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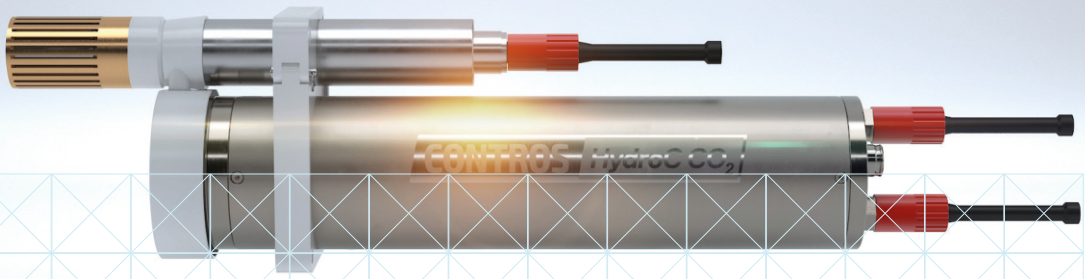
CONTROS HydroC CO_2



ACCURATE AND FAST UNDERWATER pCO_2 SENSOR

The CONTROS HydroC® CO_2 sensor is a unique and versatile underwater carbon dioxide sensor for in-situ and online measurements of dissolved CO_2. The CONTROS HydroC® CO_2 is designed to be used on different platforms following different deployment schemes. Examples are moving platform installations, such as ROV/ AUV, long-term deployments on seabed observatories, buoys and moorings as well as profiling applications using water sampling rosettes.

Individual 'in-situ' calibration

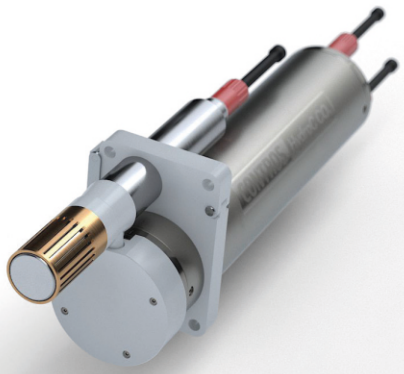
All sensors are individually calibrated in a water tank which simulates the deployment temperature. A sophisticated reference detector is used to verify the pCO_2 concentrations in the calibration tank. The reference sensor is recalibrated with secondary standards on a daily basis. This process ensures that the CONTROS HydroC® CO_2 sensors achieve unmatched short and long term accuracy.

Operating principle

Dissolved CO_2 molecules diffuse through the newly designed custom made thin film TOUGH membrane into the internal gas circuit leading to a detector chamber, where the partial pressure of CO_2 is determined by means of IR absorption spectrometry. Concentration dependent IR light intensities are converted into the output signal from calibration coefficients stored in firmware and data from additional sensors within the gas circuit.

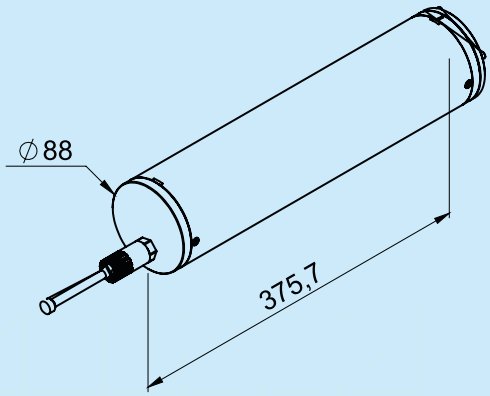
Accessories

A wide range of available accessories ensures that each of the CONTROS HydroC® CO_2 sensors can be adapted to meet customers requirements. The optional pumps with the different flow heads are the most popular options that ensure very fast response times. An anti-fouling head is used under conditions with significant biofouling pressure. The internal data logger can be used in conjunction with the HydroCs flexible power management features and the CONTROS HydroB® battery packs to conduct unattended long-term deployments.



FEATURES

- New robust TOUGH membrane
- Improved gas cycle management for reliable long-term deployments
- Deep sea capability
- Very robust, depth rating up to 6,000 m
- Very fast response time
- User-friendly
- Versatile – easy integration into almost every oceanographic measurement system and platform
- 'Plug & Play' principle; all required cables, connectors and software are included



TECHNICAL SPECIFICATIONS

CONTROS HydroC CO_2

Detector	High-precision optical analyzing NDIR system
Measuring range[1]	
• standard calibration	200 - 1,000 µatm
Weight	
• in water	2.2 kg
• in air	4.5 kg
Dimensions[2]	89 mm x 380 mm
Depth rating	2,000 to 6,000 m (profiling) versions available
Temperature range[3]	
• standard range	-2°C to +35°C
Response time	t_{63} ~ 60 s (with SBE-5T)
Resolution	< 1 µatm
Initial accuracy	±0.5 % of reading
Connector[4]	SubConn MCBH8-M Titanium 8-pin
Supply voltage	11 V - 30 V
Power consumption [5]	Approx. 300 mA @ 12 V
• with SBE-5T ext. pump	an additional 8 W
Data interface	RS-232C
Data format	ASCII

SOFTWARE

CONTROS DETECT® incl. real time data visualization, setting of sensor parameters (e.g. measuring intervals, internal data logger settings, sleep mode function) supported by a mission planning tool and data download from internal logger

HARDWARE REQUIREMENTS

Win 7 32 Bit, 200 MB free disk space, Dual Core CPU with 2GB RAM

OPTIONS

- Available temperature ranges for reduced power consumption
  -2°C to +30°C
  -2°C to +20°C
  -2°C to +8°C
- Measuring range 100-6000 µatm
- Analog output: 0 V - 5 V
- RS-485 data interface
- Internal data logger
- External battery packs
- ROV and AUV installation packages
- Profiling and mooring frames
- CO_2 flow through sensor for underway (FerryBox) and lab applications
- External pump (SBE-5T or SBE-5M)
- Anti-fouling head

Front page image: CONTROS HydroC® CO_2 sensor with SBE-5T external pump.
1) other ranges on request 2) without connector, 3) other ranges on request, 4) other connectors on request
5) approx. values for standard configuration at 20°C ambient temperature

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