Product Introduction

This sensor uses the MODBUS-RTU protocol, allowing the host computer to monitor data through RS485 communication. When paired with the UbiBot device, it enables remote measurement and online monitoring on a computer platform or mobile app. It features high accuracy, good linearity, wide compatibility, ease of installation, and long transmission distance.

Use Case Scenarios

Widely used in factories, chemical industry, fertiliser, pharmaceuticals and other real-time monitoring of ammonia.

Features

1. High performance imported bearings, low rotation resistance, accurate measurement.
2. Stronger stability and anti-interference ability.
3. Standard audio interface design, plug and play.
4. Wide voltage input, DC10-30V.

Product Specifications

Specifications	
Model	UB-NH3-I1
Power Supply	DC 10~30V
Max Current	834mA（@12V）
Measuring Range	0~500ppm
Resolution	1ppm
Accuracy	±5%FS（@100ppm、25℃、50%RH）氧气含量：≥18%VOL
Working Environment	-20~50℃
Connector	Audio
Dimensions	110*85*44mm
Cable Length	3m
Communication Protocol	RS485 Modbus RTU Protocol
RS485 Address	0xC8
Baud Rate	1200 bit/s,2400 bit/s, 4800 bit/s, 9600 bit/s (default), 19200 bit/s

Wiring Instruction

Communication protocols

1. Communication basic parameters

Communication Basic Parameter	
Coding System	8–bit binary
Data Bit	8 bits
Parity Checking Bit	none
Stop Bit	1 bit
Error Checking	CRC Check
Baud Rate	1200 bit/s, 2400 bit/s, 4800 bit/s, 9600 bit/s (default), 19200 bit/s

2. Data Frame Format

The Modbus-RTU communication protocol is used in the following format:

- Initial structure ≥ 4 bytes in time.
- Address code: 1 byte, default 0xC8.
- Function code: 1 byte, support function code 0x03 (read only) and 0x06 (read/write).
- Data area: N bytes, 16-bit data, high byte comes first.
- Error check: 16-bit CRC code.
- End structure ≥ 4 bytes of time.

Request					
Slave Address	Function Code	Register Address	No. of Registers	CRC LSB	CRC MSB
1 byte	1 byte	2 bytes	2 bytes	1 byte	1 byte
Response							
Slave Address	Function Code	No. of Bytes	Content 1	Content 1	...	Content n	CRC
1 byte	1 byte	1 byte	2 bytes	2 bytes	...	2 bytes	2 bytes

3. Register Address

Register Address				
Address (hex)	Content	Register Length	Function Code	Description of definitions
0x0000/0002	Ammonia Value	1	03	Integer data
0x07D0	Address	1	03/06	1 ~ 255

NOTE

1. Do not install the equipment for use in a strong convection air environment.

2. The equipment should avoid contact with organic solvents (including silicone and other adhesives), paints, chemicals, oils and highly concentrated gases.

3. The device should not be used for a long time in an environment containing corrosive gases, which can damage the sensor.

4. Do not place the device for a long time in a high concentration of organic gases, long-term placement will lead to sensor zero point drift, slow recovery.

5. Prohibit long time storage and use in high concentration of alkaline gas, avoid strong sunlight direct exposure to the sensor and lead to high temperature.