

Ammonium Ion Monitor

NHMS-4

This device is an ammonium ion monitor equipped with automatic calibration and automatic cleaning functions.

Simple measurement with an ion electrode is adopted, making it suitable for continuous monitoring of water quality in factory wastewater, rivers, and lakes.

Furthermore, the reagent is sodium hydroxide solution, and the wastewater can be easily discharged through neutralization treatment.



Features

○ A reduction by half of reagent consumption compared with the previous model.

By stabilizing the flow rates of reagents and samples and reducing the internal volume of the measurement cell, we reduced the consumption of reagents and samples to 1/2 of that of our conventional model (NHMS-3) without compromising performance such as responsiveness.

This also reduced the volume of waste liquid, lowering running costs and environmental impact.

○ Space-saving design

By reducing reagent consumption, we downsized the reagent tanks installed inside the instrument, thereby making the entire instrument more compact. Furthermore, the front-access maintenance structure has significantly reduced the installation space required.

○ Optional built-in dilution mechanism is available.

The standard measurement range is 0.05 to 100 mg/L. The optional built-in dilution mechanism extends the measurement range up to 2500 mg/L. For measuring concentrations exceeding this range, an external dilution device is used. Please contact us for details.

○ Optional ammonia nitrogen notation is available.

With this option, the measured value will be displayed as ammonia nitrogen concentration, and the product name will be "Ammonia Nitrogen Monitor".

○ Compliance and certification marks (CE, cCSAus)

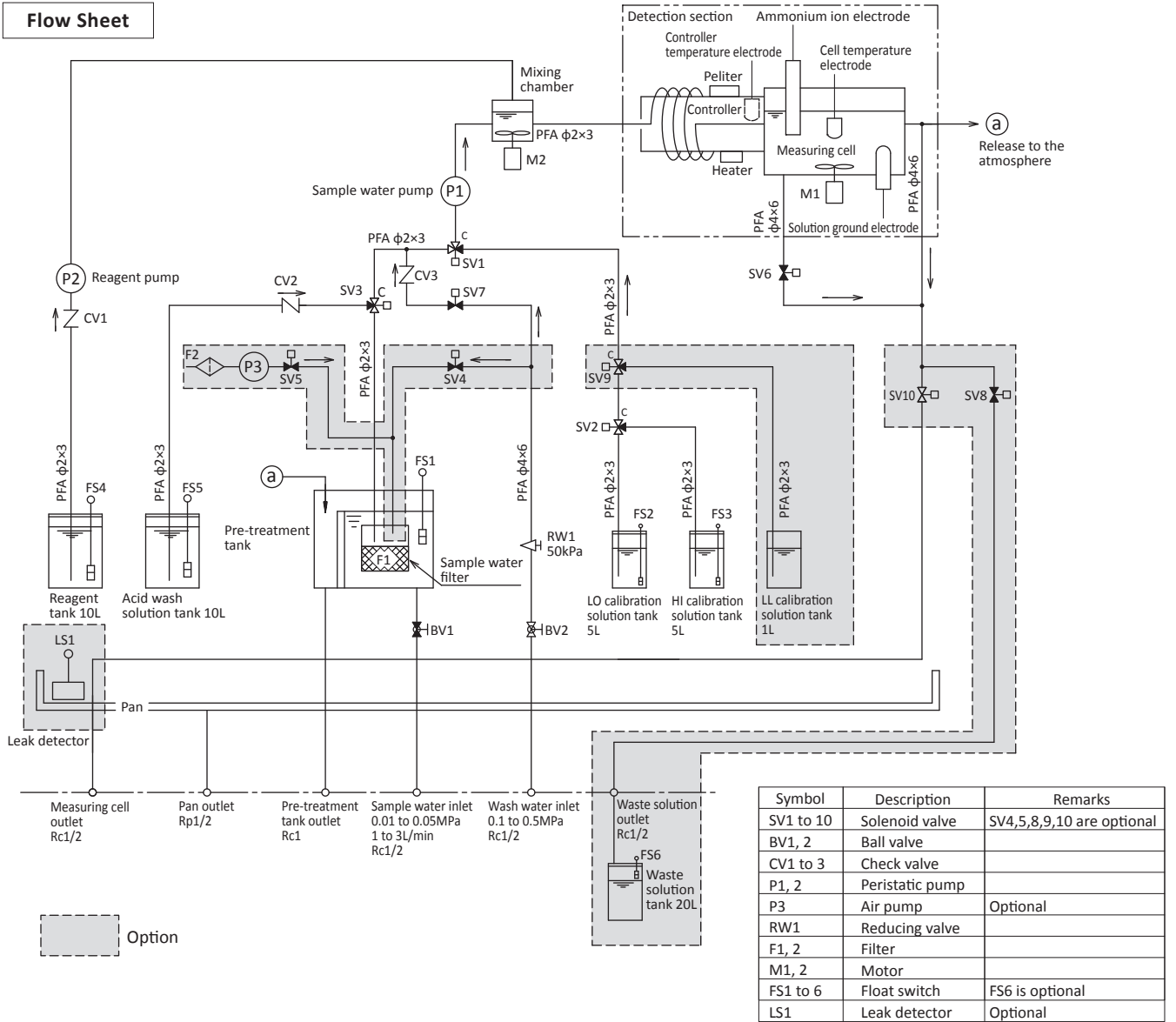
Some specifications of certified products differ from standard specifications. Some options are not supported. Please contact us for details.

