



## Electrochemical gas sensor instructions

Model: MQ-E3-NH3

Version: 1.0

Date: Jan.1st, 2021

Taiyuan Tengxing sensor technology Co., Ltd

## Declaration

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## 1. Description

MQ-E3-NH<sub>3</sub> is the sensor of fixed potential electrolysis type. By redox reaction, NH<sub>3</sub> and O<sub>2</sub> release charge and form the current. The value of current is proportional to the concentration of NH<sub>3</sub> and follow the Faraday's Law. By testing the value of current, the concentration of NH<sub>3</sub> is known.

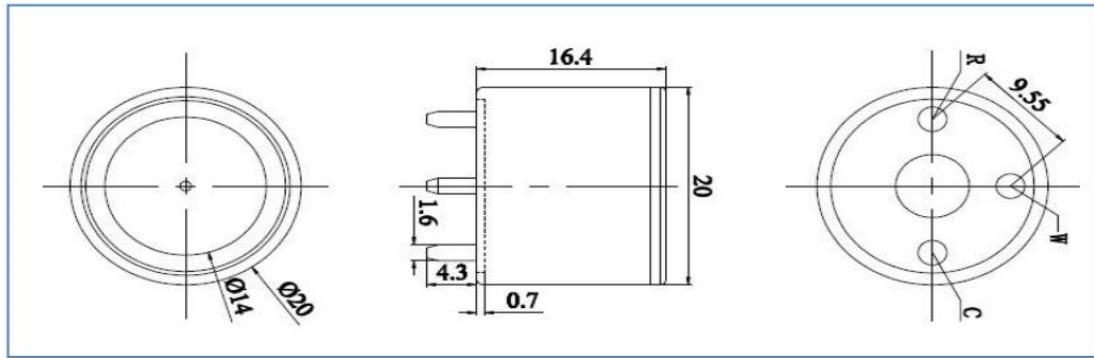
## 2. Characteristics

- (1) Low power consumption.
- (2) High accuracy.
- (3) High sensitivity.
- (4) Be stable.
- (5) Wide linear range.
- (6) Excellent repeatability.
- (7) Anti-jamming.

## 3. Application

Widely used in industry or environmental protection field for detecting NH<sub>3</sub>.

