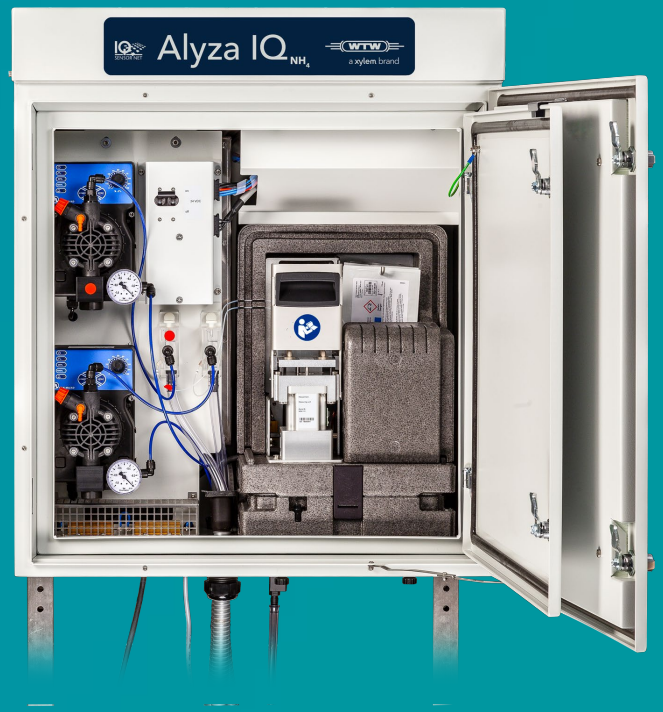
Dr. Natalie Leiprecht
Process Segment Manager
May 20, 2020

Alyza IQ: The Simple Choice for NH4 Analyzers



WWTP EFFLUENT AND RIVER MONITORING

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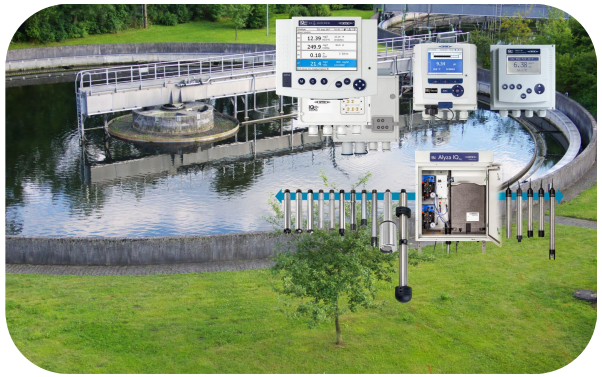
Panelist- Dr. Natalie Leiprecht

- Ph.D. in Biochemistry
- Process Segment Manager
- Product Manager for Alyza IQ
- Based in Weilheim, Bavaria, Germany
- 7+ years experience in process instrumentation

Xylem Analytics Germany – WTW brand

- Brand of the Xylem Group, which operates worldwide in its core business of water
- Located in Weilheim, Bavaria, Germany
- Founded in 1945 by Dr. Karl Slevogt
- Development and manufacturing of high quality measurement technology for water analysis
- First Ammonium Analyzer released in 1999



Why monitor for Ammonium?

Effects of NH4:

- Ammonium consumes oxygen in water → is transformed to oxidised forms of nitrogen, e.g. NO3
- Fertilizer for aquatic plants → can cause eutrophication
- Toxic to aquatic life at certain concentrations in relation to water temperature, salinity and pH

$$NH_3 + H_2O \rightarrow NH_4^+ + OH^-$$

Alyza IQ - overview

- New wet chemical analyzer platform for the IQ Sensor Net

- Two new analyzers:
  - Alyza IQ PO4
  - Alyza IQ NH4

- Temperature Operating Range:

