Detection at every point.

Flammable & Toxic Gas Detection for Pipeline & Gas Processing Plants

LEL, H₂S, SO₂, CO₂, Oxygen
Many Additional Gases Available

Bulk Petroleum • Crude Oil • Distribution Pipelines • Ethane, Propane, Butane, Isobutene, Pentanes Plus • Formations of Storage Natural Gas (NG) • Fossil Fuel Combustion • Fractionate NG Liquids • Gathering and Boosting Equipment • Gathering Pipelines • Liquefied Natural Gas (LNG) Storage • LNG Import and Export Equipment • NG Handling & Distribution System • NG Liquids • NG Liquids Fractionator • NG Processing
Industry-leading reliability, SensAlert ASI is the ideal fixed-point gas detector for critical safety applications. Flexible configurations and a simple interface provide maximum application versatility while remaining the easiest to install, commission, operate, and maintain.

- **Functional Safety, Unquestionable Reliability**
  Third-party SIL-2 certification validating long-term reliability
  Sensors are performance tested and certified providing assured capability
  Sensor Test-On-Demand, with on-board gas generator

- **Universal Platform with Intrinsically Safe Sensor Head**
  Replace sensors without area declassification or work permits
  Shop calibrate then hot-swap gas sensors in classified areas
  Remote mount sensor up to 100 ft./30 m. away without rigid conduit
  Modbus, HART, and 4-20 mA communication options

- **Intelligent Plus Series Sensors**
  Auto-recognition and set-up from sensor memory
  Extensive sensor range for Flammables/Combustibles, Toxics, and Oxygen
  Compatible with all Plus Series sensor ranges and technologies

- **Flexible Installation or Retrofit**
  2-wire and 3-wire transmitter models with global performance approvals
  Unrestricted installation and operation in hazardous classified areas
  Non-intrusive configuration and maintenance Interface
  Configurable alarms & warnings for hazard mitigation and notification

**Available in Aluminum or Stainless Steel**

**Magnetic Wand for Nonintrusive Calibration**

**Main Display**

**Main Menu**

**Sensor Data Review**

**System Configuration Menu**
Gas Processing Hazards and Mitigation

Natural gas is a mixture of Methane and up to 30% of other Hydrocarbons and lesser amounts of impurities such as Carbon Dioxide, Hydrogen Sulfide, Helium and Nitrogen. Gas is commercially extracted from underground oil and gas fields.

Highly valued as the cleanest fuel with the lowest CO2 emissions, Natural gas flammability and toxic constituents require monitoring and mitigation programs for compliance with OSHA, EPA, API and State Corporation Commission laws and guidelines for compliance and prevention of personal injury and property loss.

Wellhead gas is separated from the liquids (water and oil or condensate), gathered and processed under pressure in multiple dedicated units, before being compressed and delivered to the pipeline. Gas leaks are very hazardous because of the flammability of the gas and highly toxic Hydrogen Sulfide. Revised ACGIH guidelines for H2S limit exposure to 1.0 PPM, 8 hour TWA, with a 15 PPM STEL (15 minutes). The OSHA PEL is 10 PPM.

Natural gas pretreatment usually consists of mercury removal, gas sweetening and drying. A Claus unit with tail gas treating may be used when sulfur content is high. Should Carbon Dioxide be an exposure hazard, Oxygen deficiency monitoring is not sufficient as safe levels of CO2 are grossly exceeded way before an Oxygen sensor alarms. Gas detectors for H2S, CO2 and SO2 are strategically placed in the units near the fluid handling equipment to protect personnel.

Nitrogen and Helium extraction and purification is usually done by cryogenic or PSA methods. Natural gas liquids, liquefied petroleum gas and the pure components C2 through C5 are separated by fractionation. LEL monitoring is required near all active process equipment where leaks might occur. Optical flame detectors are often positioned for flame and fire detection within seconds.

