



Electrochemical gas-sensitive element instructions

Model: MQ2-CO- ϕ 14*50

Version: 1.2

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Taiyuan Tengxing sensor technology Co., Ltd

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1. Description

MQ2-CO- $\Phi 14 \times 50$ carbon monoxide sensor is a fuel cell type sensor. Carbon monoxide and oxygen undergo corresponding redox reactions on the working electrode and the counter electrode and release charges to form current. The generated current is proportional to the carbon monoxide concentration and follows Faraday's law. The carbon monoxide concentration can be determined by measuring the current.

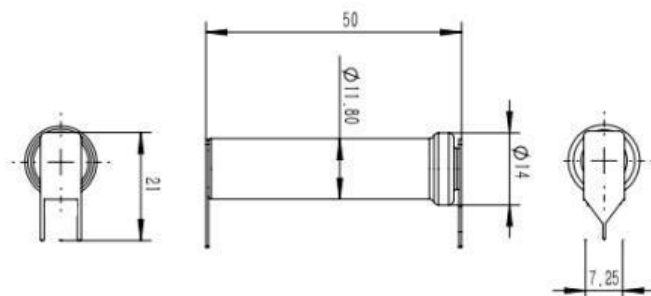
2.Characteristics

- (1) Low power consumption.
- (2) High accuracy.
- (3) High sensitivity.
- (4) Wide linear range,
- (5) Strong anti-interference ability
- (6) Excellent repeatability and stability.

3.Main Application

It is widely suitable for carbon monoxide concentration detection in commercial, especially civil fields.

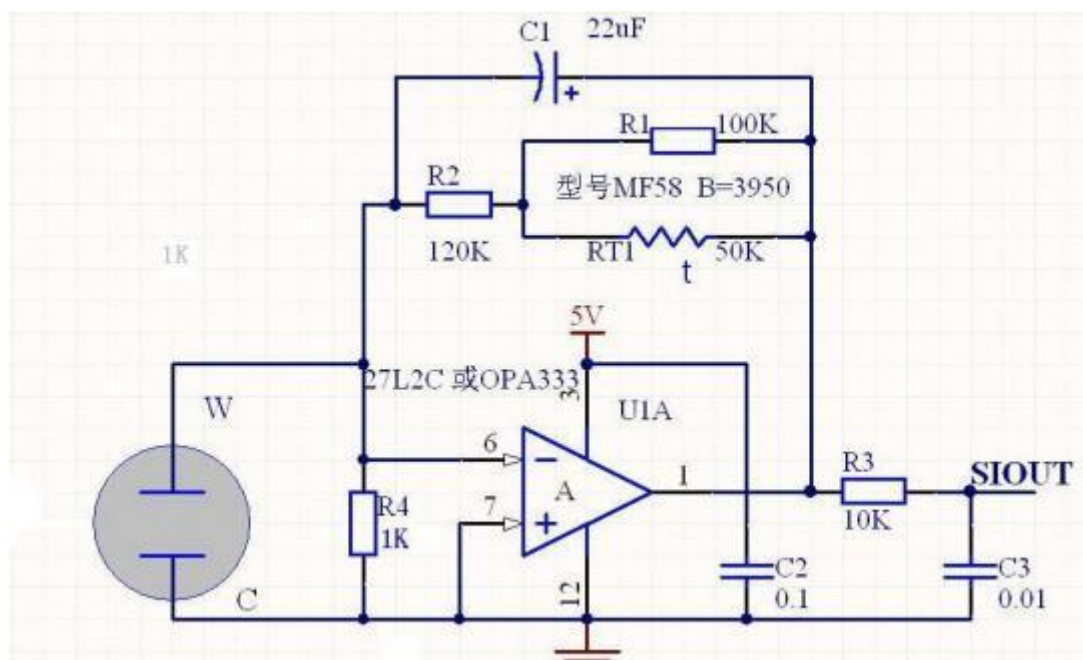
4.Appearance and dimension



5. Technical specifications

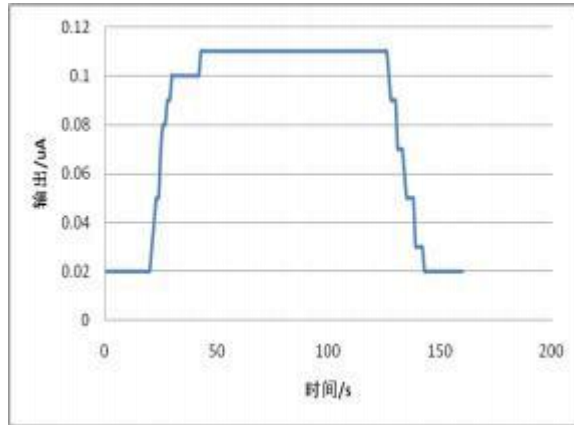
- (1) Detection gas: CO
- (2) Range: 0-1000ppm
- (3) Maximum measurement limit: 2000ppm
- (4) Sensitivity: (1~3) nA/ppm
- (5) Resolution: 1ppm
- (6) Response time(T_{90}): < 30s
- (7) Load resistance(Recommend): 1000 Ω
- (8) Repeatability: < 3% output value
- (9) Output linearity: Line
- (10) Zero drift: ≤ 10 ppm
- (11) Temperature range: -20~50 $^{\circ}$ C
- (12) Humidity range: 15% ~ 90% RH
- (13) Pressure range: Standard atmospheric pressure $\pm 10\%$
- (14) Service life: 5 years