Standard Specifications

Product name	: Ammonium ion monitor
Model	: NHMS-4
Measurement method	: Ammonium ion selective electrode method (Alkaline solution mixing method)
Measurable range	: 0.05 to 100 mg/L
Measurement range	: 0.05 to 5.00 mg/L (standard) 0.10 to 10.00 mg/L 1.0 to 100.0 mg/L
Repeatability	: Less than ±10% of read value (with Hi, Lo calibration solution)
Response	: 15 minutes or less at 90% response (after pre-treatment tank)
Temperature compensation	: Constant temperature measurement method * Can be used together with the temperature compensation function
Measurement method	: Continuous measurement and intermittent measurement (minimum interval; 1 hour)
Automatic calibration	: Periodic calibration with a fixed period or period adjusted by ACAS (Automatic Calibration Cycle Adjustment System) Interval; 1 to 99 days (Initial; 7 days)
Automatic wash	: Periodic wash • Wash sample line and measurement cell by acid • Wash sample line by city water Interval; 1 to 999 hours (Initial; 12 hours)
Display	: Color LCD touch screen (7 inches)
Measurement point	: 1 channel
Analog output	: Linear output, 4 to 20 mA DC, Load resistance; 600 Ω or less

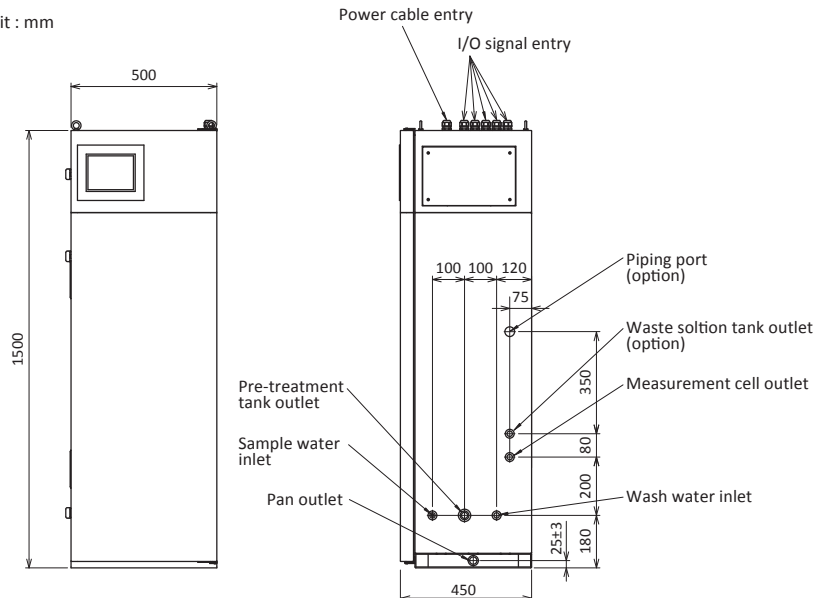
External contact output	: 10 points (9 NO contacts, 1 NC contact) Power off (NC contact), Failure 1 (serious), Failure 2 (minor), Concentration higher alarm, Concentration high alarm, Concentration low alarm, Under calibration, Under wash, Under maintenance, Under measurement Contact capacity; 30V DC, 0.1A	Acid cleaning solution	: Nitric acid 3 w/v% * 5 w/v% and 10 w/v% nitric acid are also available. Higher concentrations may shorten the electrode life. Consumption; Less than 7 L/month (at a wash interval of 12 hours) Tank capacity; 10 L
External contact input	: 6 points: (Non-voltage contact input) Measurement start, Measurement stop, Calibration start, Wash start, Continuous / intermittent switching, Waste solution switch ON-resistance; 50 Ω or less, Short-circuit current; Max.10mA, Open-circuit voltage; DC 12V	Construction	: Indoors self-standing cabinet
Digital I/O	: RS-485 1 point Protocol; Modbus/RTU * Remote monitoring (measurement values, etc.) and remote operation (starting measurements, etc.) are possible.	Dimensions	: 500 (W) × 450 (D) × 1500 (H) mm
Recording	: Equipment memory; 1 month's worth of data is recorded every minute. The data can be displayed as a graph on the screen. USB flash drive; 1 year's worth of data is recorded every minute.	Weight	: Approx. 100 kg (except reagent, optional features)
