

CONTROS SOPHISTICATED UNDERWATER GAS DETECTION

MADE IN GERMANY

HydroC™

CO₂



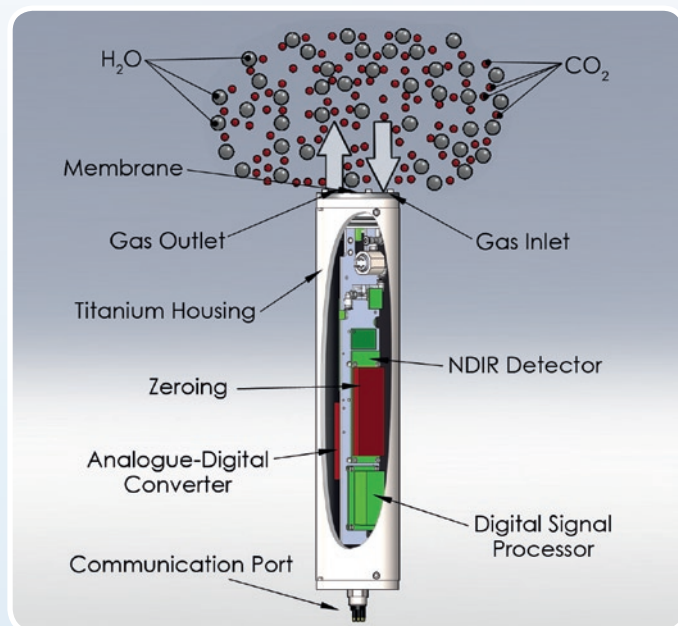
THE UNDERWATER $p\text{CO}_2$ SENSOR

- ✓ Air-Sea Gas Exchange
- ✓ Ocean Acidification
- ✓ Limnology
- ✓ Climate Studies
- ✓ Fish Farming and Aquaculture

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Although not the most powerful greenhouse gas, CO₂ drives climate change due to the enormous volumes of this gas pumped into the atmosphere. Studies on the behaviour, distribution and interaction of CO₂ in the water column and surface waters depend on accurate in-situ measurements.



CONTROS' HydroC™/CO₂ is a unique underwater carbon dioxide sensor solving the global problems of the in-situ and online measurements of CO₂.

Applications include Air- Sea Gas Exchange, Ocean Acidification, Limnology, Climate Studies, Fish Farming and Aquaculture.

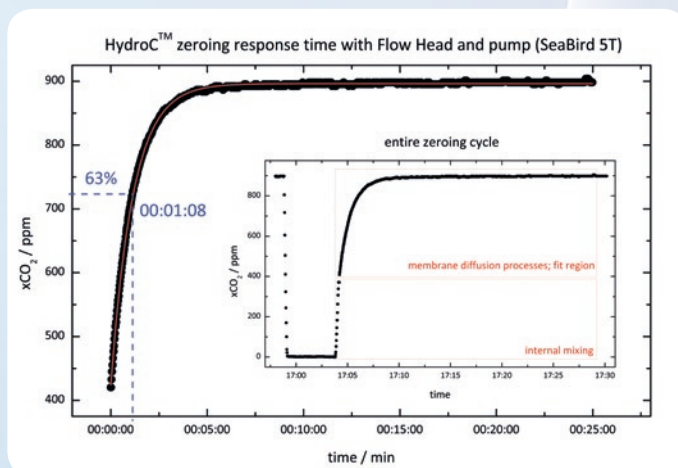
FUNCTION PRINCIPLE

Dissolved CO₂ diffuses quickly from the liquid through a patented thinfilm composite membrane into the internal gas circuit.

Therein the CO₂ concentration is measured with high accuracy by non-dispersive infrared spectrometry (NDIR).

