ME4-SO_2

Electrochemical Sulfur Dioxide Sensor

Manual

(Model：ME4-SO_2)

Version: 1.2

Valid from: 2014-05-01

Zhengzhou Winsen Electronics Technology Co., Ltd

Statement

Thanks for purchasing our product. In order to let customers use it better and reduce the faults caused by misuse, please read the manual carefully and operate it correctly in accordance with the instructions. If users disobey the terms or remove, disassemble, change the components inside of the sensor, we shall not be responsible for the loss.

The specific such as color, appearance, sizes &etc, please in kind prevail.

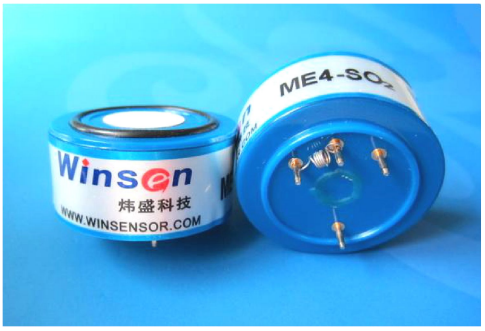
We are devoting ourselves to products development and technical innovation, so we reserve the right to improve the products without notice. Please confirm it is the valid version before using this manual. At the same time, users' comments on optimized using way are welcome.

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

ME4-SO_2 Sulfur Dioxide Gas Sensor

Profile



ME4-SO_2 sulfur dioxide gas sensor is constant potential electrolysis type. Oxidation-reduction reaction with sulfur dioxide and oxygen take place respectively on the working electrode and on the counter electrode. The process releases electric charge and generates current. The current is in direct proportion to the concentration of sulfur dioxide. 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

It is used for hydrogen sulfide detection in industrial occasions and environmental protection field.

Technical Parameters Stable1

Detection Gas	Sulfur dioxide (SO_2)
Detection Range	0~20ppm
Max range	200ppm
Sensitivity	(0.8±0.2)μA/ppm
Resolution	0.1ppm
Response Time(T_{90})	≤30S
Bias Voltage	0mV
Load Resistance	10Ω(recommended)
Repeatability	<2% Output value
Stability(/month)	<2%
Output Linearity	Linear
Zero drift (-20℃~40℃)	≤0.2ppm
Temperature range	-20℃~50℃
Humidity range	15%~90%RH
Pressure range	standard atmospheric
Lifespan	2 years(in air)

