Electrochemical Formaldehyde Sensor

（Model: ME3-CH2O）

User's Manual

Version: 1.2

Valid from: 2014-05-01

Zhengzhou Winsen Electronics Technology Co., Ltd

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At the same time, users' comments on optimized using way are welcome.

Please keep the manual properly, in order to get help if you have questions during the usage in the future.

Zhengzhou Winsen Electronics Technology CO., LTD

ME3-CH2O Electrochemical Formaldehyde Sensor

ME3-CH2O electrochemical sensor detect gas concentration by measuring current based on the electrochemical principle, which utilizes the electrochemical oxidation process of target gas on the working electrode inside the electrolytic cell, the current produced in electrochemical reaction of the target gas are in direct proportion with its concentration while following Faraday law, then concentration of the gas could be get by measuring value of current.

1. Features

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

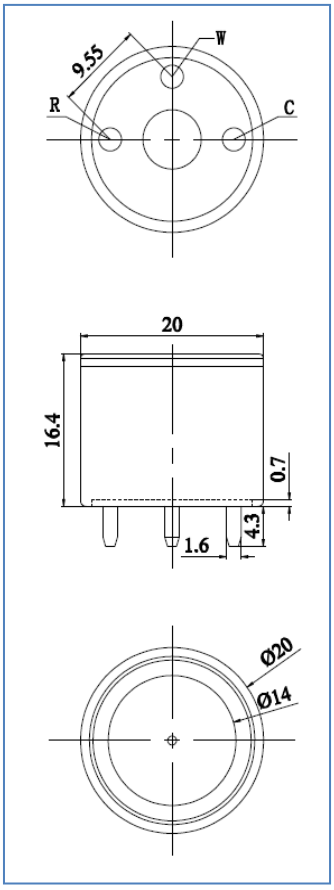
2. Applications

Widely used in industrial and environmental fields

3. Technical Parameter

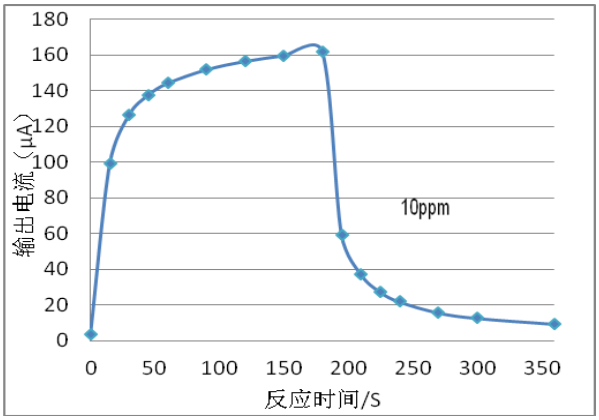
Detection gas	CH_2O
Measurement Range	0～10ppm
Max detecting concentration	100ppm
Sensitivity	（11.8±6）μA/ppm
Resolution ratio	0.1ppm
Response time（T_{90}）	≤90S
Bias voltage	300mV
Load resistance（recommended）	300Ω
Repeatability	＜2％output value
Stability（／month）	＜2％
Output Linearity	linear
Zero drift（-20℃～40℃）	-0.03ppm～0.03ppm
Storage temperature	-20℃～50℃
Storage Humidity	15％～90％RH
Pressure range	Standard atmosphere±10%
Anticipated using life	2 years(in air)

4. External dimension

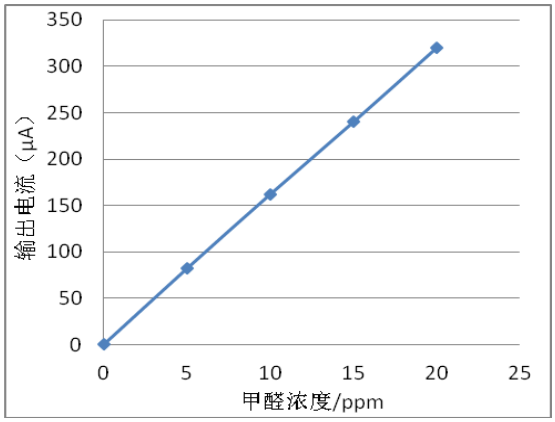


5. Characterization

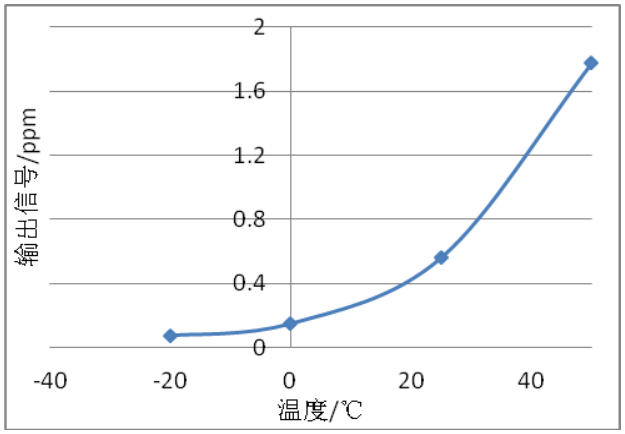
Features of Sensitivity, response and output signal



