

# AMMONIA SENSOR

## RY-CN<sub>H</sub>3

## MANUAL



### INTRODUCTION

The NH<sub>3</sub> sensor according to the principle of electrochemistry, uses the electrochemical oxidation process of the gas to be measured on the working electrode in the electrolytic cell. The working electrode and the reference electrode of the electrolytic cell are kept at a proper potential by the electronic circuit. The electrochemical oxidation of the gas under test can occur, because the Faraday current generated by the oxygen during the oxidation and reduction reactions is small and can be ignored, so the current generated by the electrochemical reaction of the gas under test is proportional to its concentration and follows Faraday's law . In this way, the concentration of the gas to be measured can be determined by measuring the magnitude of the current.

## APPLIACATION

This product is widely used in ammonia detection in industrial, underground and environmental protection.

## FEATURES

- ▲Low power consumption
- ▲High accuracy
- ▲High sensitivity
- ▲Wide linear range
- ▲Strong anti-interference ability
- ▲Excellent repeatability and stability

## TECHNICAL SPECIFICATION

- Product Type: Electrochemical Gas Sensor
- Detection range: 0—100ppm
- Measurement limit :200ppm
- Life expectancy> 12 months
- Sensitivity:  $0.10 \pm 0.03\mu\text{Apm}$
- Resolution: 0.5ppm
- Temperature range:  $-20\text{ }^{\circ}\text{C} \sim +50\text{ }^{\circ}\text{C}$
- Pressure range: Standard atmospheric pressure  $\pm 10\%$
- Response time:(T90)  $\leq 150\text{S}$
- Humidity range :15% —90% RH non-condensing
- Zero drift :( $-20\text{ }^{\circ}\text{C} \sim +40\text{ }^{\circ}\text{C}$ ) -3 ~ 10ppm
- Stability (/ month)  $< 10\%$
- Load resistance (recommended)  $10\ \Omega$
- Repeatability  $< 10\%$  output value
- Output linearity: linear
- Product weight: about 200g
- Shell size: 140mm x 30mm

## INSTALLATION & USE

### 1.Choice of installation location.

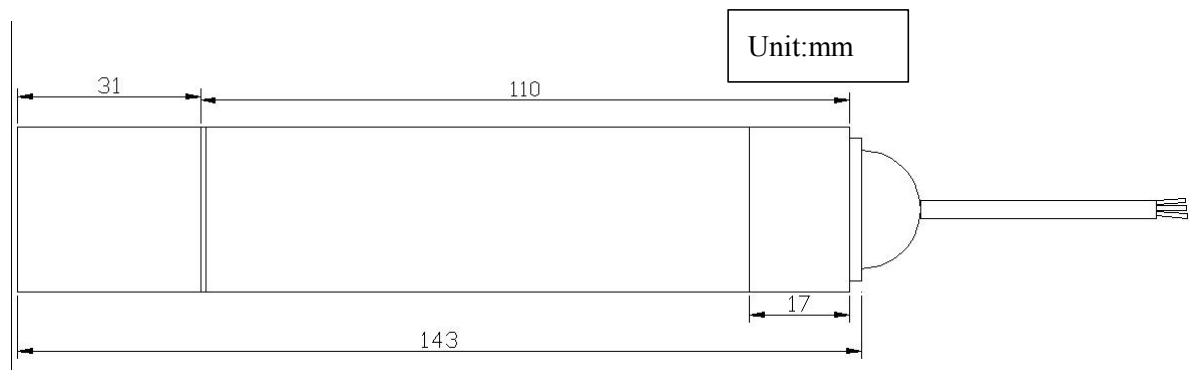
This product can be installed indoors and outdoors, and away from high-power electrical equipment to prevent interference.

### 2.Fixed way

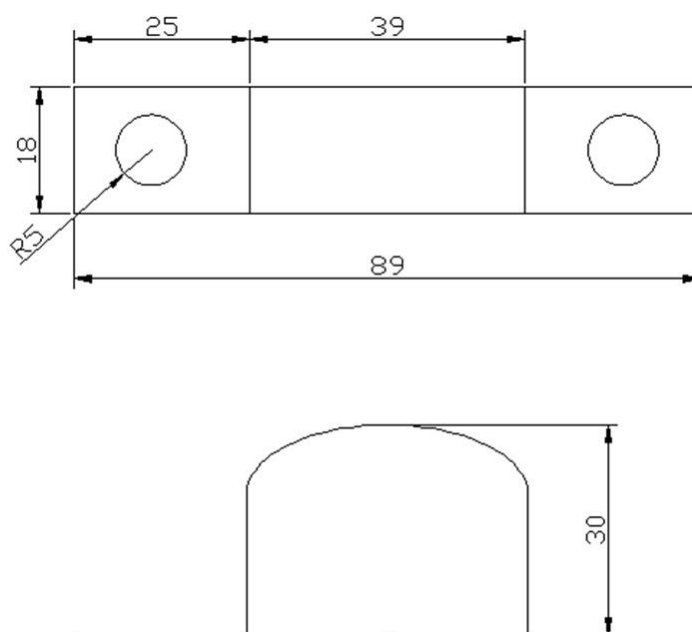
U-shaped clip,To test whether the data collection is normal after fixing the product on the mounting bracket or indoor wall. If it is abnormal, please check whether the cable plug is connected well.

## SIZE

### 1.Sensor size



### 2. U-shaped clip



## COMMUNICATION PROTOCOL

Communication specification

Baud rate: 9600

Data bit: 8

Stop bit: 1

Check bit: None

Flow control: None

Unified format of data package

(XX: slave station No. 0x01-0xff; crclo crchi: CRC check code low byte first, high byte last)

Write station number command

Host send command format:

Device address    Function code    Start register address    No. of registers    Data length  
Data CRC check

xx    10    0001    0001 02    00xx    CRCloCRChi (XX=0X01-0XFF)

Slave response command format:

Device address    Function code    Start register address    No. of registers    CRC check  
xx    10    0001    0001    CRCloCRChi

Example:

Command 00 10 00 01 00 01 02 00 33 EA 04

Respond 00 10 00 01 00 01 51 D8

Read station number command (fixed command)

Host send command format:

Device address    Function code    Start register address    No. of registers    CRC check  
00    03    0001    0001    CRCloCRChi

Slave response command format:

Device address    Function code    Data length    Data    CRC check  
00    03    02    00xx    CRCloCRChi (XX=01-ff)

Example:

Command 00 03 00 01 00 01 D4 1B

Respond 00 03 02 00 FF C5 C4

Read station number command

Host send command format:

Device address    Function code    Start register address    No. of registers    CRC check  
xx    03    0000    0001    CRCloCRChi

Slave response command format:

Device address    Function code    Data length    Data    CRC check  
xx    03    02    00yy    CRCloCRChi

Example:

Command FF 03 00 00 00 01 91 D4

Respond FF 03 02 02 08 91 36

Note: Ammonia value=02 08 (hexadecimal) =  $520/10=52$  (Decimal) ppm

## WARRANTY & SERVICE

**Warranty commitment:** the warranty period is 12 months from the delivery period (except for the product problems caused by the failure to operate according to the corresponding technical requirements or other human behaviors).

**After sales commitment:** users can consult relevant technical problems by phone and get clear solutions. If it is a quality problem, it can be returned to the factory for maintenance or replacement.

**Service Phone:** 0310-8033736