

# Sensor Data Sheet

# SENSALERT PLUS



### Carbon Disulfide (3 – 100 ppm) Part No. 823-0252-21

- Minimum Indicated Concentration ..... 3 ppm
- Repeatability<sup>1</sup> ..... ± 5% of Reading
- Accuracy<sup>2</sup> ..... ± 10% of Reading
- Span Drift ..... < 10% change per 6 months (typical)
- Response Time (Rise)<sup>3</sup> ..... T<sub>90</sub>: < 80 sec, successive exposures
- Recovery Time (Fall)<sup>3</sup> ..... T<sub>90</sub>: < 90 sec
- Temperature Range ..... -20° to 50°C (-4° to 122°F)
- Humidity Range (continuous)<sup>4</sup> ..... 15–90 %RH, non-condensing
- 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..... Not Compatible.

<sup>1</sup> Repeatability is dependent on the recovery time between exposures. Sensors exhibit 5% (of exposure concentration) repeatability when re-exposed at least 24 hours after the original exposure. A sensor re-exposed 30 minutes after the initial exposure would exhibit 20% repeatability.

<sup>2</sup> Accuracy based on 16 to 24 hour exposure intervals.

<sup>3</sup> Response time at room temperature & 24 hour exposure interval. Recovery time is based on the exposure magnitude and time, higher concentrations for more than 5 minutes can result in hours long recovery times.

<sup>4</sup> Abrupt changes in moisture can produce output transients of ± 10% of full scale.

### Cross-Interferences<sup>1</sup>

Gas	Gas Exposure	Sensor Output
Carbon Monoxide	0.18 ppm	+1 ppm
Chlorine	1 ppm	none
Hydrogen	0.4 ppm	+1 ppm
Hydrogen Chloride	5 ppm	None
Hydrogen Cyanide	1.3 ppm	+1 ppm
Hydrogen Sulfide	0.7 ppm	+1 ppm
Nitric Oxide	1.3 ppm	+1 ppm
Nitrogen Dioxide	5 ppm	None

<sup>1</sup> Interference factors may differ from sensor to sensor, it is not advisable to calibrate with interferent gases.

## **Special Calibration Considerations: Carbon Disulfide Sensor (PN° 823-0252-21)**

### **Target Gas Exposure**

Exposure to CS<sub>2</sub> temporarily reduces the activity reserve of these sensors and lowers their output for subsequent exposures. Exposure to 50 ppm CS<sub>2</sub> for 5 minutes will reduce the activity reserve by approximately 20%, i.e. a second exposure of 50 ppm CS<sub>2</sub> 30 minutes later would read approximately 40 ppm. Further reductions could occur with shorter exposure intervals. This sensitivity reduction is temporary and the sensor will regain its original output within 16 to 24 hours after that initial exposure. This sensor is not recommended for applications where high concentrations or frequent/continuous exposures could occur.

### **Zeroing the Sensor**

It is recommended that the sensor be held in clean air for 60 minutes prior to zeroing. If possible, the sensor should be zeroed in clean ambient air. If Zero Air is used, a 5 to 10 minute exposure is recommended. Complete zeroing instructions are provided in the SensAlert<sup>Plus</sup> User Manual or SensAlert ASI User Manual.

### **Bump Testing**

Many companies will bump test a sensor with the calibration gas to see if the sensor maintains accuracy or if it needs calibration, bump testing this sensor with 50ppm CS<sub>2</sub> gas is not recommended for this sensor. If the user applied CS<sub>2</sub> gas to the sensor and a calibration was required, the sensor would have to sit for 16 to 24 hours in clean, CS<sub>2</sub> free, air before initiating calibration. If needed, 10ppm carbon monoxide gas should be used to bump test the sensor, 10ppm CO should give a reading between 54 and 57ppm on a successfully calibrated sensor. Note that CO gas will not alter the sensor sensitivity so any required calibrations could be given on the CO bumped sensor.

### **Span Calibration**

This sensor should only be calibrated after it has sat in clean, CS<sub>2</sub> free air for 16 to 24 hours to ensure the calibration is performed with the sensor's innate activity reserve. It is recommended that this sensor be calibrated with 50 ppm CS<sub>2</sub> gas. A 4 to 5 minute pre-exposure is recommended prior to calibration. This pre-exposure helps to "season-in" the calibration equipment so that gas reaches the sensor at full concentration. Complete span calibration instructions are provided in the SensAlert<sup>Plus</sup> User Manual or SensAlert ASI User Manual. If a repeat exposure is desired after calibration the sensor will need 16 to 24 hours recovery in clean, CS<sub>2</sub> free air prior to re-applying CS<sub>2</sub> gas.

### **Test-on-Demand Cell**

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