



UV Sensor Flow-Through Installation with Self-Cleaning & Sampling Device

The installation is an automated UV sensor system delivering long-term, accurate measurements through continuous filtration and self-cleaning.

Ideal for harsh environments and nitrate monitoring in wastewater treatment, it minimizes errors and reduces maintenance required to clean sensor lenses.

This patented system has been successfully deployed worldwide confirming its reliability and versatility.

Overview

UV sensors often suffer measurement errors due to high concentrations of suspended solids, which demand frequent manual cleaning. The installation overcomes these challenges by continuously filtering samples using a ceramic membrane and peristaltic pump reducing concentrations from up to 35,000 mg/L to less than 10 mg/L.

Its specially designed flow cell accommodates sensors of any size and minimizes bubble interference, while adjustable cleaning cycles automatically inject an acidic solution to clean the sensor lens, flow cell, and sampling tube.

This integrated system is ideal for harsh environments where reliable, long-term, and maintenance-light performance is critical.



Applications



Waste Water Treatment

- Optimized for nitrate measurements in biochemical tanks and municipal wastewater treatment works.



Environmental Monitoring

- Ideal for monitoring water quality in rivers and lakes, ensuring reliable UV sensor performance in various settings.

Benefits

Accurate, Stable Measurements

- Minimizes errors by continuously filtering out suspended solids and reducing bubble interference.

Reduced Maintenance

- Automated cleaning cycles eliminate the need for frequent manual sensor upkeep.

Optimized for Harsh Environments

- Ideal for challenging applications such as nitrate monitoring in wastewater treatment and environmental monitoring.

Long-Term Reliability

- Designed for continuous operation with reduced downtime and enhanced durability.

Enhanced System Longevity

- Automatic temperature control stabilizes system conditions, protects components from extremes, and extends lifespan.

Key Features



Continuous Filtration

Uses a ceramic membrane and peristaltic pump to lower high sample concentrations swiftly.

Versatile Flow Cell

Accommodates any sensor size while effectively suppressing bubble formation for any application.



Automated, Adjustable Cleaning

Features configurable cleaning cycles (typically 5 minutes per cycle) to maintain sensor performance.

Robust Operation

Incorporates automatic temperature control with integrated heating and cooling for uninterrupted performance.



Pump operates continuously for 12 months - no tubing replacement required

Process

- **Water Sampling & Filtration:** The ceramic membrane is installed directly in the water sample, and a peristaltic pump continuously filters and draws the sample for analysis.
- **Measurement:** The UV device's measurement window is sealed within a specially designed flow cell, which continuously measures the filtered sample in real time.
- **Cleaning Activation:** The cleaning system periodically injects an acidic cleaning solution into the flow cell, effectively cleaning the measurement lens, flow cell, and sampling tube.
- **Customizable Cleaning Protocol:** The cleaning procedure, including the type and concentration of the acidic solution, can be adjusted and replaced based on the specific conditions of the application environment.
- **Measurement Pause During Cleaning:** During each cleaning cycle, measurements temporarily halt and outputs are held until the cleaning process is completed.

