MST140 CO sensor

product description ：

MST140 electrochemical carbon monoxide (CO) gas sensor is a fuel cell-type sensor. Carbon monoxide and oxygen undergo corresponding redox reactions at the working electrode and counter electrode, releasing electric charges to form a current. The magnitude of the generated current is proportional to the concentration of carbon monoxide and follows Faraday's Law. The concentration of carbon monoxide can be determined by measuring the magnitude of the current.

Sensor features:

It features high sensitivity and high selectivity to carbon monoxide, with an extremely fast response to carbon monoxide. It also offers linear output, a long service life, an environmentally friendly structural design, and a unique anti-leakage structure.

Main applications:

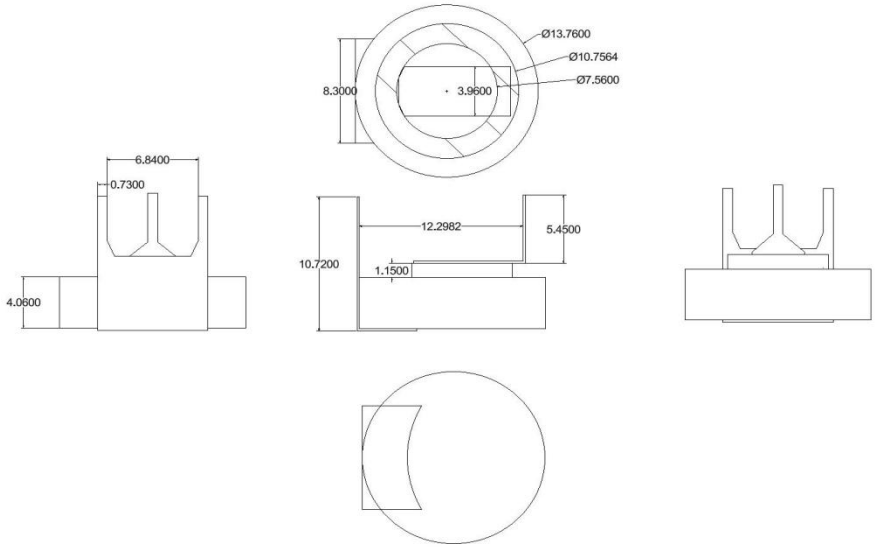
- Carbon monoxide monitoring for household use
- Carbon monoxide monitoring for commercial use
- Carbon monoxide monitoring in indoor parking lots
- Carbon monoxide monitoring in scenarios such as yachts and recreational vehicles (RVs)
- Carbon monoxide monitoring for generators
- Carbon monoxide monitoring in smart homes

product specification：

project	parameter
Object gas	carbon monoxide
Measuring range	0~1000ppm
Extreme overload	2000ppm
Output signal	1.5~3.5nA/ppm
Repetitiveness	±2%
Resolution	0.5ppm
Typical response time (t90)	<60 seconds

project	parameter
Long-term output drift	Less than 2% month
Expected life	10 years
Working temperature	-20~50℃
Humidity at work	15~90%RH
Working pressure range	0.1MPa±10%
Recommended load resistance	1KΩ
Offset voltage	no requirement

Structural dimensions diagram:



Sensor characteristics description:

Sensitivity characteristics

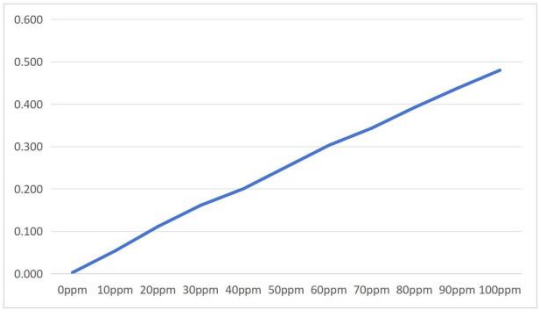


Figure 1: Typical sensitivity characteristic curve of sensor 25℃ (linear output)

Response time

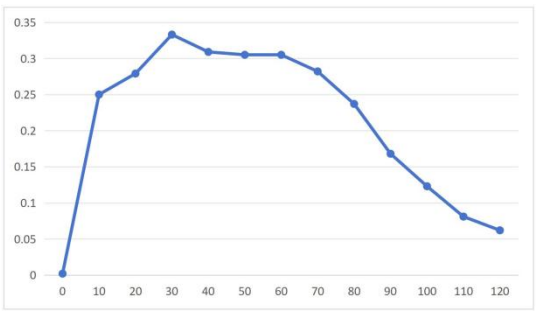


Figure 2: Response time

Cross-sensitive characteristic data

Object Gas	Concentration (ppm)	Carbon Monoxide Equivalent Concentration (ppm)
Ethyl alcohol	100	< 30
Hydrogen sulfide	100	< 30
Sulfur dioxide	20	< 30
Hydrogen	500	< 30
Nitrogen dioxide	10	< 30
ammonia	20	< 30

Typical Response of the Sensor to Various Interfering Gases / Cross-Sensitivity Characteristics (at 25˚C)

Installation and Usage Notes

1. Wires can be soldered during installation, but solder must not come into contact with the sensor.
2. The power-on aging time shall be no less than 30 minutes.
3. Avoid long-term contact with organic volatile solvents.
4. The operating or storage environment must not be acidic or alkaline.

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