ME2-C2H5OH-13×13
Electrochemical Alcohol Sensor

Manual V1.2

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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.

ME2-C2H5OH-13×13 Alcohol sensor

ME2-C2H5OH-13×13 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

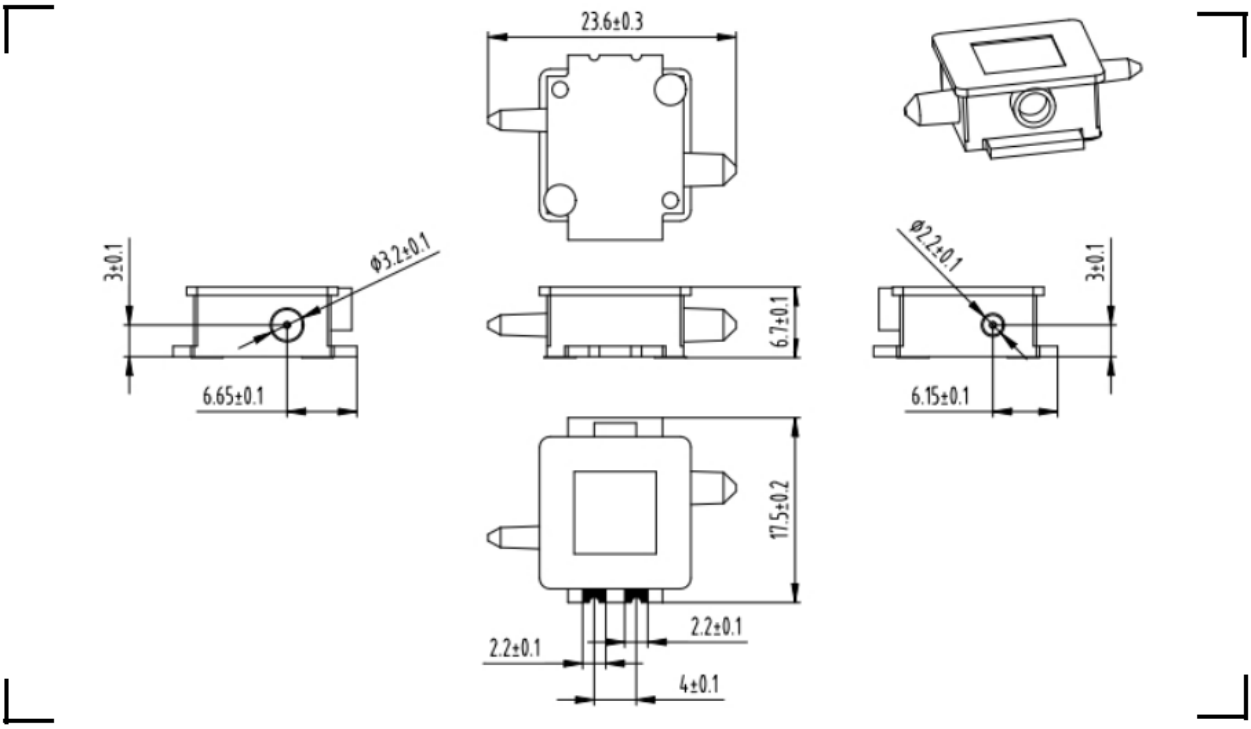
2. Application

Widely used for public traffic, environmental protection and automotive alcohol detection.

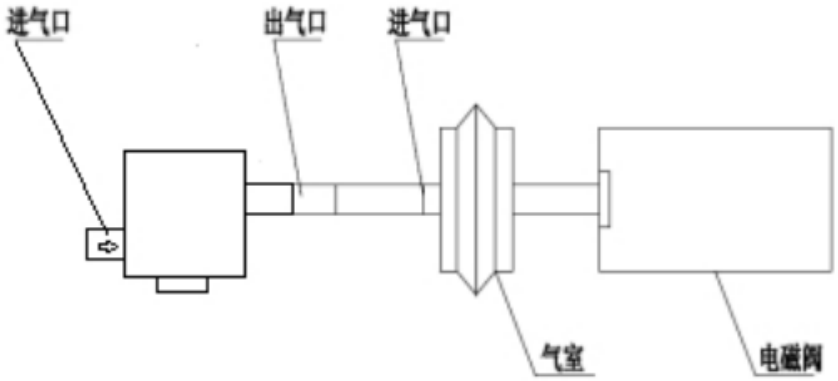
3. Technical Parameters Table1.

