Nitrogen Dioxide Gas Sensor

（Model：ME4-NO_2-E4）

Manual

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ME4-NO_2-E4 Nitrogen Dioxide Gas Sensor

Profile

ME4-NO_2-E4 nitrogen dioxide gas sensor is constant potential electrolysis type. Oxidation-reduction reaction with nitrogen dioxide and oxygen take place respectively on the working electrode and on the reference electrode. The process releases electric charge and generates current. The current is in direct proportion to the concentration of nitrogen dioxide. So the concentration of the target gas could be got by measuring the value of current. The 4th electrode (auxiliary electrode) is used to compensate the zero current, to make it has the characteristics of strong signal level and low zero current.

Features

Low power consumption, high precision, high sensitivity, wide linear range, good anti-interference ability, excellent repeatability and stability.

Main applications

Urban atmospheric monitoring, enterprise environmental monitoring, emission gas monitoring, emergency environmental monitoring, and environmental evaluate monitoring.

Technical	nitrogen dioxide（NO_2）
Detection Range	0～20ppm
Max range	50ppm
Sensitivity	-0.205～-0.548μA/ppm
Resolution	<10ppb
Response Time(T_{90})	＜60S
Bias Voltage	33-100Ω(recommended)
Stability(/month)	-20%~-40%
Output Linearity	Linear
Zero drift(-20℃～40℃)	0-20ppb
Temperature range	-30℃～40℃
Humidity range	15％～85％RH
Pressure range	80-120kPa
Lifespan	2 years(in air)

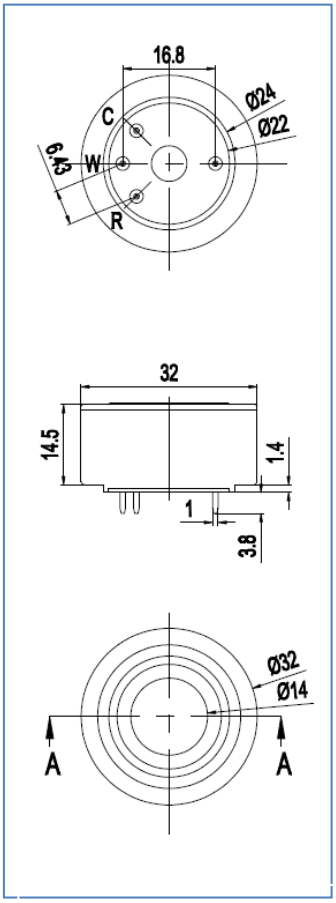

Fig1.Sensor Structure

Cross Interference

ME4-NO_2-E4 sensor also can respond to other gases besides target gas NO_2. Following data are the response characteristics of the sensor to interferential gases at certain concentration for your reference.

Stable2. Cross interference

Interferential Gas	Concentration	ME4-NO_2
O3	2	>500
H_2S	5	<-80
CL2	5	<80
CO	5	<3
NO	5	<5
SO_2	5	<5
H2	100	<0.1
C2H4	100	<0.5
CO2	5%	<0.1
NH_3	20	<0.2
Halothane	100	nd

Cautions!

- Tin soldering is prohibited.
- Before using, power on to aging for more than 48 hours is necessary.
- Pins can't be broken off or bent.
- 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 pure 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℃ to make the capsulation 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

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