WATER QUALITY / DATA SHEET

SS316-01-ANALOG-3

Ammonia Nitrogen Transmitter



Online ammonia nitrogen measurement in water with automatic pH and temperature compensation and selectable analog output.

Overview

- Three ranges: 0–10, 0–100 or 0–1000 mg/L.
- Reagent-free monitoring with automatic pH compensation.
- Analog output options: 4–20 mA, 0–5 V or 0–10 V.

Maximum Range	Resolution	Power Supply	Output
0–1000 mg/L	0.01 / 0.1 mg/L	DC 10–30 V*	Analog

Key Advantages

- Automatic pH and temperature compensation.
- Reagent-free online concentration monitoring.
- Three selectable measurement ranges.
- 4–20 mA, 0–5 V or 0–10 V output; select one.
- IP68 probe and IP65 conversion module.

Application Scenarios

- Online water-quality monitoring.
- Continuous ammonia nitrogen measurement.
- Direct immersion installation.
- Use in compatible freshwater matrices.

SYSTEM DATA

Technical Specifications

Item	Specification
Model	SS316-01-ANALOG-3
Measured parameter	Ammonia nitrogen: nitrogen present as NH3 and NH4+
Range / resolution	0–10 mg/L: 0.01 mg/L; 0–100 mg/L: 0.01 mg/L; 0–1000 mg/L: 0.1 mg/L
Measurement error	±3% FS at 25 °C in laboratory conditions
Response time	<30 s at 25 °C in laboratory conditions
Repeatability error	≤3% at 25 °C in laboratory conditions
Supply voltage	DC 10–30 V; 0–10 V output requires DC 24 V
Power consumption	0.9 W
Analog output	4–20 mA / 0–5 V / 0–10 V; select one
Probe operating temperature	0–50 °C
Housing environment	–40 to +60 °C; 0–95% RH, non-condensing
Ingress protection	Probe: IP68; transmitter housing: IP65
Probe cable	5 m standard; 10 / 15 / 20 m customizable
Probe pressure rating	0.2 MPa
Housing dimensions	117 × 87 × 43 mm maximum
Probe dimensions / thread	245 mm body dimension; Ø50 / Ø51 mm; NPT 3/4

MEASUREMENT DATA

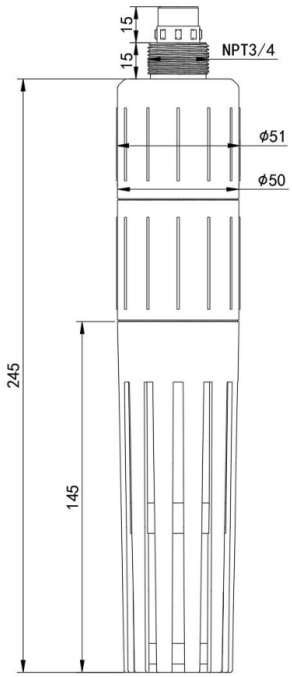
Electrode Service and Output Selection

Electrode maintenance	Requirement
Typical service life	pH electrode: 6–12 months; ammonia nitrogen electrode: 3–6 months. Replace aged electrodes promptly.
Calibration interval	Calibrate before each use; for continuous immersion, calibrate every 2–3 weeks and adjust for fouling or chemical deposits.

Ordering model: SS316-01-ANALOG-3. Specify the 0–10, 0–100 or 0–1000 mg/L range, analog output and cable length. The system includes the probe and wall-mounted conversion module. *The 0–10 V version requires DC 24 V.

MECHANICAL DATA

Dimensions and Installation



Dimensions in millimetres: probe body dimension 245, lower section 145, diameters Ø50 / Ø51; NPT 3/4 thread. Module housing: 117 × 87 × 43 maximum. Wall mounting spacing: 105; use Ø5 holes with the supplied plugs and screws.

Use immersion installation. Route the probe cable through a waterproof support bracket and connect its 3/4-inch thread to the probe thread using PTFE sealing tape. Keep cable connectors out of water until fully locked.

ELECTRICAL CONNECTION

Power and Analog Signal Wiring

Wire colour	Connection
Brown	Power positive: DC 10–30 V; DC 24 V for 0–10 V output
Black	Power negative
Blue	Analog signal positive
Yellow or green	Analog signal negative

The standard output cable has four bare wires. Connect power and analog signal according to the wire colours above. Use DC 10–30 V for 4–20 mA or 0–5 V versions; use DC 24 V for the 0–10 V version. Keep cable connectors out of water until fully locked.

ANALOG OUTPUT DATA

Signal Conversion and Measurement Examples

Let C be ammonia nitrogen concentration in mg/L and R the selected full scale: 10, 100 or 1000 mg/L. Set the receiving instrument to the ordered range and output type.

4–20 mA: C = (I − 4) × R / 16, with I in mA. 0–5 V: C = V × R / 5. 0–10 V: C = V × R / 10. For R = 10 mg/L, outputs of 12 mA, 2.5 V or 5 V respectively indicate 5 mg/L.

CALIBRATION & MAINTENANCE

Probe Cleaning and Calibration

Remove both the black and transparent electrode protective sleeves before measurement. Check the sensing end for bubbles; if present, shake the device downward to remove them. Rinse the probe head with clean water after use. Protect the membrane from sharp objects and store unused electrodes in diluted standard solution.

After prolonged storage, activate first in 10 mg/L standard for at least 12 hours, then in 1000 mg/L standard for 1–2 hours. Before testing, immerse the sensing end in deionized water for 5 minutes while stirring; repeat with fresh water for thorough rinsing. After a short idle period, soak in deionized water before measurement or calibration.

Do not use this device as a safety device or emergency stop device, or in applications where equipment failure could cause personal injury. Read the operating instructions before installation, use or servicing.

Avoid strong acids/alkalis, strong oxidizing or reducing media, hydrofluoric acid, sulfides, bromides, iodides and organic solvents. Complex sample chemistry can damage the ion membrane. Potassium ions cause substantial interference; seawater and high-potassium samples are not recommended. Package: transmitter, conversion module, 5 m cable, two plugs, two screws, nylon protective net, certificate and warranty card. Warranty: 24 months for verified defects under normal use; pH and ammonia nitrogen electrodes are consumables and excluded.

CONTACT / SUPPORT

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