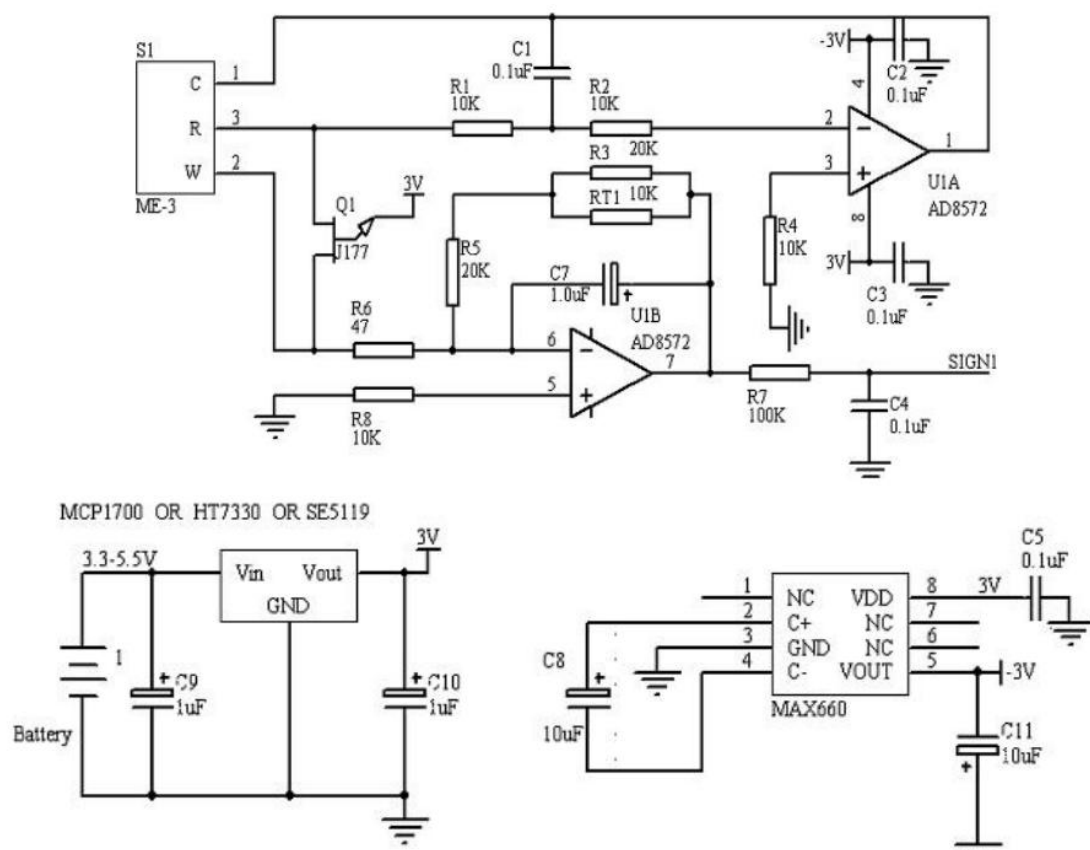
## 4. Appearance and dimension



## 5. Technical specifications

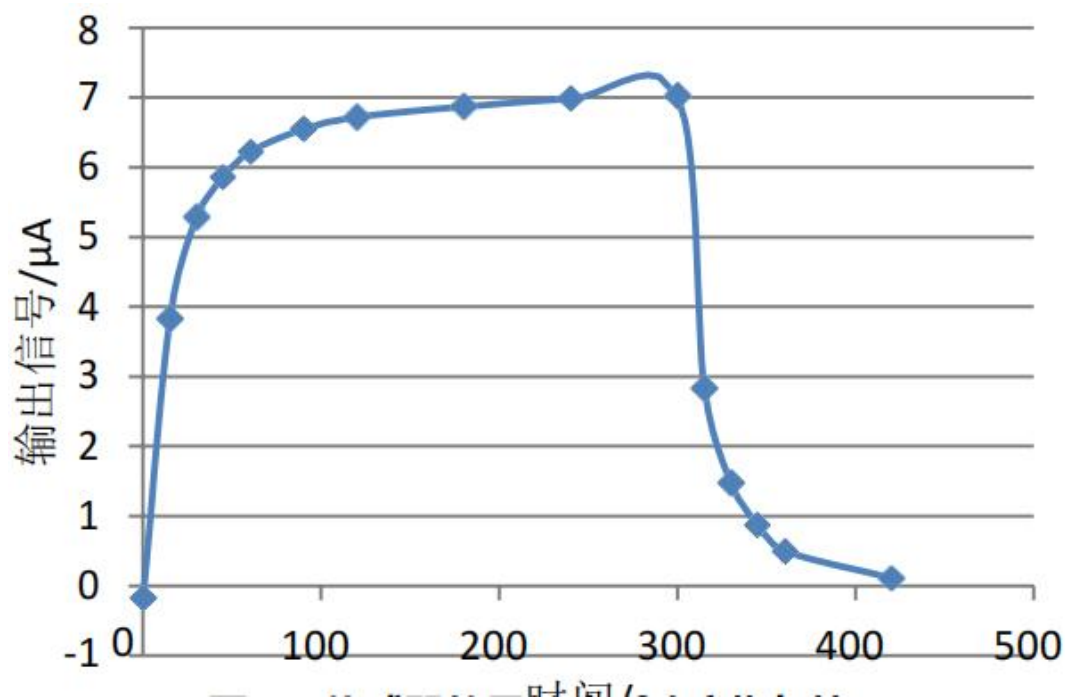
- (1) Media: NH<sub>3</sub>
- (2) Measuring range: 0-100ppm
- (3) Max. measuring limit: 200ppm
- (4) Sensitivity: (80-160) nA/ppm
- (5) Resolution ratio: 0.5ppm
- (6) Response time: ≤60s
- (7) Bias voltage: 0mV
- (8) Load resistor(recommended): 10 Ω
- (9) Repeatability: <10% output value
- (10) Stability(/Month): <10%
- (11) Output linearity: linearity
- (12) Zero drift(-20℃~+40℃): -3~10ppm
- (13) Temperature range: -20℃~+50℃
- (14) Humidity: 15%-90%RH
- (15) Pressure: standard air pressure ± 10%