  -20 to 40 °C

  → Easy installation directly at the measurement site possible

Alyza IQ - Overview

Sampling from one location

Alyza IQ NH4-111

Sampling from two locations

Alyza IQ NH4-112

Alyza IQ - Components

A. Filtration pump
B. Overflow vessel
C. Wet-chemical unit
D. MultiPort Valve
E. ChemBags
F. Photomteric unit

Status LED

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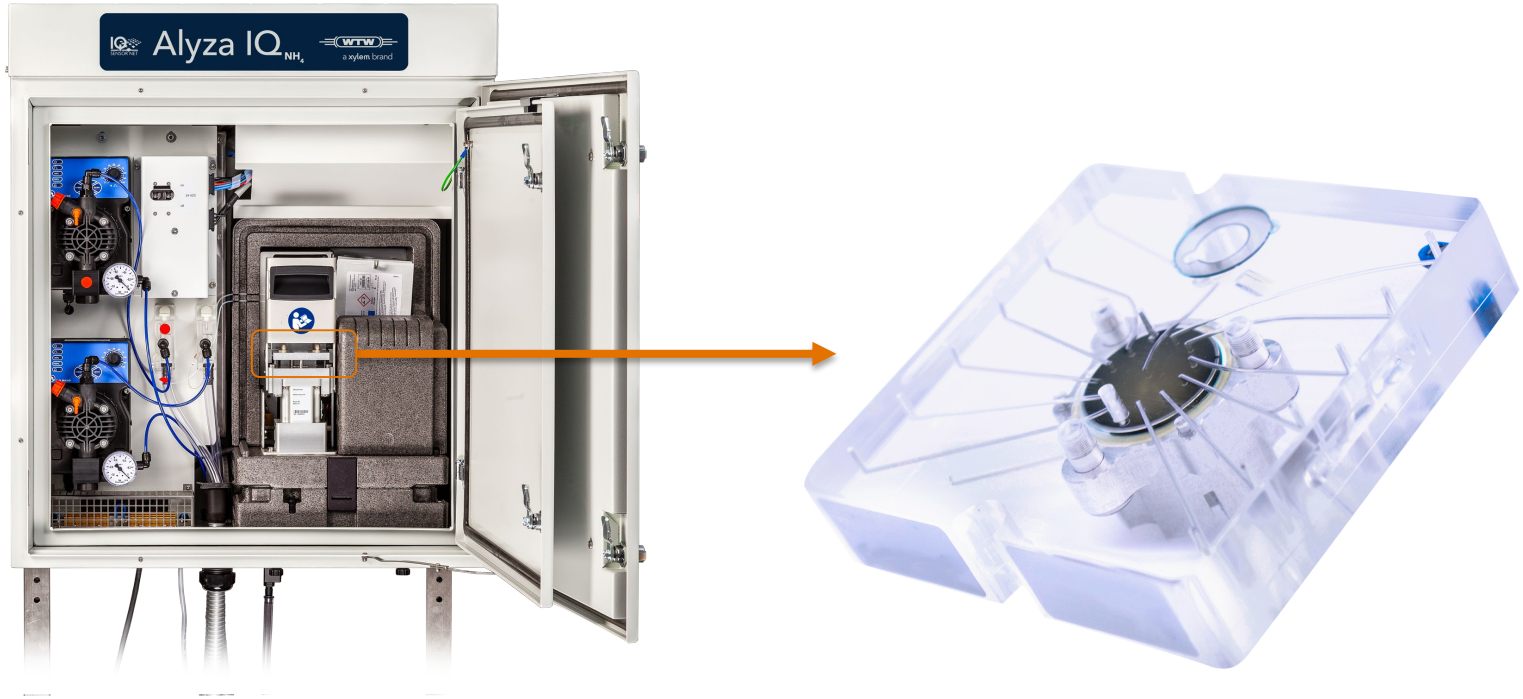
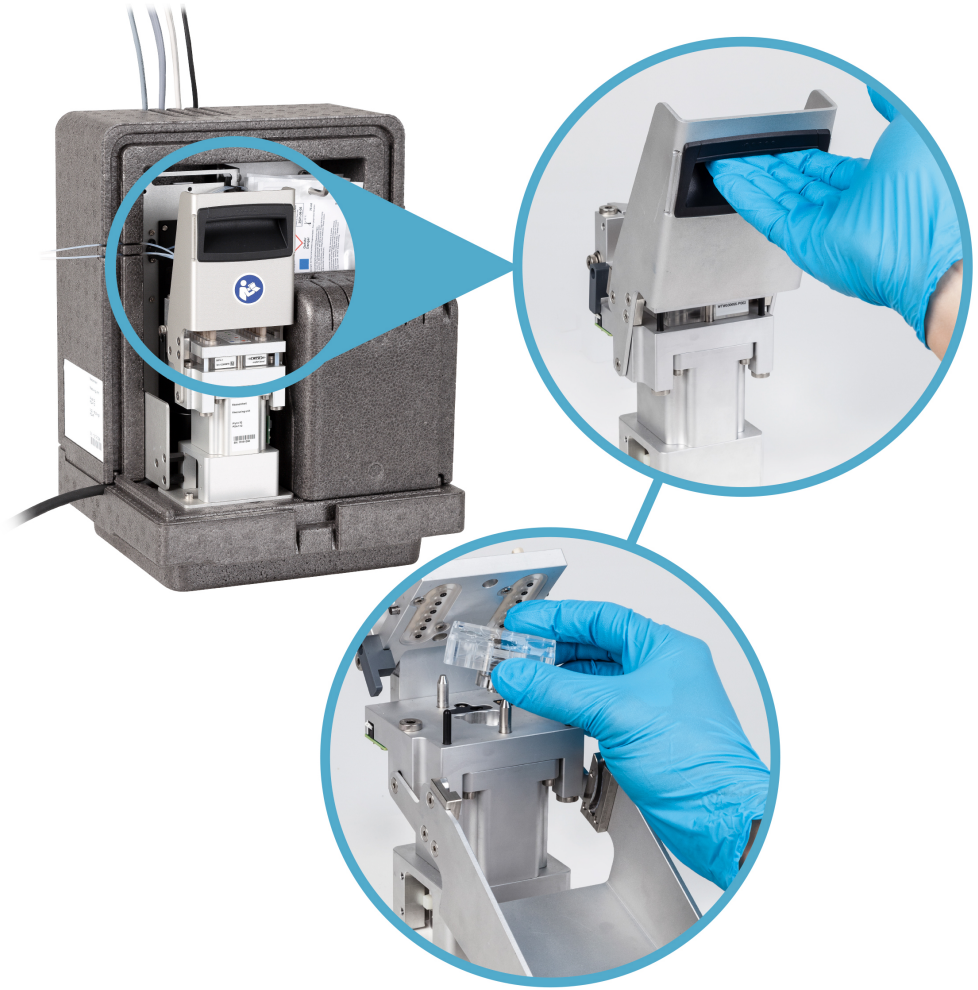
MultiPort Valve



