

OceanPack™ RACK MK-2

Mobile & Modular Flow-through / Underway System
for precise pCO₂ measurements



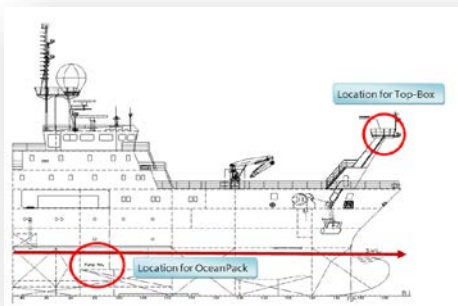
- ➔ **Superb LI-COR® analyser LI-840x**
- ➔ **Auto calibration**
- ➔ **Lowest maintenance**
- ➔ **Roughest environmental**
- ➔ **High precision**
- ➔ **Low investment**
- ➔ **Operates on small vessels**
- ➔ **Top-Box contains optionally Sensors or GPS**

Features & Benefits:

- It's a LI-COR® Biosciences LI-840x pCO₂ sensor: Highest accuracy due to automatic temperature, pressure and H₂O compensation
- Robust, versatile and compact housing for offshore and laboratory applications
- Hand-held, easy to operate and maintain system with intuitive overall design. High time series stability due to obligatory standard offset zeroing. Optional auto- or manual span gas calibration supported. Low maintenance costs!
- AUMS (Autonomous Underway Measurement System) concept: easy instrument integration through integrated data logger: e.g. Oxygen Optode; Fluorometer and Turbidity sensor; CTD and Thermosalinograph; nutrient analyzer
- Connection of external devices through RS-485 bus possible, e.g. meteorology sensors or sea- and waste water pumps. A full water supply is supported.
- Optional automatic cleaning procedure including flagging of collected data
- Automatic report of interferences and initiation of diagnostic routines
- Optional GPS geo reference for all data and position event control
- Optional online telemetry data transfer and alarm services



Specification	
Sensor Principle	High performance LI-COR [®] LI-840x analyzer – special produced by LI-COR [®] Biosciences for SubCtech Contains dual-wavelength NDIR detector for CO ₂ and H ₂ O • Silicone flat membrane equilibrator
Housing	19" Industrial rack • Open side doors for maintenance • Front splash protected • All tubes and connectors can be handled from the front • Different housings available Light : 35 kg without optional sensors or pumps Small : typ. 600 x 630 x 400 mm W x H x D • Depending instruments
Water Support	Integrated flow-through system • Ideal for ship applications • Optional mBubbler [®] CO₂ tolerant Debubbler • Optional inlet- and outlet tanks • Flow rate typ. 3-15 l/min • Max. water pressure 6 Bar
Range	Standard 0...3000 ppm CO₂ • 0...80 ppt H ₂ O • Up to 20.000 ppm CO ₂ • Units selectable
Resolution	0.01 ppm CO ₂ • 0.001 ppt H ₂ O
Accuracy	Overall accuracy < 1.5% • Automatic compensation of water vapour, pressure and temperature
Sample Rate	Output rate typ. 1 Hz with average user configurable • Storage rate configurable
Calibration	Calibration coefficients stored internally • Factory calibration with 15 traceable gases to WMO standards for CO ₂ . NIST traceable dew point generator for H ₂ O • 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 for up to 2 span gases
Analogue Out	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 and Backup on 2GB CF card
External Sensors	Nutrient analyzer • Water sampler • GPS • CTD or Thermosalinographs • Meteorological instrumentation via RS-485 bus supported • Standard sensor installed into the debubbler
Cleaning	Integrated self-cleaning option available • Automatic flagging of 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 diagnostic- and failure messages • Double 2GB CompactFlash for system and data storage • Programmable PLC Controller Expandable via RS485 modules for pumps, valves etc. • Optionally alarms
Analogue Input	Optional 24 Bit data acquisition 0/4-20 mA, ±10V • Expandable via RS485 Bus
Power	10...32 VDC or 90...240 VAC • Typ. 25W (without external pumps)
Service	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)



Sea-Air-Exchange "Underway" System



Complete "Underway" AUMS System



Option OceanView™ DataServer

