



ME2-C2H5OH-13×13 Electrochemical Alcohol Sensor

Manual V1.1
(Valid from: 2017-09-25)

Zhengzhou Winsen Electronics Technology Co., Ltd

ME2-C2H5OH-13x13 Alcohol sensor

ME2-C2H5OH-13x13 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

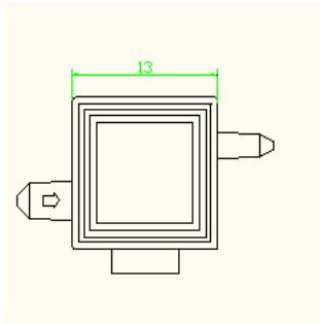
2. Application

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

3. Technical Parameter

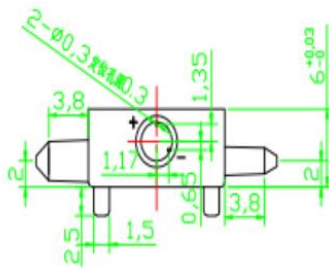
Item	Parameter
Detection gas	C2H5OH Alcohol
Measurement Range	(0~1) mg/L
Max detecting concentration	2 mg/L
Sensitivity	(115±85) μ A/(mg/L)
Response time (T ₉₀)	≤20S
Load resistance (recommend)	10 Ω
Repeatability	±0.006mg/L
Stability (/ month)	<2%
Output Linearity	linear
Zero drift (-20°C~40°C)	-0.01 mV~0.01mV
Storage temperature	0°C~20°C
Humidity Range	15%~90% RH no condensation
Temperature Range	-20°C~50°C
Pressure range	Standard atmosphere±10%
Anticipated using life	2 years(in air)

