

## 920 SERIES

### CONTINUOUS ANALYZERS FOR BIOGAS RECOVERY & PROCESSING



### APPLICATIONS

For continuous analysis of oxygen ( $O_2$ ), methane ( $CH_4$ ), and/or carbon dioxide ( $CO_2$ ) in recovered gases from biogas applications. Hydrogen sulfide ( $H_2S$ ) readout optional.

### FEATURES

- Temperature-controlled sensors for maximum stability
- Long-life electrochemical  $O_2$  sensor
- Infrared detector for reliable measurement of  $CH_4$  &  $CO_2$
- Stainless steel hard tubing and corrosion-resistant components for internal sample path
- Cabinet positive-pressure system to minimize the corrosive effects of hydrogen sulfide ( $H_2S$ ) on cabinet electronics & sensors
- Built-in sample pump, pre-filter, filters, and flow meter
- Automatic condensate removal
- Rugged NEMA4 (IP65) enclosure
- Isolated 4-20mA output for each gas
- Low flow alarm & relay
- Automatic calibration with touch screen LCD display
- Diagnostic alarms with troubleshooting guidance
- 'Cal-Now' button enables full calibration at any time by activating only one switch

### CALIBRATION

- Ambient air for  $O_2$  span and  $CO_2$  &  $CH_4$  zero
- Analyzed calibration gas of  $CO_2$  and  $CH_4$  in nitrogen for  $CO_2$  &  $CH_4$  span and  $O_2$  zero



**923C -  $O_2$ ,  $CH_4$ , &  $CO_2$  analysis  
with auto-calibration and  
optional stainless steel cabinet**

### OPTIONS

- $H_2S$  & BTU readout (see ranges & models)
- Gas hi/low alarms with relay contacts
- Class 1 Division 2 rated purge kit for use in hazardous areas
- Outdoor weather packages for operation from  $-20^{\circ}C$  up to  $55^{\circ}C$  ( $-4^{\circ}F$  to  $131^{\circ}F$ )

## DESCRIPTION

The Nova 920 Series analyzers have been designed for monitoring recovered and processed gases from biogas installations. This equipment continuously removes moisture from the wet sample gas without the need for cooling water, compressed air, or failure-prone thermoelectric elements. The 920 Series comes complete with pre-filter, sample pump, flow meter, continuous moisture removal system, long-life O<sub>2</sub> sensor, infrared CO<sub>2</sub>/CH<sub>4</sub> detector, low flow sensor, alarm relay contacts, and 4-20mA outputs for each gas measured. Sensors / detectors are mounted in an internal dedicated enclosure which is heated and temperature controlled to reduce drift due to ambient temperature swings. The internal sensor enclosure is removable to allow quick field change of sensors. The infrared detector can be cleaned in the field if necessary by the on-site technician.

On all models with Autocalibration, all calibration functions are controlled through the display rather than through manual controls. The operator only has to input the calibration frequency and leave calibration gas cylinder connected to the analyzer - the rest is automatic. Diagnostics and troubleshooting information are also included in the display interface. This assists operators to quickly determine the cause of an alarm and get the analyzer back on line.

## MODELS

- 920 - O<sub>2</sub>
- 921 - CH<sub>4</sub>
- 922 - O<sub>2</sub> and CH<sub>4</sub>
- 923 - CO<sub>2</sub> and CH<sub>4</sub>
- 924 - O<sub>2</sub>, CH<sub>4</sub>, and CO<sub>2</sub>

Other analysis options available:

- H<sub>2</sub>S, range 0 - 200 up to 0 - 2,500 PPM H<sub>2</sub>S
- BTU readout, range 0-1000 BTU (4-20mA output n/a)
- Other combinations can be requested

## SPECIFICATIONS

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

### Description

<b>Method of Detection:</b>	O <sub>2</sub> and H <sub>2</sub> S by electrochemical sensor, CH <sub>4</sub> & CO <sub>2</sub> by infrared detector
<b>Ranges Available:</b>	0-25.0% O <sub>2</sub> ; any range between 0-50.0% to 0-100.0% CH <sub>4</sub> , CO <sub>2</sub> ; 0-200 to 0-2,500 PPM H <sub>2</sub> S; 0-1000 BTU
<b>Resolution:</b>	0.1% on CO <sub>2</sub> , O <sub>2</sub> , & CH <sub>4</sub> , 1 PPM H <sub>2</sub> S, 1 BTU
<b>Accuracy and Repeatability:</b>	±1% of full scale for O <sub>2</sub> / CO <sub>2</sub> / CH <sub>4</sub>
<b>Drift:</b>	Less than 2% of full scale per month
<b>Response Time (T-90):</b>	Less than 30 seconds not including sample line delay
<b>Ambient Temperature Range:</b>	40 to 104°F (4 to 40°C). Optional: -20°C to 55°C (-4°F to 131°F) with Outdoor Pkgs.
<b>Linearity:</b>	±1% of full scale for each gas measured
<b>Size and Weight:</b>	Approx. 24" H x 24" W x 10" D @ 90 lbs (61 x 61 x 25 cm @ 41 kg) Physical data may vary depending on options required
<b>Power:</b>	115VAC 60Hz (220VAC 50Hz available)
<b>Output Options:</b>	Isolated 4-20mA standard (4-20mA output not available for BTU output option)
<b>Alarms:</b>	High O <sub>2</sub> , high CO <sub>2</sub> , low CH <sub>4</sub> , low flow; SPDT relays with 10A contacts



NOVA ANALYTICAL SYSTEMS  
(A UNIT OF TENOVA GOODFELLOW INC.)

IN USA:  
1925 Pine Avenue • Niagara Falls, NY • 14301  
Tel: 1-800-295-3771 • 716.285.0418 • Fax: 716.282.2937  
IN CANADA:  
270 Sherman Avenue North • Hamilton, ON • L8L 6N5  
Tel: 905.545.2003 • Fax: 905.545.4248  
email: sales@nova-gas.com  
websales@nova-gas.com



www.nova-gas.com