6. Test circuit

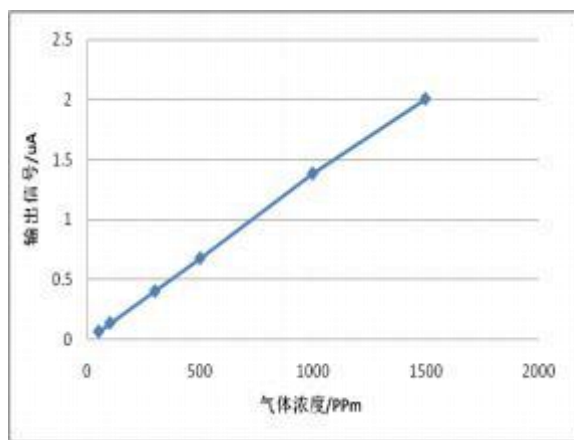


6.Characteristic curve of sensor

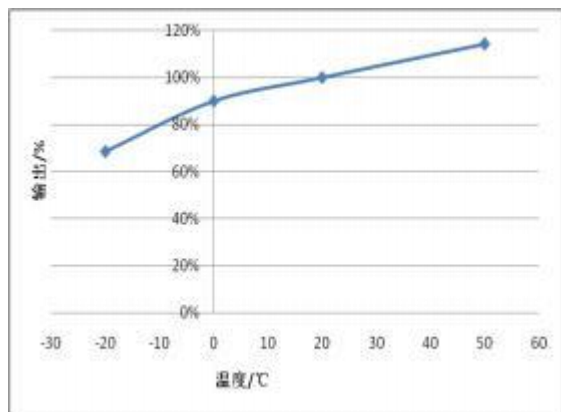
- (1) Sensor sensitivity and response recovery



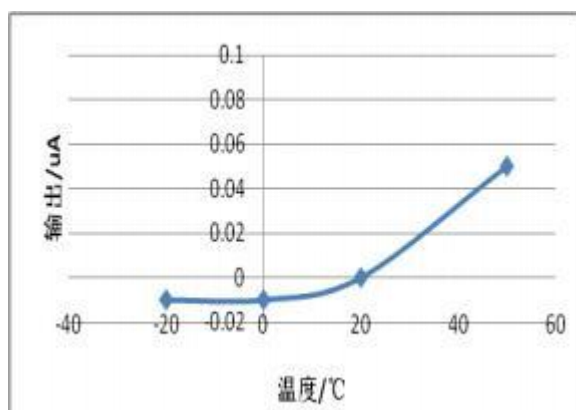
(2) Sensor linearity curve



(3) Output signal in different temperature



(4) Zero point output in different temperature



7. Cross interference characteristics sheet

MQ2-CO-Φ 14×50 sensor can respond to other gases except target gas.

The response characteristics of the sensor to several common interfering gases are listed in the table below for reference. The data in the table are typical responses of gases at given concentrations.

cross interference characteristics sheet		
gas	concentration	MQ2-CO- Φ 14*50
H2S	100ppm	0ppm
Ethylene	100ppm	80ppm
NO	35ppm	6ppm
NO2	5ppm	0ppm
C2H5OH	1000ppm	0ppm
Cl2	10ppm	1ppm
SO2	20ppm	0.6ppm
NH4	50ppm	1ppm
CH3Cl	5ppm	0ppm
C2H4O	10ppm	0ppm

Benzene	100ppm	1.5ppm
Acetone	100ppm	3.5ppm
Methanol	200ppm	0ppm
H2	500ppm	43ppm

8. Attention

(1) Welding lead wire when installing is allowed, while soldering sensor is prohibited.

(2) Aging time before using should be more than 48 hours.

(3) Don't disassemble the sensor without permission.

(4) Don't let the sensor connected with organic solvent(including silicon rubber or other adhesive), coating material, medicament, fuel oil and high concentration gas.

(5) All electrochemical sensor cannot be fully sealed with resin material. Being exposed in the environment without oxygen will damage the sensor.

(6) Being exposed in the environment with corrosive gas will damage the sensor.

(7) Zero point should be tested in clean air.

(8) Front intake or vertical intake is prohibited when testing or working.

(9) The inlets shouldn't be polluted or clogged.

(10) Shaking or impacting is not allowed.

- (11) Don't use if the shell is broken or out of shape.
- (12) It's slow to recover to initial condition if used in the environment with high concentration gas for a long time.
- (13) The working electrode and counter electrode should be short-circuited when storing.
- (14) Don't seal with melt adhesive or sealant whose curing temperature is higher than 80°C.
- (15) Don't use or store in the environment with high concentration alkaline gas.

9. Quality-guarantee

- (1) The products are supplied strictly in accordance with customers' requirement, any defective goods are available to change or refund.
- (2) The working time of components will be more than 3 years.

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