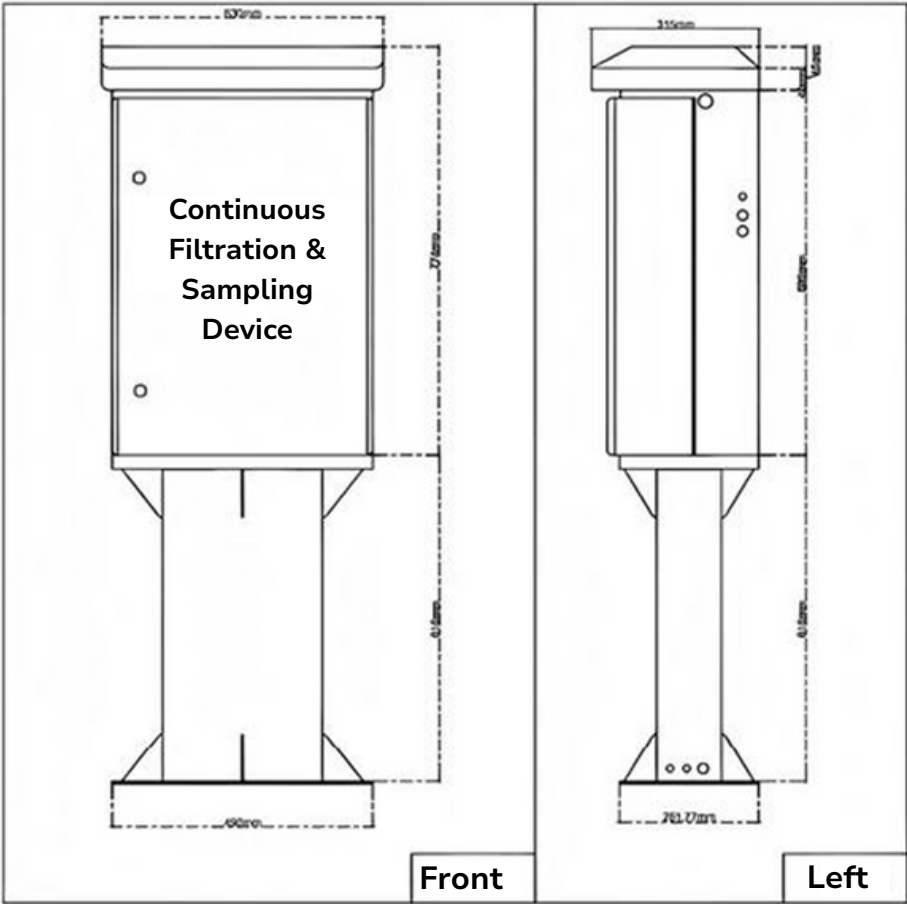
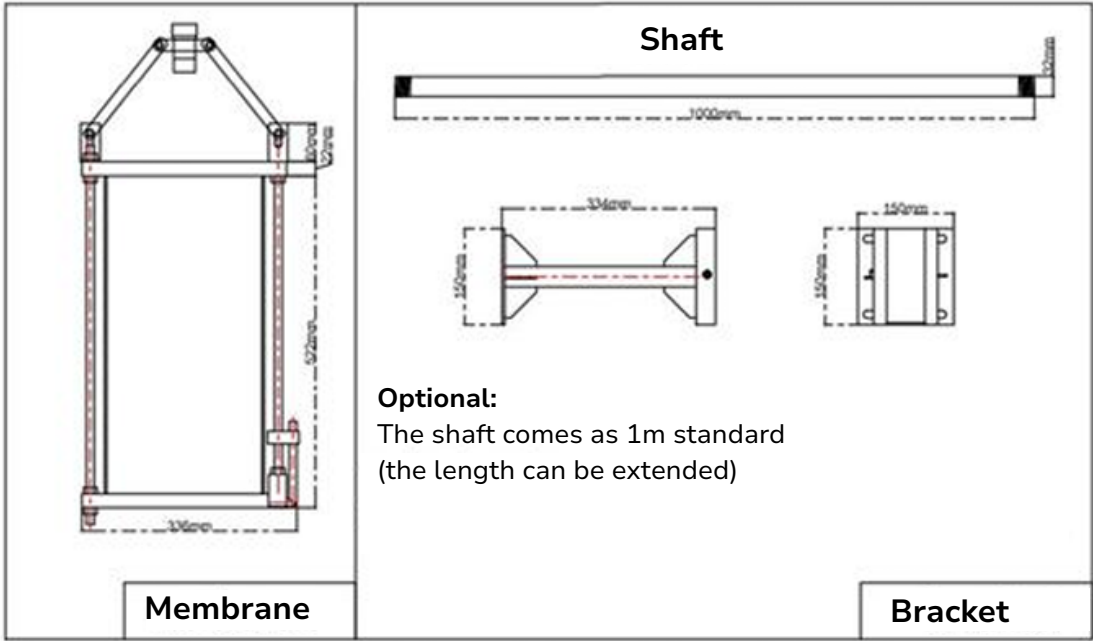
Specifications

Parameter	Specification
Overall Dimensions	530 x 774 mm
Weight	34 kg
Filtration Method	Ceramic membrane
Sampling Filtration Method	Continuous filtration with a peristaltic pump
Max Original Sample Concentration	35,000 mg/L
Post-Filtration Sample Concentration	Less than 10 mg/L
Post-Filtration Flow Rate	0 - 200 mL/min (adjustable)
Maximum Sampling Height	6 meters
Membrane Maintenance Cycle	Depends on flow rate and original sample concentration. Membrane cleaning interval >1 month (at 6000 mg/L wastewater treatment plant biochemical tank and 50 mL/min flow rate; cycle lasts ~5 minutes), Optional: Automatic membrane cleaning function available
Pump Tube Replacement Cycle	>1 year (at 4 meters sampling height and 50 mL/min flow rate)
Control Cabinet Dimensions	480 x 270 x 870 mm
Control Cabinet Weight	18 kg, membrane module 0.8 kg
Power Supply	230 VAC
Control Cabinet Protection Level	IP55 (suitable for outdoor installation)
Operating Temperature	-30°C to 70°C (with standard automatic temperature control)

