WATER QUALITY / DATA SHEET

# SS316-01-ETH-5

# Ammonia Nitrogen Transmitter

Online ammonia nitrogen, potassium, pH and temperature monitoring with automatic compensation and Ethernet upload to a cloud platform or customer server.




## Overview

- Three ranges: 0–10, 0–100 or 0–1000 mg/L.
- Automatic potassium, pH and temperature compensation.
- Ethernet data upload; 2 s acquisition; 30 s default upload.

| Maximum Range | Resolution | Power Supply | Upload |
|---|---|---|---|
| 0–1000 mg/L | 0.01 / 0.1 mg/L | DC 10–30 V | Ethernet |

## Key Advantages

- Potassium compensation supports seawater monitoring.
- Reagent-free online concentration monitoring.
- Three selectable measurement ranges.
- RJ45 interface; static IP, DHCP, gateway and DNS support.
- IP68 probe and IP65 conversion module.

## Application Scenarios

- Online water-quality monitoring.
- Continuous ammonia nitrogen measurement.
- Direct immersion installation.
- Freshwater and seawater monitoring.

SYSTEM DATA

## Technical Specifications

| Item | Specification |
|---|---|
| **Model** | SS316-01-ETH-5 |
| **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** | ±5% FS at 25 °C in laboratory conditions |
| **Response time** | <30 s at 25 °C in laboratory conditions |
| **Repeatability error** | ±3% FS at 25 °C in laboratory conditions |
| **Supply voltage** | DC 10–30 V |
| **Power consumption** | 0.5 W |
| **Data upload** | Ethernet / TCP; 2 s acquisition; 30 s default upload |
| **Probe operating temperature** | 0–50 °C |
| **Housing environment** | −40 to +60 °C; 0–95% RH, non-condensing |
| **Ingress protection** | Probe: IP68; transmitter housing: IP65 |

| Item | Specification |
|---|---|
| **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 |
| **pH range / error** | 0–14 pH; resolution 0.01 pH; error ±0.15 pH at 25 °C in laboratory conditions |
| **Temperature range / error** | −20 to +80 °C; ±0.3 °C at 25 °C in laboratory conditions; probe operation: 0–50 °C |
| **Potassium range / error** | 0–1000 mg/L; resolution 0.1 mg/L; error ±5% FS at 25 °C in laboratory conditions |

MEASUREMENT DATA

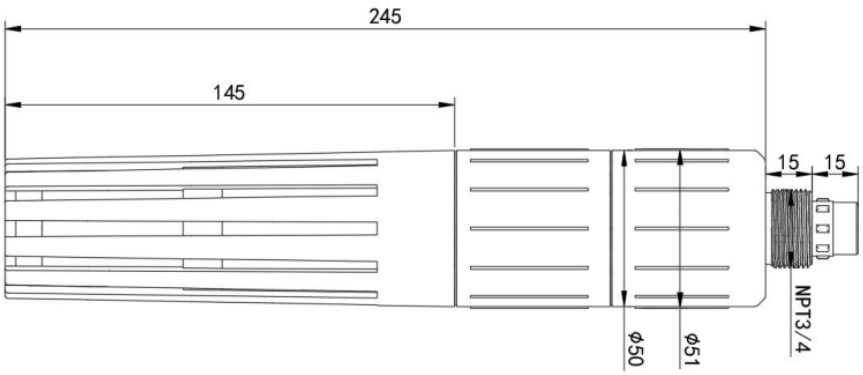
## Electrode Service and Monitoring

| Electrode maintenance | Requirement |
|---|---|
| **Typical service life** | pH electrode: 6–12 months; ammonia nitrogen and potassium electrodes: 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-ETH-5. Specify the 0–10, 0–100 or 0–1000 mg/L ammonia nitrogen range and cable length. The system includes the probe and wall-mounted Ethernet transmitter.

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 Connection and Start Up

| Connection | Instruction |
|---|---|
| **Power** | DC 10–30 V; supplied adapter: 12 V |
| **Start up** | Connect the adapter to the device, then energize |
| **Data availability** | Wait 1–3 minutes, then view readings on the platform or receiving server |

COMMUNICATION DATA

## Ethernet Configuration and Data Upload

Connect the RJ45 Ethernet port to the network. Use the supplied Android configuration app with Bluetooth enabled. Scan for ETHM followed by the device address; connect with default password 12345678. Read parameters, edit settings and send them to the device. Read back to verify changes and view real-time data to check readings.

Set the server public IP address or domain and matching listening port (default 8020). Select static IP or DHCP; for static IP, enter the IP address, subnet mask and gateway. Upload interval defaults to 30 s. The specification table gives 1–60000 s; the configuration section gives 1–65535 s. Verify the supported upper limit before use. The unique 8-digit device address cannot be changed. Operation password: 1–8 numeric digits, default 12345678.

Local software runs on a customer PC or server; cloud monitoring requires no customer server. Both support web monitoring, limit alarms, email alerts, history export and permission management. Local SMS alerts require an additional SMS modem.

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. Adjust compensation coefficients for the actual site conditions to reduce error. Package: transmitter, 5 m cable, 12 V power adapter, two plugs, two screws, Ethernet cable, nylon protective net, certificate and warranty card. Warranty: 24 months for verified defects under normal use; pH, ammonia nitrogen and potassium electrodes are consumables and excluded.

CONTACT / SUPPORT

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