



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 47 discrete water samples and may be programmed for autonomous time series sampling or for operation in "slave" mode within a system. Applications include sampling for nutrients, phytoplankton, suspended-load, tracers and contaminants. The new WMS-4 model enables in-line filtering & two-stage "smart" sample acquisition and processing.



Benefits

- Phytoplankton speciation and quantification
- Independent assessment of key parameters
- Obtain frequent in-situ calibration points
- Time series samples of parameters requiring lab determination

Applications

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

Description

Aqua Monitor is a versatile water sampler that can collect 47 samples of up to 1000 ml each. The samples are captured using a high pressure syringe pump and then injected into gas impermeable bags that can be pre-loaded with preservative. 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. 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 47
Bag sizes (ml)	250, 500, 1000
Preservatives	Lugol's iodine, mercuric chloride, chloroform, hyper-saline solution
Precision	2% sample volume
Endurance	Programmable from 1 sample every 3 minutes 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
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	PVC, acetyl, titanium, 316 stainless steel
Scope of supply	Aqua Monitor, communications and power test-lead, scientific transit case, software, manual
Optional extras	Battery pack, sample bags, filters, sample storage boxes