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| <b>Applications</b>                        | In-situ measurement of dissolved CH <sub>4</sub> motivated by:<br>Climate Change Studies; Methane Hydrate Studies; Limnology; Profiling/ Moorings;<br>Offshore Risk Management; Pipeline Inspection and Leak detection  |
| <b>Detector</b>                            | High-precision optical analysing NDIR system • Maintenance free   |
| <b>Principle</b>                           | Dissolved CH <sub>4</sub> molecules diffuse through a silicone membrane into the patented detector chamber, where their number is determined by means of IR absorption spectrometry. Concentration dependent IR light intensities are converted into output signals.  |
| <b>Dimension/ Weight</b>                   | 90 d x 376 mm corrosion-free titanium/ 4,7 kg (3 kg in water)   |
| <b>Operation depth</b>                     | 2000, 4000, 6000 m version available  |
| <b>Temperature range</b>                   | 3 ... +30°C (Arctic version: -2 ... +15°C)  |
| <b>Measuring range</b>                     | 100nmol – 50µmol/l (other ranges available)   |
| <b>Equilibration time</b>                  | first signal after 5s, T <sub>63</sub> < 100 sec (with external pump)   |
| <b>Resolution</b>                          | 10 nmol   |
| <b>Accuracy</b>                            | ±3% reading (as the total sum of all the errors)  |
| <b>Calibration</b>                         | Calibration unit is µmol/l • signal is derived considering internal sensors for pressure, temperature and humidity • Recalibration recommended every 12 months  |
| <b>Drift correction / Features</b>         | Dual channel NDIR unit  |
| <b>Connector</b>                           | Connector SUBCONN <sup>®</sup> MCBH8-M Titanium 8-pin • Others on request   |
| <b>Power supply/ Consumption (@12 VDC)</b> | Typ. 12 VDC (11 - 24 VDC) (Arctic version: 12 - 24 VDC) • warm- up phase 2- 30min (depending on water temp)/<br>Apr. 300 mA<br>+ max. 150 mA small external pump (option)<br>+ max. 450 mA big external pump (option)   |
| <b>Data Interface</b>                      | RS-232C and RS-485 • Data format ASCII NMEA-0183  |
| <b>Software</b>                            | Windows <sup>®</sup> Software DETECT <sup>™</sup> included (real time data visualization, setting of sensor parameters, download data from internal data logger) • Adaption to user-software • Sleep mode function user configurable  |
| <b>Options</b>                             | Analogue Output: 0 – 5/10 V (Range / Full-scale can be user-configured) • Internal or external data logger (µSD card/ CF card) • external Battery Pack (e.g. 200 Ah Lithium (SAFT LSH 20)) • Build-in water temperature probe for concentration calculation • ROV and AUV adaption packages • Profiling and mooring frames • HydroC <sup>™</sup> /CO <sub>2</sub> (and/or CH <sub>4</sub> ) Flow Through version for underway (FerryBox) and lab applications • biofouling protection • external mounted pump with flow head for faster response time |

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