Ion electrode	: Ammonia ion selective electrode, ELX-009	Installation conditions	: Indoor. No direct sun light. Ambient temperature; 0 to 40°C Humidity; Less than 85%RH (no condensation)
Power supply	: 100V AC ±10%, 50/60 Hz (Other options available)	Optional features	: ● Power supply with built-in transformer compatible with various power supply voltages ● Measuring channel Up to 3 channels. dimensions are as follows: Dimensions for 2ch; 1000 (W) × 500 (D) × 1650 (H) mm Dimensions for 3ch; 1500 (W) × 500 (D) × 1650 (H) mm ● High concentration range support (built-in 7-fold/25-fold dilution mechanism) 7-fold dilution; max. measurement range 700 mg/L 25-fold dilution; max. measurement range 2500 mg/L (Some items differ from standard specifications with the dilution option. For example, repeatability, response.) ● Recorder 1 to 3 pen type Chart type 100 mm wide, length 16 mm ● Air cleaning The sample water filter is backwashed with bubbling air-mixed washing water. ● Waste solution recovery mechanism Separates and recovers calibration solution 20 L drain tank can be attached. ● Low concentration calibration unit (3-point calibration) LL (low concentration) Calibration solution Tank capacity; 1 L ● Leak detector installed in bottom pan ● Junction box compatible with AC contact output Contact capacity; 100V AC, 2A ● Certifications CE, cCSAus
Power consumption	: Max.240VA, approx.120VA on average (at an ambient temperature of 25°C, excluding options)		
Sample water conditions	: Water temperature; 2 to 40°C (no freezing) Pressure; 0.01 to 0.05 MPa SS; 50 mg/L or less (particle diameter; 100 μm or less) Flow rate; Approx. 1 to 3 L/min * If the sampling point is far away, the response will be slow. In this case, install a bypass line near the main unit. pH; 5 to 9pH Coexisting components; * The following cases may affect the measurement. Please contact us for details. Amine, seawater measurement is not possible.		
Wash water conditions	: Equivalent to city water (Turbidity level; 2 or less, Color level; 5 or less) Water temperature; 2 to 40°C (no freezing) Pressure; 0.1 to 0.5 MPa Consumption; Approx. 2 L or less/time		
Reagent	: Sodium hydroxide solution 20 w/v% Flow rate; Approx. 0.07 mL/min Tank capacity; 10 L Consumption; Approx. 4 L/month (continuously measurement, flow rate 0.07 mL/min)		
Calibration solution	: HI (high concentration) calibration solution LO (low concentration) calibration solution (2 types of calibration solution) Consumption; Less than 5 L/month Tank capacity; 5 L		

