

Delivering a filtered sample preparation solution for analysis in wastewater applications



Overview

Aquamonitrix has developed pureFLO, which involves an integrated flow cell and depth filter, as a sample preparation solution for use with the NOx-monitrix® analyser. The system provides a means of extracting and preparing a filtered sample from an aeration tank (activated sludge) within a wastewater treatment plant, as part of secondary biological treatment. A sample is extracted from the matrix by pump which fills an Integrated Flow Cell adjacent to the analyser. This ensures sample presence is checked immediately prior to starting the analysis cycle, hence ensuring sample stability.

The solution can be delivered in two configurations:

(a) with the flow cell contained within an outer enclosure which is also used to house the analyser, thereby providing a means to physically protect and thermally control the complete solution (more suited to outdoor locations);

or (b) with the flow cell mounted to a separate backing plate and grouped with the analyser power distribution (more suited to indoor locations).



Benefits of pureFLO monitrix

- The pureFLO system is robust, simple to use and maintain. As the internal components of the pureFLO analyser are widely used within other common-day industrial applications they are readily available, extremely reliable and competitively priced.
- The associated operational costs are low; the filter cartridge itself is a low-cost disposable item and designed for quick replacement.
- Flow Cell functions such as pump and valve operations are controlled directly by the analyser, i.e. a fully integrated solution (no need for additional PLC/controller).
- All controls are managed via the provided AQUAtest software, no additional software required.
- Grouping the flow cell and its associated functions with the analyser allows for thermal control of the full solution within the outer enclosure. The thermal option includes insulation of the enclosure as well as heating and thermostat controls. The enclosure features integrated inlet and outlet filtered vents to allow for adequate airflow, and comes with external wall-mount fixing lugs for mounting provision.
- The system can be provided with a Dual-stream sampling option.



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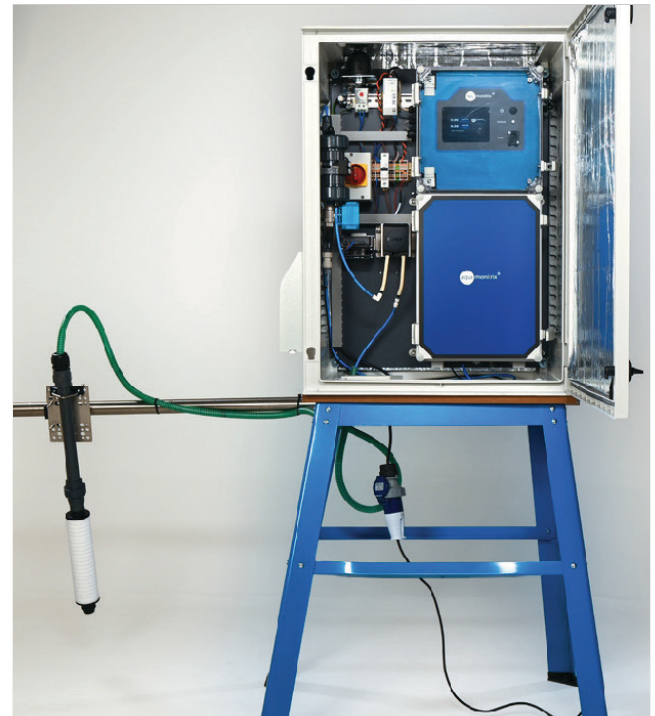


How it works

A Depth Filter Cartridge mounted to one end of a rigid pipe is submerged within the matrix at the sampling point. A peristaltic pump grouped to the Integrated Flow Cell pumps the filtered sample to fill the flow cell to overflow.

The presence of a sample within the flow cell is checked prior to the start of the analyser cycle using sensor controls to prevent any risk of pulling air into the analyser system. Once the sample has been extracted from the flow cell, a motorised drain valve opens to allow the flow cell to drain out in preparation for a subsequent sampling cycle.

The fill volume of the flow cell is 175ml; having the flow cell positioned in close proximity to the analyser ensures that the volume of sample that needs to be prepared can be minimised. The batch filling-emptying cycle of the flow cell is provided for by the analyser, a fully integrated solution.



Specifications

These specifications are specific to the analyser in the outer enclosure

| | |
|------------------------------|--|
| Electrical Power: | 210-250Vac / 110-130Vac single phase, 210W max., 50/60 Hz |
| External Size: | 847mm (H) x 636mm (W) x 300mm (D) |
| Operating Temperature range: | 0 to 40°C |
| Operating Humidity range: | 10 – 90% RH, non-condensing |
| Sample Temperature range: | 2 to 50°C |
| Storage Temperature range: | -20 to 60°C |
| Storage Humidity range: | 10 – 90% RH, non-condensing IP rating: IP65 (IEC 60529) |
| Max. Suction Lift of Pump: | 9 metres |
| Wetted Materials: | PVC, stainless steel, nylon, PU, PP, thermoplastic elastomer |
| Net Weight: | 40kg approx.(with analyser installed) |
| Pump Flow Rate: | up to 488 ml/min max. |
| Flow Cell fill volume: | 175 ml |
| Minimum sampling interval: | 5 mins Outlet drain Hose: 1/2" PU tubing |
| Filter/Strainer: | Depth Filter Cartridge 50µm (or optional coarse strainer) |
| Enclosure Mounting: | SS wall-mount fixing lugs (4x M8-size mounting holes, hole spacing 882mm H x 530mm W) |
| Enclosure type: | FRP material, grey, hinged lockable door, vented |
| Depth Filter Mounting: | SS Handrail Mount Bracket provided, for up to Ø3" size rail |
| Length of PVC rigid pipe: | 2.4m (can be cut to length) Max. length of sample line: 8m |
| Controls and Software: | Controls integrated to NOxmonitrix analyser (AQUAtest s/w utility for settings/config) |
| Flow Cell pump and valve: | 24Vdc powered |

CONTACT US

