

Marine SYSTEA

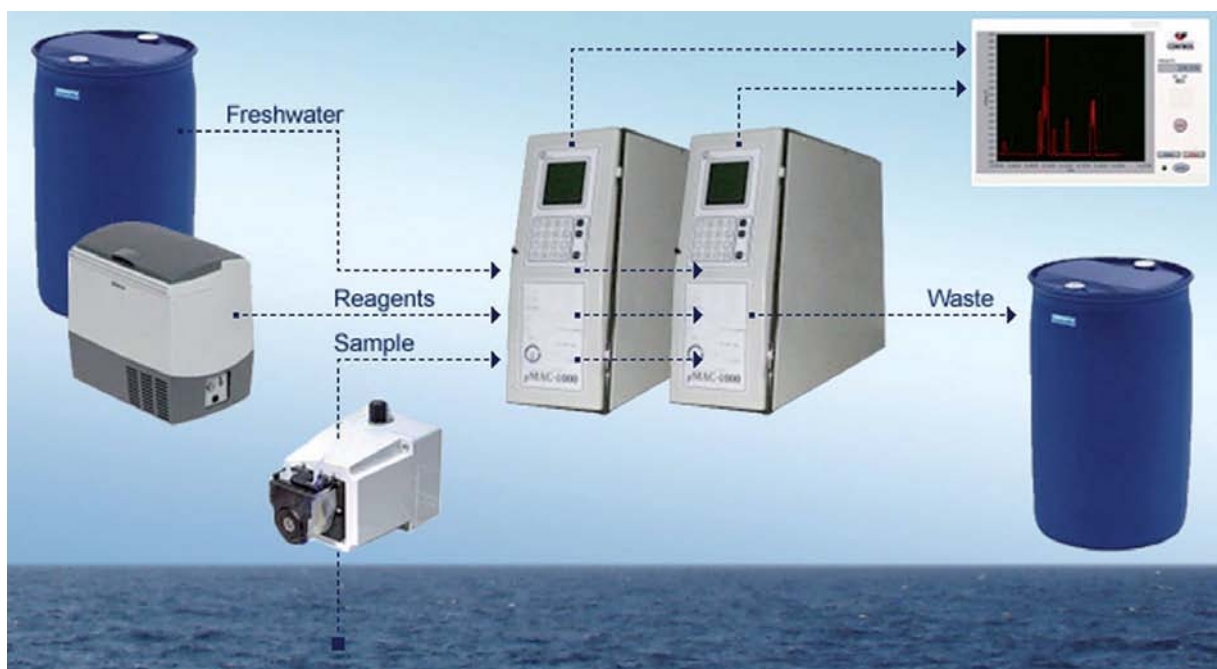
Nutrient Analyzer

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 SubCtech SmartDI™ Data system controls and supervises the measurement as well as displays the obtained data quality-validated. The data logger options for other connectable sensors and also the automatic and secure data transmission complement one another to a measurement system for monitoring applications. A sustainable investment is guaranteed by the high degree of modularity such a system provides.

The SubCtech expertise allows the realization of specific challenges:

- ▶ Automatic measurement systems with alarm options and instrument monitoring
- ▶ Monitoring with redundant data storage for more than 5 years of uninterrupted measurement data
- ▶ Low-power operation with rechargeable battery packs and intelligent energy management
- ▶ Automatic CRC secured telemetry with radio data transmission, GSM, SMS, ARGOS, IRIDIUM i.a.
- ▶ Monitoring of the in- and outflows driven by a pump and valve control system
- ▶ Ship and buoy supported installation
- ▶ Automatic pre-filtration and waste water treatment
- ▶ Low running expenses – long retention



SubCtech support options:

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

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 i.a. (please ask for current options) Up to 4 parameters can be combined into one instrument (two per photometer)
Methods:	Selectable ex works, programmable flow control
Measuring range:	Depending on method, automatic or programmable via thinner
Detection limit:	Depending on method, e.g. ammonia 1ppb, phosphate 0.5ppb
Measuring interval:	Depending on method, typically 5-7 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:	SmartDI™ control with error management, quality management, data storage and transmission, graphical quick-look display
Inflow / filtering:	Preliminary filter available with automatic cleaning prevents fouling. Flow rate approx. 2-10 l/h per calibration. Internal tube pump or prog. external pump
Wastewater:	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