ADVANTAGES

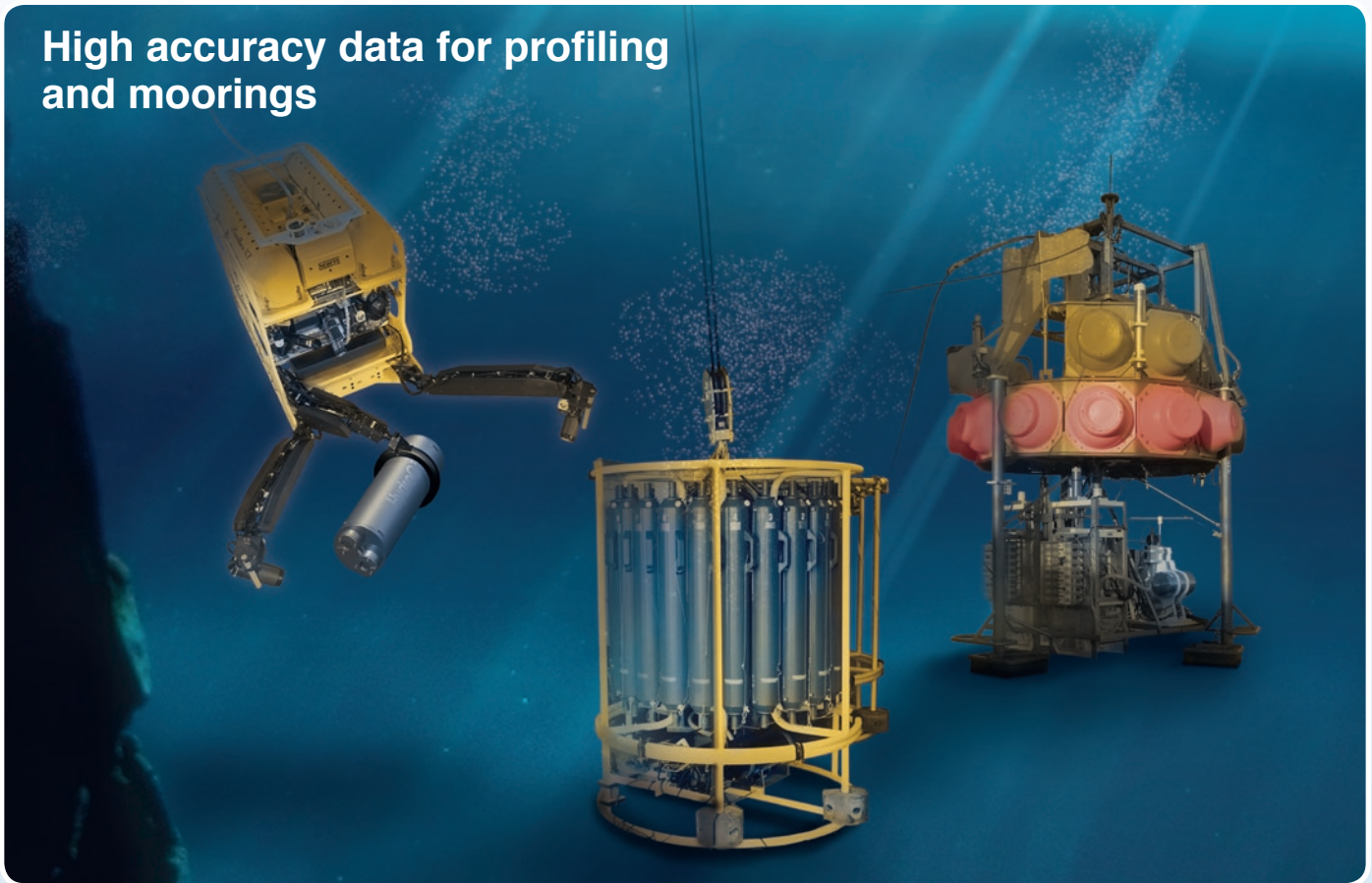
- ✓ unaffected by turbidity or interferences to other gaseous substances in the environment
- ✓ detects dissolved CO₂ in the water column
- ✓ features an optical technology with a proven track record
- ✓ long-term stable signal and reproducible data
- ✓ high reliability, very high accuracy and fast response time
- ✓ SOLE existing CO₂ deep-sea sensor (up to 6.000 m)



