



HydroC™ / CO₂ CO₂ Sensor



CO₂ is one of the most important gases in our environment. Indeed, in many areas of everyday life, CO₂ monitoring is a necessity. CONTROS' HydroC™/ CO₂ is a unique underwater carbon dioxide sensor solving the global problems of the in-situ measurements of CO₂. Applications include offshore inspections, green house effects, oceanographic applications and water & waste water treatment tasks.

Detector	High-precision optical analysing NDIR system • Maintenance free
Function principle	Dissolved CO ₂ diffuses from the liquid through a special silicone membrane (patented) into the detector chamber (patented). The NDIR absorption of light depends on the gas concentration (CO ₂ molecules) and it is measured electronically.
Membrane	Special membrane for shallow water < 100m • Standard membranes up to 2000m • HD membrane up to 6000m • Protection cap included • Anti fouling device on request
Operation depth	2000 m titanium • 4000m titanium deep sea • Special 6000m deep sea extended rating
Temperature	Standard +4 to +30 °C • Option – 3°C to +15°C for arctic applications.

	"Shorty" Version	"Long John" Version
Measuring range	500, 2500, 5000 ppm or higher on request	Same range, Higher resolution
Housing	90 d x 380 mm Titanium	90 d x 550 mm Titanium
Response time	10s for the first signal, T ₆₆ app. 30s	e.g. 2 times more
Weight	3.9 kg/1.9 kg app. in air/water 2000m 5.6 kg/3.2 kg app. in air/water 4000+m	5.3 kg/2.4 kg app. in air/water 2000m 6.6 kg/3.5 kg app. in air/water 4000+m

Resolution	0.1 ppm
Accuracy	±3% reading • Noise level app. ±3 ppm
Calibration	Calibration stored internally • Recalibration recommended every 12 months • Calibration units in ppm, µAtm, µmol/l, µg/l or other on request.
Zero adjust	Auto zeroing on programmed intervals • Gas reference included for approx. 1 year • External zeroing with software or switch button
Power supply	9 - 32 VDC • < 10W with thermal stabilisation • 3W Low-Power version available without thermal stabilisation • Warm-up max. 30 minutes
Warm-up	
Connector	Connector SUBCONN® MCBH8MTI 8-pin • Other on request
Analogue Output	0 – 5/10 V • 0/4 - 20 mA • Range / Full-scale can be user-configured
Digital Output	RS-232C • Option RS-485 / 3000m • Option Long-Range-Modem / 20 km • Option FSK Power+Data Modem / 12 km • Data format ASCII NMEA-0183
Software	Windows® Software DETECT™ included • User-software is easy to adapt
Memory, Datalogger, Options	Internal Datalogger with 2 GB FlashCard Memory • Extreme small and in-expensive Flow-trough system for underway / FerryBox and lab applications • Low-Power Battery powered sensor • Lilon PowerPacks e.g. 41Ah • ROV+AUV Adaption packages • Profiling+Mooring frames • External Datalogger and Controller • Special data processing



HydroC™ CO₂ measurements with the IfM-GEOMAR at the Fiji Islands. First time to explore a pure fluid CO₂ sea in 1700m water depth. Operated by the MARUM ROV QUEST 4000 from Schilling Robotics.
[Photo © Leibniz-Institut für Ostseeforschung Warnemünde]



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