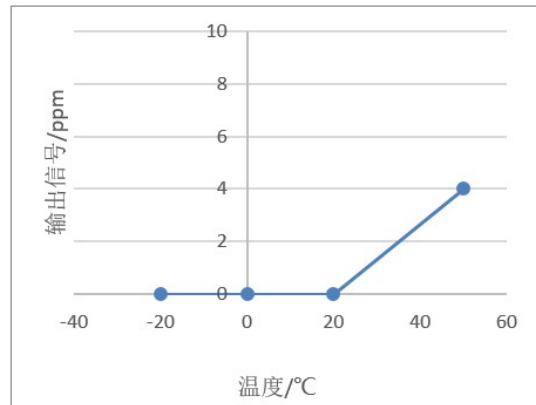
**Fig4.Data graph of concentration linearity features**



**Fig5.Sensor output upon variable temperature**



**Fig6.V0 Change upon variable temperature**



### Cross sensitivity:

ME2-CO-Φ14x50-C sensor also responds to other gases besides CO. Below are the response characteristics of interferential gases

Gas	Concentration	ME2-CO-Φ14x50-C
H <sub>2</sub> S	100ppm	0ppm
C <sub>2</sub> H <sub>4</sub>	100ppm	80ppm
NO	35ppm	6ppm
NO <sub>2</sub>	5ppm	0ppm
C <sub>2</sub> H <sub>5</sub> OH	1000ppm	0ppm
CL <sub>2</sub>	10ppm	1ppm
S <sub>0</sub> 2	20ppm	0.6ppm
H <sub>2</sub>	500ppm	43ppm
NH <sub>3</sub>	50ppm	1ppm
CH <sub>3</sub> CL	5ppm	0ppm
ETO	10ppm	0ppm
C <sub>6</sub> H <sub>6</sub>	100ppm	1.5ppm
C <sub>3</sub> H <sub>6</sub> O	100ppm	3.5ppm
CH <sub>3</sub> OH	200ppm	0ppm

### Application Notes:

- During installation, the lead can be welded, and the solder cannot contact the sensor.
- Before using, power on to aging for more than 48 hours is necessary.
- Don't disassemble the sensor.
- 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 done in clean air.
- During test and usage, sensors should avoid the gas inflow vertically.
- The inlet hole can't be choked and polluted.
- The sensor shall not be subjected to excessive impact or vibration.
- Do not use the sensor if its shell is damaged or deformed.
- In high concentration gas environment, the recovery to the initial state is slow after a long time of use.
- When the sensor is stored, the working electrode and the counter electrode should be in short circuit.
- Do not use hot melt adhesive or sealant whose curing temperature is higher than 80°C to encapsulate sensors.
- Do not store or 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 !**