Process Insights™
Premium Insights Into Process

REAL-TIME GAS ANALYZERS

PRODUCT DATASHEET

Prismatic™ 3+

Versatile Multi-Species Gas Analyzer

The Prismatic 3+ features:

- Simultaneous parts-per-billion detection of CO, CO_2, H_2O and CH_4
- Ideal analyzer for monitoring gas purity in air separation units (ASUs), in truck fill applications, and pre-purification in semiconductor fabs
- Powerful Cavity Ring-Down Spectroscopy (CRDS) technology
- Low Cost of Ownership: no calibration or utility gas requirements
- Perfect for unmanned operations due to ease of use

The Prismatic 3+ laser-based, multi-species trace gas analyzer provides a versatile tool for a variety of applications in both research and industrial settings, where real-time, on-line gas monitoring is essential. The Prismatic 3+ is ideally suited for process monitoring in critical applications such as air separation, truck fill, and pre-purifier bulk gas monitoring in semiconductor fabrication.

This compact, CRDS-based analyzer offers simultaneous detection of H_2O, CO, CO_2 and CH_4 from parts-per-billion to parts-per-million levels to ensure real-time, continuous protection of your process from harmful contaminants.

What's more, the Prismatic 3+ is very easy to install and operate with integrated touchscreen and intuitive graphical user interface to allow efficient data trending and analysis perfect for unmanned operations. The cost of ownership is extremely low, with no calibration, spare parts or utility gases required.

Prismatic 3+ Multi-Species Gas Analyzer	
Performance	
Operating range:	See table on next page
Detection limit (LDL, 3σ/24h):	See table on next page
Precision (1σ, greater of):	± 0.75% or 1/3 of LDL
Accuracy (greater of):	± 4% or LDL
Speed of response:	< 5 minutes to 95% (in 4-channel operation)
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
Leak tested to:	1 x 10^{-9} mbar l / sec
Inlet pressure:	10 − 125 psig (1.7 − 9.6 bara)
Flow rate:	< 1 slpm (gas dependent)
Sample gases:	Inert gases, hydrogen and oxygen
Gas temperature:	Up to 60°C
Dimensions & Weight	
Standard sensor:	H × W × D 8.73 × 19.0 × 23.6 in (222 × 483 × 599 mm) (19" rack-mountable)
Standard sensor weight:	50 lbs (23 kg)
Electrical and Interfaces	
Alarm indicators:	2 user programmable per channel, 1 system fault, Form C relays
Power requirements:	90 − 240 VAC, 50/60 Hz
Power consumption:	150 Watts max.
Signal output:	Isolated 4−20 mA per channel
User interfaces:	10.4" LCD touchscreen. 10/100 Base-T Ethernet. RS-232, RS-485
Data storage:	Internal or external flash drive
Certification:	CE Mark

Performance in N_2	Range	LDL (3σ)	Precision (1σ) @ zero
Methane (CH_4):	0 – 100 ppm	10 ppb	4 ppb
Moisture (H_2O):	0 – 200 ppm	10 ppb	4 ppb
Carbon Monoxide (CO):	0 – 2900 ppm	40 ppb	15 ppb
Carbon Dioxide (CO_2):	0 – 4000 ppm	100 ppb	35 ppb
Performance in Clean Dry Air (CDA)	**Range**	**LDL (3σ)**	**Precision (1σ) @ zero**
Methane (CH_4):	0 – 100 ppm	10 ppb	4 ppb
Moisture (H_2O):	0 – 175 ppm	9 ppb	3 ppb
Carbon Monoxide (CO):	0 – 2800 ppm	40 ppb	15 ppb
Carbon Dioxide (CO_2):	0 – 3800 ppm	100 ppb	35 ppb
Performance in Ar	**Range**	**LDL (3σ)**	**Precision (1σ) @ zero**
Methane (CH_4):	0 – 85 ppm	8 ppb	3 ppb
Moisture (H_2O):	0 – 75 ppm	4 ppb	1.5 ppb
Carbon Monoxide (CO):	0 – 2300 ppm	35 ppb	12 ppb
Carbon Dioxide (CO_2):	0 – 3300 ppm	85 ppb	30 ppb
Performance in O_2	**Range**	**LDL (3σ)**	**Precision (1σ) @ zero**
Methane (CH_4):	0 – 90 ppm	9 ppb	3 ppb
Moisture (H_2O):	0 – 95 ppm	5 ppb	2 ppb
Carbon Monoxide (CO):	0 – 2400 ppm	35 ppb	12 ppb
Carbon Dioxide (CO_2):	0 – 3400 ppm	90 ppb	30 ppb
Performance in He	**Range**	**LDL (3σ)**	**Precision (1σ) @ zero**
Methane (CH_4):	0 – 65 ppm	7 ppb	2.5 ppb
Moisture (H_2O):	0 – 50 ppm	3 ppb	1.0 ppb
Carbon Monoxide (CO):	0 – 2500 ppm	35 ppb	12 ppb
Carbon Dioxide (CO_2):	0 – 3400 ppm	90 ppb	30 ppb
Performance in H_2	**Range**	**LDL (3σ)**	**Precision (1σ) @ zero**
Methane (CH_4):	0 – 100 ppm	10 ppb	4 ppb
Moisture (H_2O):	0 – 125 ppm	7 ppb	2.5 ppb
Carbon Monoxide (CO):	0 – 3700 ppm	50 ppb	20 ppb
Carbon Dioxide (CO_2):	0 – 6400 ppm	160 ppb	60 ppb

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

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GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights manufactures and delivers premium sensors, monitors, detectors, analyzers, instrumentation, and software that are mission-critical to keep your operations, personnel, and the environment safe – every day across the globe.

Get the most reliable, precision analytical technologies available on the market today. We will work to match your needs and budget, and provide the optimal, and most stable process analysis solution for your application.

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