Flow Sheet



Dimensions

Unit : mm



Product code

NHMS4-1-□□□□□□□□□□

		Power supply *1
A		100V AC, 50/60Hz
B		110V AC, 50/60Hz
C		115V AC, 50/60Hz
D		120V AC, 50/60Hz
E		200V AC, 50/60Hz
F		220V AC, 50/60Hz
G		230V AC, 50/60Hz
H		240V AC, 50/60Hz
J		100V AC, 50/60Hz (CE/CSA certification)
K		110V AC, 50/60Hz (CE/CSA certification)
L		115V AC, 50/60Hz (CE/CSA certification)
M		120V AC, 50/60Hz (CE/CSA certification)
N		200V AC, 50/60Hz (CE/CSA certification)
P		208V AC, 50/60Hz (CE/CSA certification)
Q		220V AC, 50/60Hz (CE/CSA certification)
R		230V AC, 50/60Hz (CE/CSA certification)
S		240V AC, 50/60Hz (CE/CSA certification)
Z		Custom spec.
		Measuring channel
1		1 channel (standard)
2		2 channel parallel measurement *2
3		3 channel parallel measurement *2
9		Custom spec.
		Measurement range for 1st channel
A		0.05 to 5.00 mg/L
B		0.10 to 10.00 mg/L
C		1.0 to 100.00 mg/L
D		7-fold dilution *4
E		25-fold dilution *5
Z		Custom spec. *6
		Measurement range for 2nd channel *3
A		0.05 to 5.00 mg/L
B		0.10 to 10.00 mg/L
C		1.0 to 100.00 mg/L
Y		Not applicable
Z		Custom spec. *6
		Measurement range for 3rd channel *3
A		0.05 to 5.00 mg/L
B		0.10 to 10.00 mg/L
C		1.0 to 100.00 mg/L
Y		Not applicable
Z		Custom spec. *6
		Recorder (100mm)
0		None (standard)
1		1 pen type
2		2 pen type
3		3 pen type
9		Custom spec.
		Air cleaning (sample water filter with bubbling)
0		None (standard)
1		Supplied
		Waste solution recovery unit (separation of calibration solution)
A		None (standard)
B		Supplied (no tank)
Z		Supplied (20 L tank included)
		Low concentration calibration unit (3 point calibration)
0		None (standard)
1		Supplied
		Leak detector (bottom of cabinet)
0		None (standard)
1		Supplied
9		Custom spec.
		Junction box (option unit for AC power type contact output)
0		None (standard)
1		Supplied
		Language (of documents)
A		Japanese (standard)
B		English
C		Ammonia nitrogen notation (English) *7
Z		Custom spec.
		Certifications
0		None (standard)
1		CE/CSA certification applicable

- *1. If a power supply other than AC 100V is used, or if certification apply, a transformer will be incorporated. Please inform us of the power supply specifications.
- *2. If there is a large distance between sampling points, there may be a response delay.
- *3. The analog output (4 to 20mA) corresponds to a range from 0 to the upper limit of the measurement range.
- *4. If the full scale exceeds 100 mg/L and is up to 700 mg/L, dilute by a factor of 7. Please specify the desired measurement range.
- *5. If the full scale exceeds 700 mg/L and is up to 2500 mg/L, dilute by a factor of 25. Please specify the desired measurement range.
- *6. Please indicate the desired measurement range.
- *7. The device nameplate indicates "Ammonia nitrogen monitor", and the display shows "AMMONIA-N". The measured value (range) is approx. 0.78 times that of ammonium ions.

Custom spec. code;
 Numeric digit: 9
 Alphabet: Z



DKK-TOA CORPORATION



Please read the operation manual carefully before using products.

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