

Real-time **nitrate** and **nitrite** based monitoring & process control for **wastewater** treatment

Aquamonitrix® is a new breed of autonomous *in situ* analyser, capable of measuring nitrate and nitrite with laboratory-quality accuracy and specificity in real-time. It is incredibly robust in wastewater environments, delivering high accuracy (~95% in wastewater) with low-biofouling and blockage potential and minimal need for intervention.

This makes it an extremely user-friendly analyser for monitoring wastewater effluent in real-time.

The ability to simultaneously measure nitrate and nitrite with laboratory accuracy and specificity also makes Aquamonitrix® a powerful tool for optimisation of biological nitrogen removal (BNR) processes to control nitrous oxide emissions and/or significantly reduce aeration energy requirements through short-cut BNR.

- Control nitrous oxide emissions by using real-time nitrate and nitrite monitoring in the nitrification and denitrification zones
- Significantly reduce the energy consumption associated with aeration by using real-time nitrate and nitrite monitoring for process optimisation, including 'short-cut' biological nitrogen removal methods such as nitrite shunt and anammox
- Remotely monitor your WWTP, with 24/7 surveillance of concentrations of nitrate (and nitrite if desired) in effluent prior to discharge or re-use.
- Perform real-time monitoring to evaluate the potential of new and alternative nitrogen removal processes.

Aquamonitrix® is a novel nitrate and nitrite monitoring solution

- Based on rapid ion chromatography and a proprietary UV-LED detection technology
- Offering laboratory accuracy in the field and real-time measurement
- With real-time data transmission to your SCADA system and/or the proprietary Datamonitrix data management system for instant alarms and alerts and analyser self-diagnosis direct to your PC



How AquaMonitrix[®] delivers superior performance in wastewater

AquaMonitrix[®] innovatively combines ion chromatography with proprietary, low-power-requirement UV-LED detection and microfluidic sample-handling technology. This provides laboratory performance from a compact and robust, field-based instrument.

Due to lower ionic attraction, the nitrite ions can travel more quickly through the chromatography column than nitrate, so they reach the UV-LED detector first, allowing both anions to be measured separately. The column also acts as a trap for organics, colour, turbidity, air bubbles and other common sources of interference in wastewater.

Because only microfluidic sample volumes are required, the sample-handling challenges are greatly reduced, and the use of large bore, anti-fouling intake tubing further minimises the potential for blockages and bio-fouling.

Virtually plug n' play for instant deployment

On arriving on site, your AquaMonitrix[®] unit can be installed and operating in just over an hour

- No need for site preparation
- The only connections required are mains power and the sample inlet and outlet. (Solar/battery option available)
- The device is portable, lightweight and smaller than an airline carry-on case

Low life-time costs

- Simple setup and operation
- Equally simple, vendor-neutral servicing. Can be carried out in-house or by a local, agnostic service company
- Low skills requirement
- Low cost, non hazardous sodium chloride (NaCl) reagent

AquaMonitrix[®] key performance parameters

- No requirements for recalibration - even if the analyser is moved to a new matrix – e.g. wastewater to fresh or saline water
- Only minor inventions required between services - such as topping up eluent or changing the sample syringe
- Servicing is straight-forward and vendor-neutral



Want to know more?

Call us on +353 59 9149097
 Email us at info@aquamonitrix.com
 Visit www.aquamonitrix.com

View more technical specifications over the page ->

TECHNICAL DATA SHEET

Specifications

- + Analyser technology: Ion chromatography and UV-LED
- + Maximum sampling frequency: 10 mins
- + Accuracy:
 - Fresh water ~99%
 - Wastewater & Saline Water ~95%
- + Precision 95%
- + Analytical Range for Fresh Water and Wastewater*
 - Nitrate: 0.6 – 500 mg/L NO_3^- (0.14 to 113 mg/L as N)
 - Nitrite: 0.05 – 100 mg/L NO_2^- (0.01 to 23 mg/L as N)

**In 35 ppt saline water, the lower limits of detection are 1.0 mg/L nitrate as NO_3^- (0.23 mg/L as N) and 0.5 mg/L nitrite as NO_2^- (0.15 mg/L as N)*

Power Source

- + 15 - 25 V dc input power, 50W max. rated power
- + Integrated battery for backup
- + Solar/battery version available for mobile and off-grid use

Environmental

- + Operating temperature range: 10 - 40°C
- + Sample temperature range: 2 - 50°C
- + Operating humidity range: 10 - 90% RH, non-condensing
- + Storage temperature range: -20 - 60°C
- + Storage humidity range: 10 - 90% RH, non-condensing
- + IP rating: IP65 (IEC 60529)

Dimensions and Features

- + External size: 23cm X 36cm X 57cm (enclosure size, without supporting cradle)
- + Weight: 12 kg
- + Portable
- + Integrated provision for mounting/securing to a fixed surface (e.g. floor, wall, etc.)
- + Integrated carry handle and lockable hinged door
- + Rugged construction: Impact, UV and corrosion-resistant
- + Eluent: Sodium Chloride (NaCl)
- + Alarms and indicators: Tri-colour Status LED

User Interfaces/Data Output

- + Wired output transmission: MODBUS over Serial (RS232 / RS485)
- + IoT communication capability
- + Optional IoT Datamonitrix data management platform
- + Data communications via RS232, for commissioning/troubleshooting

Certifications

- + C.E. Mark, REACH

Warranty

- + One Year

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