### FEATURES

**Long-life Trace Oxygen Sensor**

**Sealed Sensor**

**CO₂ Resistant Sensor**

**Economically priced**

**Wide Measurement Ranges**

**Factory Calibration**

**Visual and Audible Alarms**

### BENEFITS

Provides up to three times the functional life of most “fuel cell” type sensors. Reliability is dramatically increased while maintenance costs are reduced.

Eliminates handling potassium hydroxide (caustic), a hazardous material or having to frequently “recharge” the electrolyte.

Optional CO₂ resistant sensor is designed to operate with sample gases containing up to 100% CO₂. Conventional “fuel cell” type sensors using KOH electrolyte can be poisoned from CO₂.

Affords savings of up to 50% over other manufacturers trace oxygen analyzers.

Measure from under 1 PPM to as high as 10,000 PPM oxygen.

Factory calibration included at no additional charge. Upon request, NIST calibration certificates available.

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 18-33 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)

<table>
<thead>
<tr>
<th>Single-range</th>
<th>Three-range</th>
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</thead>
<tbody>
<tr>
<td>0-10,000</td>
<td>0-100/1,000/10,000</td>
</tr>
<tr>
<td>0-5,000</td>
<td>0-50/500/5,000</td>
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<tr>
<td>0-1,000</td>
<td>0-100/1,000</td>
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<tr>
<td>0-100</td>
<td>0-50/500</td>
</tr>
<tr>
<td>0-50</td>
<td>0-1/10/100</td>
</tr>
</tbody>
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Accuracy*: ±1% of full scale (±5% FS 0-1 ppm 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: 40° to 104° F (5° to 40° C)
Temperature <40° F (5° C) use heated sensor enclosure
(both sensor and electronics): required

Warranty: 2 years electronics, 1 year sensor

Instrument: Rated identically to the O2 relays

Status Alarm: 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:

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

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

Control Unit: 9.45 in. (245.5 mm) height
Dimensions: 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.

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 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.