Extremely low reagent consumption

MultiPort Valve – easy replacement

1. Empty the system!



2. Open the holder

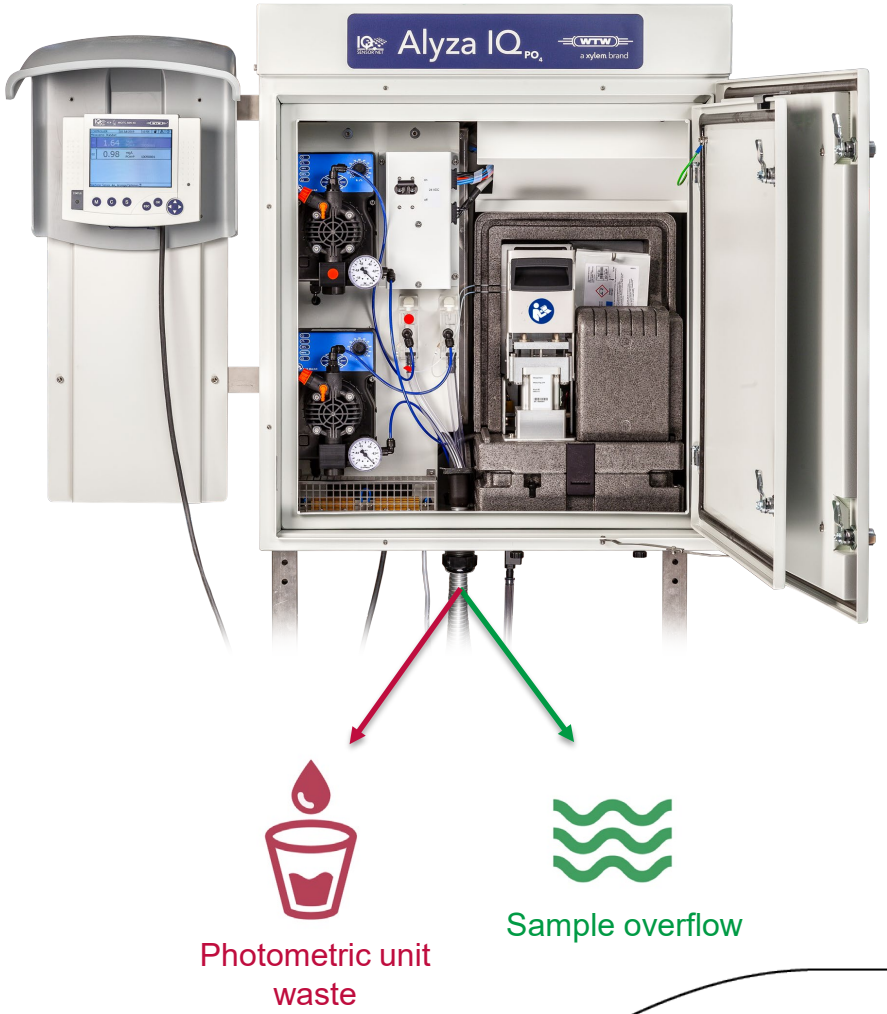
3. Exchange the MPV

ChemBags

- No-drip replacement
- Quick and easy to exchange
- NH4: Exchange every 45 to 90 days
- Long-life reagents
- No contamination risks
- No cooling required

Benefits Alyza IQ – Minimized reagent consumption and waste

- Reagent consumption reduced to a minimum
- Minimized reagent containing waste
- Optional chemical waste separation
  - ➢ Collect only what is obligatory
  - ➢ Separate disposal possible
    (WF Set required)



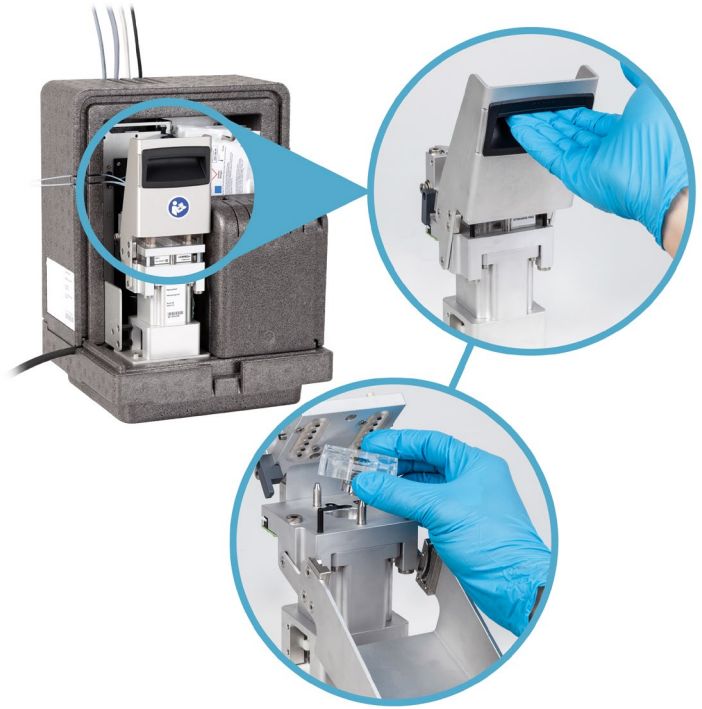
Benefits Alyza IQ - Minimum maintenance

Exchange of reagent bags:

Reagents: every 45-90 days
Cleaning calibration: every 6 months

Exchange of MultiPort Valve:

every 12 months

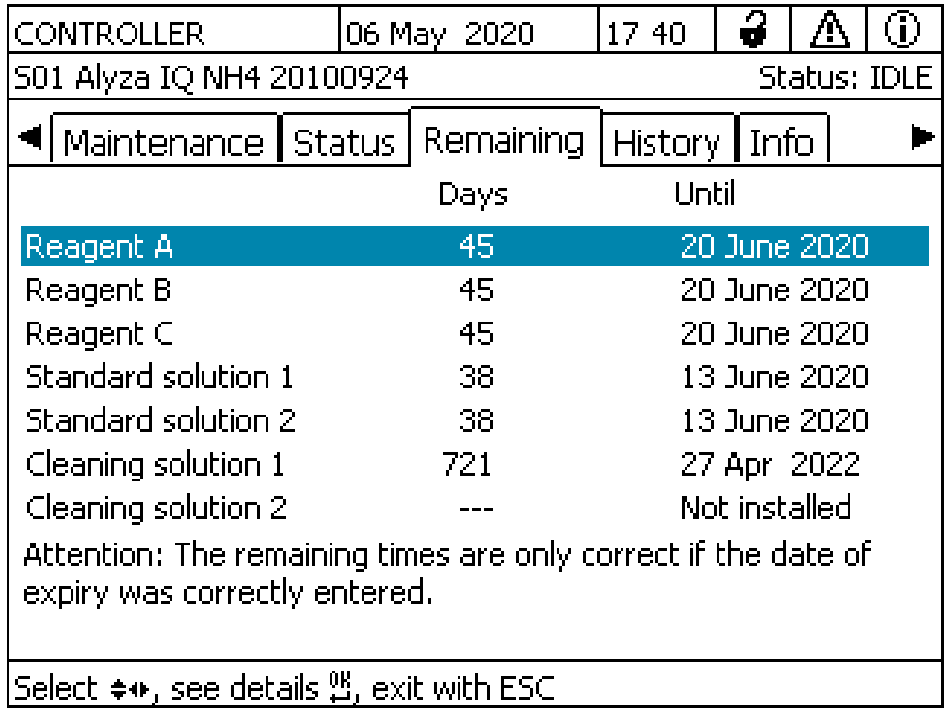


Exchange of tubings:

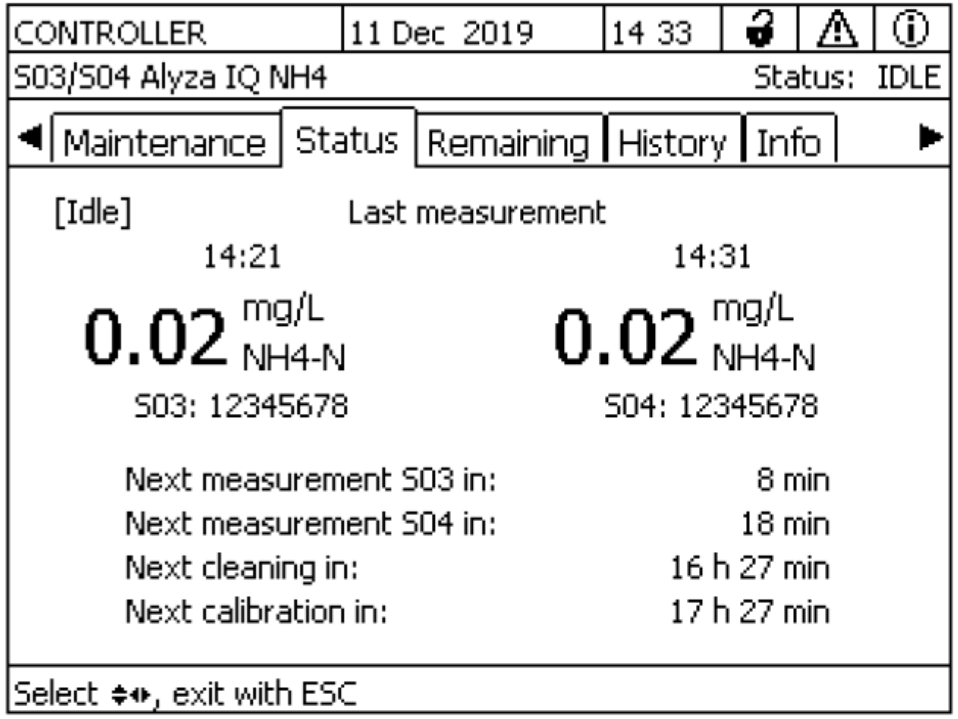
Tubings reduced to a minimum

- Tubing life > 1 year
- Robust material
- Automatic cleaning cleans sample tube as well

