Trusted Solutions for Gas & Flame Detection

Combustibles/Flammables
Toxics & Corrosives
Oxygen Enrichment/Deficiency
Fire/Flame

www.SensidyneGasDetection.com
Engineered for Performance
Sensidyne proudly designs, manufactures, and distributes gas monitoring systems relied upon by customers for detection of gas in critical safety applications for protection of their personnel and assets. Customers know us by our quality products and commitment to servicing their needs. We work knowing that our product performance and manufacturing quality is customer safety and productivity.

 Manufactured for Quality
Sensidyne is committed to providing products and services that consistently meet customer needs and comply with applicable statutory and regulatory requirements. Our Quality Management System is structured in accordance with ISO9001 in addition to our Service facility and calibration laboratory being ISO17025 certified. We strive to ensure continuous improvement through ongoing review of our designs, supplier performance, and customer feedback.

All Sensidyne employees share the responsibility to provide products that are produced with the highest level of quality and represent the best value and service to our customers. We are committed to meeting or exceeding customer expectations in everything we do.
Trusted Supplier of Gas Detection to a Wide Range of Industries & Applications

Manufacturing, Chemicals & Solvents, Pharmaceuticals, and Building Materials

Oil & Gas Refining, Processing, Transportation, and Distribution

Waste Water Collection and Treatment Facilities, Wet Wells, and Pumping Stations

Ammonia for Fertilizer and Refrigeration Applications

Power Generation, Battery Rooms, Boilers, and Cooling Systems

Breweries, Food & Beverage, Paper, Flavors & Fragrances, and Research Laboratories

And many more common and specialty applications.
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 accuracy
  Sensor Test-On-Demand, with on-board gas generator
  Predictive sensor end-of-life indication

- **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 & 3-wire models with global hazardous area & performance approvals
  Unrestricted installation and operation in hazardous classified areas
  Non-intrusive configuration and maintenance interface
  Configurable alarms & warnings with up to four relays and one virtual relay

**Critical Protection with Global Approval**
SensAlert ASI is third-party certified to IEC61508 Level 2 (SIL-2) for both hardware and software. SIL certification assures reliability verified by an independent testing agency. Sensor performance response verification is available through the Test-on-Demand feature. Predictive Sensor End-of-Life Indication provides advanced warning of impending sensor expiration. Combined, these features ensure the best up-time without increasing maintenance tasks or costs.

**Unmatched Application Versatility**
SensAlert ASI is a universal instrument platform for toxic & combustible gas detection and oxygen monitoring. Its design enables standardized installation across a complete plant or facility.
SensAlert ASI provides unmatched application suitability through remote sensors and gassing, duct mount, and sample-draw to maximize application versatility.

**Easiest to Install, Commission, Operate, and Maintain**
SensAlert ASI is engineered to overcome the challenges users face with traditional gas detectors. The universal instrument platform for all gas and sensor types provides common installation for each detection point with vertical or horizontal installation options and removable plug-type terminal blocks to simplify wiring and commissioning.
Embracing Intrinsic Safety for the ROI

Intrinsic Safety (I.S.) is a method of electrical protection for safe operation of electrical equipment in hazardous classified areas by limiting the energy available for ignition. I.S. installation provides many cost-saving advantages as it does not require expensive rigid conduit or a hot work permit for instrument maintenance. I.S. installation should be considered when existing wiring does not meet code requirements or for new installations where cable trays will be employed using power limited tray cable. Consult the Application Engineering Team at Sensidyne to discuss if I.S. is right for your application.

Technical Specifications

Sensors
Gas Sensors: Electrochemical, Infrared, Catalytic Bead Test-On-Demand Modules: Type C and Type S

Electrical
Voltage
2-Wire 24 VDC (18-30 VDC) 20 mA
3-Wire 24 VDC (15-30 VDC) 90 mA
W/ Relay Card and combustible sensors: 300 mA

Output and load resistance with 24 VDC at transmitter terminals:
3 wire 4-20 mA: 500 Ω maximum
2 wire 4-20 mA: 350 Ω maximum
Relay 3-Wire Only - One SPDT Configurable Relay Option Card: Three (3) SPDT Configurable Relays

Contact Ratings: 5 Amps at 115 VAC or 30 VDC Resitive

Communication Options: 4-20 mA, non-isolated (current source), 2 or 4-wire RS-485 (Modbus), HART

Controls and Display
User Interface: Non-intrusive, menu driven security
Password protection
LEDs: Four (4) Red, corresponding to magnetic keypad, and Alarm Relays when equipped.

Graphic LCD: 128 by 64 pixel screen (backlight on 3-wire transmitter); displays Concentration and Measuring Units, Gas Name or Type, Sensor Span, Date and Time, Tag Number, System messages or Warnings, and Calibration Due notification

Environmental
Temp. (Transmitter): -20°F to 158°F (-29°C to 70°C)
Humidity (Transmitter): 0-90% RH, non-condensing

I.S.:
Groups A, B, C, D; Class II Groups E, F, G; Class III T4

ATEX Directive 2014/34/EU
ATEX Ex nC (ia Ga) IIC T4 Gc

IECEx
Zone 0: Ex ia llC T4 Ga; Sensor Ex ia IIC T4 Ga;
Zone 1: Ex d [ia Ga] IIC T4 Gb

CE Mark:
ATEX Directive 2014/34/EU
IECEx
Zone 0: Ex ia IIC T4 Ga; Sensor Ex ia IIC T4 Ga;
Zone 1: Ex d [ia Ga] IIC T4 Gb

FM:
Groups A, B, C, D, Class II Groups E, F, G;
Class III T4

Approval Ratings
Explosion Proof: NEC and CEC Class I Div 1, Groups A, B, C, D, Class II Groups E, F, G, Class III T4

Flame Proof: ATEX Ex d [ia Ga] T4 Gb

Non-Incendive: ATEX Ex nC [ia Ga] T4 Gc

Intrinsic Safety: NEC and CEC Class I Div 1, Groups A, B, C, D, Class II Groups E, F, G;

Hardware & Software:
Fit for use in SIL-2 applications. See approval drawings and sensor specification sheets for additional detail.

See Sensor Data Sheets for additional detail.

Sensor Status
Gas Name CB CMB 100% TWA Conc 0%LEL
Sensor Life Remaining 100%
K Factor Is: 1.00

SensAlert ASI Div 2, 2 wire | 3/4” NPT
SensAlert ASI Div 2, 2 wire with relay card | 3/4” NPT
SensAlert ASI Div 2, 3 wire with Modbus | 3/4” NPT
SensAlert ASI Div 2, 3 wire with Hart | 3/4” NPT
SensAlert ASI Intrinsically Safe, 3 wire | 3/4” NPT
SensAlert ASI Div 1, 2 wire | 3/4” NPT
SensAlert ASI Div 1, 3 wire | 3/4” NPT
SensAlert ASI Div 1, 3 wire with relay card | 3/4” NPT
SensAlert ASI Div 1, 3 wire with Modbus | 3/4” NPT
SensAlert ASI Div 1, 3 wire with Hart | 3/4” NPT

Live Test-on-Demand Sensor Verification
TOD Pass
0.8 ppm
Select << to Cancel

Sensor Data Review
Sensor Data
Max Exposure 21 %LEL
02/07/17 05:21:11
Sensor Temp C 23.6
Max Temp C 32.7
04/07/17 05:40:31
Min Temp C 23.2
04/04/17 07:48:16

Main Menu
> Calibration Mode
> Maintenance Mode
> Data Review
> Test-On-Demand
> System Configuration
Lost Password

Main Menu
> Self Test
> Alarm Settings
4/20mA Adjustment
Adjust Date/Time
Communication Setup
TOD Mode Adjustment
--more--
SensAir is a heavy duty gas detector designed for high performance in price sensitive installations. This platform employs premium sensors for reliable gas monitoring while its cost effective design makes it the ultimate solution for OEM and high-volume applications.

