



**EnviroTech Instruments**

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# **Aqua Monitor**

## **Smart Water Sampler**



### ***Smart, Versatile Water & Plankton Sampler***

**Aqua Monitor** is a versatile water sampler for use in a wide variety of applications and can be integrated within traditional moorings, towed-vehicle systems and ROV or AUV platforms. The highly programmable sampler enables collection of up to 48 discrete water samples and may be programmed for autonomous time series sampling or for operation in "slave" mode within a system. Applications are as diverse and include sampling for nutrients, phytoplankton, salinity, suspended-load, tracers and contaminants. The new WMS-4 model enables in-line filtering & two-stage "smart" sample acquisition and processing.

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## Benefits

- Determine phytoplankton numbers during blooms
- Independent assessment of key parameters
- De-trend data corrupted by biofouling
- Obtain frequent in-situ calibration points
- Measure difficult variables

## Applications

- Phytoplankton, nutrients, salinity, suspended-load
- Fixed-point and spatial sampling
- Long-period deep-ocean deployments
- TMDL assessment

## Description

Aqua Monitor is a versatile water sampler that can collect 48 samples of up to 1000 ml each. The samples are captured using a high integrity syringe mechanism and then injected into gas impermeable bags via a 48-way multi-port valve. Samples are stored in two or more protective enclosures for post recovery analysis. Aqua Monitor can be used in moored or towed-vehicle applications to collect samples either as “one-shot” per sample or each sample integrated over time. Originally designed as a versatile water and phytoplankton sampler the device may be programmed for autonomous sampling or operated as a “slave” within an integrated system. The sample volume is user programmable and a macro language allows the operator to easily implement custom in-situ sample processing. Timed sampling control for moored applications includes traditional time-series sample collection and batch / burst sampling from a user generated schedule of sample interval. The real-time mode provides Aqua Monitor with the unique ability to sample coherently with tidal state or acquire groups of samples each dosed with different preservatives. Aqua Monitor may be triggered externally with an additional controller determining thresholds or other criteria to initiate sampling. A special deep ocean version of Aqua Monitor rated to 4000 m is available. Aqua Monitor has been used aboard many ROVs and AUVs and has been fitted to the National Oceanography Center (UK) AUV “Autosub” during science missions in the UK.

## Specification

Sample size (ml)	100 - 1000
Number of samples	Up to 48
Bag sizes (ml)	250, 500, 1000
Preservatives	Lugol’s iodine, mercuric chloride, chloroform, hyper-saline solution
Precision	0.50% sample volume
Endurance	Programmable from 1 sample per minute to 1 sample every 45 days
Dimensions	5.7” (146 mm) diameter x 24.5” (623 mm)
Weight	Air: 24 lbs (12.5 kg) - Water: Neutrally buoyant
Depth capability	100 m and 4000 m. <i>Deeper on request</i>
Power consumption	Peak: 740 mA / Mean: <2 mA (8 weeks)
Communications	RS232 - ASCII / 19,200 baud
Power supply	12 volt DC (range 9.5 - 15.0 volts)
Materials	Acetyl plastic, titanium
Scope of supply	Aqua Monitor, communications and power test-lead, scientific transit case, software, manual
Optional extras	Battery pack, sample bags, filters, preservatives, mooring frames