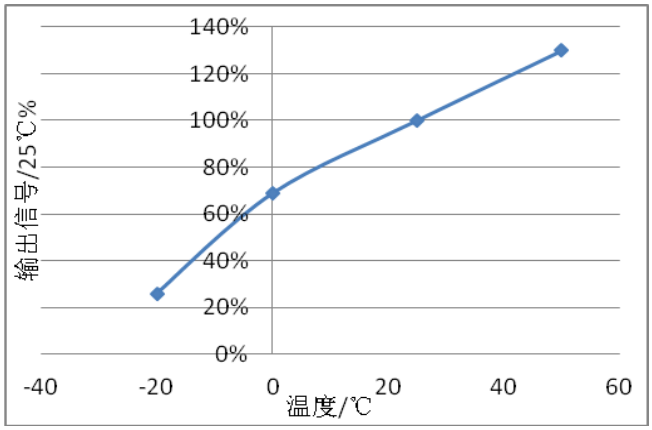
Data graph of concentration linearity features



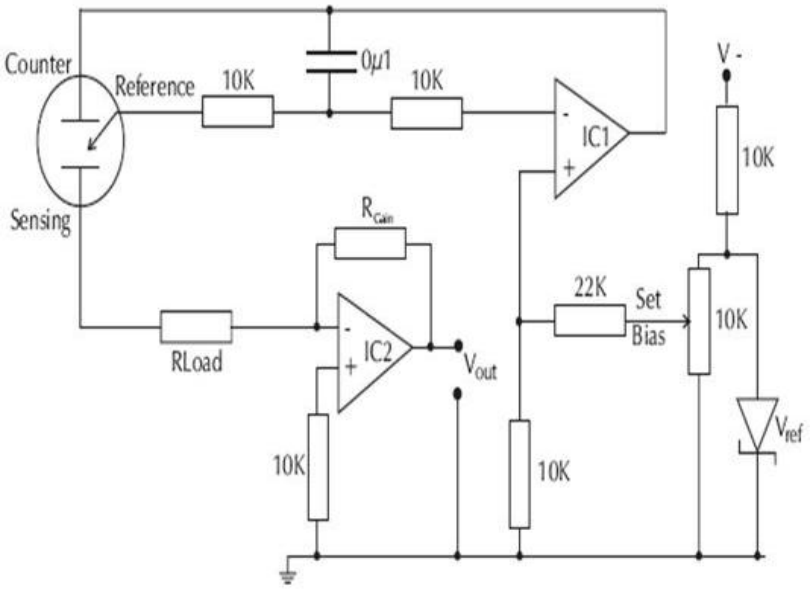
V0 Change upon Variable Temperature



Sensitivity upon variable temperature



6. Basic circuit



7. Anti-Interference:

ME3-CH_2O sensor also responds to other gases besides target gas. Below are the response characteristics of interferential gases

Gas	Concentration	ME3-CH_2O
CH20	1ppm	1ppm
CH2CHCL	100ppm	8ppm
ETO	10ppm	1ppm
(C2H5)2O	50ppm	1.5ppm
CH3COOH	50ppm	1ppm
C6H6	50ppm	1.5ppm
C7H8	50ppm	2.3ppm
C8H10	50ppm	3ppm
CHCL3	50ppm	0.8ppm
CO	200ppm	6ppm
C2H5OH	300ppm	19ppm
H2S	50ppm	7ppm
SO2	20ppm	0.7ppm
CL2	10ppm	0.07ppm

8. Application Notes:

- Sensor shall Avoid organic solvent, coatings, medicine, oil and high concentration gases;
- All ME 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 ME sensors shall not be applied in corrosive gas environment, or the sensor will be damaged;
- Please test the sensitivity of gas sensors in clean atmosphere;
- Sensors Shall be avoided to face the gas, which flow directly from front side;
- To avoid to bend and break of pins;
- Blowhole of the sensor should not be blocked and polluted, which will cause the sensitivity decrease;
- Excessive impact or vibration should be avoided;
- Do not use the sensor when the shell is damaged;
- It takes some time for the sensor to return to normal state After applied in high concentration gas;
- Do not take apart the sensor, otherwise electrolyte leakage can cause sensor damage;
- Working electrode and reference electrode of the sensor shall be in short circuit when stored.;
- To preheat over 48hs before using and soldering forbidden;

Note: To keep continual product development, we reserve right to change design features without prior notice !

Zhengzhou Winsen Electronics Technology Co., Ltd
Add.: NO.299 Jin Suo Road, National Hi-Tech Zone, Zhengzhou, 450001 China
Tel.: 0086-371-67169097 **Fax**:0371-60932988

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