



MQ-E3-C7H8

Electrochemical sensor

Manual

(Model: MQ-E3-C₇H₈)

Taiyuan Tengxing sensor technology Co., Ltd

MQ-E3-C₇H₈ gas sensor

MQ-E3-C₇H₈ 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



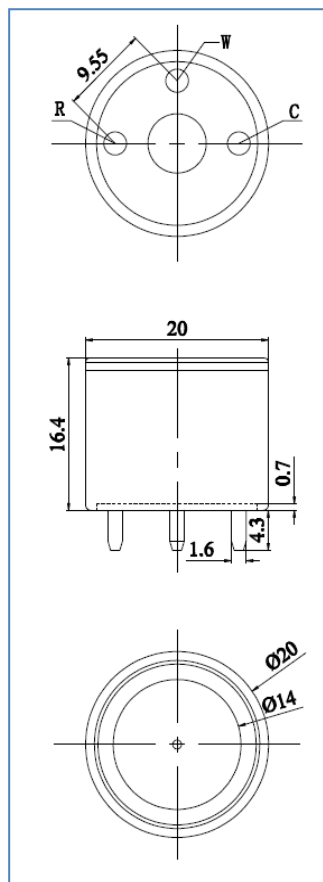
2 Application

Widely used in in industrial and environmental fields

3. Technical Parameter

Item	Parameter
Detection gas	C ₇ H ₈
Measurement Range	0~500ppm
Max detecting concentration	1000ppm
Sensitivity	(0.04±0.01) μA/ppm
Resolution ratio	1ppm
Response time (T ₉₀)	≤120S
Bias voltage	300mV
Load resistance (recommend)	10 Ω
Repeatability	<2 % output value
Stability (/ month)	<2 %
Output Linearity	linear
Zero drift (-20℃~40℃)	≤4ppm
Storage temperature	-20℃~50℃

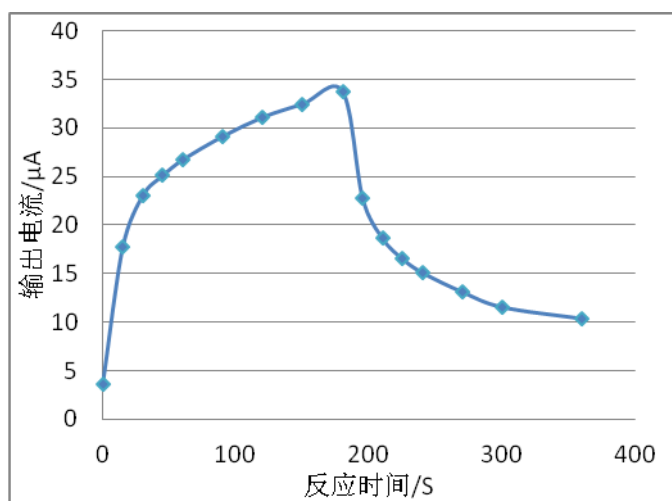
4. External dimension



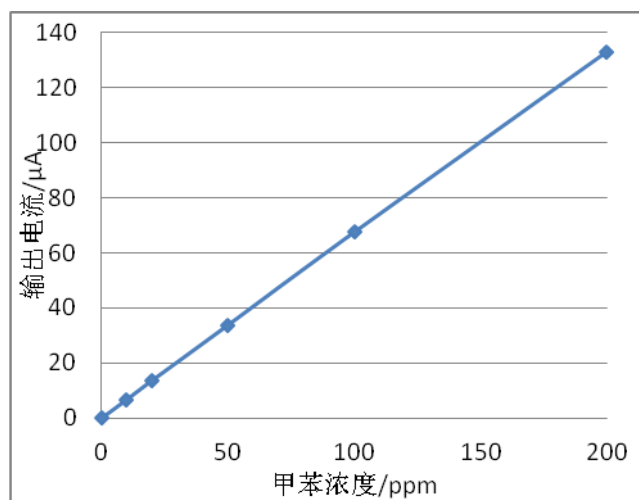
Storage Humidity	15%~90% RH
Pressure range (kPa)	90-110
Anticipated using life	1 years

