

PRODUCT DATASHEET

Spark Max CO₂ Trace Level Carbon Dioxide Analyzer



Compact, affordable and powerful, the Spark Max CO₂ brings you:

- Sub-100-ppb detection capability for carbon dioxide (CO₂) in inert gases and hydrogen
- Wide measurement range
- Drift-free performance & immunity to vibration
- No spectral interferences
- Standalone or rack-mountable
- Lowest cost of ownership
- Available Serani™ Max interface software for remote analyzer control & data analysis
- NOW INCLUDED: **Speed+ performance upgrade** – intelligent dynamic data processing boosts analyzer's speed of response while maintaining low noise performance



Simple, Drift-Free CO₂ Contaminant Detection Ideal for Air Separation Plants

With the Spark Max CO₂, the latest generation of Cavity Ring-Down Spectroscopy (CRDS) instrumentation is now available at a popular price for a host of applications, from process control and quality assurance in Air Separation Units to refineries and hydrogen plants. Other applications include monitoring of cylinder filling, bulk delivery and distribution transfer points, fuel-cell hydrogen analysis, as well as welding, medical, industrial and high-purity gas production, and more. Sensitivity below 100 parts per billion and high-ppm ranges make the Spark Max an ideal trace gas detection solution for these industrial gas applications.

Say goodbye to cumbersome, complex, costly and labor-intensive mid-20th century technology. Gone is the need for calibration, spare parts, limited measurement ranges, and worries about drift and downtime usually associated with NDIRs and GCs. In addition, the Spark Max has the lowest cost of ownership in the industry with fully automatic operation and virtually no maintenance is required.





Performance

Operating range:	See table on next page
Detection limit (LDL, 3σ/24h):	See table on next page
Precision (1σ, greater of):	$\pm 0.75\%$ or 1/3 of LDL
Accuracy (greater of):	$\pm 4\%$ or LDL
Speed of response:	< 1 minute to 90%
Environmental conditions:	10°C to 40°C 30% to 80% RH (non-condensing)
Storage temperature:	-10°C to 50°C

Gas Handling System and Conditions

Wetted materials:	316L stainless steel, 10 Ra surface finish
Gas connections:	1/4" male VCR inlet and outlet
Inlet pressure:	10 – 125 psig (1.7 – 9.6 bara)
Flow rate:	~0.7 slpm (in N ₂), gas-dependent
Sample gases:	Most inert and passive matrices
Gas temperature:	Up to 60°C

Dimensions & Weight

Standard sensor:	H × W × D 8.73 × 8.57 × 23.6 in (222 × 218 × 599 mm)
Sensor rack (fits up to two sensors):	H × W × D 8.73 × 19.0 × 23.6 in (222 × 483 × 599 mm)
Standard sensor weight:	32 lbs (14.5 kg)

Electrical and Interfaces

Platform	Max Series analyzer
Alarm indicators:	2 user programmable, 1 system fault, Form C relays
Power requirements:	90 – 240 VAC, 50/60 Hz
Power consumption:	40 Watts max.
Signal output:	Isolated 4–20 mA per sensor
User interfaces:	5.7" LCD touchscreen. 10/100 Base-T Ethernet. USB, RS-232, RS-485. Modbus TCP (optional)
Data storage:	Internal or external flash drive
Certification:	CE Mark



Performance, CO₂

In Nitrogen:

In Hydrogen:

In Clean Dry Air (CDA):

Range

0 – 500 ppm

0 – 800 ppm

0 – 400 ppm

LDL (3σ)

50 ppb

80 ppb

40 ppb

Precision (1σ) @ zero

20 ppb

30 ppb

15 ppb

Contact us for additional analytes and matrices.
U.S. Patent # 7,277,177



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