

Sensor Data Sheet

SENSALERT PLUS



Ethylene Oxide (0 – 10.0 ppm) Part No. 823-0245-21 FM Performance Certified ⁴



- Minimum Indicated Concentration 0.3 ppm
- Repeatability ± 2% of Reading
- Accuracy¹ ± 5% of Reading
- Span Drift < 5% change per year (typical)
- Response Time (Rise)^{2,3} T₅₀: < 15 seconds
T₉₀: < 140 seconds, successive exposures
- Recovery Time (Fall)^{2,3} T₁₀: < 180 seconds
- Temperature Range -20° to 40°C (-4° to 104°F)
- Humidity Range (continuous) 15–95 %RH, non-condensing³
- Humidity Range (intermittent)..... 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
- Oxygen Requirement 1% by volume, minimum
- SensAlert 4-Channel Controller..... Compatible

¹ When unit is calibrated and serviced at recommended intervals.
² Room Temperature, seasoned system.
³ See the section on Moisture Considerations for this sensor
⁴ For use in an FM Approved SensAlert Plus Transmitter

Cross-Interferences*

Gas	Gas Exposure	Sensor Output
Acrylonitrile	3 ppm	+1 ppm
Alcohols	ppm levels	Yes**
Ammonia	100 ppm	None
Ethylene	1.3 ppm	+1 ppm
Carbon Disulfide	2 ppm	+1 ppm
Carbon Monoxide	2.5 ppm	+1 ppm
Hydrogen Sulfide	0.5 ppm	+1 ppm
Nitrogen Dioxide	11 ppm	+1 ppm
Nitric Oxide	2.5 ppm	+1 ppm
Ozone	0.9 ppm	-1 ppm
Sulfur Dioxide	2.5 ppm	+1 ppm
Vinyl Chloride	1.4 ppm	+1 ppm

* Interference factors may differ from sensor to sensor, it is not advisable to calibrate with interferent gases.
 **Ethanol, Ethanol, Isopropyl alcohols will result in a positive output near or above a 1:1 interference

Special Calibration Considerations: **Ethylene Oxide (PN° 823-0245-21)**

Moisture Considerations

A rapid change in moisture levels will result in transient output spikes with this sensor. A change from moist air (room air) to dry air (bottled zero-air or calibration gas) will result in a negative transient and vice versa. These transients can take up to 5 minutes to recover to previous levels. Transient recovery times will lengthen as the sensor ages. In addition, the sensor can undergo baseline shifts due to changed moisture levels. A sensor zeroed under dry air can shift positive by more than 10% of scale when exposed to moist ambient air, and vice versa. These shifts may intensify as the sensor ages although other sensor operating characteristics are not affected.

Zeroing The Sensor

Where possible, it is recommended that these sensors be zeroed in known clean (interferent free) ambient air. If bottled zero air is used to preclude interferences, it should be moisturized to ambient conditions. When moist zero-air is used, the gas should be allowed to flow over the sensor for 3 to 5 minutes prior to zeroing in order to equilibrate transient outputs. Complete zeroing instructions are provided in the SensAlert^{Plus} User Manual or SensAlert ASI User Manual. If the sensor indicates "Zero Fail", the factory Service Department should be consulted for further assistance.

Span Calibration

It is recommended that this sensor be calibrated at the half-scale concentration of 5 ppm Ethylene Oxide. The sensor should undergo a 4 to 5 minute pre-calibration exposure in order to overcome moisture transients as described above and to season the gas delivery components. This pre-exposure ensures that the gas reaches the sensor at full concentration. The use of Teflon™ tubing or equivalent is required with this gas to prevent gas absorption into the tubing walls. Complete span calibration instructions are provided in the SensAlert^{Plus} User Manual or SensAlert ASI User Manual.

Test-on-Demand Cell

There is no Test-On-Demand cell available for this sensor.

Biased Sensor Note

This sensor has a +300 mV bias applied between its reference and sensing electrodes. For this reason, this sensor is shipped on a (non-intrinsically safe) battery bias board. If the sensor is unplugged from the bias board or the transmitter (or the transmitter loses power) this bias is lost and the sensor will produce an elevated baseline. The time needed for the baseline to fall to zero depends on how long the sensor was without a bias voltage. A loss of bias voltage for 1 minute could result in up to 15 minutes or more of elevated baseline while a 24 hour loss of bias could take over 72 hours for the baseline to recover to zero.

Bias Battery Board Note

The battery on the bias board contains approximately 0.5 g of lithium metal. A risk of fire or explosion exists if this battery is improperly handled. Do not puncture or force open. Do not heat or dispose of in fire. Do not attempt to recharge this battery.