- Division 1 & Division 2 and ATEX Zone 1 & Zone 2 approved
- Explosion proof stainless steel sensor housing option
- Poison resistant catalytic bead sensor with rapid response
- Highly visible bright LED display or blind versions
- 3-wire design with 4-20mA output
- Horizontal or vertical installation options

Poison Resistant Sensor in SensAir CMB
SensAir CMB is a heavy duty combustible point gas detector employing a sensor designed with enhanced poison resistance to Sulfides and Silicone. This advanced sensor technology in SensAir CMB significantly reduces the effects of poisoning, thereby minimizing the replacement of sensors and costs of ownership, making this product a cost effective, robust gas detector for chemical and hydrocarbon processing and manufacturing facilities.

Effective Toxic and Oxygen Monitoring
SensAir Toxic and Oxygen provide various options for the instrument enclosure, display, and installation orientation. When combined with premium grade gas sensors, this platform becomes a configurable and reliable solution to meet target installation and application requirements. SensAir is the ultimate solution common for OEM and high-density gas detection applications.

Reduced Cost of Ownership
SensAir is housed in a rugged explosion-proof cast aluminum enclosure with horizontal or vertical conduit orientation, or a polycarbonate NEMA rated enclosure. Display models feature bright LED display and non-intrusive user interface means fast set-up and maintenance. Both the HD polymeric and stainless steel sensor housing provide excellent corrosion resistance.
SensAir Models

**SensAir CMB - Combustible Options**
- Methane (0-100% LEL sensor)
- Propane (0-100% LEL sensor)
- K-Factor (0-100% LEL sensor)

**SensAir Oxygen**
- Oxygen (O2) 0-25% by volume sensor

**SensAir Toxic - Sensor Options**
- Ammonia (NH3) 100ppm sensor
- Ammonia (NH3) 300ppm sensor
- Ammonia (NH3) 50ppm sensor
- Carbon Monoxide (CO) 100ppm sensor
- Carbon Monoxide (CO) 500ppm sensor
- Chlorine (Cl2) 0-10 ppm sensor
- Chlorine (Cl2) 5ppm sensor
- Chlorine Dioxide (ClO2) 5ppm sensor
- Hydrogen (H2) 100ppm sensor
- Hydrogen Chloride (HCl) 100ppm sensor
- Hydrogen Chloride (HCl) 10ppm sensor
- Hydrogen Fluoride (HF) 10ppm sensor
- Hydrogen Sulfide (H2S) 100ppm sensor
- Hydrogen Sulfide (H2S) 50ppm sensor
- Nitrogen Dioxide (NO2) 10ppm sensor
- Sulfur Dioxide (SO2) 20ppm sensor

**Technical Specifications**

**Sensor**
- SensAir CMB: Poison resistant catalytic bead. SensAir CMB can be used for detection of Methane, Hydrogen, Propane, Pentane, Butane and most other common combustible hydrocarbons.
- SensAir O2: High performance electrochemical Oxygen sensor for detection 0 - 25% by volume
- SensAir Toxic: High performance electrochemical sensors; see range and performance specifications on each datasheet.

**Electrical**
- Power Requirement: 24 VDC, nominal, up to 6 Watts
- Voltage Range: 12-30 VDC
- Current Consumption (Max): 300mA, typical 125mA
- Termination Resistance: Up to 500Ω recommended. 250Ω recommended
- Transmission Link: 4–20 mA current source, non-isolated with respect to Common (3 wires)

**Controls and Display**
- Display Models:
  - User Interface: Non-intrusive
  - LEDs: Six (6) Red, corresponding to magnetic keypad
  - LED Display: Seven segment, displays gas concentration
- Blind Models:
  - User Interface: Requires hand-held controller

**Environmental**
- All Models:
  - Operating Temperature: -4˚ to 167˚F (-20˚ to 75˚C)
  - Storage Temperature: -40˚ to 122˚F (-40˚ to 50˚C)
  - Operating Humidity: 0-95% RH, non-condensing
- SensAir CMB: Oxygen Requirement: 10% by volume, minimum

**Enclosure**
- Hazardous Area Approved Models:
  - Transmitter: Painted Aluminum
  - Sensor Housing: Stainless Steel
- General Purpose Models:
  - Transmitter: Polycarbonate
  - Sensor Housing: High density polymeric

**Approval Ratings**
- Hazardous Area Approved and General Purpose models available. Reference approval drawings and sensor specification sheets for additional detail.

**Combustible:**
- FM US and Canadian: NEC/CEC/ISS 1, Div 1, Groups A, B, C, D, T4 (FM6320, C22.2 No. 152)
- Nonincendive: for installation in Class 1 Division 2 Groups A, B, C, D, T4 (FM6320, C22.2 No. 152)
- ATEX: II 2 G Ex ic IIC T4 Gb (FM13ATEX0066), II 3 G Ex nA ic IIC T4 Ga (FM13ATEX0084)

**Toxic / O2:**
- Pending U.S.A./Canada/ATEX Approval: UL 61010-1: 3rd Edition (US & Canada)

**Poison Resistant Catalytic Bead Sensor in SensAir CMB**

Industrial atmospheres often contain catalyst poisons such as silicone, silane, lead, sulfur, or phosphorous compounds. These catalysts are known to poison low-powered catalytic bead sensors. Silicone compound concentrations of less than one part per million (ppm) will quickly degrade the performance of a standard catalytic bead sensor and render it ineffective at sensing the presence of combustible gases. The Sensidyne high-powered Cat-Bead sensor used in SensAir CMB is a proven proprietary poison resistant sensor, significantly reducing these problems and extending sensor life.
Advanced all-in-one gas detection system for local and remote gas detection.

SensAlarm Plus is a complete single point gas detection system including a transmitter, power supply, outputs, and annunciation. It is extremely cost-effective and easy to install. SensAlarm Plus accepts all Plus Series sensors making it appropriate for a wide range of applications.

- **Complete gas detection system**
  - Stand-alone single point gas detection system
  - 1 or 2 double-flash strobes, horn and reset
  - Optional battery back-up

- **Intelligent Plus Series sensors for Combustible and Toxic gases and Oxygen enrichment & deficiency**
  - Percent remaining sensor life
  - Sensor auto-recognition and configuration
  - Uploads application parameters and gas & alarm data
  - Time-stamped event and calibration data

- **Application-flexible installation and easy maintenance**
  - Non-intrusive configuration and maintenance interface
  - Remote sensor & gassing, duct mount, or sample draw
  - Mount sensor up to 100 ft./30 m. away using 4 conductor cable

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**Exceptional Versatility**
SensAlarm Plus is a complete gas detection system in one enclosure. The system is fully equipped with strobe, horn, high-visibility four-digit LED Display and LCD Display / Interface. At the core of SensAlarm Plus is an advanced Intelligent Sensor platform with non-volatile memory for all key application variables and sensor data. A non-intrusive user interface enables operational customization and access to sensor life parameters, TWA alarms, calibration data and other information with date and time recording.

