



Product shown with optional flow meter and coalescing filter

FEATURES	BENEFITS
Long-life Trace Oxygen Sensor	Provides up to three times the functional life of most “fuel cell” type sensors. Reliability is dramatically increased while maintenance costs are reduced.
Sealed Sensor	Eliminates handling potassium hydroxide (caustic), a hazardous material or having to frequently “recharge” the electrolyte.
CO ₂ Resistant Sensor	Optional CO ₂ resistant sensor is designed to operate with sample gases containing up to 100% CO ₂ . Conventional “fuel cell” type sensors using KOH electrolyte can be poisoned from CO ₂ .
Economically priced	Affords savings of up to 50% over other manufacturers trace oxygen analyzers.
Wide Measurement Ranges	Measure from under 1 PPM to as high as 10,000 PPM oxygen.
Factory Calibration	Factory calibration included at no additional charge. Upon request, NIST calibration certificates available
Visual and Audible Alarms	Ensures the highest level of protection and reliability.

Product Description

The eloquence of the Series 3000 Trace Oxygen Analyzer is its ease of use. The Series 3000 is a microprocessor- controlled instrument that is available in either a single range or three range configuration. Measurement ranges are from 0-1 PPM to 0-10,000 PPM. For three range analyzers, auto-ranging is included at no additional charge. The analyzer is housed in a general purpose enclosure and is powered from either 115/230 VAC, 50-60Hz, or 18-32 VDC. Battery power is an option. Trace oxygen values are displayed on a 0.4 inch (10.2 mm) high, 4-1/2 digit liquid crystal display (LCD). The long-life trace oxygen sensor is installed in a high integrity-leak tested metal housing that is equipped with 1/4" stainless steel compression fittings on both the sample gas inlet and outlet. Also included are manual isolation valves. The Series 3000 can be configured with an optional remote sensor that may be placed up to 1,000 feet (approx. 300 meters) from the electronics. Available in a wide number of optional mechanical configurations from explosion proof (NEMA 7) to watertight (NEMA 4), the Series 3000 Trace Oxygen Analyzer affords maximum flexibility to meet the increasing demands of the industrial, commercial, and educational markets.

Depending the application, the Series 3000 can be equipped with a number of options including; battery operation, sample filters, sample pumps, pressure regulators, data logger, block & bleed by-pass sampling systems, serial communications, sensor heaters, solenoid valves with internal control connections, flow meters, etc.

High Performance Trace Oxygen Sensor

The Series 3000 Trace Oxygen Analyzer features Alpha Omega Instrument's long-life ambient temperature electrochemical sensor that has a functional life of up to three times that of most "fuel cell" type sensors. The enhanced mechanical design of the sensor ensures longer life, and virtually eliminates leakage of caustic electrolyte, a nagging (and expensive) problem associated with sensors that require periodic electrolyte maintenance.

Specifications PERFORMANCE

Measurement Ranges (parts per million)

Single-range	Three-range
0-10,000	0-100/1,000/10,000
0- 5,000	0- 50/500/5,000
0-1,000	0-10/100/1,000
0-100	0- 5/50/500
0- 50	0-1/10/100

Accuracy¹: ±1% of full scale (±5% FS 0-1ppm range)

Linearity: ±1%

Response Time: 90% of full scale response in less than 10 seconds (typical). The response time for ranges of 0-50 PPM or less depend to a great extent on the design of the sample delivery system including the materials used.

Sensor Type: Long-life Ambient Temperature Electrochemical Sensor(Optional CO₂ Resistant Sensor Available).

Temperature Compensation: Standard

Operating Temperature (both sensor and electronics): 40° to 104° F (5° to 40° C)
<40° F (5° C) use heated sensor enclosure
>104° F (40°) cooling of sample gas/ sensor required

Warranty: 2 years electronics, 1 year sensor

ELECTRICAL

Display: 0.4" (10.2 mm) high, 4-1/2 digit LCD

Resolution of Display: 0.1 ppm for ranges <100 ppm
1.0 ppm for ranges >100 ppm

Input Power: 115/230 VAC, 50-60Hz or 18-32 VDC. Optional battery backup available

Outputs: 4-20 mADC and 0-2 VDC standard as is a TTL output for range identification. RS-232C or RS-485 serial communication optional.

Oxygen Alarm Relays: Three (3) SPDT Form C contacts rated 10 A@ 30 VDC/115/230 VAC. User selectable for fail-safe or non fail-safe.

And, because the sensor is sealed, it is not position sensitive. In addition, unlike some electrochemical sensors, Alpha Omega Instruments readings from the Series 3000 do not require manual adjustment based on changes in the molecular weights of the sample gas i.e. helium, hydrogen, etc. a major advantage for continuous measuring applications. The output from the sensor is both linear and temperature compensated to provide optimum performance.

Now Featured a CO₂ Resistant Sensor

A nemesis for many conventional "fuel cell" type trace oxygen sensors are their inability to measure oxygen in gases containing carbon dioxide. Carbon dioxide reacts with potassium hydroxide electrolyte to form carbonic acid and in short time destroys the sensor. Not anymore. Alpha Omega Instruments offers an optional CO₂ tolerant trace oxygen sensor with proprietary electrolyte. The CO₂ tolerant sensor is capable of providing accurate oxygen readings in gases containing up to 100% CO₂ without shortening the life of the sensor.

The Series 3000 Trace Oxygen Analyzer is equipped with three oxygen alarm relays and one status alarm relay. All four relays are Form C (SPDT) types rated at 10 amps at 115/230 VAC and 30 VDC. The relays are user configurable for fail-safe operation. In addition to the four alarm contacts, the Series 3000 Trace Oxygen Analyzer has a built-in audible alarm and three red LED's for visual indication of an oxygen alarm condition. The audible alarm may be manually canceled at any time. The Series 3000 provides two standard analog outputs, 4-20 mADC and 0-2 VDC. For enhanced communications, the Series 3000 Trace Oxygen Analyzer can also be equipped with optional RS-232C or RS-485 serial communications.

The Series 3000 Trace Oxygen Analyzer is priced significantly less than most other manufacturers. Before making a purchase decision, we would be delighted to discuss the Series 3000 Trace Oxygen Analyzer.

Instrument Status Alarm: Rated identically to the O₂ relays

Audible Alarm: Internal buzzer with audible cancel

SAMPLE GAS CHARACTERISTICS

Flow Rate: 1.0 to 2.0 SCFH (0.5 to 1.0 liter/min)

Sample Gas Temperature: 40° to 104° F (5° to 40° C)

Sample Gas Pressure: 0.1 to 1.5 psig (0.007 kg/cm² to 0.1 kg/cm²)

Entrained Solids: <3 mg/ft³: no in-line filter required
>3 mg/ft³: in-line filter is required

Hydrocarbon Mist: <0.7 mg/ft³: no in-line filter required
>0.7 mg/ft³: in-line filter is required

CONSTRUCTION²

Electronics Control Unit (Bench-top without optional equipment): Polycarbonate with a hinged clear front cover, rated NEMA 4X (IP 66)

Control Unit Dimensions: 9.45 in. (240.5 mm) height
6.50 in. (165.1 mm) width
6.20 inches (157.5 mm)

Note: All dimensions are without optional equipment

Gas Connections: 1/4" stainless steel compression fittings.

Sensor Mounting: Local or optional remote mounting

Weight: 11lbs (4.98 kg) (Standard Bench-top Configuration)

¹ Stated at constant temperature and constant pressure.

² Other mechanical configurations available-consult the factory.

³ Alpha Omega Instruments reserves the right to change or modify its product specifications without notice.



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