TECHNICAL OUTLINE

Dimension/ Weight:	90 d x 526 mm corrosion-free titanium / 5,9 kg (2,6 kg in water)
Operation depth:	2.000, 4.000, 6.000 m version available
Temperature range:	from -4°C to +30°C
Measuring range:	from 0 to 3.000 ppm (Standard calibration: from 200 to 1.000 ppm)
Equilibration time:	first signal after 5s, T ₆₃ ~ 1min (with external pump)
Accuracy:	± 1% of upper range value
Data Interface:	RS-232C • Data format ASCII NMEA-0183
Power supply:	Typ. 12 VDC (11–24 VDC)
Options:	RS-485 • Analogue Output: 0 – 5/10 V (Range / Full-scale can be user-configured) • Internal or external data logger • external PowerPack (e.g. 36 Ah) • Build-in water temperature probe for concentration calculation • UltraSleep energy saving for long-term monitoring • ROV and AUV adaption packages • Profiling and mooring frames • HydroC™/ CO ₂ - FT flow - through sensor for underway (FerryBox) and lab applications • biofouling protection • externally mounted pump with flow head for fast response time

High accuracy data for profiling and moorings



CONTROS' OFFER

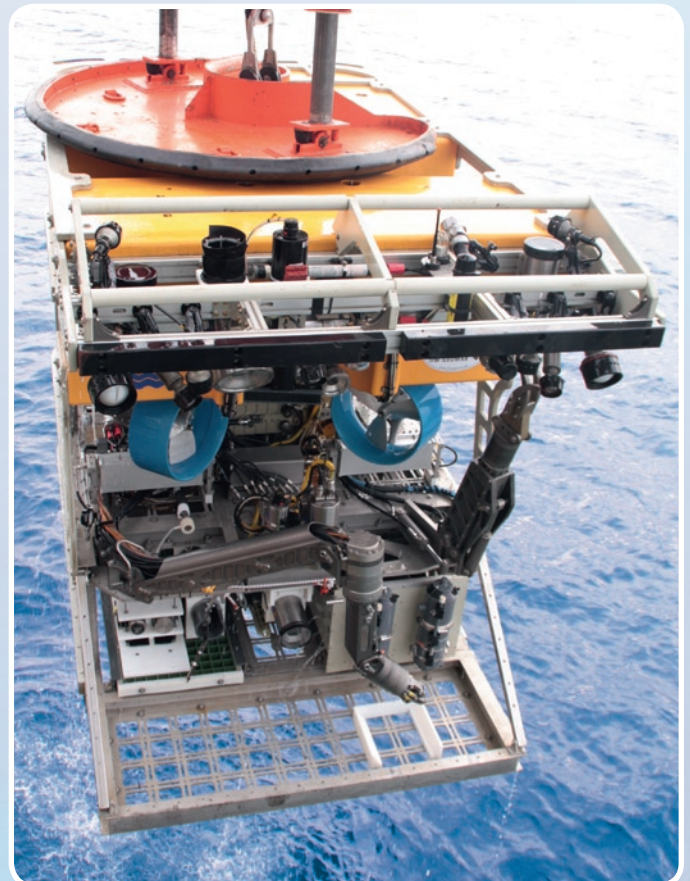
The key expertise of CONTROS is the development of subsea sensor systems for the detection of Hydrocarbons and CO₂. HydroC™ scientific product line, field experience and advanced data management systems meet the demanding requirements from research institutes worldwide.

PRODUCTS

- ✓ Sensor Systems
- ✓ PAH Systems
- ✓ MEG Systems
- ✓ Subsea Power Supplies
- ✓ Early Leak Detection Systems

SERVICES

- ✓ Instruction and Training
- ✓ Engineering Services
- ✓ International Project Management
- ✓ Offshore Oil & Gas Surveys
- ✓ Global presence and availability





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