**Easy to Use and Maintain**
The SensAlarm Plus sensor head is universal in that it accepts all Sensidyne Plus sensors. Monitoring in high, low or adjacent locations is simplified by remote mounting the sensor head using 4 conductor cable. The automatic uploading of variables, alarm values and sensor information when a sensor is plugged in greatly simplifies installation and maintenance. Transportable calibration allows sensor calibration at the point of installation or in a workshop, then hot-swapping the sensor in the field.

**Application-friendly Design**
SensAlarm Plus is the ideal gas monitoring solution for labs, gas cylinder storage, industrial work areas, control room protection or any other applications where users benefit from a packaged gas detection system that works with all SensAlert Plus sensor types.
Common SensAlarm Plus Applications

SensAlarm Plus is an excellent single-point gas detection solution for a wide range of applications. The flexibility of the Plus Series instruments are extended even further through remote mount and duct mount sensors. These options allow users to place the sensor closer to potential leak sources for rapid detection of gas.

Technical Specifications

Sensors

Gas Sensors: Electrochemical, Infrared, Catalytic Bead, Test-On-Demand Modules: Type C and Type S

Electrical

Design: Microporcessor based with nonvolatile memory. Automatically resumes operation after power failure.
Power: 100-240 VAC, 50/60 Hz or 20-30 VDC.
Battery: Optional battery back-up available. Outputs: Max 4-20 mA into 600 ohms, Optional RS-485, Modbus RTU Protocol.
Strobe: Red lens flashing strobe (NEMA 4X) standard with optional dual strobes with red and amber strobe.
Horn: 95 dB piezo horn
Alarm Relays: SPDT, 6 Amps @ 120VAC or 24VDC. User accessible SPDT Fault, Low & High Alarm Relays. Additional relays for Strobe & Sounder. Note: Alarm values stored in non-volatile memory.

Controls and Display

LCD Display: Alphanumeric (Value, Gas, & Units).
LED Display: 4 Digit x 1.5 Inch Tall Red LED (Value).
Indicators: Power source LEDs (AC, DC and Battery), Alarm and corresponding to magnetic keypad LEDs
Security: Password Protected Configuration Menu Auto Config.: System automatically senses the presence of optional modules and features
Reset/silence: External push button switch for acknowledge (Alarm sequence 3A)
Annunciators: Audible (+95db) & Visual single strobe with optional second strobe

Environmental

Temp.: -4° to 122°F (-20° to 50°C).
Humidity: 0-90 %RH, non-condensing.
Location: Indoor or Outdoor
Temp. (Sensor): See Sensor Data Sheets
Humidity (Sensor): See Sensor Data Sheets

Enclosure

Material: Fiberglass.
Description: UL listed, NEMA 4X Rated
Type: Wall mount with tabs & threaded inserts.
Overall Size: 9.75 (W) by 20 (H) by 6.4 (D) Inches, / 24.8 (W) by 50.8 (H) by 16.3 (D) cm.
Weight: 9.75 lbs. (4.4 - 6.3 Kg) including sensor.
Conduit: 3/4 inch EMT connector supplied (side).
Sensor Head: Sensor head enclosure and retaining ring are black anodized aluminum; splash guard, and most other accessories are made of PVC.

See approval drawings and sensor specification sheets for additional detail.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SensAlarm Plus, one red strobe</td>
<td>820-0301-01</td>
</tr>
<tr>
<td>SensAlarm Plus, one red strobe w/ battery back-up</td>
<td>820-0301-02</td>
</tr>
<tr>
<td>SensAlarm Plus, with amber and red strobes</td>
<td>820-0301-03</td>
</tr>
<tr>
<td>SensAlarm Plus, with amber and red strobes w/ battery back-up</td>
<td>820-0301-04</td>
</tr>
<tr>
<td>SensAlarm Plus, one blue strobe</td>
<td>820-0303-01</td>
</tr>
<tr>
<td>SensAlarm Plus, one blue strobe w/ battery back-up</td>
<td>820-0303-02</td>
</tr>
<tr>
<td>SensAlarm Plus, one amber strobe</td>
<td>820-0304-01</td>
</tr>
<tr>
<td>SensAlarm Plus, with amber and blue strobe w/ battery back-up</td>
<td>820-0305-02</td>
</tr>
<tr>
<td>SensAlarm Plus remote sensor kit (100ft maximum)</td>
<td>821-0301-01</td>
</tr>
<tr>
<td>HART Communication Card - Installed</td>
<td>821-0302-01</td>
</tr>
<tr>
<td>RS-485 Modbus RTU Communication Card - Installed</td>
<td>821-0303-01</td>
</tr>
</tbody>
</table>
In SensFlex, a flexible and highly-capable set of features combine to provide dual-head point gas monitoring for lower cost and easier installation of multiple points within the same area.

- **Superior Application Flexibility**
  - Ethernet standard, communicates simultaneous Modbus TCP master/slave
  - Embedded web pages for display of operation variables & remote configuration
  - Optional relays for alarm contacts and dual Modbus configuration
  - Remote mountable sensors for monitoring near high concern locations
  - Maintenance mode to avoid false alarms during calibrations

- **Safety without Compromise**
  - Certified for Division 1 and Division 2 hazardous classified areas
  - Configurable relays and redundant Modbus communication
  - Uploads application parameters and gas & alarm data
  - Time-stamped event and calibration data
  - Fault supervision circuitry for error warning

- **User Friendly and Intuitive**
  - Bright QVGA color TFT display with highly visible graph and trend
  - Sensor status indicated by color change and flashing display
  - Non-intrusive user interface for easy maintenance
  - Accessible data via mobile devices and laptops when connected to a LAN

**Highly Flexibility Configurations to Meet Facility Requirements**

The SensFlex platform provides a highly flexible, user-friendly format for placing two of the same or different sensors within one defined area. The benefits of SensFlex-2 are rapidly seen when reviewing costs of installation for running conduit and wires to multiple points as rather than a single transmitter.

SensFlex-2 can be configured to simultaneous deploy two sensors for the same gas or different sensors for applications requiring a toxic and combustible, two different toxic gases, or a toxic and oxygen sensor, in both local and remote configurations.
### SensFlex Displays

**Bar Graph Screen**

Displays current value as bar graph and numerical value. Includes channel ID (SensFlex-2), and engineering units. Background color changes and flashes on alarm. Alarm-indication color becomes steady after acknowledgment.

**30-Minute Trend Screen**

View channels most recent 30-minute trend. Top data fields include current reading and engineering units.

### SensFlex-2 Sensors

<table>
<thead>
<tr>
<th>Gas Target/Type</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetylene</td>
<td>0-50% LEL</td>
</tr>
<tr>
<td>Ammonia</td>
<td>50 PPM, 100 PPM, 300 PPM, 500 PPM</td>
</tr>
<tr>
<td>Arsine</td>
<td>1 PPM</td>
</tr>
<tr>
<td>Bromine</td>
<td>1 PPM, 10 PPM</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>5% Vol, 1 PPM, 5 PPM</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>100 PPM, 500 PPM, 1000 PPM</td>
</tr>
<tr>
<td>Chlorine</td>
<td>5 PPM, 10 PPM, 20 PPM</td>
</tr>
<tr>
<td>Chlorine Dioxide</td>
<td>1 PPM, 5 PPM</td>
</tr>
<tr>
<td>Combustible (IR)</td>
<td>0-100% LEL</td>
</tr>
<tr>
<td>Combustible (CB)</td>
<td>0-100% LEL</td>
</tr>
<tr>
<td>Ethylene Oxide</td>
<td>10 PPM</td>
</tr>
<tr>
<td>Fluorine</td>
<td>10 PPM, 25 PPM</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>1000 PPM, 100% LEL</td>
</tr>
<tr>
<td>Hydrogen Chloride</td>
<td>10 PPM, 20 PPM, 100 PPM</td>
</tr>
<tr>
<td>Hydrogen Cyanide</td>
<td>20 PPM</td>
</tr>
<tr>
<td>Hydrogen Fluoride</td>
<td>10 PPM, 20 PPM</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>10 PPM, 50 PPM, 100 PPM</td>
</tr>
<tr>
<td>Methanol</td>
<td>500 PPM</td>
</tr>
<tr>
<td>Nitric Oxide</td>
<td>100 PPM</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>10 PPM</td>
</tr>
<tr>
<td>Oxygen</td>
<td>25% Vol</td>
</tr>
<tr>
<td>Ozone</td>
<td>1 PPM, 2 PPM</td>
</tr>
<tr>
<td>Phosgene</td>
<td>1 PPM</td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td>10 PPM, 20 PPM</td>
</tr>
</tbody>
</table>

