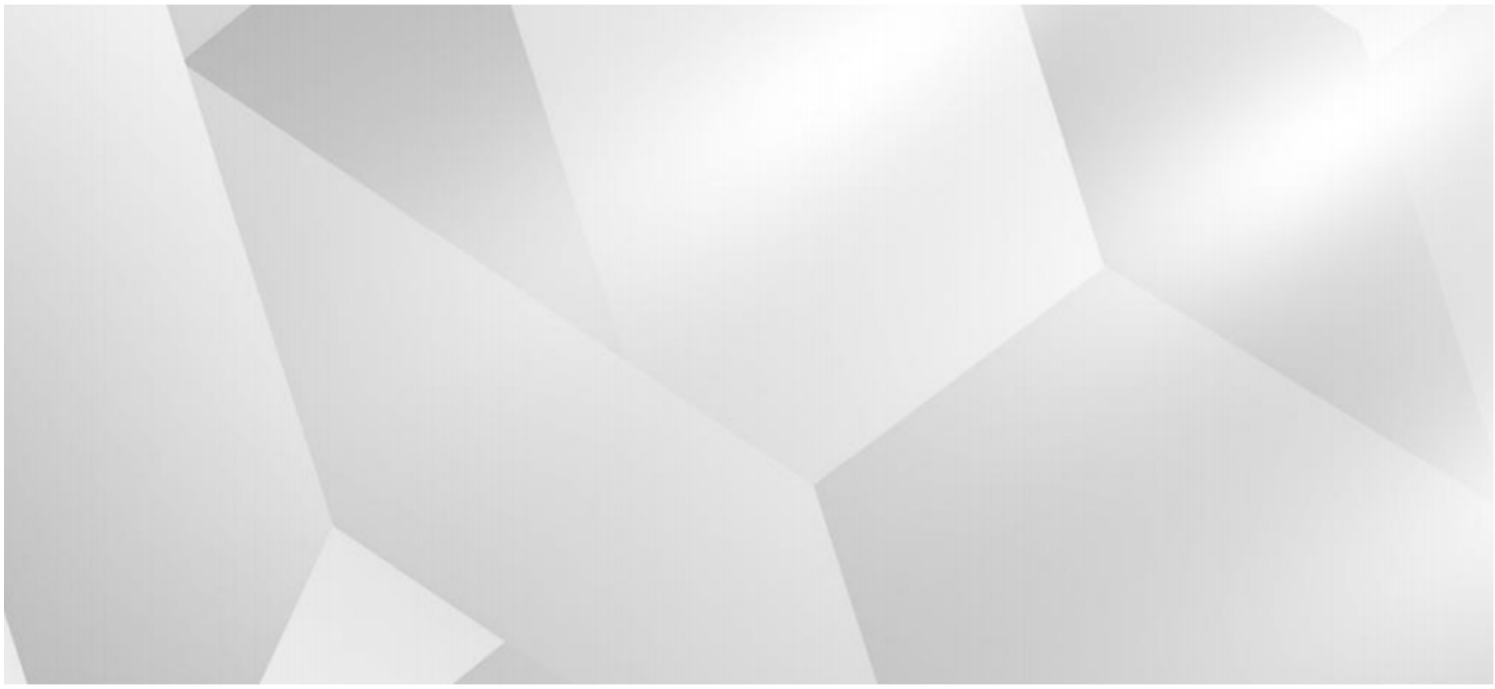




Datasheet
Ammonia Nitrogen Electrode
SUP-NH7000

Supmea®

Committed to process automation solutions

Tel: 86-15158063876

E-mail: info@supmea.com

www.supmea.com

Datasheet

Ammonia Nitrogen Electrode
SUP-NH7000

SUP-NH7000 Online ammonia nitrogen sensor is characterized by no reagent, green and pollution-free, real-time online monitoring. Ammonium ion electrode, pH electrode and reference electrode (potassium ion optional) are equipped as standard. During the measurement of ammonia and nitrogen in water, automatic pH and temperature compensation makes the measurement value more accurate.The electrode outputs RS485 digital signals and supports Modbus protocol for easy integration. The electrodes can be put into the water directly, without sample pretreatment and water sample transmission.Widely used in surface water, sewage water, tap water and many other scenarios of water quality testing.

