

## Process Buoy PBS 2 (NO<sub>3</sub>)

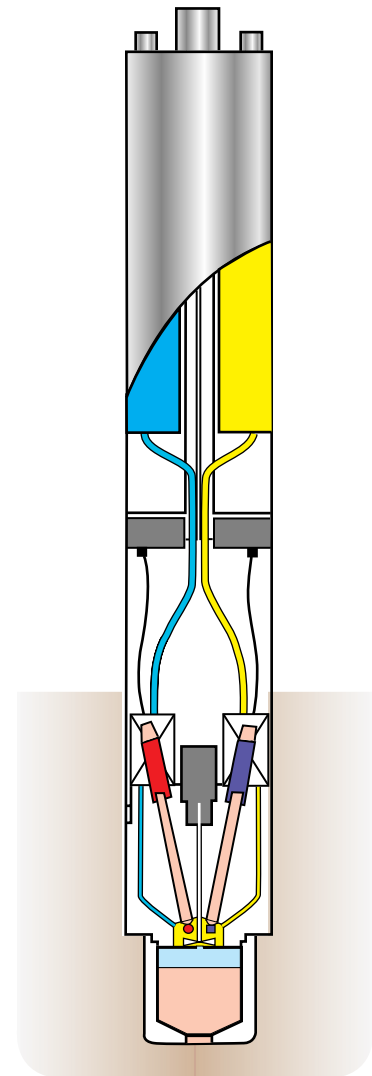
The Process Buoy PBS 2 measures nitrate through direct immersion in aeration basins or final effluent. The buoy is filled by the hydrostatic pressure of the water, and emptied by air pressure. This eliminates the need for any pumps in the wastewater. Valves contact only air, reagents, and calibration standards, assuring a high level of reliability.

### Features

- Measurement directly in aeration basins
- Automatic self-calibration using standard addition method
- Measuring range: 0.1 - 50 mg/liter NO<sub>3</sub> - N
- Analysis delay time: 3 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

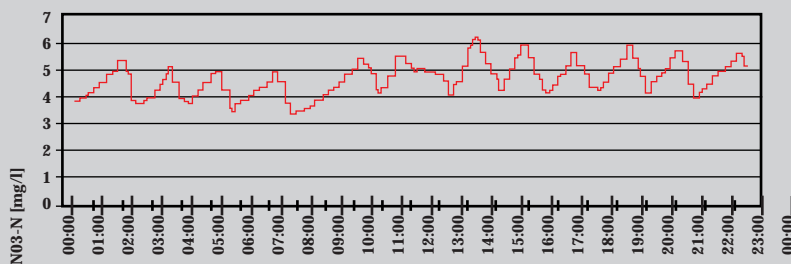
### How it works

For nitrate measurement the STIP Process Buoy PBS 2 (NO<sub>3</sub>) is equipped with a purgeable cell in which wastewater is separated from sludge and solids before it is fed into the reaction cell. For nitrate measurement the ionic strength is regulated via a conductivity probe. Nitrate is measured with an ion-selective nitrate probe, which is automatically calibrated and conditioned daily in the wastewater by the standards addition method.



ACTIVATED SLUDGE
  STANDARD
  COMPUTER

WASTEWATER
  REAGENT



Nitrate daily graph from a municipal treatment plant.



## Technical Data Process Buoy PBS 2 (NO<sub>3</sub>)

### Specifications for NO<sub>3</sub> - N measurement

Measuring range	0.1 - 50 mg/liter NO <sub>3</sub> - N
Reagent to wastewater ration	approx. 1:100
Detection limit:	0.1 mg/liter NO <sub>3</sub> - N
Reproducibility	3%
Reagent consumption	0.5 - 1 liter/month
T <sub>90</sub> time	3 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, failure in wastewater filling, calibration failure and lack of reagent.
Analog outputs	0 - 20 mA or 4 - 20 mA selectable, electrically isolated load max 500 ohm
Limit value alarms	Dry contact relay (normally closed, max 0.2A and 50 V) for high limit, low limit, and slope
Fault signal	Dry contact relay (normally closed, max 0.2A and 50 V)
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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