### Technical Specifications

**Sensors**

Electrochemical, Catalytic Bead, Infrared Technologies. See range and performance specifications on each sensor datasheet.

**Electrical**

Power Requirement: 24 VDC current source output Voltage Range: 12–30 VDC at 10 Watts max Transmission Link: 4–20 mA current source, non-isolated with respect to Common (3 wires)

**Controls and Display**

User Interface: Non-intrusive, magnetic Security: Password protection Display Modes: Displays 30-minute trend, bar-graph and large engineering units. Dual head units offer split screen. Display: OVGA color TFT

**Environmental**

Operating Temperature: -40˚ to 140˚F (-40˚ to 60˚C) Storage Temperature: -40˚ to 140˚F (-40˚ to 60˚C) Operating Humidity: 0-95% RH, non-condensing Temperature Drift: Less than 0.1% per degree C over ambient temperature range

**Enclosure**

Hazardous Area Approved Models
- Coated Aluminum
- 316 Stainless Steel

General Purpose Models
- Polycarbonate
- High density polymeric

**Approval Ratings**

See approval certificates for detailed approval classifications
- Division 1 and 2 Group A, B, C, D, Eexia
In SensFlex-PID, a flexible and highly-capable set of features combine to deploy a powerful Photo Ionization Detection (PID) sensor for detection of Volatile Organic Compounds (VOC) and trace level gases.

- **Superior Application Flexibility**
  - Ethernet standard, communicates simultaneous Modbus TCP master/slave
  - Embedded web pages for remote configuration and display
  - Optional relays for alarm contacts
  - Dual Modbus configuration
  - Remote mountable sensors for monitoring near high concern locations
  - Maintenance mode to avoid false alarms

- **Safety without Compromise**
  - Certified for Division 1 and Division 2 hazardous classified areas
  - Configurable relays and redundant Modbus communication
  - Uploads application parameters and gas & alarm data
  - Time-stamped event and calibration data
  - Fault supervision circuitry for error warning

- **User Friendly and Intuitive**
  - Bright QVGA color TFT display with highly visible graph and trend
  - Sensor status indicated by color change and flashing display
  - Hot-swap sensors and non-intrusive user interface for easy maintenance
  - Accessible data via mobile devices and laptops

**Power of a PID Sensor**

The SensFlex platform is available in two models to meet facility application requirements. SensFlex-PID uses the powerful transmitter platform to drive a high-performance photo-ionization detector (PID) sensor. This sensor provides dependable response to many of volatile organic compounds (VOCs). Advanced technology allows the SensFlex-PID to excel even in high-humidity applications while the anti-contamination design protects it from moisture, dust, and aerosols.

A PID sensor provides detection of VOC’s that cannot be detected with an electrochemical sensor. PID sensors also enable detection of many combustible gases at their toxic levels, well below their lower explosive level (LEL) for earlier warnings and compliance with regulatory exposure levels. Most gases ending in -ane, -ene, -ine, -one, -ide, and -nol can be detected with a PID sensor; our application experts would be happy to discuss your facility’s requirements with you.
SensFlex Displays

Bar Graph Screen
Displays current value as bar graph and numerical value, and engineering units. Background color changes and flashes on alarm. Alarm-indication color becomes steady after acknowledgment.

30-Minute Trend Screen
View channels most recent 30-minute trend. Top data fields include current reading and engineering units.

SensFlex-PID Common Applications
Manufacturing
Process Monitoring
Refineries
 Petrochemical
 Offshore
 Chemical
 Waste Water Treatment
 Pharmaceutical
 Indoor Air Quality
 Pulp and Paper
 Solvent Recovery
 Industrial Painting and Coating
 Perimeter / Fence-line Monitoring
 Power Generation

SensFlex-PID Common Gases Types
Aromatics
 Olefins
 Bromides & Iodides
 Sulfides & Mercaptans
 Organic Amines
 Ketones
 Ethers
 Esters & Acrylates
 Aldehydes
 Alcohols
 Alkanes
 Some Inorganics, including NH3, H2S, and PH3

Technical Specifications

Sensors
Photo Ionization Detector (PID); Multiple Lamps Available
See range and performance specifications on each sensor datasheet.

Electrical
Power Requirement........... 24 VDC current source output
Voltage Range................. 12-30 VDC at 10 Watts max
Transmission Link............. 4–20 mA current source, non-isolated with respect to Common (3 wires)

Controls and Display
User Interface:.......................... Non-intrusive
Security:.......................... Password protection
Display Modes:...................... Displays 30-minute trend, bar-graph and large engineering units. Dual head units offer split screen.
Display:..................................................... OVGA color TFT

Environmental
Operating Temperature........... -40˚ to 140˚F (-40˚ to 60˚C)
Storage Temperature.............. -40˚ to 140˚F (-40˚ to 60˚C)
Operating Humidity................... 0-95% RH, non-condensing
Temperature Drift................... Less than .1% per degree C over ambient temperature range

Enclosure
Hazardous Area Approved Models
Transmitter.......................... Coated Aluminum
Sensor Housing.................... 316 Stainless Steel
General Purpose Models
Transmitter.......................... Polycarbonate
Sensor Housing.................... High density polymeric

Approval Ratings
See approval certificates for detailed approval classifications
Division 1 and 2 Group A, B, C, D: Exia

Excerpt from extensive list of detectable gases and compounds

<table>
<thead>
<tr>
<th>VOC Gas</th>
<th>PID 10.6eV Response Factor</th>
<th>Limit Values</th>
<th>100% LEL (% by Volume)</th>
<th>5% LEL (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>0.7</td>
<td>250 ppm TWA</td>
<td>2.5</td>
<td>1250 ppm</td>
</tr>
<tr>
<td>Benzene</td>
<td>0.5</td>
<td>1 ppm TWA</td>
<td>1.2</td>
<td>600 ppm</td>
</tr>
<tr>
<td>Hexane</td>
<td>4.2</td>
<td>500 ppm TWA</td>
<td>1.0</td>
<td>500 ppm</td>
</tr>
<tr>
<td>Hydrogen Sulphide</td>
<td>4.0</td>
<td>5ppm TWA</td>
<td>4.0</td>
<td>2000 ppm</td>
</tr>
<tr>
<td>Isopropyl Alcohol</td>
<td>4.4</td>
<td>200 ppm TWA</td>
<td>2.0</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>Styrene</td>
<td>0.4</td>
<td>20 ppm TWA</td>
<td>1.0</td>
<td>500 ppm</td>
</tr>
<tr>
<td>Toluene</td>
<td>0.5</td>
<td>20 ppm TWA</td>
<td>1.0</td>
<td>500 ppm</td>
</tr>
</tbody>
</table>

Consult the factory or your local Sensidyne representative for full table of gases and compounds detectable with SensFlex-PID.
The SensCast gas monitoring system is a cutting edge wireless platform providing a complete solution for gas detection signal communication throughout a plant or facility. SensCast is a versatile and easy to use wireless solution for continuous, multi-point gas monitoring.

