

# NOVA

Dependable Gas Analysis Solutions



## 322 SERIES PORTABLE PARAMAGNETIC OXYGEN ANALYZER

### APPLICATIONS

For continuous high accuracy analysis of oxygen (O<sub>2</sub>) in process gas streams or other applications such as combustion air O<sub>2</sub> enrichment, O<sub>2</sub> deficiency analysis, and many more.

### FEATURES

- High accuracy paramagnetic O<sub>2</sub> cell, very stable
- Fast response (T<sub>90</sub> - 4 to 5 seconds)
- Bright digital readout
- Linear over entire 0-100% range
- Non-consumable O<sub>2</sub> cell, no periodic replacement required
- Built-in sample pump or pressure regulator
- To improve accuracy, cell is compensated for changes in barometric pressure
- Bench Top (BT) enclosure is standard

### OPTIONS

- Isolated or non-isolated recorder outputs of 4-20mA
- Sample pre-cooler for hot samples
- Condensate removal for wet applications
- High or low O<sub>2</sub> alarms
- Detachable/portable datalogger
- Sensors temperature-controlled for maximum stability

### CALIBRATION

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



Standard Enclosure  
Bench Top (BT)



Optional Precooler  
for hot or wet  
sample gases

NOVA ANALYTICAL SYSTEMS

[www.nova-gas.com](http://www.nova-gas.com)

## DESCRIPTION

The Nova 322 Portable Paramagnetic Analyzer is designed to measure the oxygen concentration of clean, dry sample gas. A built-in pressure regulator reduces any positive sample pressure. A built-in sample pump may be switched on to draw in the sample gas when it is at or slightly below atmospheric pressure. An external gas scrubber is available if required to remove any corrosive gases prior to entering the analyzer.

In operation, the incoming sample gas passes through sample conditioning filters and the flow meter, then into the O<sub>2</sub> sensor. The paramagnetic sensor utilizes a magneto-dynamic measuring cell and powerful selenium cobalt magnet assembly combined with on-board amplification, temperature compensation and barometric pressure compensation. This cell makes use of the principle that O<sub>2</sub> is drawn into a magnetic field, thereby increasing the turning force on a diamagnetic body suspended in the field. Very few other gases respond this way, making this method specific to O<sub>2</sub>. The Model 322 can be used for any O<sub>2</sub> measurement between 0-100% as long as the sample gas is clean, dry and non-corrosive.

## MODELS

- 322BT - un-heated sensor; standard accuracy  $\pm 1.0\%$  of FS; AC & rechargeable battery powered
- 322HABT - heated sensor with pressure control system; highest accuracy  $\pm 0.5\%$  of FS; AC powered only, no battery

## SPECIFICATIONS

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

Description	
<b>Method of Detection:</b>	Magneto-dynamic paramagnetic O <sub>2</sub> cell
<b>Ranges Available:</b>	Any range from 0-2.0% to 0-100.0% O <sub>2</sub>
<b>Resolution:</b>	0.1% O <sub>2</sub>
<b>Accuracy and Repeatability:</b>	Model 322BT $\pm 1\%$ of full scale; Model 322HABT $\pm 0.5\%$ of full scale
<b>Drift:</b>	$\pm 0.5\%$ of full scale per month
<b>Response Time (T-90):</b>	4-6 seconds
<b>Ambient Temperature Range:</b>	32-122°F (0-50°C) @ 5-95% RH non-condensing
<b>Linearity:</b>	Model 322BT $\pm 1\%$ of full scale; Model 322HABT $\pm 0.5\%$ 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)
<b>Power:</b>	AC/DC operation, 115VAC 60Hz for recharging (Other voltages available)
<b>Output Options:</b>	4-20 mA or 0-1 VDC (optional)
<b>Alarms:</b>	One high or one low alarm (optional)



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