MQ-E3-PH_3
Electrochemical sensor

Manual

（Model：MQ-E3-PH_3）

Taiyuan Tengxing sensor technology Co., Ltd

MQ-E3-PH_3 gas sensor

MQ-E3-PH3 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

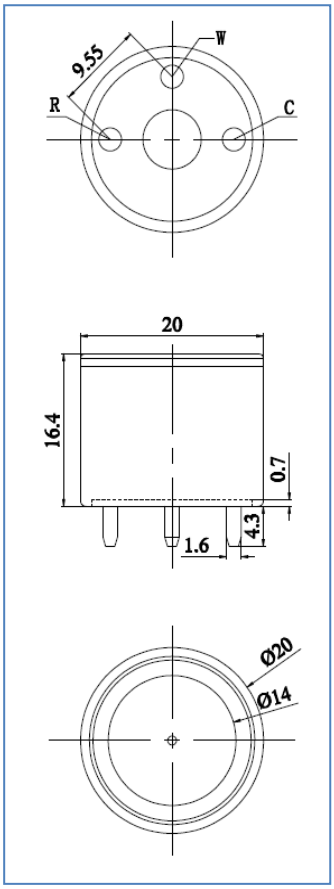
2 Application

Widely used in industrial and environmental pro ec on e s

3. Technical Parameter

Item	Parameter
Detection gas	PH_3
Measurement Range	0～10ppm
Max detecting concentration	20ppm
Sensitivity	（1.70±0.30）μA/ppm
Resolution ratio	0.05ppm
Response time（T_{90}）	≤30S
Bias voltage	0mV
Load resistance （recommend）	10Ω
Repeatability	＜2％output value
Stability（/ month）	＜2％
Output Linearity	linear
Zero drift（-20℃～40℃）	0.7ppm
Storage temperature	-20℃～50℃

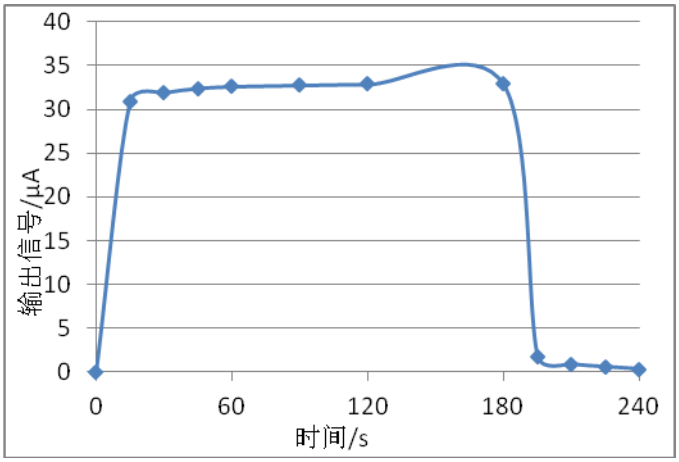
4. External dimension



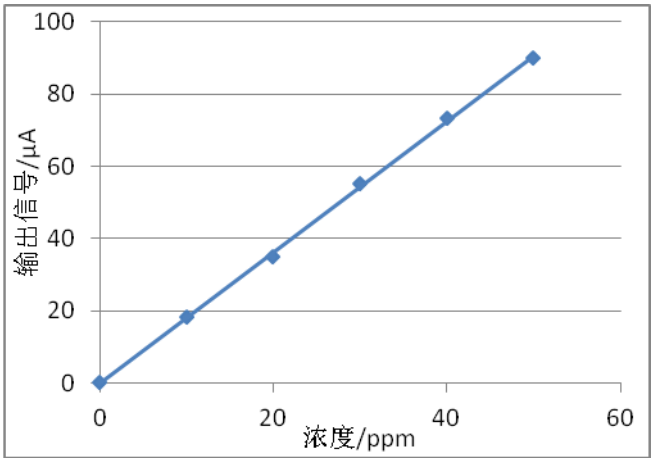
Storage Humidity	15％～90％RH
Pressure range（kPa）	90-110
Anticipated using life	2 years（In air）

5.Characterization

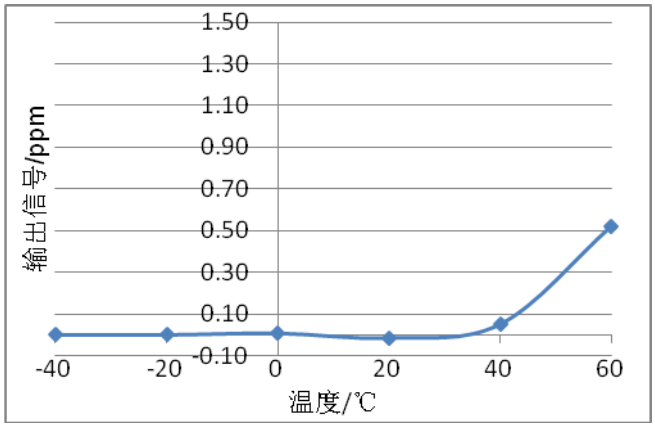
Features of Sensitivity, response and output signal



