

# Sensor Data Sheet

# SENSALERT PLUS



## Ozone (0 – 1.00 ppm) Part No. 823-0243-21

Minimum Indicated Concentration .....	0.03 ppm
Repeatability <sup>2</sup> .....	± 10% of Reading
Accuracy <sup>1</sup> .....	± 10% of Reading
Span Drift .....	< 4% change per month (typical)
Response Time (Rise) <sup>2,3</sup> .....	T <sub>90</sub> : < 150 seconds
Recovery Time (Fall) <sup>2</sup> .....	T <sub>10</sub> : < 90 seconds
Temperature Range .....	-20° to 40°C (-4° to 104°F)
Humidity Range (continuous) <sup>4</sup> .....	15–90 %RH, non-condensing
Humidity Range (intermittent) <sup>4</sup> .....	0–99 %RH, non-condensing
Pressure Range .....	Ambient atmospheric, ± 1 psi
Expected Sensor Life .....	3 years from Shipping Date
Recommended Calibration Flow Rate .....	500 to 1000 cc/min (maximum)
Oxygen Requirement .....	1% by volume, minimum
SensAlert 4-Channel Controller .....	Not Compatible

<sup>1</sup> When unit is calibrated and serviced at recommended intervals.  
<sup>2</sup> Room Temperature, seasoned system, repeatability is significantly affected by environmental changes, primarily varying moisture levels.  
<sup>3</sup> Response to dry ozone test gas after sensor equilibration under clean dry air.  
<sup>4</sup> Sensor is subject to significant moisture transients on changes in moisture level. Note that transients are positive for increasing moisture and vice versa.

### Cross-Interferences\*

Gas	Gas Exposure	Sensor Output
Carbon Monoxide	300 ppm	None
Chlorine	1 ppm	+1 ppm
Hydrogen	100 ppm	None
Hydrogen Cyanide	10 ppm	None
Hydrogen Sulfide	8 ppm	-1 ppm <sup>◊</sup>
Nitrogen Dioxide	1.5 ppm	+1 ppm
Sulfur Dioxide	5 ppm	None

\* Interference factors may differ from sensor to sensor, it is not advisable to calibrate with interferent gases.  
<sup>◊</sup> Negative interferent, highly variable

## Special Calibration Considerations:

### **Ozone (PN° 823-0243-21)**

#### Zeroing The Sensor

It is recommended that the sensors be zeroed in clean ambient air. If zero air is used, it should be moisturized to ambient conditions and a pre-zeroing exposure of 15 minutes is recommended to overcome possible moisture transients. If dry air is used for zeroing, a 60 minute pre-exposure is recommended to overcome moisture transients.

#### Span Calibration

It is recommended that this sensor be calibrated at 0.5 to 1 ppm O<sub>3</sub>. Due to moisture transients, the use of a surrogate gas for calibration is not recommended. It is recommended that the sensor undergo a 5 minute pre-calibration exposure of ozone in order to overcome moisture transients and season the calibration system. This pre-exposure ensures that the gas reaches the sensor at full concentration. The use of Teflon™ tubing is recommended with this gas to prevent gas absorption/reaction into the tubing walls. Ozone generators typically require dry air for operation – the sensor will experience a positive moisture transient when such gas is removed. Note that the sensor will experience a sharp negative transient for the first 60 seconds of gas application and may cause the sensor to temporarily indicate “Sensor Fail”. Complete span calibration instructions are provided in the SensAlert<sup>Plus</sup> User Manual or SensAlert ASI User Manual.

#### Test-on-Demand Cell

Test-On-Demand cell available for this sensor: 821-0204-02 (Type C). This cell is the recommended method for testing sensor activity as it does not produce moisture transients.

#### Moisture Effects

These sensors exhibit a positive moisture transient when exposed to an increase in ambient moisture. Transient magnitudes ranged from 0.5 ppm to off-scale when sensors were suddenly exposed to moist air (23°C, 55 %RH) after sitting in dry shop air (23°C, 0 %RH). The sensors took 10 to 25 minutes for the transient to fall below zero suppression while moist air exposure continued. The sensors underwent a negative transient of -0.3 to off-scale (negative) when suddenly exposed to dry air (23°C, 0%RH) after sitting in room air (23°C, 55 – 60%RH). These transients took from 60 to 90 minutes to rise above zero suppression while dry air exposure continued. Note that this negative transient could cause the transmitter to display “Sensor Fail”.

#### **Moisture Barrier & Rainshield Use**

The use of a SensAlert<sup>Plus</sup> moisture barrier and/or rainshield is not recommended for this sensor. The barrier blocks approximately 90% of the target gas. A similar effect can be expected with the rainshield.