

Sensor Data Sheet

SENSALERT PLUS



Chlorine (H₂S Tolerant) (0 – 5.00 ppm) Part No. 823-0202-42

Minimum Indicated Concentration	0.15 ppm
Repeatability ²	± 5% of Reading
Accuracy ¹	± 10% of Reading
Span Drift	< 12% change per 6 months (typical)
Response Time (Rise) ^{2,3}	T ₉₀ : < 45 seconds
Recovery Time (Fall) ²	T ₁₀ : < 60 seconds
Temperature Range	-20° to 50°C (-4° to 122°F)
Humidity Range (continuous) ⁴	15–90 %RH, non-condensing
Humidity Range (intermittent) ⁴	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, repeat exposures.
³ Response to dry gas after dry air equilibration, the response to a dry gas after moist air will appear to take longer due to a humidity transient.
⁴ Sensor is subject to moisture transients on sudden changes in moisture level. Note that transients are positive for increasing moisture and vice versa.

Cross-Interferences*

Gas	Gas Exposure	Sensor Output
Carbon Dioxide	5000 ppm	None
Carbon Monoxide	300 ppm	None
Chlorine Dioxide	0.3 ppm	+1 ppm
Hydrogen Cyanide	10 ppm	None
Hydrogen Sulfide	4 ppm	-1 ppm [◊]
Nitrogen Dioxide	1 ppm	+1 ppm
Sulfur Dioxide	100 ppm	-1 ppm

* Interference factors may differ from sensor to sensor, it is not advisable to calibrate with interferent gases.
[◊] Negative interferent, highly variable

Special Calibration Considerations:

Chlorine (H₂S Tolerant) (PN° 823-0202-42)

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 2 to 5 minutes is recommended to overcome possible moisture transients. If dry zero air is used, a 45 to 60 minute pre-exposure is recommended prior to zeroing. The sensor will undergo a negative moisture transient when dry air is applied, possibly indicating "Sensor Fail" at the transient onset.

Span Calibration

For best accuracy, it is recommended that this sensor be calibrated at a full scale concentration of 5 ppm Cl₂. It is recommended that the sensor undergo a 3 to 5 minute pre-calibration exposure 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 into the tubing walls. Complete span calibration instructions are provided in the SensAlert^{Plus} User Manual or SensAlert ASI User Manual. The sensor will undergo a positive moisture transient when the (dry) calibration gas is removed.

Test-on-Demand Cell

Test-On-Demand cell available for this sensor: 821-0204-02 (Type C).

Moisture Effects & Moisture Barrier Use

These sensors exhibit a positive moisture transient when exposed to a rapid increase in ambient moisture. Transient magnitudes ranged from 1 to 2 ppm when sensors were suddenly exposed to moist air (23°C, 99%RH) after sitting in room air (23°C, 55 – 60%RH). The sensors underwent a negative transient of -1 to -2 ppm when suddenly exposed to dry air (23°C, 0%RH) after sitting in room air (23°C, 55 – 60%RH). These transients took from 30 to 40 minutes to rise above -0.3ppm. Note that this negative transient could cause the transmitter to display "Sensor Fail".

The use of a SensAlert^{Plus} moisture barrier, p/n 821-0201-01, is not recommended with these sensors. The barrier blocks almost all of the Cl₂ gas from the sensor (at 5 to 10 ppm levels).