SPS-NH3 Ammonia Nitrogen Water Quality Sensor Datasheet

Product overview

Ammonia nitrogen is a common pollutant found in industrial, agricultural, and domestic wastewater. Ammonium nitrogen depletes dissolved oxygen in water bodies and leads to eutrophication. Ammonium ions are measured using the ion-selective method, which consists of a working electrode, a reference electrode, an ion-selective membrane and an electrolyte. Only the ammonium ions to be measured can pass through the ion-selective membrane and undergo a charge change, generating a potential at the working electrode that is proportional to the ion concentration and a constant potential at the reference electrode. The transmitter is based on the Nernst equation, which measures the potential difference between the working and reference electrodes and converts it to the ammonia nitrogen concentration based on the principle of potentiometric measurement, independent of coloration and turbidity.

It is suitable for online and portable monitoring in municipal wastewater, domestic wastewater, agricultural wastewater, industrial wastewater, process control, nitrification treatment and aeration tanks, etc. It is suitable for integrated applications such as buoy monitoring, floating discharge monitoring and vessel monitoring.

Application

- Domestic sewage
- Surface water, groundwater
- Industrial wastewater
- Wastewater treatment process

Features

- Fast measurement, the fastest measurement cycle is 1 second
- RS485 communication mode, can quickly connect the meter head, control the sensor
- IP68 protection grade, can be used in harsh environments
- Low power consumption, can be powered by battery, convenient for equipment deployment

Specifications

Principle	Ion-selective electrode method
Range	NH3-N/NH4-N: 0-100 mg/L, 0-1000, 0-2000 mg/L (optional) Temperature: 0 - 50 ℃
Resolution	NH3-N/NH4-N: 0.1 mg/L Temperature: 0.1 ℃
Detection limit	0.2 mg/L
Accuracy	NH3-N/NH4-N: ±5% or ±0.5 mg/L Temperature: ±1 ℃
Dimensions	φ25×261 mm (Slightly different sizes for different interfaces)
Weight	0.63 kg
Power requirements	DC+12 V to +24 V
Operating temperature	2-45 °C (35.6-113 °F)
Storage temperature	2-45 °C (35.6-113 °F)
Mounting	Submerged, flow-through
Sensor cable length	Cable straight out: 6 m (19.69 ft.), 5 pole aviation plugs: 2 m (6.56 ft.) Please contact us for other sizes
Pressure	<0.6 MPa
IP rating	IP68 (Waterproof tail joint version)
Communication method	RS485, Modbus RTU
Warranty	6 months

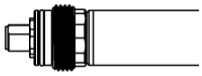
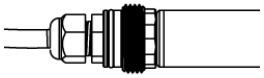
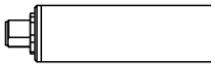
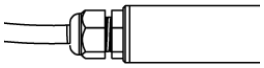
In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual. The manufacturer reserves the right to make changes in this manual and the products it describes at any time, without notice or obligation.

Accessory

Name	Model No.	Quantity
Protective fence	/	1

Product Selection

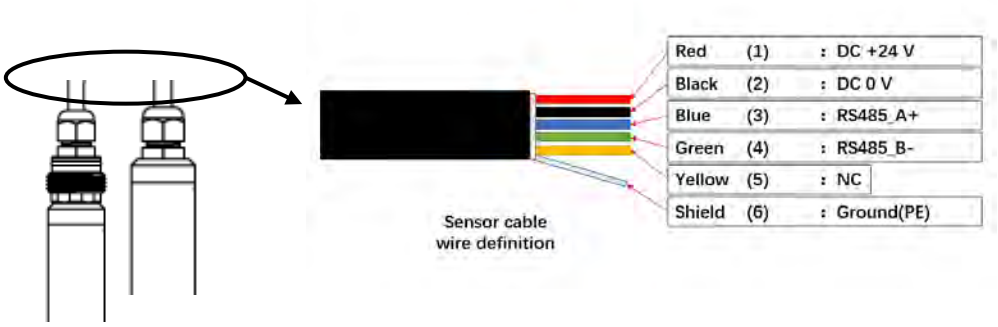
The sensors are available with different tail connections so that customers can choose according to their needs.