- **Comprehensive Solution to Meet Application Requirements**
  All components available for 900 MHz or 2.4 GHz systems
  Remote or locally mounted sensors for ideal detector location
  Ultra low-powered transmitters have internal power source
  Hazardous area and non-classified area models
  Can be used for short-term and permanent installations

- **Safety Reliability without Compromise**
  Deployable for facility-wide or local monitoring networks
  Certified for Division 2 hazardous classified areas
  Repeater functions to link wired system from a controller to DCS/PLC
  Wireless relays enable control of annunciation and mitigation functions
  Dual-sensor models have independent outputs and alarms for each channel

- **User Friendly and Intuitive**
  Significantly lowers installation costs from running wiring and conduit
  Mobile or computer browser access to the system setup and measurements
  Easy, menu-driven setup with confirmed signal notification
  Relay activation control including three alarm levels, com, and power
  Available survey tool for analyzing signal performance and layout

**Intuitive and Cost Effective Solution for Complex Applications**

SensCast takes a unique approach to solving communication and connectivity challenges found in many gas detection applications. Beginning with proven toxic gas and oxygen sensors and robust transmitters, SensCast then provides options for linking and communicating sensor measurements, alarm conditions, and faults to local and facility-wide networks, without traditional expensive hard wiring.

The drawings to the right depict common network installations using SensCast to wirelessly communicate within the gas detection system. Wireless systems can be installed indoors or outside with the transmission distance dependent upon many facility-specific factors. Our SensCast Site Survey Tool (SST) calculates network reach and potential RF interferences ensuring optimal setup of your wireless gas detection network.
Example SensCast System Drawings

Drawing 1: SensCast Transmitters transmit wirelessly to the SensCast Receiver. The Receiver sends Transmitter output via wifi or Modbus (wireless or wired). The SensCast Relayer actively “listens” for alarm or fault conditions and activates annunciators or hazard mitigation systems connected to one of 5 relays.

Drawing 2: Two independent networks consisting of a Receiver and 32 SensCast Transmitters (or 16 Dual Head Transmitters) exist in one facility. A Sensidyne wireless-enabled controller (Model 7200 shown) collects all 64 outputs sending them to a DCS or PLC via wireless Modbus. A SensCast Relayer actively “listens” for alarm or fault conditions and activates annunciators or hazard mitigation systems.

Essential SensCast System Components


Receiver: Monitors/displays up to 32 points. 8 on-board relays, and LCD display. Requires 100-240 VAC or 10-30 VDC for solar power applications. Can be fitted with annunciators.

Relayer: “Listens” on network for alarm or fault condition signals from Transmitters activating one of five, 5 amp SPDT relays.

Bridge Repeater: Redistributes SensCast signal to extend range and overcome transmission obstacles.
Local Alarm Annunciators

Added visual and audible annunciation warning workers and supervisors.

Sensidyne Alarm Annunciators provide audible and visual warning of gas hazard alarms to nearby workers and supervisors - alerting them to follow alarm procedures or not to enter the area.

- Single and dual strobe options
- Power supply option to power transmitters
- General purpose or hazardous area approved models
- Options for stand-alone components or as part of a package

Condition Reporting

Annunciators can be connected to any Sensidyne gas detection transmitter or system for local visual or audible alarm annunciation. Annunciators can power a transmitter and become a mini-system using alarm contacts in the transmitter. The Annunciators have a universal power supply, or can be powered externally to preserve operation in the event of a power failure. A bright green power light is often wired through system fault contacts to also indicate “system ready,” that is operational. Sensidyne application personnel can assist you with gas detection alarm sequences, annunciation and truth table preparation.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm Annunciator, Dual Strobes, High Red, Low Amber, includes power supply</td>
<td>821-0016-02</td>
</tr>
<tr>
<td>Alarm Annunciator, Hi Red, Low Amber, and Sounder, including power supply</td>
<td>821-0016-03</td>
</tr>
<tr>
<td>Alarm Annunciator, Hi Red, Hi Sounder, including power supply</td>
<td>821-0016-04</td>
</tr>
<tr>
<td>Alarm Annunciator, Hi Red, Hi Sounder, no power supply</td>
<td>821-0016-08</td>
</tr>
<tr>
<td>Alarm Annunciator, Hi Sounder, Low Amber strobe, includes power supply</td>
<td>821-0016-01</td>
</tr>
<tr>
<td>3-Port Power Module, 10 watt, 24 VDC (85-265 VAC)</td>
<td>821-9904-01</td>
</tr>
<tr>
<td>Class 1, Division 2, 123-230 VAC Strobe only for mounting by user – Red</td>
<td>208-0003-04</td>
</tr>
<tr>
<td>Red GP Strobe Lamp for mounting by user 12-48 VDC, general purpose</td>
<td>7017414</td>
</tr>
<tr>
<td>Amber GP Strobe Lamp for mounting by user 12-48 VDC, general purpose</td>
<td>208-0002-02</td>
</tr>
<tr>
<td>Blue GP Strobe Lamp for mounting by user 12-48 VDC, general purpose</td>
<td>208-0002-06</td>
</tr>
<tr>
<td>GP 110 dB Horn for mounting by user 9-28 VDC, general purpose</td>
<td>7017380</td>
</tr>
</tbody>
</table>
Sample Draw System
Approved solution for monitoring gas in remote or difficult to access locations.

Sensidyne Sample Draw is the only FM listed system approved for sampling from a Class 1 Division 1 area and placement in a Class 1 Division 2 area. This system is a flexible solution for complex gas detection applications in remote and difficult to access locations.

- FM listed for NFPA 820 compliance
- Pumped or air aspirated versions
- Flow sensor with relay that fails safe
- Internal power switch and flow adjustment
- External flow indication and LED’s
- 24 VDC power source for gas detectors

Reduce Time in the Hazardous Area
Best safety practices aim to minimize personnel time working in hazardous (classified) areas. The Sensidyne Sample Draw System pulls air from hazardous locations to pass through a flow block(s) attached to gas detection sensor(s). It’s offered with a diaphragm pump or an air operated aspirator. The system meets requirements for installation according to common fire and electric code.

Flow rate is easily adjustable to meet the application requirements. A flow switch wired to a fail-safe relay provides a contact on loss of flow or power. The two-way valve enables calibration and routine maintenance. The system power supply is capable of operating the pump and multiple transmitters and thus can be a stand-alone system with the addition of annunciation.

Technical Specifications

**Electrical**
- Power In/Out: 85–264 VAC, 47-63 Hz, 1.2 Amps; 24 VDC, 1.1 Amp max.

**Controls and Display**
- External: Flowmeter, green power LED and red fault/low flow LED
- Internal: On-Off switch, voltage out adjust and flow rate adjust
- Outputs: Two 24 VDC power terminals, SPDT fault/low flow relay contact

**Environmental**
- Temperature: -4° to 104°F (-20° to 40°C)
- Humidity: 5-95% RH, non-condensing for indoor or outdoor locations.