4. External dimension



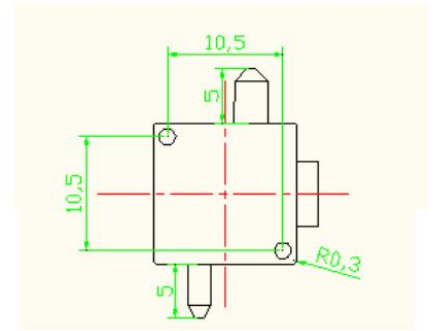
俯视图

From top



侧视图

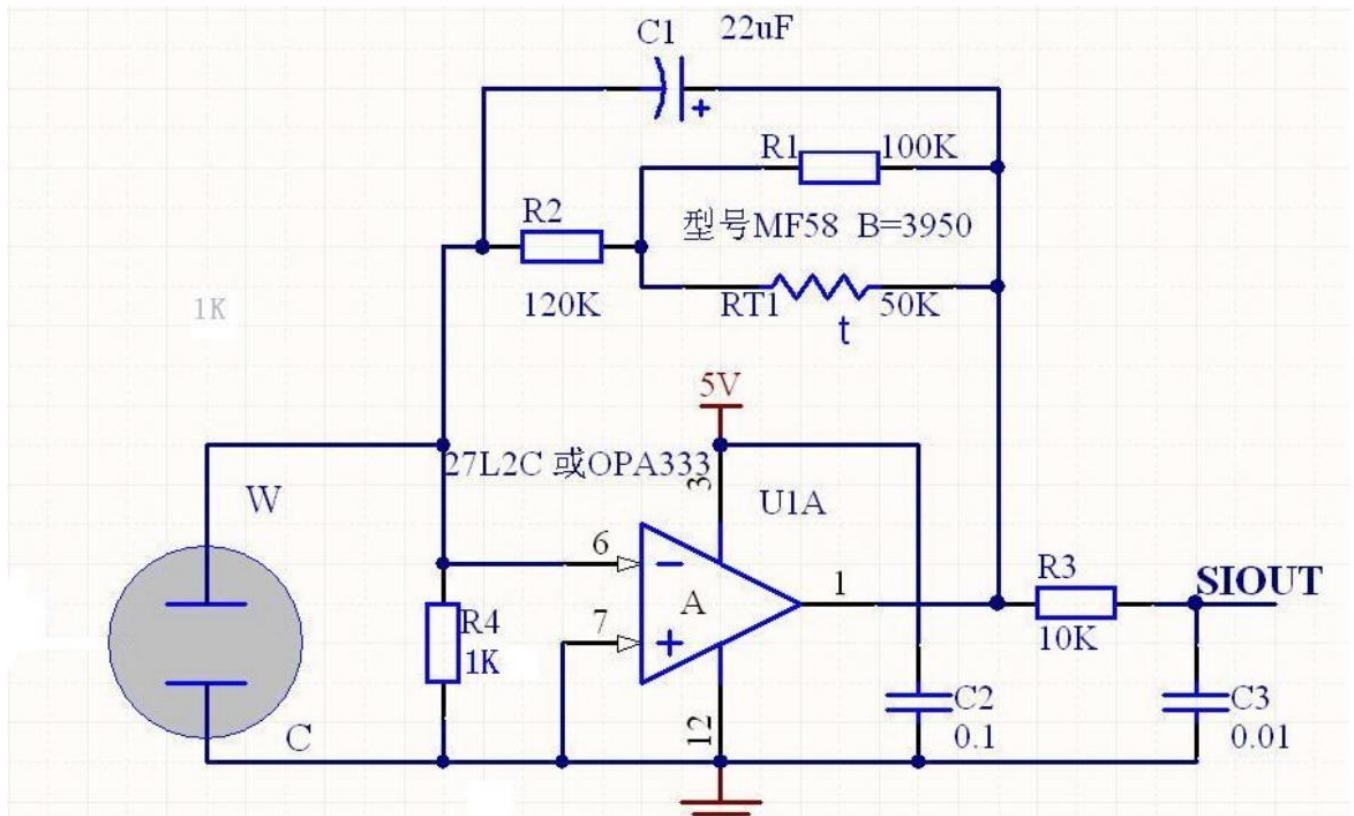
From side



仰视图

From bottom

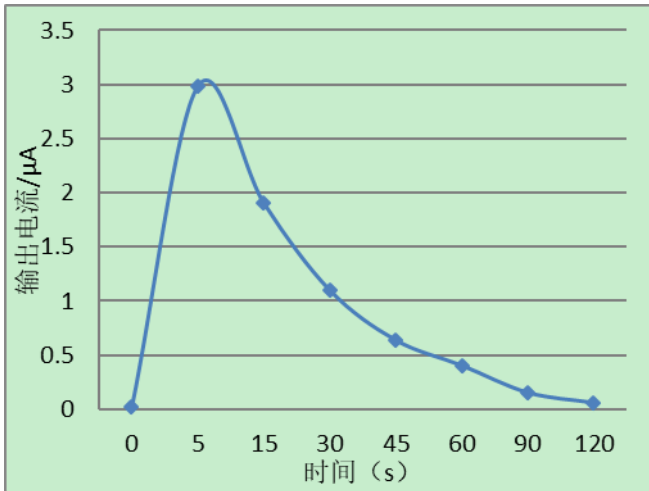
5. Basic circuit



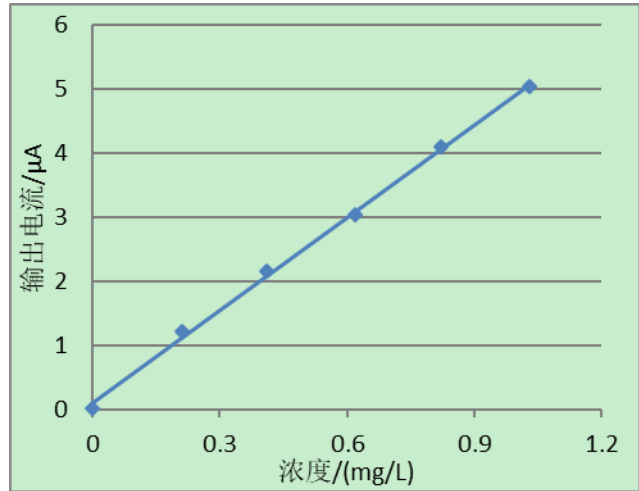
Test circuit of ME2-C2H5OH-D13x13

6.Characterization

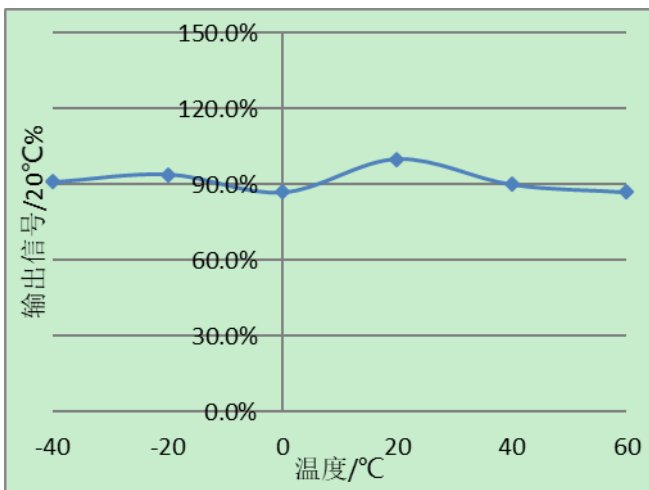
Features of Sensitivity, response and output signal



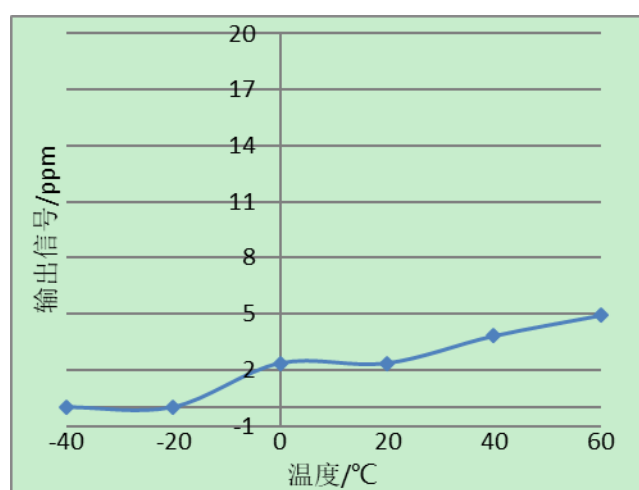
Data graph of concentration linearity features



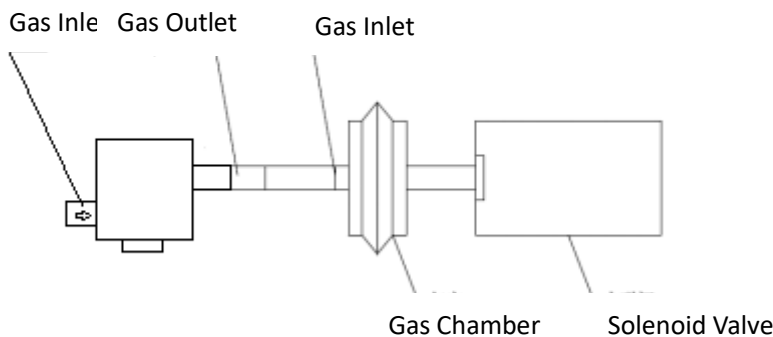
Sensor output upon variable temperature



V0 output upon variable temperature



7. Connection of sensor and pump



Electromagnetic pump includes gas chamber and solenoid valve.

Please note that we don't the electromagnetic pump.

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;
1. Forbid soldering during installation;
 2. The aging time before use is not less than 48 hours;
 3. The pin is prohibited from being broken and bent;
 4. Pumping the intake air to accurately quantify the intake air;
 5. Recommended storage temperature 0-20 ° C;
 6. Electrolyte leakage will cause damage, please do not take apart the sensor;
 7. The sensor should avoid contacting with organic solvents (including silicone rubber and other adhesives), paints, chemicals, oils and high-concentration gases;
 8. The sensor should not be immersed in an oxygen-free environment for long time, otherwise it will damage the performance of the sensor;
 9. The sensor shall not be used in an environment containing corrosive gases, which may damage the sensor;
 10. Zero calibration shall be carried out in a clean atmosphere;

11. When testing and using the sensor, vertical front air intake should be avoided;
12. The air inlet of the sensor shall not be blocked or contaminated;
13. The sensor should not be excessively impacted or vibrated;
14. Do not use it if the outer casing is damaged or deformed;
15. After long-term using in a high concentration gas environment, the recovering process to an initial state is slow;
16. The working electrode and the counter electrode should be in a short circuit state when the sensor is stored;
17. It is forbidden to package the sensor with hot melt adhesive or sealant with curing temperature above 80 °C;
18. It is forbidden to store and use it in high concentration alkaline gas for long time.

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

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