

Process Buoy PBS 1 (NH₄)

The Process Buoy PBS 1 measures ammonium through direct immersion in aeration basins or final effluent. The buoy is filled by the hydrostatic pressure of the water, and emptied by air pressure. This eliminates the need for pumps in the wastewater. Valves contact only air, reagents, and calibration standards, assuring a high level of reliability.

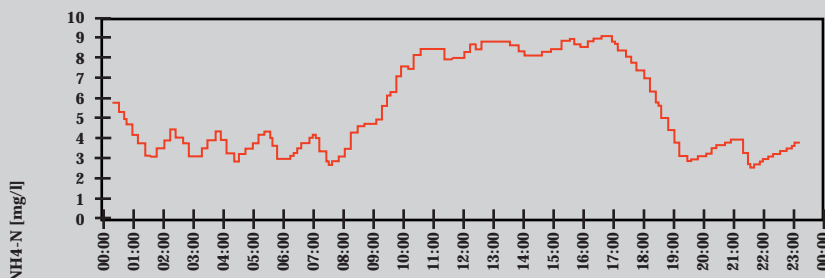
How it works

For ammonia measurement the STIP Process Buoy PBS 1 (NH₄) is equipped with a purgeable cell, in which, wastewater is separated from sludge and solids before it is fed into the reaction cell. During the ammonium measurement, the necessary pH value is accurately regulated to assure high measuring accuracy with low reagent consumption. The buoy automatically calibrates itself daily using the standard addition method, and at the same time compensates for variability in the wastewater.



Features

- Measurement directly in aeration basins
- Automatic self-calibration using standard addition method
- Measuring range: 0.1 - 50 mg/liter NH₄ - N
- Analysis delay time: 5 minutes
- No sample preparation, pumps, or transfer lines
- 6-hour on-screen graph, scrollable through 14 days
- 90 day data storage on diskette
- Programmable concentration alarms



Ammonium daily graph from a municipal treatment plant.



Technical Data Process Buoy 1 (NH₄)

Specifications for NH₄ - N measurement

Measuring range	0.1 - 50 mg/liter NH ₄ - N
Reagent to wastewater ration	approx. 1:100
Detection limit	0.1 mg/liter NH ₄ - N
Reproducibility	3%
Reagent consumption	0.5 - 1 liter/month
T ₉₀ time	3 - 5 minutes

General Specifications

Process Buoy

Controller

Dimensions (mm)	830 x 130 (length x diameter)	Single: 264 x 360 x 345 (W x H x D) Double: 360 x 400 x 345
Weight (kg)	approx. 10.8 (filled)	Single: 12.0 Double: 14.0

Electrical and standards conformity

Single-buoy system

Double-buoy system

Buoy power	15/24 V from controller	
Mains power	115 VAC/50 Hz or 60 Hz	
Average current usage	115 VAC, 0.3 A	115 VAC, 0.4 A
Maximum current usage	115 VAC, 0.4 A	115 VAC, 0.6 A
Power load	45 W	68 W
Enclosure	IP65	
Protection class	1 (per IEC 4010)	
Immunity to voltage change	EN 50022	
EMC emission	EN 50081-1	
EMC noise immunity	EN 50082-2, IEC 801-3	
Certification	CE Mark (Declaration of conformity)	
Test method	per DIN/VDE 0701	

Data display, inputs and outputs

Display	LCD graphics display, 16 lines by 40 characters, backlit
Keypad	21 key, 13 x 13 mm
Data presentation	6-hour graph (14-day scrollable); current value with 5 digit resolution
Data storage	10 days in RAM; 90 days with diskette drive (data interval 2 minutes)
Monitoring	Logging of warnings, malfunctions, limit value alarms and calibrations for last 4 weeks (90 days with diskette drive), alerts for leakage, defective probe, general errors for malfunction in measuring cell, dilution water failure.
Analog outputs	0 - 20 mA or 4 - 20 mA selectable, electrically isolated load max 500 ohm
Limit value alarms	Dry contact relay (normally closed) for high limit, low limit, and rate of increase (slope)
Diskette drive	PC-compatible 3.5" diskette drive for data storage
Computer interface	RS 232C for data output and remote maintenance

October 1998; specifications subject to change.



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