Item	Parameter
Detection gas	Alcohol(CH3CH2OH)
Measurement Range	（0～1.0）mg/L
Max detecting concentration	2.0 mg/L
Sensitivity	（15～125）μA/(mg/L)
Response time（T_{90}）	≤20S
Load resistance （recommend）	10Ω
Repeatability	±0.006mg/L
Stability（／month）	＜2％
Output Linearity	linear
Zero drift（-20□～40□）	-0.01 mV～0.01mV
Storage temperature	0□～20□
Temperature Range	0□～40□
Humidity Range	15％～90％RH (no condenstaion)
Pressure range	Standard atmosphere±10%
Anticipated using life	3 years(in air)

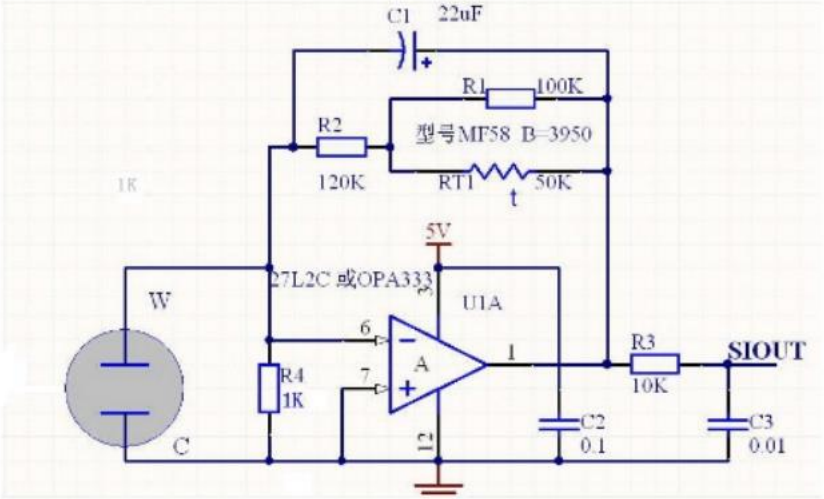
4. Structure



Quantitative air intake control: When using the sensor, a plastic tube is used to connect the sensor outlet to the air inlet of the gas chamber. When the solenoid valve works that the working stroke is controlled, the gas chamber in front of the solenoid valve will suck in a quantitative volume of gas, and the corresponding sensor will also suck in a certain amount of gas inside to to achieve the purpose of quantitative air intake. The diagram below shows the connection between the sensor and the solenoid pump (consisting of a gas chamber and a solenoid valve).

