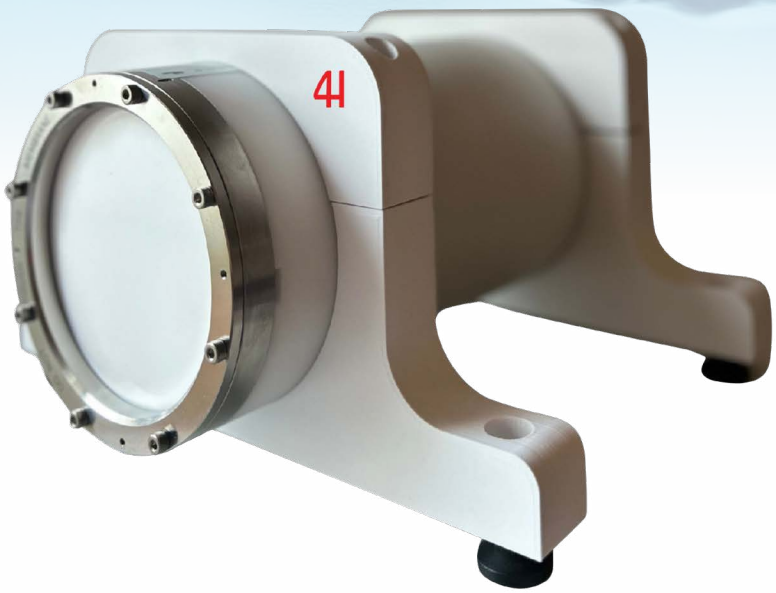
PRODUCT SHEET

4H JENA ENGINEERING

CONTROS HydroC™ CH_4/CO_2 Combi FT



FLEXIBLE FLOW-THROUGH MONITORING OF METHANE AND CARBON DIOXIDE

Simultaneous CH_4 and CO_2 measurements in water and air for shipboard and laboratory applications

The CONTROS HydroC™ CH_4/CO_2 Combi FT is a combined flow-through sensor designed to measure methane and carbon dioxide simultaneously in a single, compact system. Optimised for flexible monitoring workflows, it supports measurements of dissolved CH_4 and CO_2 in water and is also available for CH_4/CO_2 measurements in air.

By integrating two essential greenhouse gas measurements into one device, the HydroC™ CH_4/CO_2 Combi FT reduces system complexity while saving space, weight and energy. It delivers reliable, high-quality data for both scientific and industrial applications, including climate research, air–sea gas exchange studies and laboratory-based investigations.

OPTIONS

- Internal data logger
- External battery packs (HydroB series)
- Anti-fouling head

Each sensor is individually calibrated under field-simulated conditions to ensure high accuracy and long-term measurement stability. With a proven track record in international research programmes, the HydroC™ platform is a trusted solution for environmental monitoring and seamless integration into advanced observing systems such as 4H-FerryBox installations and stationary research or laboratory setups.

OPERATING PRINCIPLE

Water is pumped through the flow head of the sensor, where dissolved CH_4 and CO_2 molecules diffuse through a specially developed, highly stable ePTFE membrane into the internal gas circuit and detector chambers.

The partial pressure of CO_2 is determined using high-precision nondispersive infrared spectrometry (NDIR), while CH_4 is measured by tunable diode laser absorption spectroscopy (TDLAS), providing high sensitivity and selectivity. Concentration-dependent signals are converted into output data using calibration coefficients stored in the sensor firmware, supported by additional reference sensors within the gas circuit.

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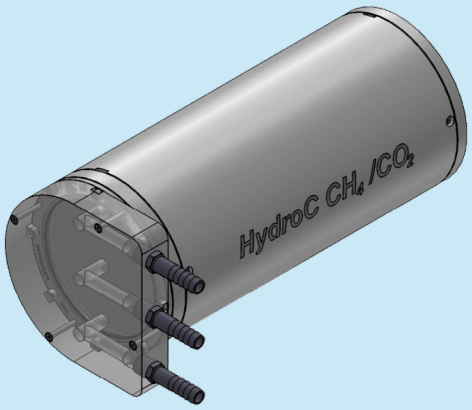
APPLICATIONS

- Ocean acidification research
- Climate studies
- Air–sea gas exchange
- Limnology
- Freshwater control
- Methane hydrate studies

KEY FEATURES

- Combined measurement of CH_4 and CO_2 in one compact flow-through system
- Measurements of dissolved CO_2 and dissolved CH_4 in water and air (ePTFE membrane)
- Long maintenance interval (12 months)
- Easy integration into 4H-FerryBox and laboratory applications
- User-friendly operation with CONTROS DETECT® software (real-time visualization, parameter configuration, data download)
- "Plug & Play" principle: all cables, connectors and software included



TECHNICAL SPECIFICATIONS

Detector	High-precision optical analysing – NDIR Tunable Diode Laser Absorption Spectroscopy – TDLAS
Measuring range	Standard calibration is pCO_2 200 to 1,000 µatm (other ranges on request) Standard calibration is pCH_4 0 to 40,000 µatm (other ranges on request)
Membrane	TOUGH membrane (for water), ePTFE membrane (for air)
Flow range	2 to 15 L/min
Weight	5.3 kg
Dimensions	140 x 315 mm
Supply voltage	11 – 30 V
Ambient temperature	1 °C to 35 °C
Water temperature	1 °C to 30 °C (other ranges on request)
Resolution	<1 µatm
Initial accuracy	± 0.5 % of reading
Connector	Hirschmann CA6LD (other connectors on request)
Supply voltage	11 to 30 V
Power consumption	Approx. 4.2 W @ 12 V
Data interface / Data format	RS-232C / ASCII

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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CONTACT YOUR LOCAL REPRESENTATIVE

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

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