aquamonitrix®

REAL-TIME NITRATE & NITRITE MONITORING

Real-time **nitrate** and **nitrite** monitoring for **drinking water producers** from source - to treatment plant - to tap

Aquamonitrix® is a revolutionary new breed of real-time analyser, capable of selectively analysing nitrate and nitrite in the same sample, with high accuracy (~99% in freshwater) down to very low levels of detection.

Use Aquamonitrix® to monitor raw water entering the treatment plant to determine the need for blending or nitrate-removal - and for real-time statutory-limit monitoring of nitrate and nitrite in treated water leaving the plant.

Aquamonitrix® delivers the same high performance for mobile and 'off-grid' solar/battery-powered nitrate and nitrite monitoring in river basins and groundwater studies.

In addition, it provides a uniquely effective tool to identify nitrification hot spot in drinking-water distribution systems treated with chloroamines for secondary disinfection.

Aquamonitrix® is a new type of nitrate and nitrite analyser

- Based on rapid ion chromatography and a novel, proprietary UV-LED-based 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

- Be alerted instantaneously to elevated nitrate and/or nitrite in raw water entering the plant or in treated drinking water leaving the process.
- Monitor nitrate and nitrite levels in observation boreholes and groundwater sources.
- Perform catchment/watershed studies of nitrate sources and evaluate mitigation strategies.
- Monitor nitrate and nitrite formation in the distribution system, where chloramination is used for secondary disinfection.

99% Accuracy for Nitrate and Nitrite Measurement | At the Treatment Plant or for Mobile & Remote Use

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With **best-in-class accuracy Aquamonitrix®** offers a host of **additional user benefits**

Aquamonitrix® provides equivalent nitrate measurement accuracy (or better) in head-to-head trials with marketing-leading analysers for the drinking water sector.

But with Aquamonitrix® you also benefit from

- A simultaneous nitrite measurement - also with laboratory-quality accuracy (~99% in freshwater)
- Low-cost, vendor-neutral servicing
- High performance outside a treatment plant or kiosk - in water distribution networks and groundwater / river-basin water-abstraction-source environments
- Battery/solar option for mobile & remote monitoring
- Stable calibration - no need to recalibrate when moved to a different matrix type

Virtually plug n' play for instant deployment

On arriving on site, your Aquamonitrix® unit can be installed and operating in little over an hour.

- No need for site preparation
- The analyser is lightweight and portable
- The only connections required are sample inlet and outlet
- Choose from the mains powered or the solar/battery version, with data communication options to suit your site

Low life-time costs

- No nitrite/nitrate sampling and lab analysis costs
- Low skills requirements, with simple setup and minimal intervention operation
- Equally simple servicing, which can be carried out in-house or by a local vendor-neutral service company
- Low-cost, non hazardous (NaCl) eluent

Datamonitrix Data management portal

- Aquamonitrix® transmits your nitrate and nitrate readings by IoT and/or wired data transmission in real time
- Data input can be to SCADA and/or your choice of water/ environmental data management system
- The proprietary Datamonitrix portal allows you to store, manage and trend your data, set limits and alarms, and receive analyser self-diagnosis reports - all from your PC

Want to know more?

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

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REAL-TIME NITRATE & NITRITE MONITORING

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)*

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

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

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

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)

Certifications

+ C.E. Mark, REACH

Warranty

+ One Year

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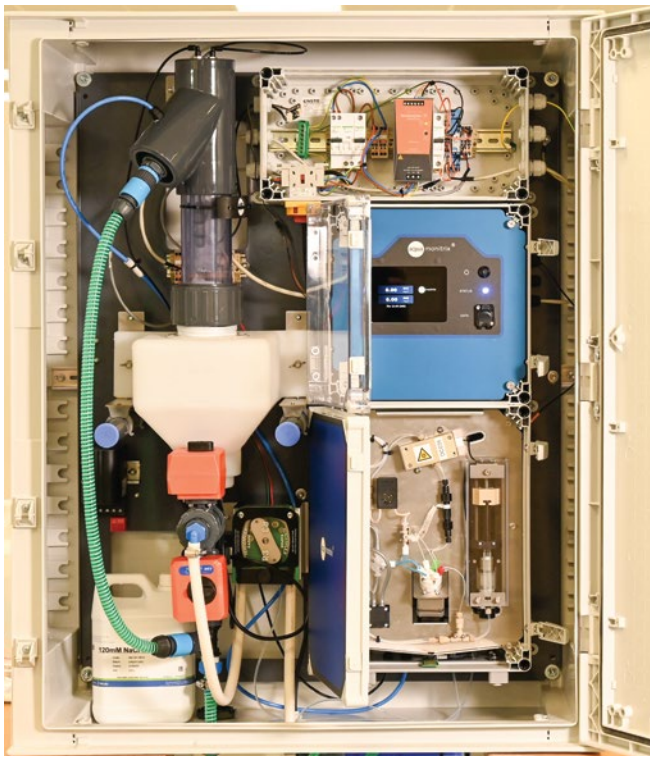
setLR monitrix
Sample Delivery

