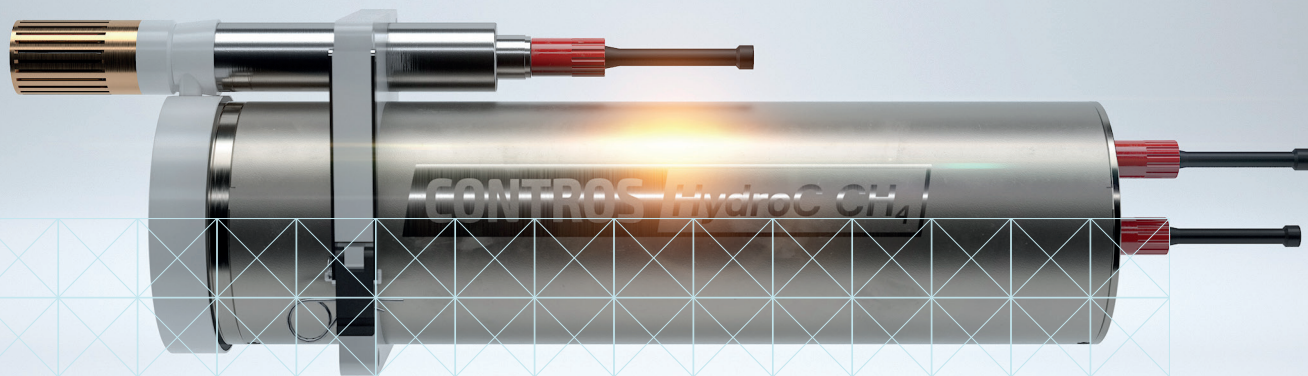


CONTROS HydroC CH₄



KONGSBERG



ACCURATE, LONG-TERM STABLE METHANE SENSOR

The CONTROS HydroC[®] CH₄ sensor is a unique underwater methane sensor for in-situ and online measurements of CH₄ partial pressure ($p\text{CH}_4$). This versatile sensor provides the ideal solution for the monitoring of background CH₄ concentrations as well as for high peaks of CH₄ in a deep sea environment.

Operating principle

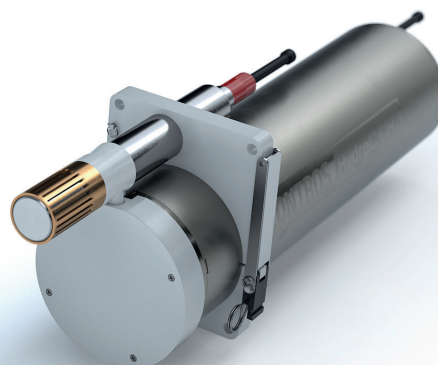
Dissolved CH₄ molecules diffuse through the newly designed custom made TOUGH thin film membrane into the internal gas circuit leading to a detector chamber, where the CH₄ concentration is determined by means of Tunable Diode Laser Absorption Spectroscopy (TDLAS). Concentration dependent laser light intensities are converted into the output signal from calibration coefficients stored in firmware and data from additional sensors within the gas circuit.

High accuracy and stability

Due to their narrow line-width, the Tunable Diode Laser Detectors have a high accuracy and an ideal selectivity for methane molecules. In addition, they feature a large dynamic range covering background partial pressures up to 40 matm. All detectors are subject to an individual calibration and an in depth quality check in our QA lab before they are integrated into our sensors. The quality of the calibration is then verified individually in calibration tanks. The sensor is stable over a long time as the detector tunes the laser to CH₄ absorbing and non-absorbing wavelengths for each measurement thus compensating for potential drift influences.

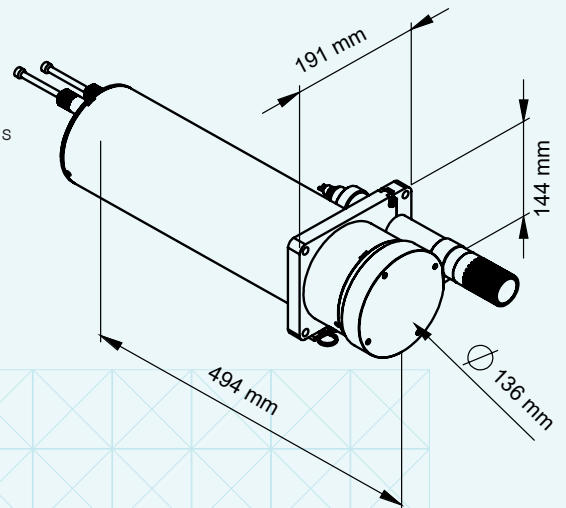
Accessories

A wide range of available accessories ensures that each of the CONTROS HydroC[®] CH₄ sensors can be adapted to meet customers' requirements. Underwater pumps and different flow head designs are the most popular options, which ensure fast response times. An antifouling head is used under conditions with significant biofouling pressure. The internal data logger can be used in conjunction with the CONTROS HydroC[®]'s 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
- High accuracy and low detection limit of background concentration
- Large measuring range
- Optimal long-term stability
- Ideal methane selectivity
- Non-consuming CH₄ measurement
- Very robust, can be used in water depths up to 3000 meters
- User-friendly 'Plug & Play' principle; all required cables, connectors and software are included



TECHNICAL SPECIFICATIONS

CONTROS HydroC CH₄

Detector	TDLAS -Tunable Diode Laser Absorption Spectroscopy
Measuring range	0- 40,000 µatm
Detection limit	< 1 µatm
Weight	
• in water	5.5 kg
• in air	12.5 kg
Dimensions	
• without connector	136 x 494 mm
• with connector	136 x 528 mm
Operational depth	3,000 m
Temperature ranges ^[1]	-2°C to +35°C
Resolution	< 0.01 µatm
Accuracy ^[2]	±2 µatm or ±3 %
Connector ^[3]	SUBCONN MCBH-M Titanium 8-pin
Supply voltage	12 V - 30 V
Power consumption ^[4]	Approx. 690 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, download data from internal data logger and sleep mode function

HARDWARE REQUIREMENTS

Windows 7 32 Bit or higher, 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
- Analogue output: 0 V - 5 V
- RS-485 data interface
- Internal data logger
- External battery packs
- ROV and AUV installation packages
- Profiling and mooring frames
- External pump (SBE-5T or SBE-5M)
- Flow through version for underway (FerryBox) and lab applications

Front page image: CONTROS HydroC® CH₄ sensor with SBE-5T external pump.

1) other ranges available, 2) whichever is greater, 3) other connectors on request, 4) approx. values for standard configuration at 20°C ambient temperature

CONTROS HydroC® is a registered trademark of Kongsberg Maritime AS in Norway and other countries.

Specifications subject to change without any further notice.

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