



Ethylene Oxide Gas Sensor

(Model: ME4-ETO)

Manual

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Zhengzhou Winsen Electronics Technology Co., Ltd

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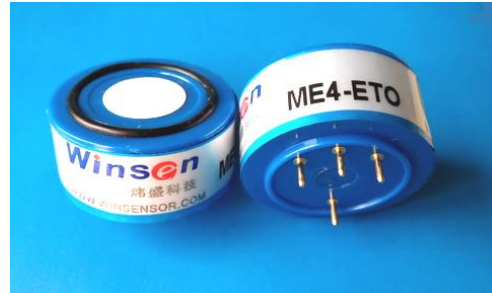
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Zhengzhou Winsen Electronics Technology CO., LTD

ME4-ETO Ethylene Oxide Gas Sensor

Profile

ME4-ETO ethylene oxide gas sensor is constant potential electrolysis type. Oxidation-reduction reaction with ethylene oxide gas take place inside of the sensor. The process releases electric charge and generates current. The current is in direct proportion to the concentration of ethylene oxide gas. So the concentration of the target gas could be got by measuring the value of current.



Features

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

Main applications

For ETO gas detection in petroleum and petrochemical occasion, medicine and environmental protection field.

Technical Parameters Stable1.

Detection Gas	ethylene oxide (ETO)
Detection Range	0~20ppm
Max range	100ppm
Sensitivity	(1.8±0.3) μA/ppm
Resolution	0.1ppm
Response Time(T ₉₀)	<120S
Bias Voltage	300mV
Load Resistance	10Ω(recommended)
Repeatability	<2% Output value
Stability(/month)	<2%
Output Linearity	Linear
Zero drift(-20℃~40℃)	4ppm
Temperature range	-20℃~50℃
Humidity range	15%~90% RH (No condensation)
Pressure range	standard atmospheric pressure±10%
Lifespan	2 years

