



Standard Specifications

Part Number	SNR475
Standard Range	0-10 Parts Per Million (PPM)
Accuracy	± 0.4 PPM
Optional Ranges	0-50 PPM ± 2 PPM 0-100 PPM ± 4 PPM
Response Time	41.7 seconds to 50% of scale
Repeatability	± 1% full scale
Drift	± 2% full scale per month
Assembly Rating	Class 1, Division 1
Assembly Material	Aluminum
Operating Life	2 years
Storage life in container	6 months
Temperature Limits	
Operating	-15°C (5°F) to 40°C (104°F)
Intermittent	-20°C (-40°F) to 55°C (131°F)
	Prolonged operation in this range will reduce cell performance and life. This range is not approved by FM Approvals.
Operating Pressure	Ambient ±10%
Pressure effect	Negligible
Humidity Range	15% to 90% RH
One way line length	5,000 feet 14 AWG
Interconnection wiring	3 wires
Input voltage	24 VDC
Output	mADC into SmartMaxII monitor
Approvals	FM

Cross Sensitivity to:	SNR475 Response
100 PPM Nitrogen Oxide	0
300 PPM Carbon Monoxide	0
100 PPM Hydrogen	0
100 PPM Hydrogen Sulfide	-20
100 PPM Ethylene	0
100 PPM Sulfur Dioxide	< -0.5

Sensor Design

The Nitrogen Dioxide Sensor employs electrochemical technology. The sample diffuses into a micro fuel cell, where it chemically reacts to produce an electrical current. The micro fuel cell is designed so that the current produced is proportional to the concentration of nitrogen dioxide present. The signal is then amplified into a mA output. The output signal is linear and readings are displayed in parts per million concentrations.

Construction

The sensor assembly consists of a micro fuel cell that plugs into the electronics. The cell and electronics are housed in an aluminum sensor body that connects to a junction box for field wiring. A collar protects the sensor from environmental conditions and also provides a means of introducing calibration gas.

The micro fuel cell employs a capillary barrier that eliminates the possibility of puncturing the membrane and destroying the cell. The cell is a rugged and stable design that is less sensitive to temperature and pressure variations than other electrochemical cells.

An on-board heater protects the cell and extends its useful operating range in sub-freezing temperature.

The sensor requires only 100 PPM of oxygen for its operation.

Sampling System

The sensor relies on diffusion for sampling. In the diffusion mode the sensor detects Nitrogen Dioxide by direct sampling of the atmosphere through the sensor flame arrester.

Performance

The Nitrogen Dioxide Sensor exhibits high accuracy, excellent repeatability, and long-term stability for zero and span readings.

Factory Tested as a Complete System

The sensor is completely factory assembled, calibrated and tested with its control monitor prior to shipment.