A complete safety program including point gas detectors, open path gas detection and optical flame detection is the most reliable solution for process leak detection. FM performance certified sensors and FM explosion-proof approval delivers gas detection that operates flawlessly in any environment and delivers the earliest warning of dangerous conditions.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Gas</th>
<th>TLV TWA</th>
<th>NIOSH IDLH</th>
<th>Sensor Span Units</th>
<th>Response Time, T-50</th>
<th>Operating Temperature, Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>823-0201-22</td>
<td>NH3</td>
<td>25 PPM</td>
<td>300 PPM</td>
<td>0-50 PPM</td>
<td>11 sec</td>
<td>-4° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0201-21</td>
<td>NH3</td>
<td>25 PPM</td>
<td>300 PPM</td>
<td>0-100 PPM</td>
<td>11 sec</td>
<td>-4° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0201-41</td>
<td>NH3</td>
<td>25 PPM</td>
<td>300 PPM</td>
<td>0-300 PPM</td>
<td>10 sec</td>
<td>-4° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0206-23</td>
<td>H2S</td>
<td>1 PPM</td>
<td>100 PPM</td>
<td>0-10.0 PPM</td>
<td>10 sec</td>
<td>-40° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0206-22</td>
<td>H2S</td>
<td>1 PPM</td>
<td>100 PPM</td>
<td>0-50 PPM</td>
<td>10 sec</td>
<td>-40° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0206-21</td>
<td>H2S</td>
<td>1 PPM</td>
<td>100 PPM</td>
<td>0-100 PPM</td>
<td>10 sec</td>
<td>-40° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0205-53</td>
<td>CO2</td>
<td>0.50%</td>
<td>4.00%</td>
<td>0-5.0%</td>
<td>60 sec</td>
<td>-4° to 122° F, 15-95% RH</td>
</tr>
<tr>
<td>823-0219-23</td>
<td>CO</td>
<td>25 PPM</td>
<td>1,200 PPM</td>
<td>0-100 PPM</td>
<td>10 sec</td>
<td>-4° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0219-22</td>
<td>CO</td>
<td>25 PPM</td>
<td>1,200 PPM</td>
<td>0-500 PPM</td>
<td>10 sec</td>
<td>-4° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0240-22</td>
<td>O2</td>
<td>19.50%</td>
<td>18.00%</td>
<td>0-25%</td>
<td>4 sec</td>
<td>-4° to 122° F, 5-90% RH</td>
</tr>
<tr>
<td>823-0221-21</td>
<td>NO2</td>
<td>1 PPM</td>
<td>20 PPM</td>
<td>0-10.0 PPM</td>
<td>10 sec</td>
<td>-4° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0218-22</td>
<td>SO2</td>
<td>2 PPM</td>
<td>100 PPM</td>
<td>0-10.0 PPM</td>
<td>10 sec</td>
<td>-4° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0218-21</td>
<td>SO2</td>
<td>2 PPM</td>
<td>100 PPM</td>
<td>0-20.0 PPM</td>
<td>10 sec</td>
<td>-4° to 122° F, 15-90% RH</td>
</tr>
<tr>
<td>823-0211-51</td>
<td>NGLs, CH4</td>
<td>10% LEL</td>
<td>-</td>
<td>0-100% LEL</td>
<td>10 sec</td>
<td>-13° to 167° F, 15-90% RH</td>
</tr>
</tbody>
</table>
The SafEye Quasar 900 is an open path detection system which provides continuous monitoring for combustible hydrocarbon gases. It employs “spectral fingerprint” analysis of the atmosphere using the Differential Optical Absorption Spectroscopy (DOAS) technique. It consists of a Xenon Flash infrared transmitter and infrared receiver, separated over a line of sight from 23 ft (7m) to 660 ft (200m) in extremely harsh conditions where dust, fog, rain, snow, or vibration can cause a high reduction of signal.

The transmitter and receiver are both housed in a rugged, stainless steel, ATEX and IECEx approved enclosure. The main enclosure is Exd frameproof with an integral, segregated, Exe increased safety terminal section. The hand-held unit can be connected in-situ via the intrinsically safe approved data port for prognostic and diagnostic maintenance. The Quasar 900 is approved to FM/FMC per Class I Div 1 Group B, C and D and Class I, II Div 1 Group E, F and G, and ATEX/IECEx per Ex d e ib [ib Gb] IIB + H2 T4 Gb, Ex tb IIIC T135°C Db.