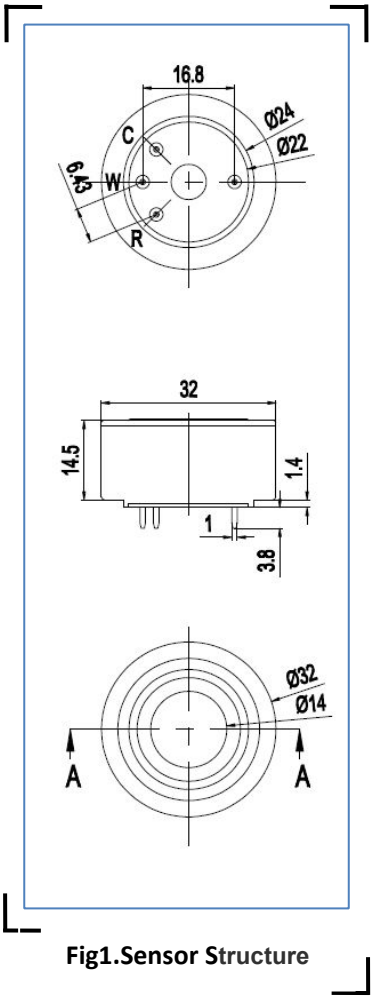


Fig1.Sensor Structure

Basic Circuit

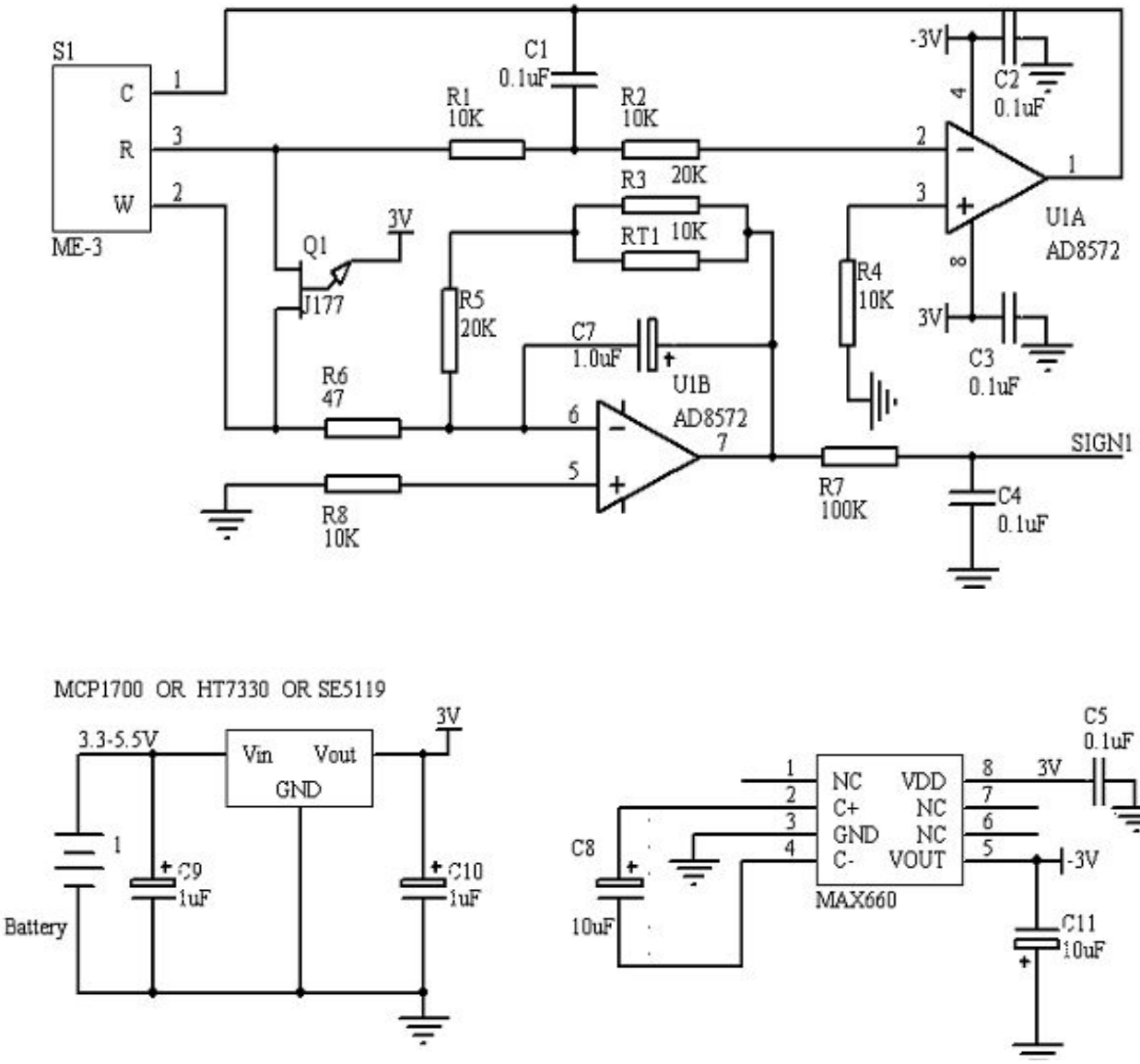


Fig2 ME4-SO_2 test circuit

Description of sensor characters

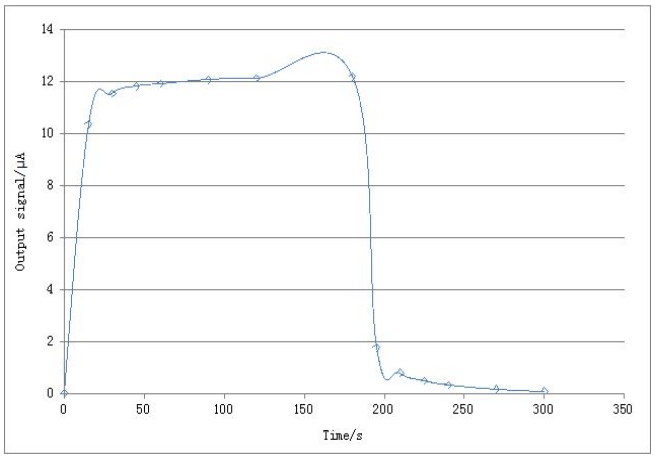


Fig3. Responce and Resume

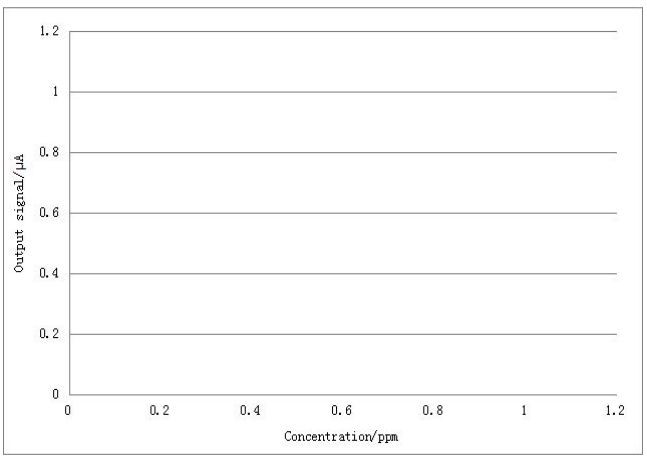


Fig4. Linearity

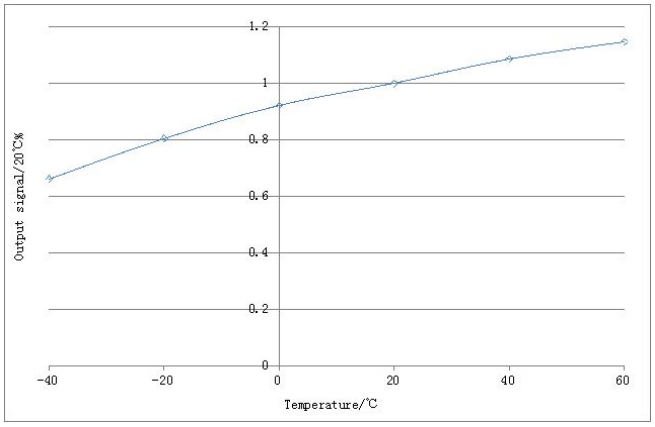


Fig5. Sensor output at different temperature

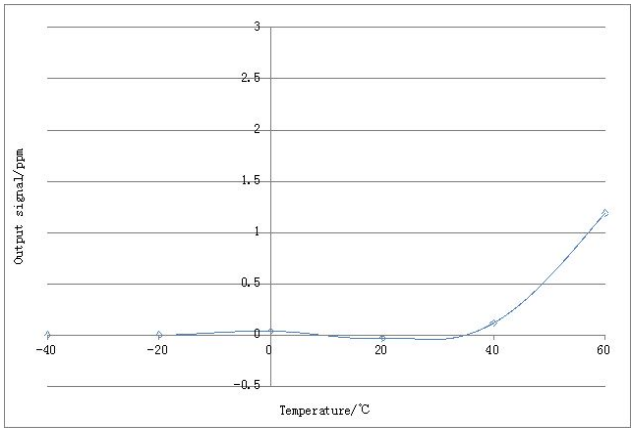


Fig6. Sensor zero at different temperature

Cross Interference

ME4-SO_2 sensor also can respond to other gases besides target gas SO_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-SO_2
CO	200	<2.5
H_2S	50	<0.15
Cl_2	10	<-0.6
C_2H_4	130	<5
H_2	400	<1
Alcohol	1000	<1.5
NH_3	50	<0.1
PH_3	20	<3
NO	35	0
Benzene	100	0
Methanol	200	<0.1

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.

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