Winsen 炜盛科技

UE-NH_3
Long-acting Gas Sensor

Manual

（Model：UE-NH_3）

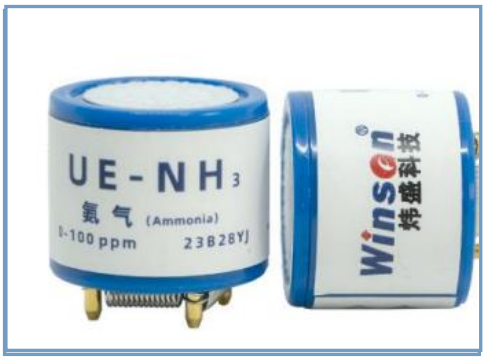
Version: 1.0

Valid from: 2023-3-3

Zhengzhou Winsen Electronics Technology Co., Ltd

UE-NH_3 Electrochemical Gas Sensor

UE-NH3 long-acting ammonia sensor is a constant potential electrolytic electrochemical sensor. Ammonia undergoes an oxidation-reduction reaction inside the sensor and releases electric charges to form a current. The concentration of ammonia can be determined by measuring the magnitude of the current.



1.Features

* Low consumption
* High precision
* High sensitivity
* Wide linear range
* Good anti-interference ability
* Excellent repeatability and stability

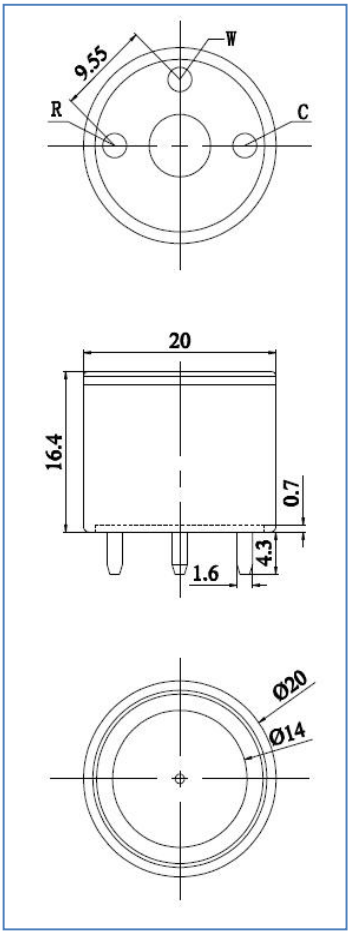
2. Application

Widely used to detect and monitor ammonia in animal husbandry, industry, and environmental protection etc.

3. Technical Parameter

Detection gas	Ammonia NH_3
Measurement Range	0～100ppm
Max detecting concentration	200ppm
Sensitivity	（80～160）nA/ppm
Resolution ratio	0.5ppm
Response time（T_{90}）	≤120S
Bias voltage	0mV
Load resistance(recommended)	10Ω
Repeatability	＜2％output value
Stability（/ month）	＜2％
Output Linearity	linear
Zero drift（-20℃～40℃）	-3～10ppm
Storage temperature	-25℃～60℃
Storage Humidity	15％～90％RH
Pressure range	Standard atmosphere ±10%
Anticipated using life	5 years（in air）