Benefits Alyza IQ - On Board Diagnostics



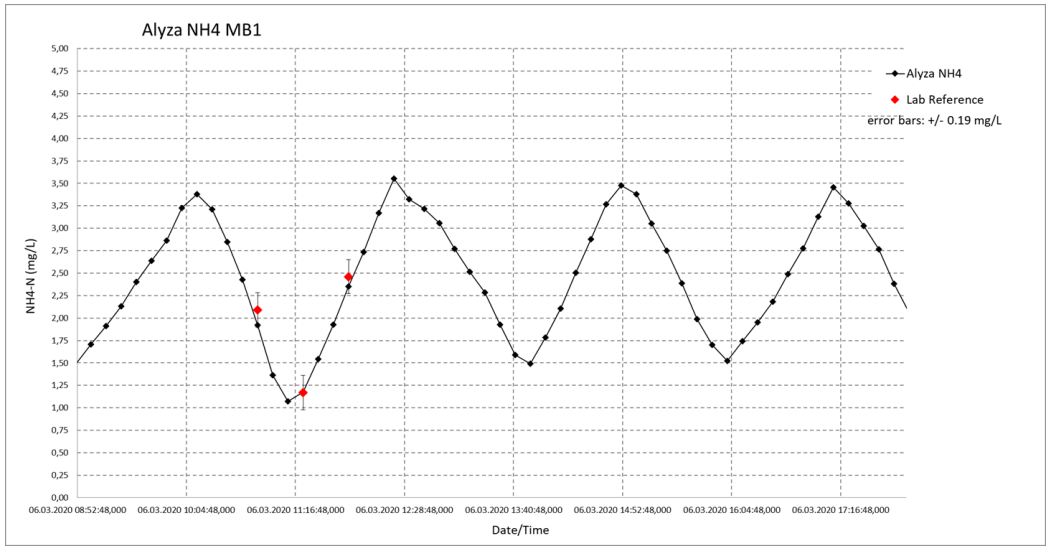
Real-time monitoring of reagent levels



Measurement Status

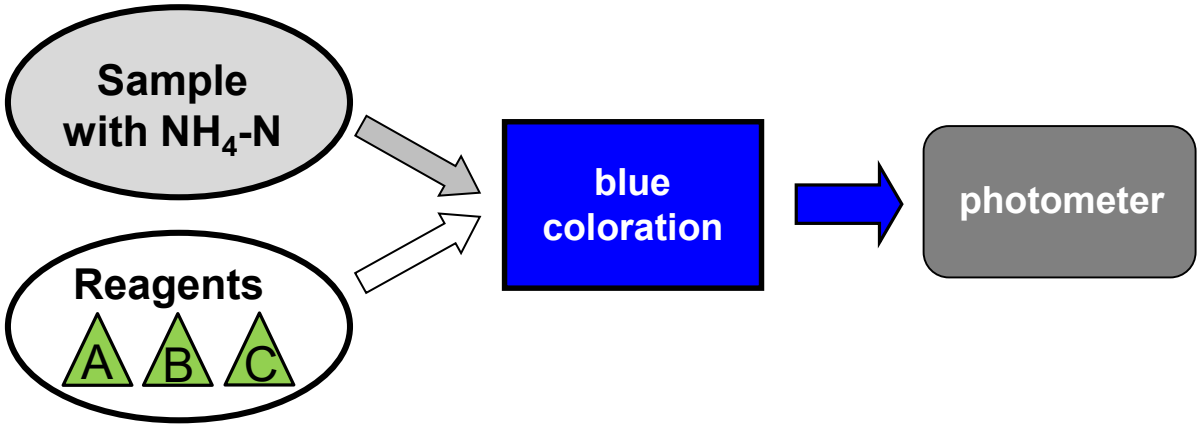
Benefits Alyza IQ – Maximize data availability