**Enclosure**
- Material: NEMA 3R Fiberglass wall mount with two 3/4” conduit entries
- Dimensions: 11” (H) X 10” (W) X 6.375” (D) (27.9cm X 25.4cm X 16.2cm)
- Weight: 6.6 lbs (3.0 kg)

**Approval Ratings**
- Hazloc: FM approved for Class I, Division 2, Groups C & D location to sample from Class I, Division 1, Groups C & D
- FM Canada: CSA C22.2 No. -0-M91, CSA C22.2 No. 142-M1987, CSA C22.2 No. 213-M1987, CSA C22.2 No. 1010.1 ANSI/UL 61010-1
- DC Supply: UL60950-1, UL508, UL131033, EN60950-1, CE Mark
- Pump: Diaphragm type rated at 1.0 LPM @ 40” H2O at pressurized leak rate of < 1.0 inch wc drop in 5 seconds at 25 inches wc
- Wetted parts: Polycarbonate, Neoprene, Tygon 2075, Silicone Silastic, 304/316ss, Buna-N, Brass, PVC, Glass, Acrylic and User Tubing

See approval drawings and specification sheets for additional detail.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumped Sample Draw with 24 VDC power supply</td>
<td>821-0231-01</td>
</tr>
<tr>
<td>Aspirated Sample Draw with 24 VDC power supply</td>
<td>821-0232-01</td>
</tr>
<tr>
<td>Pumped Sample Draw without power supply</td>
<td>821-0231-02</td>
</tr>
<tr>
<td>Aspirated Sample Draw without power supply</td>
<td>821-0232-02</td>
</tr>
<tr>
<td>Coalescing filter &amp; Close Nipple 1/8 NPT</td>
<td>821-0233-01</td>
</tr>
</tbody>
</table>

installer to provide 24 VDC power when ordering 821-0231-02.
SensAlert 4-Channel Controller
Four channel controller with smart features for SensAlert family transmitters.

SensAlert 4-Channel Controller is the ultimate companion for SensAlert family gas detection transmitters. With auto configuration for most sensor types and ranges, it expedites commissioning and setup.

- Automatic sensor configuration for many Plus Series sensors
- 24 VDC power source for up to four gas detectors
- Wall-mounted, NEMA 4X fiberglass enclosure
- Easy push-button interface for fast setup
- Single, dual, or non-strobe options

Easiest Controller to Use
The SensAlert 4-Channel controller powers and monitors up to 4 channels of gas detection. With three alarm relays per channel plus a common fault relay, the controller provides local or remote alarm annunciation via the optional strobe and standard 90 dB buzzer. The controller has a latched alarm reset button and discrete LED value displays plus LCD displays for gas name or type and value. Discrete 4-20 mA and RS-485 Modbus RTU outputs are standard. Most SensAlert and SensAlert Plus transmitters, when used with this controller, will automatically configure the controller to display the gas type, range and factory default alarms making system set up quick and easy.

Technical Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SensAlert 4-Channel Controller</td>
<td>7013227-3</td>
</tr>
<tr>
<td>SensAlert 4-Channel Controller with Red Strobe</td>
<td>7013227-4</td>
</tr>
<tr>
<td>SensAlert 4-Channel Controller with Dual Strobe</td>
<td>Call Factory</td>
</tr>
<tr>
<td>SensAlert 4-Channel Controller for Use with SensAir</td>
<td>7013227-5</td>
</tr>
</tbody>
</table>

Easiest Controller to Use

- Automatic sensor configuration for many Plus Series sensors
- 24 VDC power source for up to four gas detectors
- Wall-mounted, NEMA 4X fiberglass enclosure
- Easy push-button interface for fast setup
- Single, dual, or non-strobe options

SensAlert 4-Channel Controller is the ultimate companion for SensAlert family gas detection transmitters. With auto configuration for most sensor types and ranges, it expedites commissioning and setup.

Description

- Part Number

- SensAlert 4-Channel Controller
- 7013227-3
- SensAlert 4-Channel Controller with Red Strobe
- 7013227-4
- SensAlert 4-Channel Controller with Dual Strobe
- Call Factory
- SensAlert 4-Channel Controller for Use with SensAir
- 7013227-5
The model 7200 is a highly capable controller designed to provide maximum accessibility and management of up to 64 inputs. The large color display with non-intrusive keypad and embedded webservice ensure complete access to control and data from anywhere.

- Large color screen for display of trends, bar graphs, and engineering units with color indication for Faults and Alarm
- Accepts up to 64 Analog, bridge sensor, ModBus RTU, ModBus TCP, and wireless inputs
- Ethernet with Modbus TCP Master/Slave and embedded webservice
- Available wireless interface with Modbus
- Five standard SPDT 5-amp common alarm relays including Horn and Fault
- Password protected lockout protects configuration variables during general use
- One-year datalogging onto SD memory card recording minimum, maximum, and average values for up to one year

Model 9000 Controller

- Approved for Class I, Div 2
- Graphic backlit LCD display
- Discrete alarm relays
- Accepts two or four 4-20 mA inputs
- RS-485 Modbus RTU output

Model 7100 Controller

- Approved for Class I, Div 2
- Accepts 8 or 16 4-20 mA inputs
- Optional discrete alarm relays
- Common alarm (3) & horn (1) relays
- Dual RS-485 Modbus RTU outputs
SharpEye Flame Detectors
Electro-Optical Fire and Flame Detection

SharpEye delivers the highest level of protection from unwanted fires and flames. This series of flame detectors incorporates the latest technologies for absolute performance in critical safety applications.

- **Maximum Performance**
  - Third party performance approvals (EN54-10, FM, DNV)
  - Safety Integrity Level (SIL-2) certified for long-term reliability
  - Rapid detection of unwanted fires and flames
  - High false alarm immunity
  - Detection of hydrocarbon and non-hydrocarbon flames

- **Designed for Critical Safety Applications**
  - Certified for Division 1 and Division 2 hazardous classified areas
  - Detector technology configurations specific to flame source
  - Three relays for Alarm, Fault, and Auxiliary conditions
  - Heated window for assured operation in harsh weather conditions

- **Easy to Use and Maintain**
  - HART communication for lower power requirements and easy maintenance
  - Lower profile design for ease of installation
  - Pivot and tilt mount providing easy adjustment of the detector orientation
  - Available long-range simulators for verifiable detector operation
  - Built-In-Testing (BIT) for manual and automated operation tests

**SharpEye Electro-Optical Fire and Flame Detectors**
SharpEye consistently delivers the highest level of protection and early notification of the presence of unwanted fires and flames. These flame detectors incorporate the latest technologies in unique sets of multi-spectrum electro-optics to provide absolute performance matched to the application.

Quality and outstanding performance are key traits to the success of SharpEye. Third party performance approvals provide the assurance that the product will repeatedly deliver performance matching its specifications while Safety Integrity Level (SIL-2) certification assures the flame detector will continue to perform long after installation. Supporting the reliability and commitment to customer satisfaction, each SharpEye comes with a 5-year manufacturer’s warranty.
SharpEye 40/40 Models

40/40I Triple IR (IR3) Flame Detector
The 40/40I, a multi spectrum based on three IR bands (IR3), detects fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40I IR3 can detect a 1 ft² (0.1 m²) gasoline pan fire at 215 ft (65m) in less than 5 seconds.

40/40M Multi IR Flame Detector
The 40/40M Multi IR Flame Detector is specifically designed for detection of hydrocarbon and hydrogen flames. It detects hydrocarbon-based fuel and gas fires at long distances with the highest immunity to false alarms.