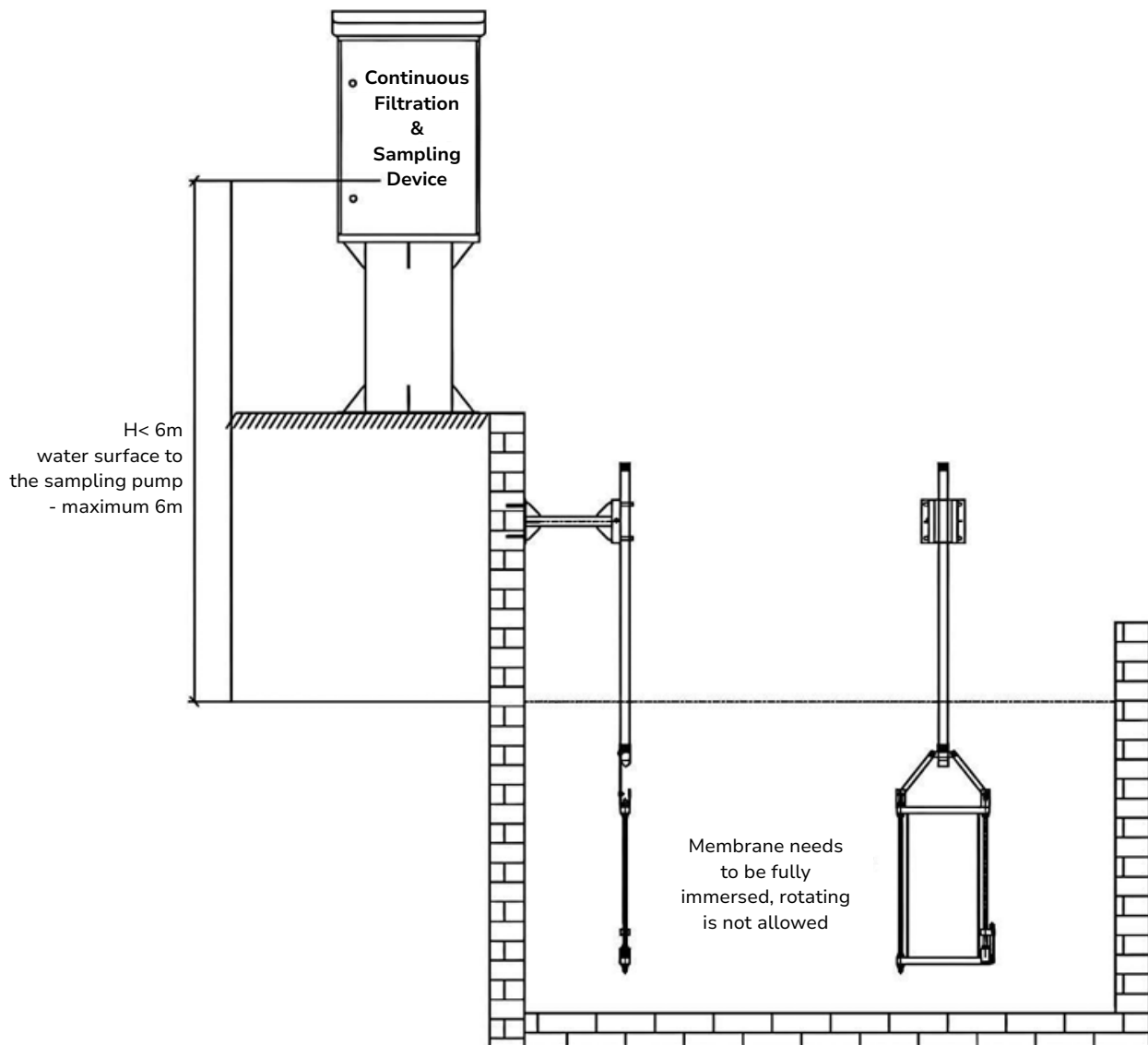
Specification

Parameter	Specification
Membrane Material	304 Stainless Steel, Ceramic (optional installation bracket available)
Communication	Two configurable relays required from field equipment for cleaning cycle settings
Cleaning Solution	Citric acid; 2 liters provide continuous cleaning for one month (cleaned once daily). Flow cell, sensor lens, and sampling tube will be fully cleaned.
Cleaning Coverage	Fully cleans the flow cell, sensor lens, and sampling tube.
Cleaning Procedure	Adjustable; typically, each cleaning cycle takes 5 minutes.
Cleaning Cycle Control	Adjustable; field equipment requires two configurable relays.
Automatic Temperature Control	Activates a cooling blower when the environment exceeds the high setting and a heating system when it drops below the low setting; heats the cabinet and all sampling & drainage tubes.

Installation



Installation



**Ready to revolutionize your UV sensor measurements for nitrate
in wastewater and environmental monitoring?**

Discover how the installation can deliver unmatched accuracy
and reliability even in the toughest environments.

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contact our team today for a personalized consultation.**