5.Characterization

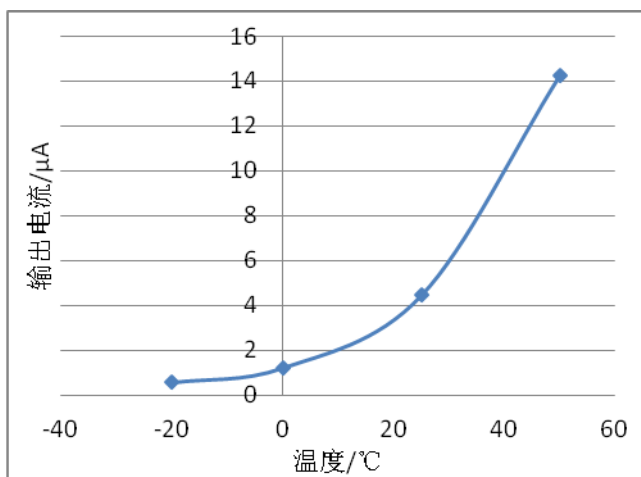
Features of Sensitivity, response and output signal



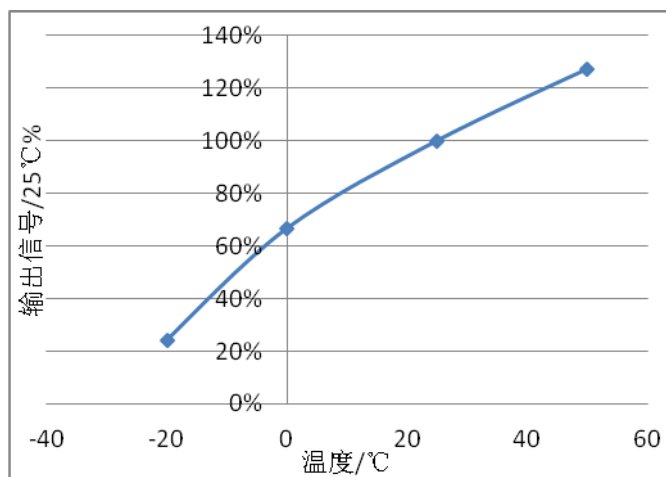
Data graph of concentration linearity features



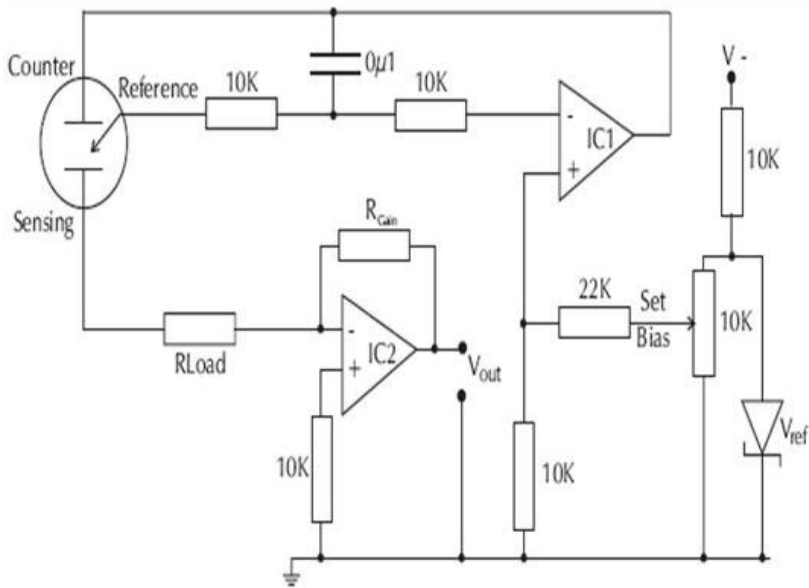
V0 Change upon Variable Temperature



Sensitivity upon variable temperature



6.Basic circuit



7.Anti-Interference:

MQ-E3-C₇H₈ sensor also responds to other gases besides target gas. Below are the response characteristics of interferential gases

Gas	Concentration	MQ-E3-C ₇ H ₈
C ₇ H ₈	1ppm	1ppm
CH ₂ CHCL	100ppm	169ppm
ETO	10ppm	27ppm
(C ₂ H ₅) ₂ O	50ppm	30ppm
CH ₃ COOH	50ppm	20ppm
C ₆ H ₆	50ppm	31ppm
C ₈ H ₁₀	50ppm	66ppm
CHCL ₃	50ppm	18ppm
CH ₂ O	10ppm	216ppm
CO	200ppm	140ppm
C ₂ H ₅ OH	300ppm	416ppm
H ₂ S	50ppm	148ppm
SO ₂	20ppm	16ppm
CL ₂	10ppm	1.4ppm

8.Application Notes:

- Sensor shall Avoid organic solvent, coatings, medicine, oil and high concentration gases;
- All MQ-E Sensors shall not be encapsulated completely by resin materials, and shall not immerse in oxygen-free environment, otherwise, it will damage the function of sensor;
- All MQ-E 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;

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