Applications

- Water Plant
- Water Station
- Surface Water
- Farming
- Sewage



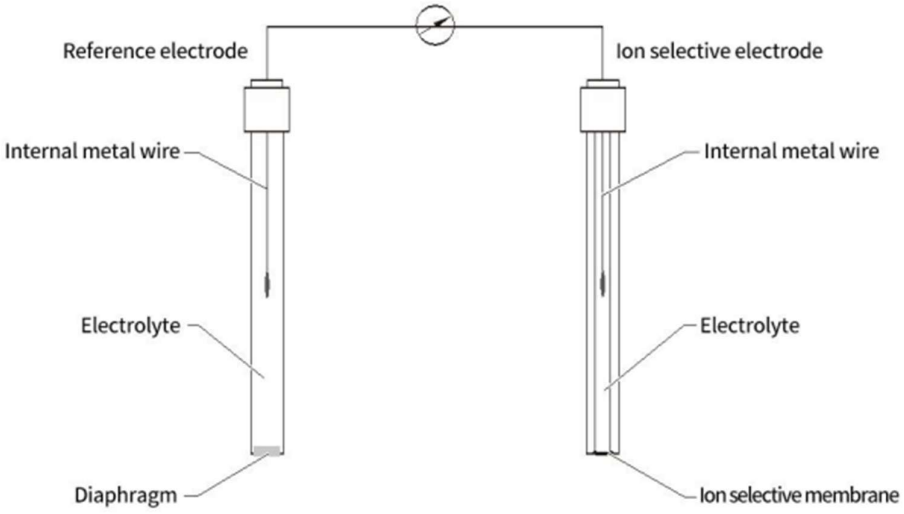
Ammonia Nitrogen Electrode

Features

- RS485 output, supports Modbus protocol
- Direct ammonia measurement without expensive sample pre-treatment
- More economical and environmentally friendly
- Automatic compensation, applicable to a variety of working conditions
- High accuracy

Principle

The ammonia nitrogen electrode measures ammonium ion concentration based on an ion-selective method.The electrode is mainly composed of an ion-selective electrode, a reference electrode, anion-selective membrane and an electrolyte, and only the ammonium ion to be measured can migrate through the ion-selective membrane and subsequently reach the electrode. After the migration of ions is completed, the charge changes and a potential is generated, the value of which is proportional to the logarithm of the ion concentration.A constant potential reference electrode is used to measurethepotential and calculate the ion concentration based on the Nernst equation (Nernst). Based on the potentiometric measurement principle, the measurement results are not affected by colorimetry or turbidity.



Schematic diagram of the measurement principle of ion-selective electrodes

In wastewater measurements, potassium ions and ammonium ions, which have similar chemical properties, are the most significant interfering factors and can cause high measurements, so potassium ion compensation is required, in addition to dynamic compensation for the temperature and pH of the water samples.

Parameters	
Measurement Range	NH4-N: 0.1-3000 mg/L (customizable) K^+:0.5-5000 mg/L (Optional) pH: 5 – 10 Temperature: 0 – 40 °C
Measurement Accuracy	NH4-N: ±5% of the measured value or ±0.2 mg/L K^+:±10% of the measured value or ±0.2 mg/L (Optional) pH: ±0.1 pH Temperature: ±0.5 °C
Repeatability	±5% or 0.2 mg/L, maximax criterion
Resolution Ratio	NH4-N: 0.01 mg/L K^+:0.01 mg/L (Optional) pH: 0.01 Temperature: 0.1 °C
Power Supply	12VDC
Communication Protocol	MODBUS RS485
Operating Temperature	0~40℃（not freeze）
Weight	< 1 KG
Level of Protection	IP68/NEMA6P
Cable Length	Standard 10-Meter Cable, Max Length: 100 Meters
Response time	01 second

Wiring

The sensor is properly connected with the following core definitions:

No.	Color	Wiring definition
1	Brown	+12VDC
2	Blue	AGND
3	White	RS485 A
4	Black	RS485 B

Dimension

Dimension：