Sample Filtration System
For in-situ water sample analysis

Pre-Treatment Settler System

Overview

The Pre-Settling System utilises the natural settleability of mixed liquor in the Activated Sludge Process (ASP) to separate supernatant from sludge. In batch sampling, a predefined mixed liquor volume settles in a vessel. After settling, the supernatant is extracted using an analyzer sample pump. The inlet filter is shielded from mixed liquor exposure by a containment tube within the vessel head. Airflow blockage prevents water sample entry into the containment tube. Once settled, opening the air line allows supernatant into the tube, preventing scum entry through the bottom end. The prepared sample is then extracted for analysis.



Benefits of setLRmonitrix

- **Improved equipment availability**

  The process relies on natural settling, so the only addition is time. Other solutions typically use filtration which are typically prone to fouling and ragging leading to partial/full blockages and therefore greater equipment downtime.

- **Large sample volume can be prepared in a relatively short time**

  Up to 500 ml of sample can be prepared in 10 mins.

- **Simple & Robust**

  The main components used in the system (liquid pump, electric-actuated valves) are tried-and-tested technologies that are mature, are used across various industries, and generally have wide availability.

- **Lower operational costs**

  Because the system doesn't involve the use of filtration elements, the operating costs involved in maintaining and servicing filters are eliminated, as well as the cost of spare/consumable elements of the filter element itself which periodically need replacement.

CONTACT US

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Sample Delivery

Sample Filtration System
For in-situ water sample analysis

Pre-Treatment Settler System

How it works

The Pre-Settling System takes advantage of the inherent settleability of the mixed liquor matrix. ASP involves the use of aeration and the addition of chemical agents such as coagulants and flocculants (e.g. ferric sulphate) to the plant influent which accelerate the settling of suspended solid matter within the matrix. When a sample of this mixed liquor is extracted from the ASP process and left undisturbed for a period of time, the suspended solids content can be observed to settle to the bottom of the sample container under gravity to form a sludge, while a clear supernatant layer can be observed to form at the top of the container. This supernatant volume increases with time. This same principle is used as part of the plant treatment process whereby a secondary clarifier is used to settle out the sludge from the aeration basin output.

The solution has multiple design aspects:

1. Sampling from the aeration basin using Supply Pump
2. Settling Vessel to separate the supernatant from the sludge
3. Filter Containment Tube to protect the analyser's inlet filter
4. Control system

Specifications

- Electrical Power: 120-240 Vac single phase, 240 W max., 50/60 Hz (without heater accessory option)
- External Size: 1056 mm (H) x 852 mm (W) x 350 mm (D)
- Operating Temperature range: 5 – 40°C
- Sample Temperature range: 2 – 50°C
- Max. Suction Lift of Pump: 7 metres
- Wetted Materials: PVC, PP, PE, thermoplastic elastomer
- Net Weight: 60 kg approx. (without Aquamonitrix unit installed)
- Pump Flow Rate: Up to 3 L/min
- Settler Tank capacity (filled): 4 litres
- Minimum sampling interval: 15 mins
- Settling Time range: up to 30 mins
- Inlet/Outlet Hose: 1/2" reinforced flexible PVC
- Strainer: Coarse strainer on inlet, uPVC construction, 5mm perforated hole size, 1/2" hose connection.

- Enclosure construction: Fibreglass Reinforced Polyester (FRP), hinged door w/ panel key lock
- Enclosure rating: IP66 to IEC 60529
- Mounting options: wall-mount or pedestal/plinth mount (no mounting system provided)

- Controls and Software: Controls integrated to Aquamonitrix analyser (AQUAtest s/w available to support install & service)

- Pump and valves, electrical: 24 Vdc powered

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