



## MODEL 314 PORTABLE ZIRCONIA OXYGEN ANALYZER

### APPLICATIONS

For continuous high accuracy analysis from PPM to 96% oxygen (O<sub>2</sub>) in process gas streams. Other applications include combustion air O<sub>2</sub> enrichment, O<sub>2</sub> deficiency analysis, and many more. Note: Sample gas must not contain combustible gases or vapors.

### FEATURES

- High accuracy, long-life zirconia O<sub>2</sub> sensor
- Rugged design that is easy to operate
- Fast warm-up and response
- Digital readout meter with backlight
- Modular layout that is easy to maintain
- Rechargeable battery operation
- Built-in sample pump, filter, and flow meter
- Bench Top cabinet with front-mounted controls and displays

### OPTIONS

- Recorder output of 0-1V or 4-20mA
- Sample pre-cooler for hot samples
- Condensate removal for wet sample gas
- Suitcase (K) style cabinet available
- AC power only operation
- Low flow and O<sub>2</sub> alarms
- Detachable/portable datalogger

### CALIBRATION

- Analyzed calibration gas of O<sub>2</sub>-free nitrogen (N<sub>2</sub>) for zero
- Air @ 20.9% O<sub>2</sub> or analyzed calibration gas of O<sub>2</sub> in N<sub>2</sub> for span



Bench Top (BT) Enclosure



Suitcase (K) Enclosure



Optional Precooler  
for hot or wet  
sample gases

## DESCRIPTION

The Nova 314 Portable Oxygen Analyzer is designed to measure the oxygen concentration of a clean, dry sample gas. In operation, a built-in sample pump draws the sample gas into the analyzer and through the sample conditioning filters, flow meter and O<sub>2</sub> sensor. An external gas scrubber is available to remove any corrosive gases prior to entering the analyzer, if required.

The zirconia sensor is mounted in a flow-through block through which the sample gas flows. The sensor produces a non-linear  $\mu\text{A}$  output proportional to the oxygen concentration. This non-linear signal is then linearized and amplified by an O<sub>2</sub> processor board. The output is then directed to a main amplifier board which then connects to the digital readout meter and optional recorder output terminals.

## SPECIFICATIONS

*Nova reserves the right to specification changes which may occur with advances in design without prior notice.*

Description	
<b>Method of Detection:</b>	Temperature controlled zirconium oxide sensor in amperometric mode
<b>Ranges Available:</b>	314L - 2-200 / 10-1,000 / 100-10,000 / 200-20,000 / 500-50,000 PPM O <sub>2</sub> 314 - 0.2-25.0% / 1.0-96.0% O <sub>2</sub> <small>(other ranges may be available)</small>
<b>Resolution:</b>	1 PPM on PPM versions; 0.1% on percent versions
<b>Accuracy and Repeatability:</b>	$\pm 0.5\%$ of full scale
<b>Drift:</b>	Zero: 1% of reading Span: 1% of reading per week (non-accumulating)
<b>Response Time (T-90):</b>	2-3 seconds to 90% step change, depending on range
<b>Ambient Temperature Range:</b>	32-122°F (0-50°C)
<b>Linearity:</b>	$\pm 0.5\%$ of full scale
<b>Size and Weight:</b>	BT style - approx. 8" W x 9" H x 10" D @ 12 lbs (20 x 23 x 25 cm @ 5.5 kg) K style - approx. 14" W x 6" H x 6½" D @ 12 lbs (35.5 x 15.2 x 26.5 cm @ 5.5 kg)
<b>Power:</b>	AC/DC operation, 115VAC 60Hz for recharging (other voltages available)
<b>Output Options:</b>	4-20 mA or 0-1 VDC

## UNIQUE APPLICATIONS

The 314 series analyzers should not be used on sample gases containing flammable gases. These gases will be burned by the zirconia sensor along with any available O<sub>2</sub> and cause the analyzer to display readings that are lower than the actual values.

All Nova analyzers are built using proven technologies and techniques. If this product does not suit your application, please contact Nova at 1-800-295-3771. In many cases, we are able to build an analyzer specific to your needs.



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