## 5. Test circuit

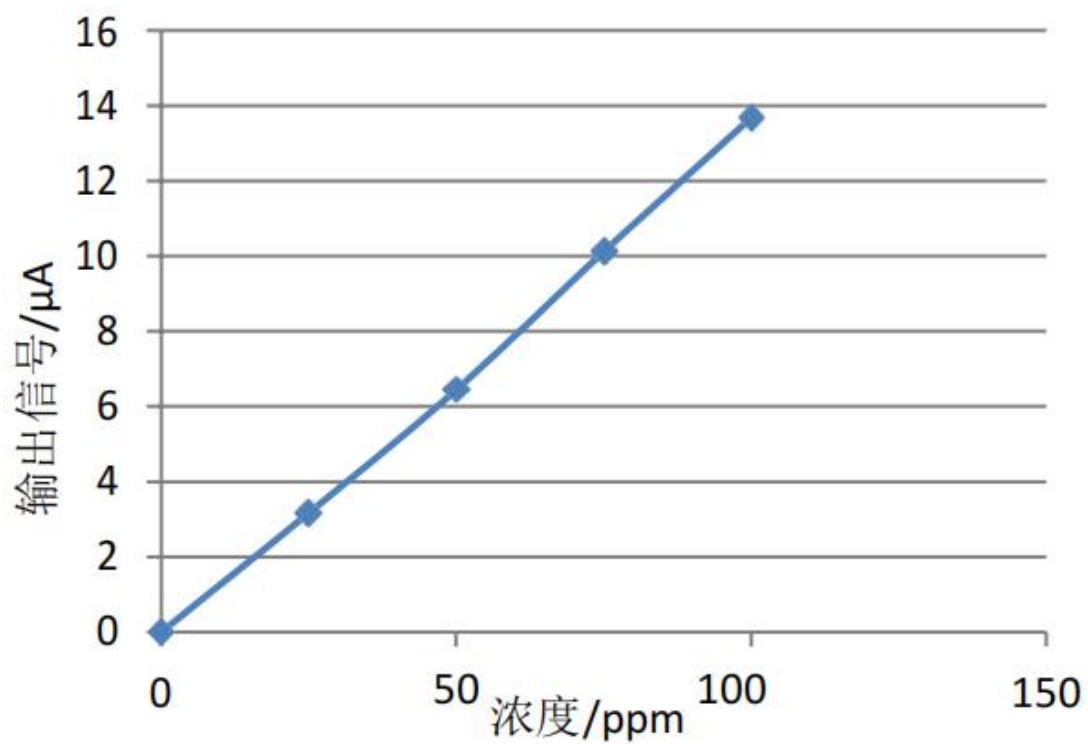


## 6.Characteristic curve of sensor

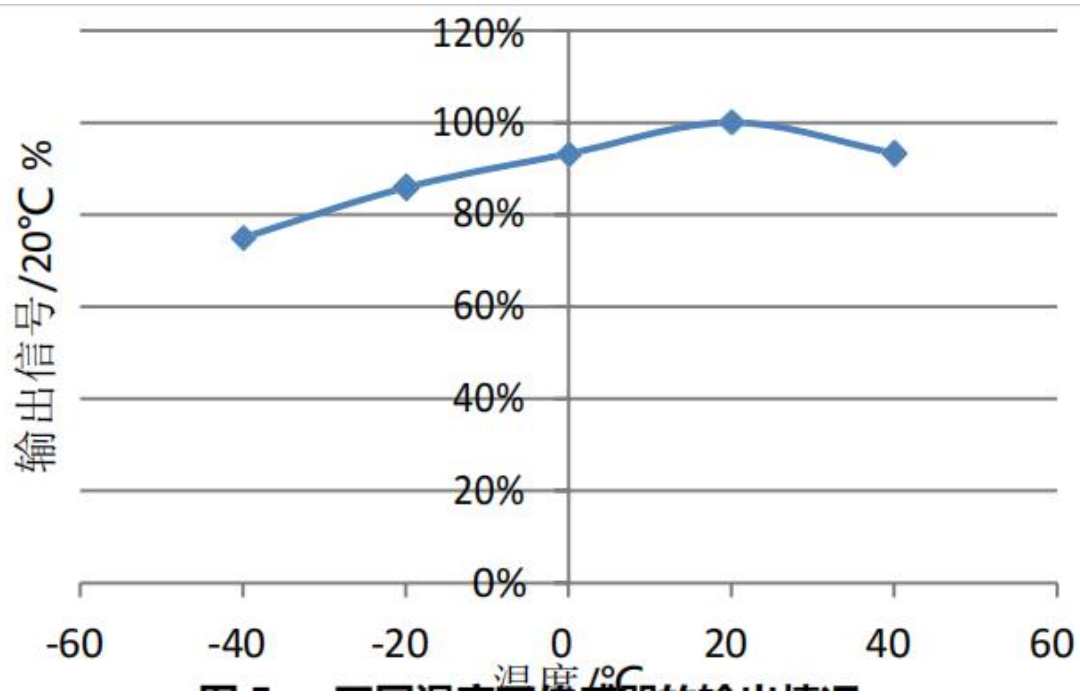
### (1) Sensitive curve



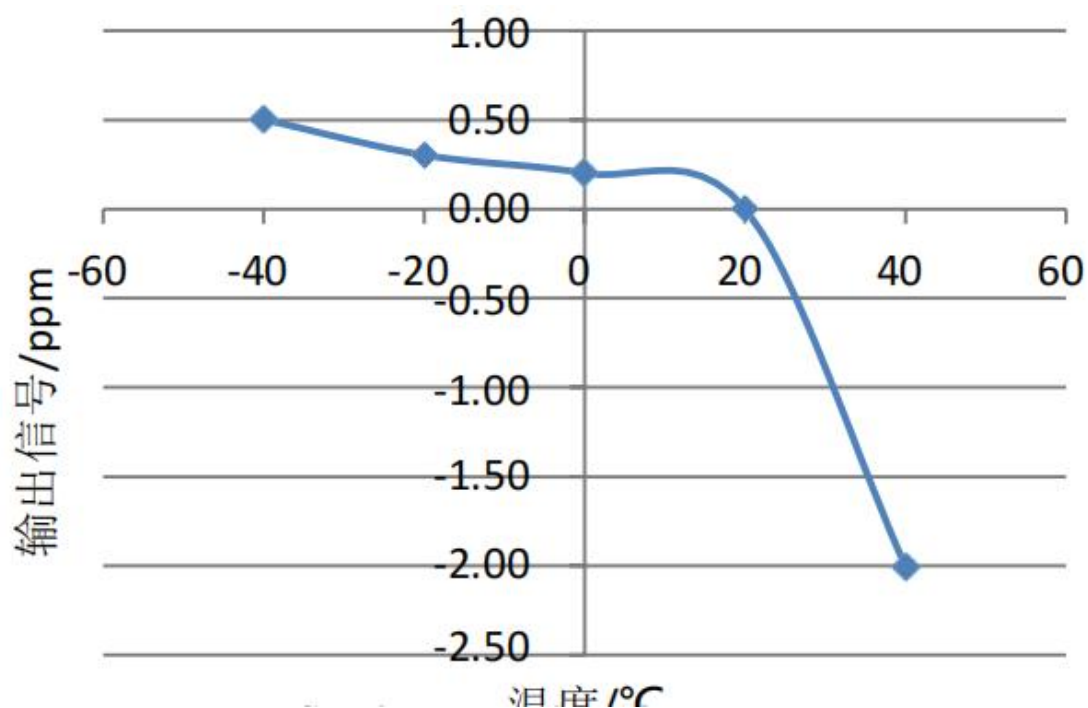
### (2) Linearity curve



(3) Output signal in different temperature



(4) Zero point output in different temperature



## 7. Cross interference characteristics sheet

MQ-E3-NH3 sensor makes response to other gas besides target gas.

cross interference characteristics sheet		
gas	concentration	MQ-E3-NH3
CO	200ppm	<-6ppm
H2S	50ppm	<25ppm
Cl2	10ppm	<-7ppm
Ethylene	100ppm	0ppm
H2	10000ppm	<14ppm
C2H5OH	1000ppm	<20ppm
SO2	20ppm	<9ppm
PH3	20ppm	<18ppm
HCHO	10ppm	<38ppm

Benzene	100ppm	<0.7ppm
CH <sub>3</sub> OH	200ppm	<4ppm

## 8. Attention

- (1) Soldering is prohibited.
- (2) Aging time before using should be more than 48 hours.
- (3) Don't disassemble the sensor without permission.
- (4) Don't let the sensor connected with organic solvent(including silicon rubber or other adhesive), coating material, medicament, fuel oil and high concentration gas.
- (5) All electrochemical sensor cannot be fully sealed with resin material. Being exposed in the environment without oxygen will damage the sensor.
- (6) Being exposed in the environment with corrosive gas will damage the sensor.
- (7) Zero point should be tested in clean air.
- (8) Front intake or vertical intake is prohibited when testing or working.
- (9) The inlets shouldn't be polluted or clogged.
- (10) Shaking or impacting is not allowed.
- (11) Don't use if the shell is broken or out of shape.
- (12) It's slow to recover to initial condition if used in the environment with high concentration gas for a long time.



(13) The working electrode and counter electrode should be short-circuited when storing.

(14) Don't seal with melt adhesive or sealant whose curing temperature is higher than 80°C.

(15) Don't use or store in the environment with high concentration alkaline gas.

## 9. Quality-guarantee

(1) The products are supplied strictly in accordance with customers' requirement, any defective goods are available to change or refund.

(2) The working time of components will be more than 2 years(in air).

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