40/40L-LB UV/IR Flame Detector Series
The 40/40L (or LB, with Built-in-test option) provides a combination of UV and IR sensors, where the IR sensor operates at a wavelength of 2.5-3.0 µm, and can detect hydrocarbon-based fuel and gas fires, hydroxyl and hydrogen fires, as well as metal and inorganic fires.

40/40UFL Ultra Fast UV/IR
The new SharpEye UV-IR High-Speed Optical Flame detector 40/40UFL is designed to meet two major requirements: High-Speed Response (20 msec) and High Reliability (immunity to False Alarm).

40/40L4-L4B UV/IR Flame Detector Series
Model 40/40L4 (or L4B, with Built-in-test option) provides a combination of UV and IR sensors, where the IR sensor operates at a wavelength of 4.5 µm, and can detect hydrocarbon-based fuel and gas fires.

40/40U-UB - UV Flame Detector
The 40/40UV Flame Detector design is the most durable and weather resistant UV flame detector currently on the market.

40/40R - Single IR Flame Detector
The 40/40R Single IR Flame Detector detects hydrocarbon-based fuel and gas fires using advanced flame analysis tools.
SafEye Quasar Series of open path gas detectors (OPGD) are the highest standard for reliable and rapid detection of fugitive gas releases. Form a comprehensive protection strategy employing point and open path gas detection.

- **Rapid Detection Across Wide Areas**
  Detect gas releases across distances of up to 660 feet (200 meters)
  Safety Integrity Level (SIL-2) certified for long-term reliability
  Performance approved per FM6325 and tested per EN60079-29-4
  Spectral fingerprint technology using Xenon flash source transmitter
  Immunity from sunlight and common facility radiation sources

- **Component of a Comprehensive Protection System**
  Augments monitoring provided by fixed point gas detections
  Provides early warning of potentially catastrophic events
  Ideal for large area, line of sight applications or fence-line monitoring
  OPGD identifies leaks while point detectors indicate location

- **Easy to Use and Maintain**
  Setup via local remote interface under power or via HART communication
  Designed with precision mounts for easy alignment during commissioning
  Continued performance through up to 70% obscuration
  Built-in datalogger maintaining detail records of up to 100 events

**Performance, Technology, and Capability Combine for Superior Protection**
Spectrex invented the xenon flash lamp design that revolutionized the open-path gas detection market, which, until then, was plagued by false alarms due to the drawbacks of the previous designs. Now, open path detectors complement the use of individual point detectors, take executive action and offer many significant benefits.

Open path gas detections provide wider area coverage likely to detect any large leak in the area with a high rate of response. Point gas detectors installed near high-probability leak sources help identify the location of the source providing facility personnel with the information necessary to make intelligent mitigation decisions. This complementary relationship with point gas monitors makes the installation location for open path systems less critical while continuing to deliver comprehensive protection.
SafEye for Combustible and Toxic Gas Detection Applications

SafEye Quasar 900 – Combustible Hydrocarbon Detection
SafEye Quasar 900 quickly and sensitively detects a wide range of hydrocarbon gases – including alkanes (methane to hexane) and ethylene with a minimum detectable level is 0.15 LEL.m. No need for any manual adjustment or standard test gas, due to the built-in calibration of the SafEye Quasar 900.

SafEye Quasar 950
Hydrogen Sulfide Detection
SafEye Quasar 950 delivers rapid detection of Hydrogen Sulfide (H2S) gas. The instrument can detect gas in ranges up to 263 feet (80 meters) and due to their inherent stability and sensitivity, the minimum detectable level is 50 PPM.m.

Technical Specifications

Detected Gas
SafEye Quasar 900 – Hydrogen Sulfide

Performance
- Response Time: 3 seconds
- False Alarm Immunity: Not influenced by solar radiation, hydrocarbon flames and other external IR radiation sources.
- Sensitivity Range: 0-5 LEL.m methane and propane
- Spectral Response: 0.5 - 3.0μm
- Displacement/Misalignment: ±0.5° Tolerance
- Drift: ±7.5% of the reading or ±4% of the full scale (whichever is greater)
- Temperature Range: -67°F (-55°C) to 149°F (65°C)
- Humidity: Up to 95% non-condensing (withstands up to 100% RH for short periods)
- Heated Optics: To eliminate condensation and icing on the window
- Warranty: 3 years

Electrical
- Power Supply: 24VDC nominal (18-32 VDC)
- Power Consumption: Detector: 250mA (300mA Peak) (peak includes heated optics)
- Source: 250mA (300mA Peak)
- Warm Up Time: 30 sec for transmitter and receiver
- Electrical Connection: 2 x 3/4” – 14NPT conduits or 2 x M25 x 1.5mm ISO
- Electrical Input Protection: per MIL-STD-1275B
- Electromagnetic Compatibility: EM/RFI protected per EN50270

Outputs
- 0-20mA Current Output
- Sink (source option) configuration - maximum load of 500 ohm at 18-32 VDC
- Gas reading
- Obscuration/beam block
- Normal, zero reading
- Zero calibration mode
- Maintenance call
- Fault
- Misalignment
- RS-485 Interface

Approvals
- Ex d e ib [ib Gb] IIB + H2 T4 Gb
- ATEX/IECEx
- FM/FMC Approved per Class I Div 1 Groups B, C and D; Class II,III Div 1 Groups E, F and G
- Inmetro Approved per Ex d e ib [ib Gb] IIB + H2 T4 Gb
- Safety system – 3 years
- Flash source bulb – 10 years

Reliability
- SIL2 per IEC61508 (TUV)

Hazardous Area
- The detector or source units have a combination of approvals. Each is a single enclosure (Exd) with integral, segregated rear terminal section (Exe) and intrinsically safe (Exia) data-port for external in-situ connection to Hand-Held Diagnostic unit.
- The RS-485 input/output provides complete data information to a PC and receives control from the PC or handheld unit.
- HART communications on 0-20mA analog current (FSK) – used for maintenance and asset management.
- Visual Status Indicator
- HART – Fault, Red – Alarm

HART
- Connection to Hand-Held Diagnostic unit.
- Intrinsically safe (Exia) data-port for external in-situ connection to Hand-Held Diagnostic unit.
- FM/FMC Approved per Class I Div 1 Groups B, C and D; Class II,III Div 1 Groups E, F and G
- Inmetro Approved per Ex d e ib [ib Gb] IIB + H2 T4 Gb

Performance
- Approved per FM6325 and tested by FM per EN60079-29-4
- 1 LEL meter (1 LEL. m) = a cloud of 100% LEL methane gas that is 1 meter wide
- 2 LEL meter (2 LEL. m) = a cloud of 100% LEL methane gas that is 2 meter wide
- 70% LEL methane gas that is 100 meter wide
- 40-meter path
- HART – 4-20mA
Detection at every point.

Factory Commissioning & Service
Ensure safety through expert start-up, repair, calibration, and maintenance.

Convenient, customer-centered service and repair helping customers maintain a safe workplace. The experts at Sensidyne have the experience and knowledge to keep gas detectors performing at their peak.

Start-up and Commissioning Service
Start-up of equipment, functional testing, initial calibration and training of local personnel. An expert Sensidyne Service team member visits the site to aid customers in the initial start-up of their installed gas detection equipment.

Contracted On-site Calibration or Maintenance Service
Routine calibration and other maintenance services are available to new and existing customers on an annual basis at reduced service rates.

Factory Repair Service
Sensidyne will evaluate and quote equipment repair cost for all products manufactured by Sensidyne. An RMA number is required prior to product being returned to Sensidyne.