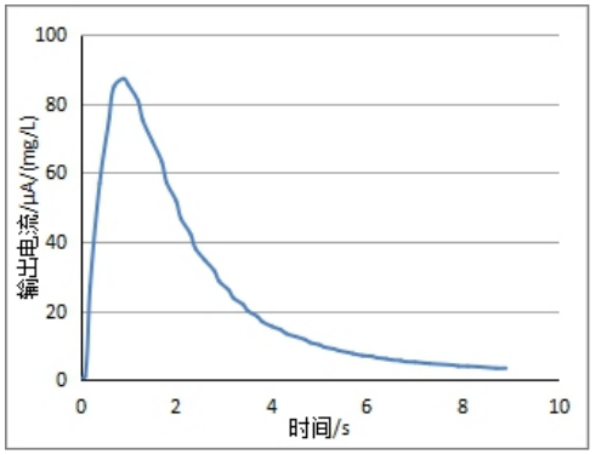


5.Basic circuit

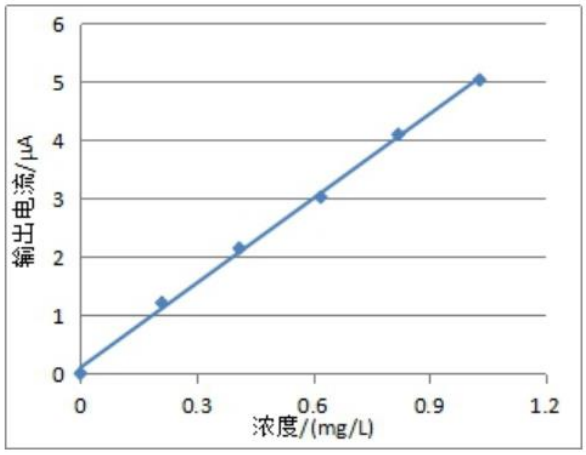


6.Characterization

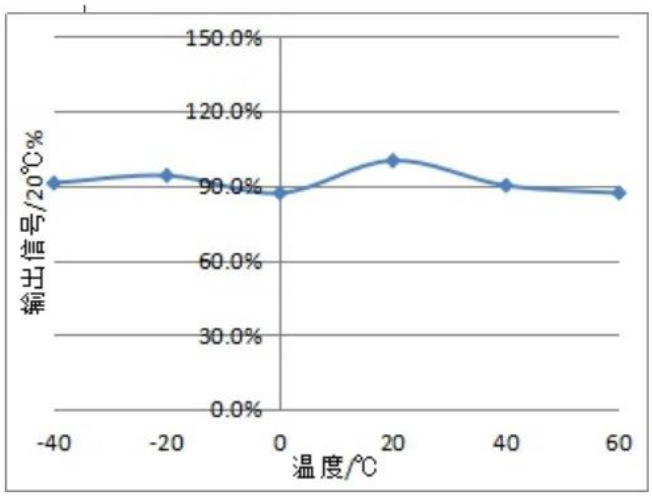
Features of Sensitivity, response and output signal



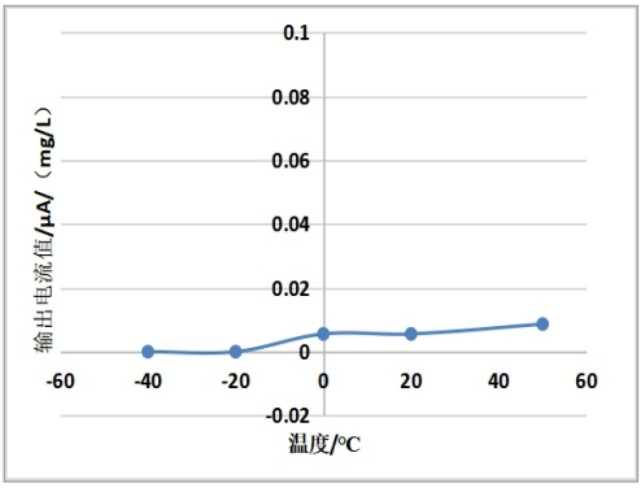
Data graph of concentration linearity features



Output upon variable temperature



V0 Change upon Variable Temperature



7. Application Notes:

- To preheat over 48hs before using;
- It is forbidden to break and bend the PCB;
- Pump suck into gas with precise quantitative air intake;
- Storage temperature 0 - 20 °C;
- Do not take apart the sensor, otherwise electrolyte leakage can cause sensor damage;
- Sensor shall Avoid organic solvent, coatings, medicine, oil and high concentration gases;
- The sensor must not be submerged in an oxygen-free environment for a long time, otherwise the sensor performance will be damaged;
- 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;
- Blowhole of the sensor should not be blocked and polluted,;
- 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;
- Working electrode and reference electrode of the sensor shall be in short circuit when stored;
- Do not use hot melt adhesives or sealants with curing temperatures above 80°C to encapsulate sensors
- It is prohibited to store and use in high concentration of alkaline gas for a long time.

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

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