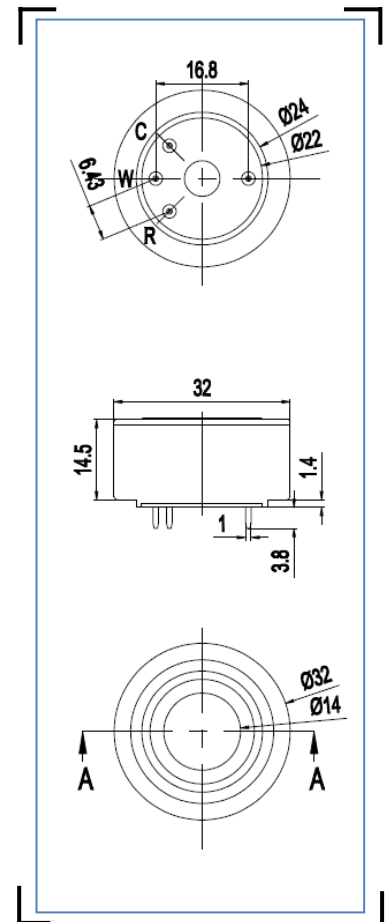


Fig1.Sensor Structure

Basic Circuit

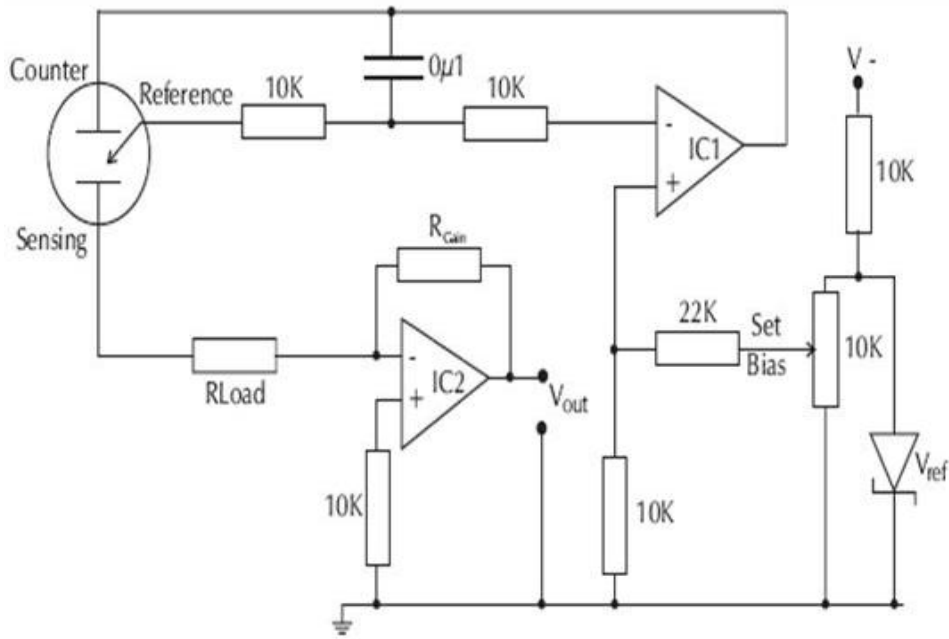


Fig2: ME4-ETO test circuit

Description of sensor characters

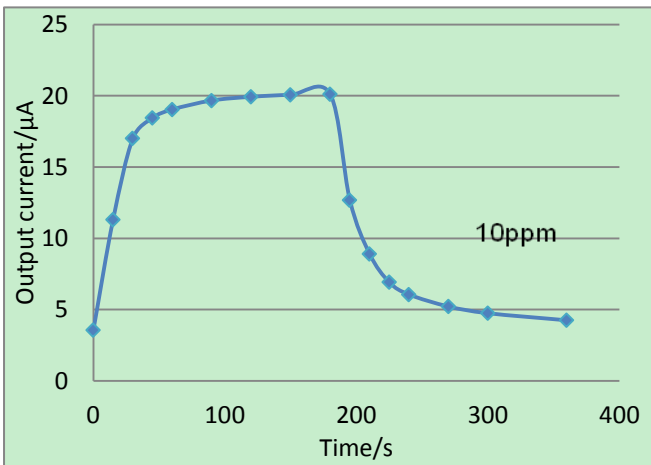


Fig3. Responce and Resume

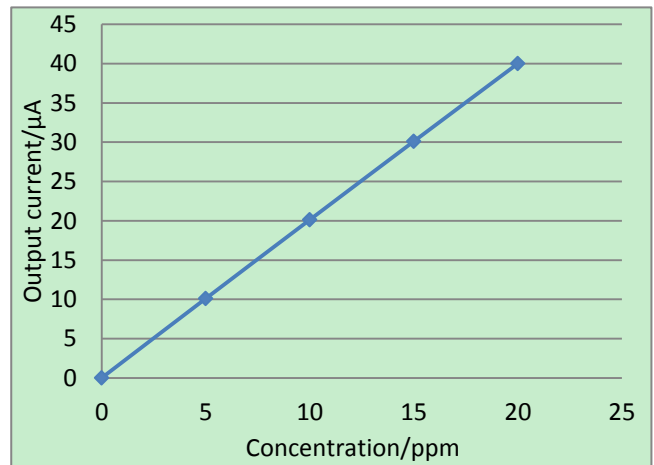


Fig4. Linearity

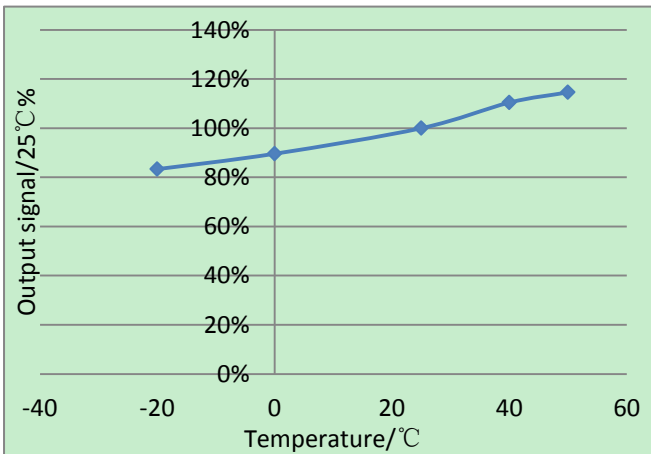


Fig5. Output of sensor at different temperature

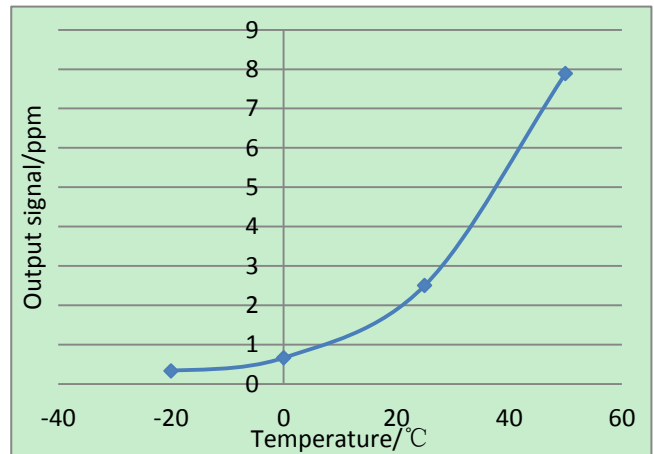


Fig6. Zero output of sensor at different temperature

Cross Interference

ME4-ETO sensor also can respond to other gases besides target gas ETO. 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-ETO
ETO	1ppm	1 ppm
chloroethylene	100ppm	63ppm
diethyl ether	50ppm	11ppm
acetic acid	50ppm	7ppm
benzene	50ppm	12ppm
toluene	50ppm	19ppm
dimethylbenzene	50ppm	25ppm
trichloromethane	50ppm	7ppm
methanal	10ppm	80ppm
carbon monoxide	200ppm	52ppm
alcohol	300ppm	155ppm
H ₂ S	50ppm	55ppm
SO ₂	20ppm	6ppm
Cl ₂	10ppm	0.5ppm

Cautions!

- Tin soldering is prohibited.
- Before using, power on to aging for more than 48 hours is necessary.
- Pins can't be broke 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°C 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

Zhengzhou Winsen Electronics Technology Co., Ltd

Add.: NO.299 Jin Suo Road, National Hi-Tech Zone,
Zhengzhou, 450001 China

Tel.: 0086-371-67169097 67169670

Fax: 0371-60932988

E-mail: sales@winsensor.com