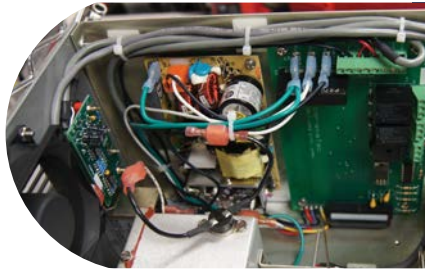


# MODEL OA-1



## Portable trace oxygen analyzer

For high purity applications requiring ppm measurement



### Lightweight. Durable. Fast.

- PPM to 100% measurement range
- Rapid-response Neutronics zirconium oxide sensor
- Suitable for a wide range of operating gas temperatures
- Less than 15 seconds from air to 50 ppm
- 5 year sensor life with no regular service required

#### Description

The Model OA-1 is a portable analyzer that accurately measures oxygen in the range of 0.1 ppm to 100%. Featuring the Neutronics rapid response zirconium oxide sensor with its extremely fast response and high accuracy, the Model OA-1 can be exposed to air and within seconds read ppm oxygen in a variety of background gases, including nitrogen, argon, and helium. The OA-1 is designed to measure oxygen concentrations in clean gases that do not contain hydrocarbons or carbon monoxide.

#### Rapid response zirconium oxide sensor

The robust design of the Neutronics zirconium oxide sensor gives this analyzer the ability to rapidly measure oxygen through large step changes in concentration and the ability to accurately measure ppm concentrations of oxygen within seconds after exposure to air. When heated to an elevated temperature, the rapid-response zirconium oxide sensor produces a predictable electrical output in response to changes in the partial pressure of oxygen. The sensor is a solid-state device that utilizes yttria-stabilized zirconium (YSZ), a zirconium-oxide based ceramic.

#### Precise sensor temperature control

Critical to reliable performance and rapid response, the Model OA-1 includes a precision controlled sensor heater assembly designed to maintain the temperature of the sensor at 650° C by continuously modulating the VAC electrical power input. To meet strict heat loss requirements, the sensor heater housing utilizes high temperature microporous insulation, a low density material with an extremely low

#### Long sensor life

The expected service life for the Neutronics zirconium oxide sensor is greater than 5 years. The sensor has an unlimited shelf life and will not dry out or freeze.

#### Portable design

The Model OA-1 is a completely self-contained instrument that is unaffected by position or motion. The unit is ideally suited for process pressures ranging from 10 to 20 psig. The internal sampling system includes a pressure release bypass valve that controls the system back pressure and a series of fixed orifices that control the sample flow at a rate of 0.5 to 3 slpm to the sensor. Gas released by the bypass valve exhausts through the bypass exhaust fitting, while the sample gas stream is discharged through a separate sensor exhaust fitting.

#### Two adjustable alarms

The analyzer has an audible alarm system that also controls contact closures that integrate this alarm function into the user's process control system. The OA-1 provides the flexibility to set the alarms for high/low, high/higher, or low/lower as required. The user can change the alarm values and turn the alarms on or off. Relay contacts are located on the back panel.

#### Two displays

A large three-digit LED display shows the temperature and oxygen content. When the oxygen content is displayed, the analyzer automatically switches to the proper range and illuminates one of the range indicators, showing either ppm or percent. The smaller secondary display is used to guide the user through a variety of diagnostics and operation modes.

#### Communication options

The electronics have been designed for communication with a host controller through a standard RS-232 interface. The host computer can inquire about temperature, oxygen concentration, sensor voltage, and alarm points. Two analog outputs are available: 4-20mA and 0-1VDC.

#### Auto or fixed range measurement

The range values for the OA-1 are typically set to auto-range. However, the user has the option to disable the auto-range feature and set the range as needed for a specific application.



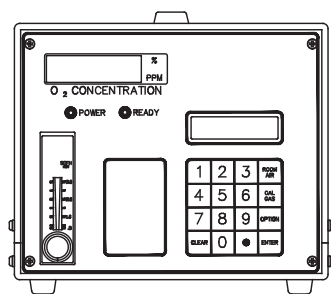
# MODEL OA-1

## Portable trace oxygen analyzer

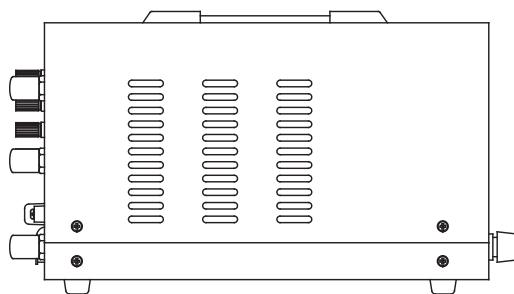
### Specifications

Type	Portable trace analyzer
Operating range	Auto-ranging between 0.1ppm to 100% oxygen. Operator does not need to Select the range. An indicator light shows whether the reading is in ppm or percent.
Sensor type	Neutronics rapid response zirconium oxide, ZR-100
Expected sensor service life	>5 years
Accuracy	1 to 100 ppm $\pm$ 5.0% of reading 101 to 999 ppm $\pm$ 2.0% of reading 0.1 to 99.9% $\pm$ 2.0% of reading
Response time (step change)	T <sub>95</sub> < 3 seconds at 1 liter/min sample flow rate T <sub>90</sub> < 5 seconds below 999 ppm
Sample pressure	10 to 20 psig
Sample flow rate	0.5 to 3.0 liters/minute
Warm up time	20 minutes
Recovery time	< 5 seconds from room air to 0.1% < 5 minutes from room air to 1 ppm < 15 seconds from room air to 50 ppm
Relative humidity	0 to 90%, non-condensing
Operating temperature	32° to 122° F (0° to 50° C)
Power supply	110/220 VAC $\pm$ 20%, 50/60 Hz (power cord included)
Display	3-digit LED digital display of O <sub>2</sub> concentration, dot matrix diagnostics display
Signal interface	RS-232 serial port 0-1V $\pm$ 0.5% analog output 4-20mA analog output
Relay outputs	Two dry contacts available, 5A, 220VAC rated
Warranty	12 months from date of shipment
Dimensions	13.55" (344mm) length x 9.00" (229mm) width x 9.15" (232mm) height
Ratings	Faceplate: NEMA 4 (IP66)
Sampling system MOC	316 SS fittings and tubing
Weight	8.5 lbs. (3.9 Kg)

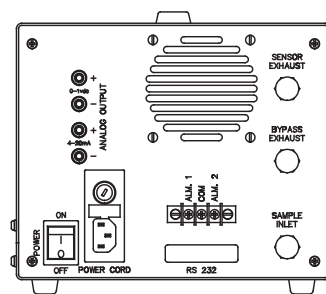
Specifications are subject to change without notice.



Front view



Side view



Rear view

### Order information

#### Part

Model OA-1

Operations manual, MN-A-0076

#### Part number

C7-01-1000-15-1

C5-06-4900-06-0



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