OceanPack MK-2

Mobile & Modular
Flow-through / Underway System for precise pCO_2 measurements

- Superb LI-COR® analyzer
- Auto calibration
- Lowest maintenance
- Roughest environmental
- High precision
- Low investment
- Operates on small vessels

Features & Benefits:

- High accuracy due to automatic temperature and pressure compensation
- Robust, versatile and compact housing for ship + offshore applications
- Complete, hand carry able and easy to maintain “Underway” or “Lab” System
- Includes the well-known LI-COR® pCO_2 sensor
- High stability with auto calibration feature included standard offset zeroing , auto- or manually span gas calibration supported – low maintenance costs
- AUMS (Autonomous Underway Measurement System) concept: easy integration of instrumentation through integrated “SmartDI” data management system, connected simultaneously by up to 36 serial interfaces (AADI Aanderaa Optode, BBE or TriOS Algae Monitor, SBE Seabird CTD’s and Thermosalinographs, Sea&Sun CTD’s, SYSTEA Nutrient Analysers, TriOS or Turner Fluorometer, Seapoint or WetLabs Fluorometer etc.)
- Optionally expandable through the RS-485 bus, e.g. to connect a Meteorology or sea- and waste water pumps. A full water supply is supported.
- Optionally automatic cleaning procedure includes flagging of collected data
- Automatic report for interferences and initiation of diagnostic routines
- Optionally GPS geo references for all data and position event control
- Optionally online telemetry data transfer and alarm services
- Easy handling and intuitive overall design

SubCtech GmbH
Gettorfer Straße 1
D-24251 Osdorf · Germany

Tel: +49 (0) 4346-6014 551
Fax: +49 (0) 4346-6014 552

Web www.subctech.com
E-mail: info@subCtech.com

New CO_2 measuring strategies for the Ocean

Sensor Principle	High performance **LI-COR®** analyzer contains dual-wavelength NDIR detector for CO_2 and H_2O. ● Silicone flat membrane equilibrator ● Low maintenance
Housing	19“ Industrial rack typ. 9 HE ● Open side doors for maintenance ● Front splash protected ● All tubes and connectors can be handled from the front. ● Smaller housings available
Weight	**Light**: 35 kg without optionally sensors or pumps
Size	**Small**: 600 x 505 x 400 mm W x H x D includes 150mm spacer
Water support	Integrated flow-through system ● access from all sides ● ideal for ship applications ● optionally **CO_2 tolerant Debubbler** ● optionally external inlet and outlet tanks ● flow rate typ. 5 l/min ● max. water pressure 3 Bar ● à ask for special conditions
Range	Standard 0...3000 ppm CO_2 ● 0...80 ppt H_2O ● up to 20.000 ppm CO_2 ● Units selectable
Resolution	0.01 ppm CO_2 ● 0.001 ppt H_2O
Accuracy	Correction for water vapour, pressure and temperature effects ● overall accuracy < 1.5%
Sample rate	Output rate typ. 1 Hz or higher with average ● **user configurable** ● Storage rate configurable
Calibration	Calibration stored internally ● Recalibration recommended every 12 months ● Factory calibration with 15 traceable gases to WMO standards for CO_2. NIST traceable LI-610 portable dew point generator for H_2O ● User correction supported
Auto Calibration	**Auto offset zeroing** on programmed intervals ● Zeroing reference included for >1 year operation time ● Manual **Span gas calibration** supported, optionally full auto-calibration
Analogue output	0...5V / 0...2,5V or 4...20mA ● Range can be configured
Data interface	Up to 36x RS-232 / RS-485 ● ASCII NMEA-0183 ● Easy integration into existing systems ● Optionally usage of radio links, Ethernet, WLAN etc. ● Data + Backup on 2GB CF card ● NEW Windows® Software **OceanView** for logging and online real-time data
External devices	Example of optionally sensors: SYSTEA nutrient analyzers ● Water sampler ● GPS ● Sea&Sun , Seapoint, bbe MOLDAENKE, RDI, Aanderaa AADI, Wet-Labs, Seabird (e.g. SBE45) Sensors ● external meteorological instrumentation via **RS-485 bus** supported
Cleaning	Optionally integrated **self-cleaning** option available ● Automatic flagging of the data for maintenance and error states ● Cleaning (anti-fouling) for integrated sensors provided
Controller Unit	SmartDI Touch-panel industrial PC ● 8,4“ touch TFT Display ● Automatic messages for failures and diagnostic ● 2 x 2GB CompactFlash for system and data storage ● Programmable Controller ● Expandable via RS485 modules for pumps, valves etc. ● Optionally alarms
Analogue input	Optionally 24 Bit data acquisition 0/4-20 mA, ±10V etc. ● Options for PT100 ● Expandable via RS485 Bus for e.g. meteorology or in-situ measuring devices.
Power	10..32 VDC or 90..240 VAC ● typ. 25W (without external pumps) ● max. 45W

Complete OceanPack system for small vessels and extreme conditions. *OceanoScientfic®* project by *SailingOne®*, IFRMER, Meteo-France, IFM-GEOMAR and others.

- www.oceanoscientific.org
- http://www.aldebaran.org/html/pressemitteilungen/2010/pm20100822.html

Complete OceanPack for vessel operation with additionally sensors and debubbler unit. The doors are removed here. Connect only water inlet, outlet, power, NMEA data output – and go.

SubCtech GmbH
Gettorfer Straße 1
D-24251 Osdorf · Germany

Tel: +49 (0) 4346-6014 551
Fax: +49 (0) 4346-6014 552

Web www.subCtech.com
E-mail: info@subCtech.com