

CONTROS HydroFIA™ TA



ANALYZER FOR TOTAL ALKALINITY IN SEAWATER

Characterizing the marine carbonate system to the level of accuracy required by marine scientists

Total alkalinity, or the buffer capacity, is an important sum parameter for many scientific and commercial fields of application. The CONTROS HydroFIA™ TA is a flow through system for the determination of the total alkalinity in seawater.

AUTONOMOUS ANALYSIS

The analyzer can be used for continuous monitoring during surface water applications as well as for discrete sample measurements. As an autonomous TA analyzer, it can also be easily integrated into existing automated measuring systems on Voluntary Observing Ships (VOS) such as FerryBoxes.

OPERATING PRINCIPLE

A defined amount of seawater is acidified by injection of a fixed amount of hydrochloric acid (HCl). After acidification the generated CO₂ in the sample is removed by means of a field-proven TOUGH membrane based degassing unit, which results in an open-cell titration. The subsequent pH determination is carried out by means of an indicator dye (Bromocresol Green) and VIS absorption spectrometry. Together with salinity and temperature, the resulting pH is directly used for the calculation of total alkalinity.

The CONTROS HydroFIA™ TA analyzer was motivated and supported by initial investigations carried out at the Helmholtz Centre for Ocean Research Kiel (GEOMAR) and the Helmholtz-Zentrum Geesthacht (HZG).

OPTIONS

- Integration into automated measuring systems on VOS
- Cross-flow filters for high turbidity / sediment loaded waters
- Extended working range of 1000 µmol kg⁻¹

CONTROS HydroFIA™ TA

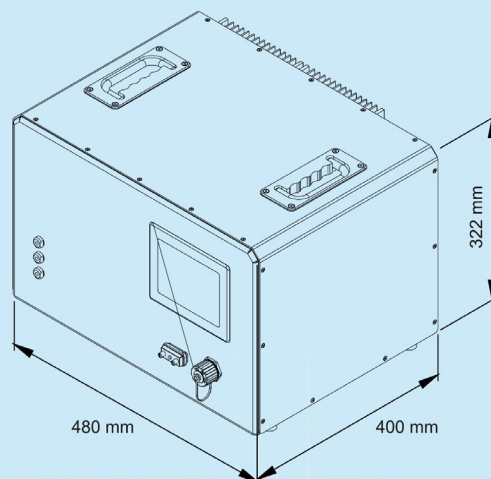
APPLICATIONS

The CONTROS HydroFIA™ TA is trusted to deliver precise results for diverse applications, including:

- Ocean acidification and carbonate chemistry research
- Monitoring of biogeochemical processes
- Aquaculture monitoring

FEATURES

- Measurement cycles of less than 10 min
- Robust and proven pH determination using absorption spectrometry
- Low sample consumption (<approx. 50 mL)
- Low reagent consumption (100 µL)
- User-friendly reagent cartridges
- Easy one-point calibration by the user
- Minimized biofouling effects due to acidification of the sample
- Autonomous long-term installations
- Second inlet for regular standard measurements



TECHNICAL SPECIFICATIONS

Detector	VIS absorption spectrometry, temperature stabilized, benchtop system	Measuring range:	
		– dynamic	400 µmol kg ⁻¹
		– standard	2000 µmol kg ⁻¹ to 2400 µmol kg ⁻¹
Field application	Surface water	Resolution	0.1 µmol kg ⁻¹
Dimensions	480 x 400 x 322 mm	Initial accuracy	±5 µmol kg ⁻¹
Weight	25 kg	Precision	±2 µmol kg ⁻¹
Temperature range ambient	+5 °C to +30 °C	Measurement cycle	<10 min
Salinity range	20-37 psu	Power supply	100 VAC to 240 VAC
		Data interface	Ethernet, RS-232

Specifications subject to change without notice.

CONTACT -4H-JENA

Get in touch to find out how CONTROS HydroFIA™ TA can secure your ability to measure and report dependable total alkalinity data as part of your workflow.

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The CONTROS HydroFIA™ TA enables climate researchers to contribute towards meeting the United Nations Sustainable Development Goals.



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