

MARTEK® DISSOLVED CARBON DIOXIDE ANALYZER

MARTEK INSTRUMENTS INC. MANUFACTURERS OF WATER QUALITY INSTRUMENTATION

... for accurate, continuous, in situ monitoring of dissolved carbon dioxide in ultrapure water.

- Measures and displays dissolved carbon dioxide, specific, cation, and degassed conductivities
- Three manual ranges: 0-1, 0-10, and 0-100 $\mu\text{S}/\text{cm}$ and auto-ranging
- Automatic digital calibration for temperature and conductivity
- Four isolated 4-20 mA analog and one RS232 digital output
- Four alarm set points and password protection
- Easy to install, calibrate and maintain
- Portable stand available
- 5 year warranty on analyzer and sensor electronics



The Martek Dissolved Carbon Dioxide Analyzer provides accurate, on-line determination of dissolved carbon dioxide as well as specific, cation, and degassed conductivity measurements in ultrapure water processes. Calibrated to ASTM and NIST standards, the Martek CO₂ Analyzer displays data in direct engineering units on a large 4 digit LED display while offering both digital and analog output signals for external recorders and other data acquisition equipment.

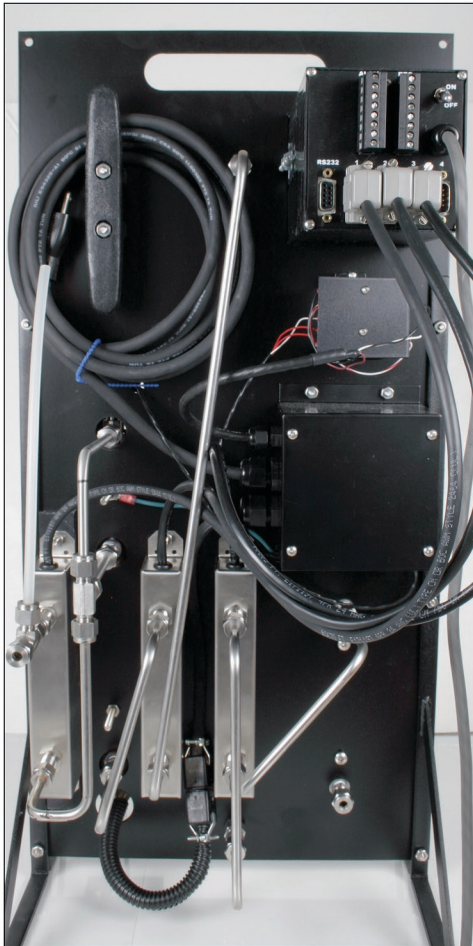
As a steam constituent, carbon dioxide can form carbonic acid and carbonate on dissolution in water. This can severely affect not only cycle corrosion, but mask early condensate pH and conductivity measurements in cycle regions where condensation sets in. The most important paths for CO₂ ingress are air and cooling water

inleakage, makeup water, ion exchange resins, and plant cycle additives. By precise heating of the process solution to near-boiling after a cation column, carbon dioxide and other low molecular organics are volatilized and removed. Differential analysis between cation and degassed conductivity measurements provide a more accurate cation conductivity value that can be directly correlated to CO₂ concentration and result in a more realistic assessment of the process chemistry.

The Martek Dissolved Carbon Dioxide Analyzer's ability to provide real-time data make it the ideal analytical tool for monitoring high purity processes in nuclear and high-performance fossil fuel power plants; condensate polishing systems and demineralizers; semiconductor and pharmaceutical manufacturing plants; and other industrial applications.

MARTEK DISSOLVED CO₂ SPECIFICATIONS

Parameter	Range	Resolution	Accuracy
Dissolved CO ₂	0-9999 ppb	0.1 ppb	±2.0 ppb
Temperature	0-100°C	0.01°C	±0.1°C
Conductivity	0-1.000 µS/cm 0-10.00 µS/cm 0-100.0 µS/cm	0.001 µS/cm 0.01 µS/cm 0.1 µS/cm	±0.01 µS/cm ±0.1 µS/cm ±1.0 µS/cm



A cooled condensate sample stream is fed to the Martek CO₂ Analyzer. The sample flow is controlled by a flow meter and directed to a conductivity sensor that measures the specific conductivity of the inlet stream. Next, the sample passes through a cation exchange column then is fed through a second conductivity sensor that measures the cation conductivity. Finally, the sample is sent to the boiler where it is heated to near boiling to allow carbon dioxide and other gasses to be vented off through an expansion chamber. The hot sample stream is directed through a third conductivity sensor that measures the degassed conductivity. The differential analysis between the cation and degassed conductivity values is then displayed along with the corresponding carbon dioxide concentration. The effluent from this last sensor then goes to drain.

Power	Monitor: 98-240 VAC, 50/60 Hz, optional 24VDC, Boiler: 115VAC, 50/60 Hz
Recorder Output	Four isolated, full scale 4-20 mA DC analog outputs and one RS232C digital output
Alarm Output	Four relays, 5 amp 250V
Panel Dimensions	12.0 inches (30.5cm) x 24.0 inches (61.0cm) x 8.0 inches (20.3 cm) WHD
Weight	20 lbs. (44 kg)
Mounting	Panel (optional portable stand available)
Wetted Parts	Type 316 Stainless Steel, Teflon
Connections	All inlets use 0.25 inch Type 316 Stainless Steel Swagelock fittings
Warranty	Analyzer: 5 years, Sensors: Lifetime

ORDERING INFORMATION

P/N

180-70

Dissolved Carbon Dioxide Analyzer

NOTE:

All prices FOB Factory. Specifications and prices subject to change without prior notice. Warranty subject to certain conditions. For complete warranty information, contact the factory.



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