

**PRODUCT DATASHEET**

# Spark Max CO<sub>2</sub><sup>TM</sup> Trace Level Carbon Dioxide Analyzer



## Compact, affordable and powerful, the Spark Max CO<sub>2</sub> brings you:

- Sub-100-ppb detection capability for carbon dioxide (CO<sub>2</sub>) 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



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## Simple, Drift-Free CO<sub>2</sub> Contaminant Detection Ideal for Air Separation Plants

With the Spark Max CO<sub>2</sub>, 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-20<sup>th</sup> 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

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

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## Gas Handling System and Conditions

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

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## Dimensions & Weight

<b>Standard sensor:</b>	H × W × D 8.73 × 8.57 × 23.6 in (222 × 218 × 599 mm)
<b>Sensor rack</b> (fits up to two sensors):	H × W × D 8.73 × 19.0 × 23.6 in (222 × 483 × 599 mm)
<b>Standard sensor weight:</b>	28 lbs (12.7 kg)

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## Electrical and Interfaces

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

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<b>Performance, CO<sub>2</sub></b>	<b>Range</b>	<b>LDL (3<math>\sigma</math>)</b>	<b>Precision (1<math>\sigma</math>) @ zero</b>
<b>In Nitrogen:</b>	0 – 1500 ppm	50 ppb	20 ppb
<b>In Argon:</b>	0 – 1200 ppm	40 ppb	15 ppb
<b>In Clean Dry Air (CDA):</b>	0 – 1500 ppm	50 ppb	20 ppb
<b>In Oxygen:</b>	0 – 1200 ppm	45 ppb	15 ppb
<b>In Hydrogen:</b>	0 – 2000 ppm	80 ppb	30 ppb

## **GAIN REAL-TIME INSIGHT INTO YOUR PROCESS**

Process Insights delivers premium analytical sensors, analyzers, instrumentation, software and solutions that are mission-critical to keep your operations, personnel, and the environment safe. Our commitment to customer satisfaction is evident through our diverse range of products, programs, and services, designed to accommodate various budgets and application needs.

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