

## pCO<sub>2</sub> Analyzer MK-2

Mobile flow-through analyzer for precise pCO<sub>2</sub> measurements



- Superb LI-COR® analyzer
- Auto calibration
- Lowest maintenance
- Roughest environmental
- High precision
- Operates on small vessels
- Optionally Top-Box contains Sensors, GPS or Air-CO<sub>2</sub> analyzer

### Features & Benefits:

- It's a LI-COR® Biosciences LI-840x CO<sub>2</sub>/H<sub>2</sub>O sensor: highest accuracy due to automatic temperature, pressure and H<sub>2</sub>O compensation - dual-wavelength NDIR detector
- Patented robust flat-membrane-equilibrator cassette – lifetime 10+ years, easy to handle
- Hand-held, easy to operate and maintain system with intuitive overall design. Low maintenance costs! No special setup required. Just plug'n'play.
- Robust, versatile and compact housing for offshore and laboratory applications. No need for special filters. Just provide water 3 to 20 l/min – max. 3 Bar
- High time series stability due to obligatory standard offset zeroing. Optional auto- or manual span gas calibration or reference gas measurements supported.
- Incl. data logger, easy instrument integration for e.g. Aanderaa Optode; TriOS, Turner or WET Labs Fluorometer; Seabird or Sea&Sun CTD and Thermosalinograph etc.
- Optionally connection of external devices through RS-485 bus, e.g. meteorology sensors or sea- water pumps. A full water supply is supported.
- Real-time data interface NMEA-0183: simple ASCII protocol, configurable to your needs.
- 12/24V dc or 110/230V ac power supply
- Data logging on 2GB Compact-Flash card.
- Optional GPS geo reference for all data and position event control



Specification	
<b>Sensor Principle</b>	High performance LI-COR® LI-840x analyzer – exclusive produced by LI-COR® Biosciences for SubCtech Contains dual-wavelength NDIR detector for CO <sub>2</sub> and H <sub>2</sub> O • Silicone flat membrane equilibrator
<b>Range</b>	Standard 0...3000 ppm CO <sub>2</sub> • 0...80 ppt H <sub>2</sub> O • Up to 20.000 ppm CO <sub>2</sub> • Units selectable
<b>Resolution</b>	0.01 ppm CO <sub>2</sub> • 0.001 ppt H <sub>2</sub> O
<b>Accuracy</b>	Overall accuracy < 1.5% • Automatic compensation of water vapour (H <sub>2</sub> O), pressure and temperature
<b>Calibration</b>	Calibration coefficients stored internally • Factory calibration with 15 traceable gases to WMO standards for CO <sub>2</sub> . NIST traceable dew point generator for H <sub>2</sub> O • User correction supported
<b>Auto Calibration</b>	Auto offset zeroing on programmed intervals • Zeroing reference included for >1 year operation time • Manual Span gas calibration supported • Optionally full auto-calibration (same housing size)
<b>Datalogger</b>	SmartDI® industrial embedded PC • Optionally 8,4" touch-screen • Automatic diagnostic- and failure messages • Redundant (double) 2GB CompactFlash for system and data storage • PLC Controller
<b>Logging</b>	Data and Backup on 2GB CF card • Sample rate configurable • Standard ASCII NMEA-0183 data
<b>Data Interface</b>	RS-232 or RS-485 • Standard ASCII NMEA-0183 data protocol • Easy integration into existing systems • Output rate typ. 1 Hz configurable • Optionally usage of radio links, Ethernet, WLAN etc.
<b>Analogue Out</b>	0...5V / 0...2,5V or 4...20mA • Range can be configured
<b>Analogue Input</b>	Optional 24 Bit data acquisition 0/4-20 mA, ±10V • Expandable via RS485 Bus
<b>External Sensors</b>	Nutrient analyzer • Water sampler • GPS • CTD or Thermosalinographs • Meteorological instrumentation via RS-485 bus supported • Standard sensor installed into the debubbler
<b>Water Support</b>	Quick-lock connectors 1/2" • Ideal for ship applications • Optional mBubbler® CO <sub>2</sub> tolerant Debubbler • Optional inlet- and outlet tanks • Flow rate typ. 3-15 l/min • Max. water pressure 6 Bar
<b>Cleaning</b>	Optionally self-cleaning option available • Automatic flagging of data for maintenance and error states
<b>Housing</b>	Stainless steel • complete splash protected IP66 • All tubes and connectors can be handled from the front • 8 kg • 300 x 280 x 350 mm W x H x D incl. equilibrator head at the front • Weight 10.5 kg
<b>Power</b>	10...32 VDC or 90...240 VAC • Typ. 20W operating • Max. 50W warming up
<b>Service</b>	Recalibration & Service recommended every 12 months • Membrane lifetime up to 10years • Operating time for 24/7 usage typ. 1 year before service (internal micro pump, zero filter)
<b>Accessories</b>	Li-Ion Batteries • Datalogger • Water Supplies • External Sensors or Analyzers • Subsea Housings



Complete Sea-Air-Exchange "Underway" System: SmartDI Datalogger with Touch-Screen; pCO<sub>2</sub> Analyzer with Debubbler and extra sensor on a moving drawer



Special mobile version for small or sailing vessels, incl. optional automatic cleaning



Top-Box with independent Air-CO<sub>2</sub> Analyzer LI-7200, GPS and interfaces to



meteo. Sensors. Simple data interface to  
the OceanPack system.