Model	Description	IP rating	Pictures
SPS-NH3-S01	5 pole aviation plug, cable length: 2 m with waterproof connection thread	IP65	
SPS-NH3-S11	Cable extending directly, cable length: 6 m with waterproof connection thread	IP68	
SPS-NH3-P01	5 pole aviation plug, cable length: 2 m	IP65	
SPS-NH3-P11	Cable extending directly, cable length: 6 m	IP68	

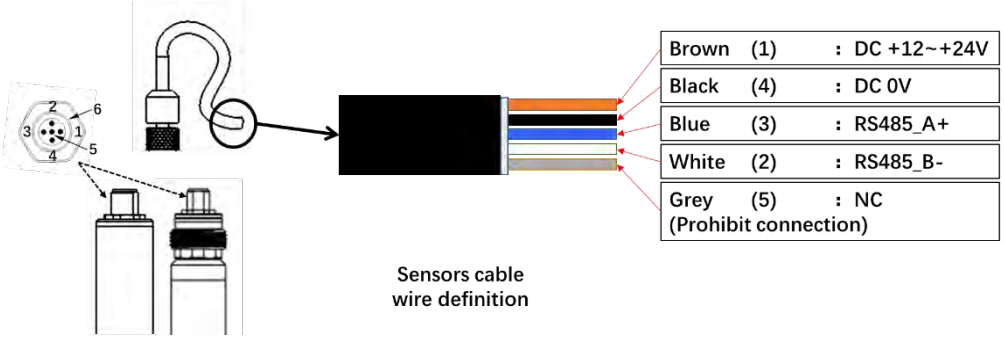
Interface definition

There are two types of wiring for the sensors, direct out and 5 pole aviation plugs. The two use different cables and have different wiring definitions, see diagram below.

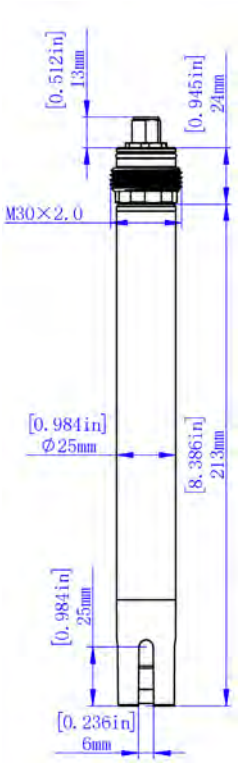
Cable straight out



5 pole aviation plugs



Dimensions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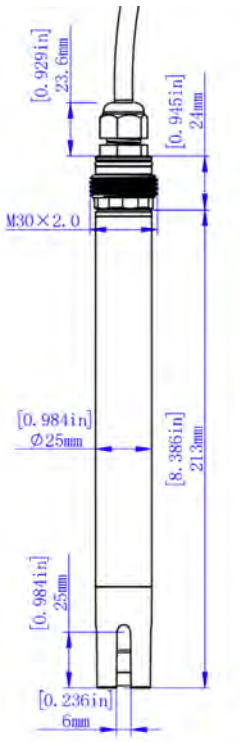
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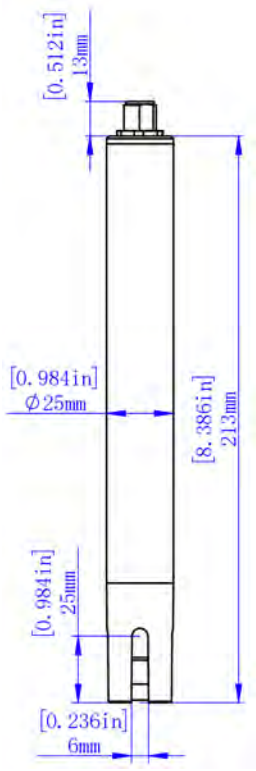
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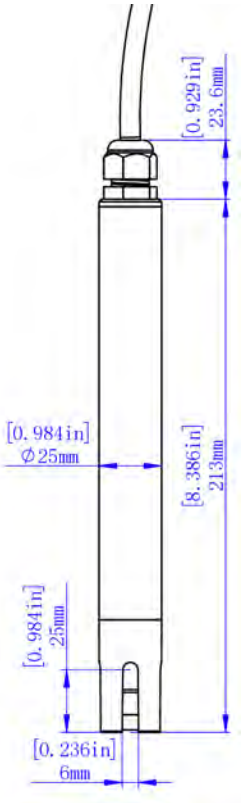
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