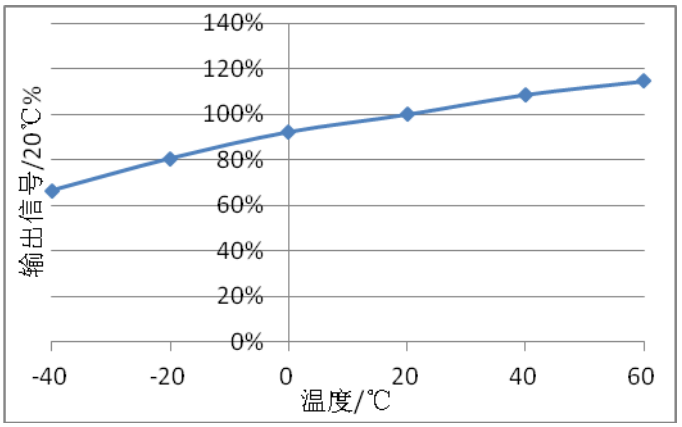
Data graph of concentration linearity features



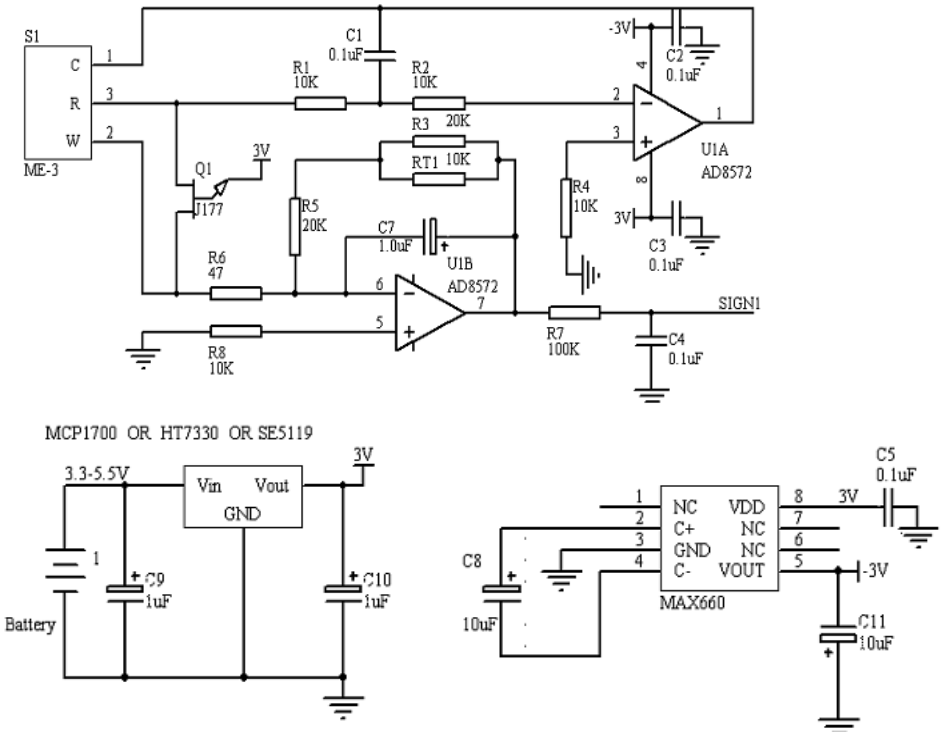
V0 Change upon Variable Temperature



Sensitivity upon variable temperature



6.Basic circuit



7.Anti-Interference:

MQ-E3-PH_3 sensor also responds to other gases besides target gas. Below are the response characteristics of interferential gases

Gas	Concentration	MQ-E3-PH_3
CO	200ppm	＜0.4ppm
H2S	50ppm	＜15ppm
CL2	10ppm	＜-0.5ppm
C2H4	130ppm	＜0.7ppm
H2	400ppm	＜0.2ppm
C2H5OH	1000ppm	＜0.3ppm
NH3	50ppm	＜0.05ppm
SO2	20ppm	＜3.5ppm
CH2O	10ppm	＜3.5ppm
C6H6	100ppm	＜0.15ppm
CH3OH	200ppm	＜0.02ppm

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 oxygen-free 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;