4. External dimension



Description of sensor characters

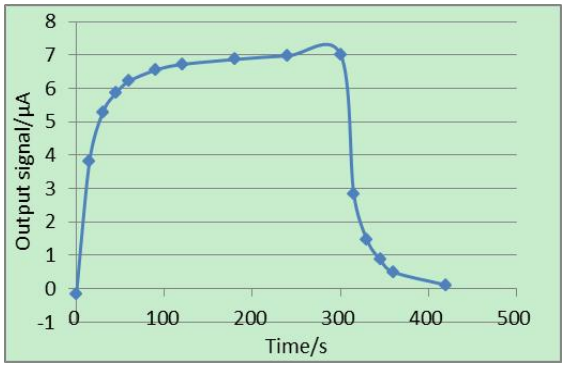


Fig3. Response and Resume

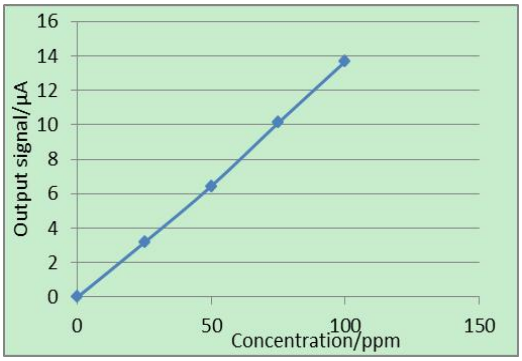


Fig4. Linearity

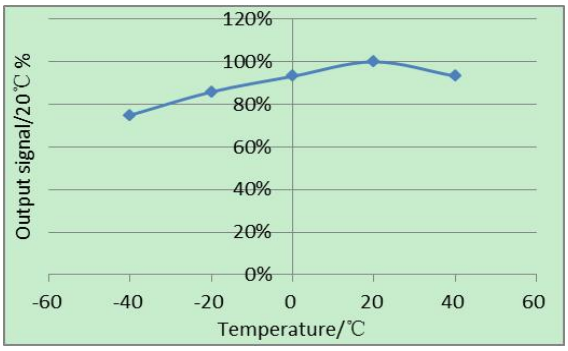


Fig5. Output of sensor at different temperature

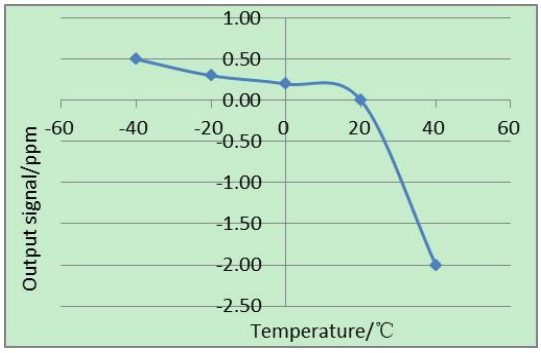
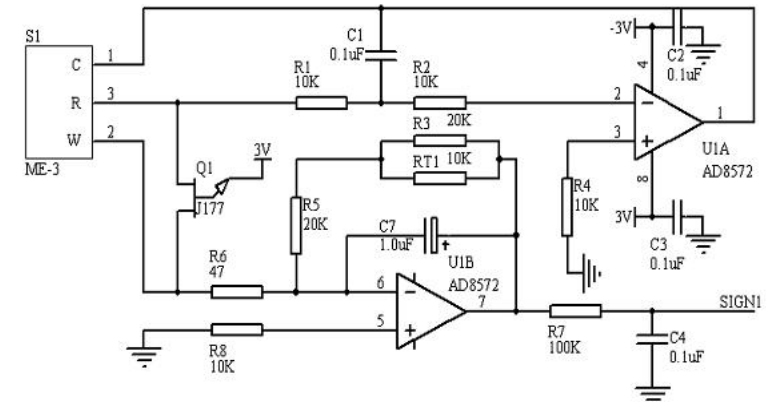
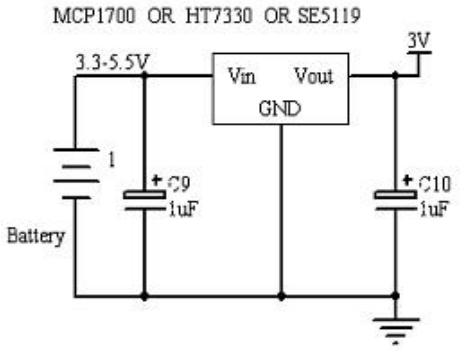
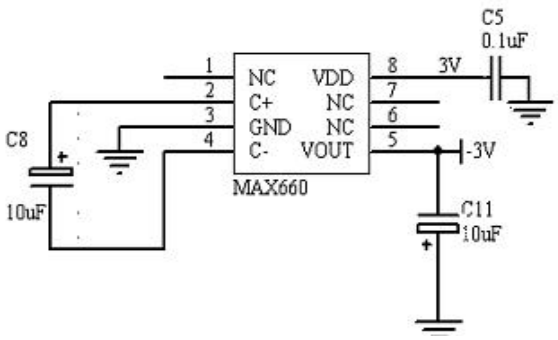


Fig6. Zero output of sensor at different temperature

6.Basic circuit







7.Anti-Interference:

UE-NH_3 sensor also responds to other gases besides target gas. Below are the response characteristics of interferential gases

Gas	Concentration	UE-NH_3
CO	200ppm	＜10ppm
H2S	50ppm	＜22ppm
CL2	10ppm	＜6.6ppm
SO2	20ppm	＜2ppm
HCL	10ppm	＜10ppm
NO2	10ppm	＜2ppm
NO	1ppm	＜10ppm

8.Application Notes:

- Sensor shall Avoid organic solvent, coatings, medicine, oil and high concentration gases；
- All electrochemical 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 electrochemical 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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