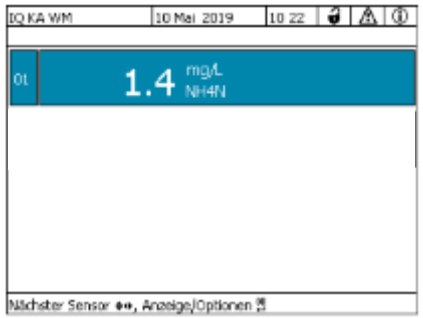
- Automatic 2-point calibration and cleaning ensures accurate and reliable measurements
- Real-time monitoring of reagents levels helps keeping your analyzer in operation
- Temperature control improves accuracy
- High accuray at low measuring ranges



Alyza IQ NH_4 – detection method

- Berthelot Method/Indophenol (blue) Method
- Reaction from Ammonia to blue colored Indophenol-Ions
- Method according to DIN 38 406





Marcellin Berthelot
1827 to 1907

Alyza IQ NH_4 – Specifications

Analyzer Model	Alyza IQ NH4-111 and Alyza IQ NH4-112 (Measuring range 1 and 2 in each model)	
Measuring Range	0.02 … 5.00 mg/l NH4-N	0.10 … 20.00 mg/l NH4-N
Resolution	0.01 mg/l NH4-N	0.05 mg/l NH4-N
Accuracy	± 2 %, ± 0.02 mg/l	± 3 %, ± 0.10 mg/l

Alyza – NH4 Applications

Compliance Assurance:

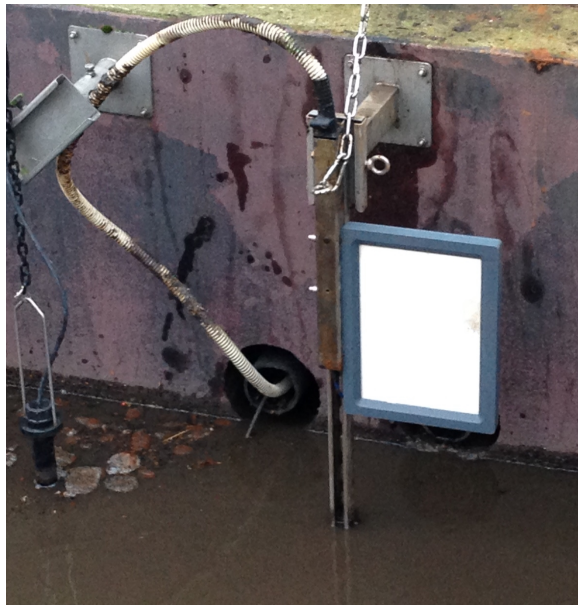
- Effluent monitoring

Environmental monitoring:

- River monitoring

Filtration

- Improved Filtration
- Standard Filter
- Cut-off limit: < 0.45 µm
- Mounting same as P 700 IQ filter



Mounting options

- Wall mount
- Rail mount
- Mounting stand

- New: Terminal mount

Analyzer vs. ISE sensors

Feature	Alyza IQ NH4	VARiON 700 IQ
Optimized for	Effluent monitoring Surface water monitoring	Aeration control Centrate water measurement
Measurement of	Low levels of NH4 with high accuracy	Medium to high NH4 levels with moderate accuracy
Min. measurement interal	10 min (t_{90}< 10 min)	Continously (t_{90}< 3 min)
Measurement range	0.02 … 5.00 mg/l NH4-N 0.10 … 20.00 mg/l NH4-N	0.1 ... 100.0 mg/l 1 ... 2,000 mg/l
Resolution	0.01 mg/l NH4-N 0.05 mg/l NH4-N	0.1 mg/L 1 mg/L
Accuracy	± 2 %, ± 0.02 mg/l ± 3 %, ± 0.10 mg/l	± 5 %, ± 0.2 mg/l* ± 5 %, ± 0.2 mg/l*

**in standard solutions*

Contact Xylem for more information

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Panelist

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Website:

www.xylem-analytics.asia

New Catalog!

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Upcoming Webinars

Panelist:
Dr. Klaus Reithmayer

June 18th:
OxiTop for BOD, much simpler much easier!

June 25th:
OxiTop-IDS, best solution for respiration study!

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Thank you for joining us today!

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