

NOVA

Dependable Gas Analysis Solutions



412 SERIES PROCESS PARAMAGNETIC OXYGEN ANALYZER

APPLICATIONS

For continuous analysis of oxygen (O₂) in process gas streams that contain gases that interfere with other methods of O₂ measurement. For high accuracy or high purity applications.

FEATURES

- Highest accuracy O₂ analyzer, very stable
- Fast response (T90 - 4 to 5 seconds) and bright digital readout
- Linear over entire 0-100% range
- Microprocessor control with push button calibration
- Explosion-proof version has magnetic calibration
- Non-consumable O₂ detector, no periodic replacement required
- Built-in sample pump or pressure regulator, and 4 - 20 mA output
- To improve accuracy, detector is temperature controlled and compensated for changes in barometric pressure in the vented sample

OPTIONS

- Hi/Low gas, low flow, and diagnostic alarms available
- Isolated 4-20mA, RS232, RS485, MODBUS®, and Ethernet outputs available
- Cabinet purge system available for use in hazardous areas
- Automatic calibration with touch screen LCD display
- Cold weather package for operation to -20°C (-4°F)
- Cabinet coolers can be fitted to most models

CALIBRATION

- Nitrogen for zero
- Air or analyzed calibration gas for span



Explosion-Proof (N7MC) Enclosure
Model 412N7MC



Wall Mount (N4) Enclosure
Model 412N4

NOVA ANALYTICAL SYSTEMS

www.nova-gas.com

DESCRIPTION

The Nova 412 Series O₂ analyzers utilize a magneto-dynamic paramagnetic measuring cell and powerful selenium cobalt magnet assembly with on-board pre-amplification to provide the highest standard of O₂ analysis. Accuracy is further augmented by built-in barometric pressure compensation and detector temperature control.

In operation, the magneto-dynamic cell makes use of the principle that oxygen is drawn into a magnetic field, thereby increasing the force exerted on a diamagnetic body suspended in the field. The amount of current necessary to restore the position of the body is directly proportional to the O₂ level of the sample gas. Very few other gases respond this way, making this method of detection very specific to oxygen.

MODELS

There are six types of mounting configurations available. All tubing connections are 1/4" SS FPT.

- 412N4 - Wall mounted NEMA4 (IP65) enclosure rating
- 412N4X - Wall mounted corrosion-resistant NEMA4X (IP65) enclosure rating
- 412RM - 19" (483mm) rack mounted, on sliding rails
- 412N7MC: Wall mounted NEMA7 UL/CSA explosion-proof with non-intrusive magnetic calibration, Class 1 Div 1 Group BCD
- 412RMN7: Wall mounted NEMA7 sensor housing with rack mounted control cabinet (two separate enclosures)

SPECIFICATIONS

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

Description

Method of Detection:	Magneto-dynamic paramagnetic O ₂ cell, heated and temperature-controlled
Ranges Available:	Any range from 0-2.0% to 0-100.0% O ₂
Resolution:	0.1% O ₂
Accuracy and Repeatability:	± 1% of full scale
Drift:	± 0.2% of full scale per month.
Response Time (T-90):	4 - 5 seconds at a sample flow of 1 LPM
Ambient Temperature Range:	40 to 104°F (4 to 40°C). Optional: -30°C to 55°C (-22°F to 131°F) with Outdoor Pkg. Sample dew point should be at least 9°F (5°C) below lowest sample temperature.
Linearity:	± 0.5% of full scale or 0.05%, whichever is greater
Size and Weight:	Dimensions will vary depending on enclosure style and options required
Power:	115VAC 60Hz (220VAC 50Hz available)
Output Options:	4-20mA into 500 ohms non-isolated standard Isolated 4-20mA, RS232, RS485, MODBUS®, Ethernet outputs optional
Alarms:	High and/or low alarm contacts available, relay contacts SPDT 5A @ 220VAC rating. Low flow alarm optional

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UNIQUE APPLICATIONS

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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