Marine Nutrient Analyzer

The SubCtech expertise allows the realization of specific challenges:

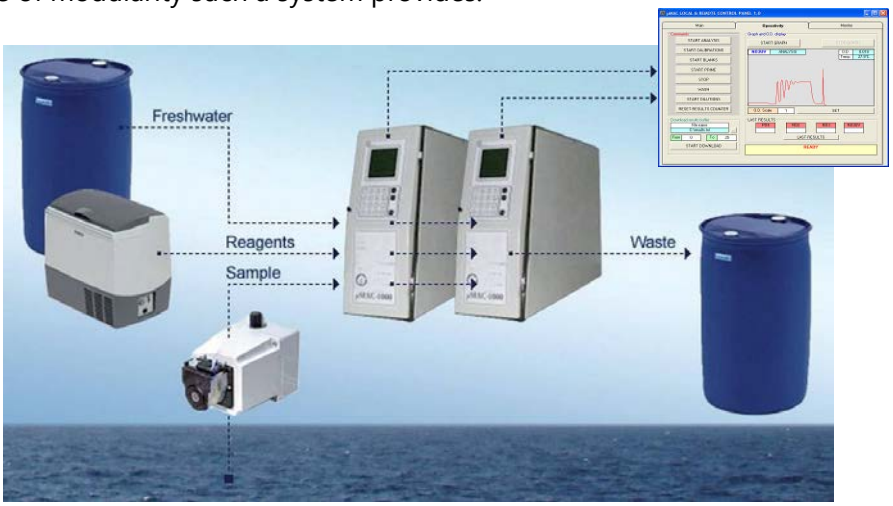
- Extreme stable measurements for long-term autonomous applications
- High safety with redundant storage and auto-reboot
- Monitoring of external parameters such as water flows, oxygen etc.
- Soft-PLC to control pumps and valves with alarm options
- Marine Ship and Buoy supported installation
- Automatic self-cleaning pre-filtration and waste water treatment
- Low running expenses – long retention

Photo: complete nutrient and pCO2 analyzing system for AquaCulture applications

SYSTEA, Italia and SubCtech GmbH, Germany, offer a unique online nutrient measurement technology for industrial and environmental monitoring as well as for professional oceanographic research. The mobile and small MicroMac-1000MP Analyser is applied hundredfold all over the world, convincing by a low detection limit and the capability for long term measurements driven by a time stable calibration. With only a couple of 100µl per analysis, the reagent consumption is incredibly low. The running expenses of the unit are further reduced by long maintenance intervals.

The optional SubCtech SmartDI® "Smart Data Interface" is used to acquire data from the analyzers and optionally sensors and is able to take control of processes as well. During the collection of data, the pre-processing already validates the values and passes quality-evaluated data records on to back-end systems. All data records are encoded according to ISO. The 2 GB Compact-Flash card is able to store years' worth of high resolution data. Firmware and data are stored on separate Compact-Flash cards, thus providing easy data access without endangering any firmware files.

The SmartDI® quick look function, as well as extensive configuration and diagnostic menus, provide a user-friendly man-machine interface. The modular and extensively expandable structure allows simple and economical adjustments to fit the most diverse applications. A sustainable investment is guaranteed by the high degree of modularity such a system provides.



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SubCtech support options:

- Development and planning of complete measurement systems
- Support in installation, operation on board and project planning
- Concept and construction of water logistics and reagents storage
- Maintenance and diagnostics of operating systems
- Instructions and after-sales support

Photo: Automatic sampling and self-cleaning on RV BELGICA

Specification	
Function principle	Two ray photometer (ion selective electrode for some data parameter) With loop-flow-analyses (LFA) and temperature stabilisation
Nutrients	NH_3, NO_2+NO_3, NO_2, PO_4, SiO_2 (please ask for other parameter) Up to 2 parameters can be combined into one instrument
Measuring range	Depending on method, automatic dilution or programmable
Detection limit	Depending on method, e.g. ammonia 1ppb, phosphate 0.5ppb
Measuring interval	Depending on method, typically 5-10 minutes, measurement rate adjustable
Calibration	Automatic, internally and externally programmable
Cleaning	Internal self cleaning, automatic and externally programmable
Reagents	Internal reservoir (optionally refrigerated) or external compressor cooler. Buffer solution and deionised water can be stored externally in larger bulks.
Signals	RS-232 and optionally analogue output (0-5V, 4-20mA). Optionally digital pins for status and error (i.e. air bubbles, leakage, measurement range)
Display	Configuration menus, graphical display, data and status memory Plastic foil keyboard for diagnostics, program selection and programming
Datalogger	Optional SmartDI® Datalogger control with error management, quality management, data storage and transmission, graphical quick-look display
Inflow / filtering	The optional self-cleaning automatic filter is recommended. Flow rate approx. 2-10 l/h per calibration. Internal tube pump or programmable external pump
Wastewater	Optional Reservoir tanks with automatic drain and alarm sensor
Temperature	Ambient temperature +10°C to +30°C for optimal results
Surrounding	IP55 splash- and dust-proof. An enclosed and tempered cabinet for usage under especially rough conditions e.g. on ships is available on request
Power	10-36VDC or 90-230V AC. 0.1W remote-off, 4W stand-by, approx. 10W analysis
Size	Approx. 500 x 110 x 350mm (L x B x H) without equipment, without cabinet
Weight	Approx. 10kg without reagents, without equipment

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