Sensor Calibration & Exchange Program
This program schedules delivery of factory calibrated sensors to the Customer’s plant or facility. This service maximizes the benefit of the smart sensor Transportable Calibration feature by exchanging your combustible and toxic SensAlert or SensAlert Plus series sensors with calibrated sensors ready for installation.

Customer’s sensors are stored in our climate-controlled storage facility until the next scheduled calibration interval. Prior to shipment, the calibrated sensors are tested in our Factory Mutual (FM) approved lab, calibrated, securely packaged, and shipped along with the calibration certificate back to the Customer. Upon receipt of the calibrated sensors, the Customer removes the sensor from its packaging and installs the sensor into the transmitter. Old sensors are placed into the plastic sensor container and returned to Sensidyne for storage and the next calibration cycle. The ultimate use of Transportable Calibration.

Contact the Sensidyne Service Team at 800-451-9444 / +1 727-530-3602 x 783 or GasDetectionService@Sensidyne.com.
Remote Sensor Mounting
Extension kits are provided to mount sensors high, low or in difficult locations – up to 100ft (30m) with SensAlert Plus / SensAlert ASI

Remote Calibration Adapters
Used with remote sensors for routine calibration or bump testing from the transmitter location

ToD™ Gas Generator
The unique ToD cell manually or automatically bump tests the sensor at user set intervals with a configurable result notification

Duct Mount Fixture
Provides general duct, vent hood, or air intake monitoring for gases

Rainshield
Prevents wind blown water from contacting the sensor and adversely affecting performance

Flow Through Cell (Flowblock)
Used in sampling systems to present sample to the gas sensor

Moisture/Particulate Barrier
Snap in membrane protects sensor from dust, particles, and reduces moisture transients

Aspirated Sample Draw
Uses an air aspirator to draw a sample from a confined space, ceiling or other difficult to access location

Pumped Sample Draw
Same as above but employs a motorized pump to draw a sample

Calibration Gases and Accessories
Sensidyne offers many calibration gases in ranges to meet most applications. The list below represents common calibration gases, contact the factory for a complete list of available calibration gases.

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>009824-57</td>
<td>Ammonia, 25 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-38</td>
<td>Ammonia, 50 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-78</td>
<td>Ammonia, 150 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-67</td>
<td>Ammonia, 300 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-4</td>
<td>Carbon Monoxide, 50 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-53</td>
<td>Chlorine, 2 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-34</td>
<td>Chlorine, 5 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-44</td>
<td>Chlorine, 10 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-56</td>
<td>Hydrogen Chloride, 5 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-37</td>
<td>Hydrogen Chloride, 10 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-42</td>
<td>Hydrogen Chloride, 50 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-54</td>
<td>Hydrogen Cyanide, 10 ppm in Nitrogen</td>
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<tr>
<td>009824-79</td>
<td>Hydrogen Cyanide, 25 ppm in Nitrogen</td>
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<tr>
<td>009824-33</td>
<td>Hydrogen Sulfide, 25 ppm in Nitrogen</td>
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<tr>
<td>009824-10</td>
<td>Hydrogen Sulfide, 50 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-6</td>
<td>Hydrogen, 2 %vol / 50 %LEL in Air</td>
</tr>
<tr>
<td>009824-2</td>
<td>Methane, 1.5 %vol / 30 %LEL in Air</td>
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<tr>
<td>009824-3</td>
<td>Methane 2.5 %vol / 50 %LEL in Air</td>
</tr>
<tr>
<td>009824-61</td>
<td>Propane 1.05%Vol / 50 %LEL in Air</td>
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<tr>
<td>009824-8</td>
<td>Sulfur Dioxide, 5 ppm in Nitrogen</td>
</tr>
<tr>
<td>009824-39</td>
<td>Sulfur Dioxide, 10 ppm in Nitrogen</td>
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<tr>
<td>009824-12</td>
<td>Zero Air, 100% Volume,</td>
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<tr>
<td>009824-15</td>
<td>Zero Gas for Infrared 100% Nitrogen</td>
</tr>
<tr>
<td>009824-25</td>
<td>Zero Gas for others incl. IR, 20.9% O2</td>
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</table>
## Plus Series Sensor Data

Plus Series sensors are compatible with SensAlert ASI, SensAlert Plus, and SensAlarm Plus.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Target Gas or Vapor</th>
<th>Sensor Data</th>
<th>Gas Data</th>
<th>ToD Cell</th>
<th>Response Time</th>
<th>Default Alarms</th>
</tr>
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<tbody>
<tr>
<td></td>
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<td>Span</td>
<td>FM</td>
<td>Type</td>
<td>Formula</td>
<td>Density</td>
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<td>Acetylene IR</td>
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<td>Infrared</td>
<td>C2H2</td>
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<tr>
<td>823-0201-22</td>
<td>Ammonia</td>
<td>50 ppm</td>
<td>FM</td>
<td>EC-LI, D3</td>
<td>NH3</td>
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<td>Ammonia</td>
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<td>EC-LI, D</td>
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<td>EC-LI, D</td>
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<td>823-0201-42</td>
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<td>EC, D</td>
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<td>823-0205-53</td>
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<td>FM</td>
<td>EC, ND</td>
<td>CO</td>
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<td>CO</td>
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<td>823-0219-43</td>
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<td>EC, ND</td>
<td>CO</td>
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<td>FM</td>
<td>EC-LI, D</td>
<td>CO</td>
<td>0.94</td>
</tr>
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<td>823-0219-42</td>
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<td>500 ppm</td>
<td>FM</td>
<td>EC-LI, D</td>
<td>CO</td>
<td>0.94</td>
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<tr>
<td>823-0202-22</td>
<td>Chlorine</td>
<td>5.00 ppm</td>
<td>FM</td>
<td>EC, ND</td>
<td>Cl2</td>
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<td>823-0202-42</td>
<td>Chlorine (H2S Resistant)</td>
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<td>EC, ND</td>
<td>Cl2</td>
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<td>Cl2</td>
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<td>Chlorine (H2S Resistant)</td>
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<td>Chlorine</td>
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<td>EC, ND</td>
<td>Cl2</td>
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<td>Chlorine (H2S Resistant)</td>
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<td>Cl2</td>
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<td>823-0239-41</td>
<td>Chlorine Dioxide</td>
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<td>EC, ND</td>
<td>ClO2</td>
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<td>823-0239-42</td>
<td>Chlorine Dioxide</td>
<td>5.00 ppm</td>
<td>FM</td>
<td>EC, ND</td>
<td>ClO2</td>
<td>2.3</td>
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<tr>
<td>823-0211-31</td>
<td>Combustibles, General</td>
<td>100% LEL</td>
<td>FM</td>
<td>Catalytic</td>
<td>-</td>
<td>-</td>
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<td>823-0211-33</td>
<td>Comb. H2, ETO, Acetylene</td>
<td>100% LEL</td>
<td>--</td>
<td>Catalytic</td>
<td>-</td>
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<td>823-0210-61</td>
<td>Hydrogen Specific LEL</td>
<td>100% LEL</td>
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<td>EC, ND</td>
<td>H2</td>
<td>0.07</td>
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<td>Part Number</td>
<td>Target Gas or Vapor</td>
<td>Sensor Data</td>
<td>Gas Data</td>
<td>ToD Cell</td>
<td>Response Time</td>
<td>Default Alarms</td>
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<tr>
<td>823-0211-51</td>
<td>Combustibles IR</td>
<td>100% LEL FM Iridescent</td>
<td>Hydrocarbons Asphyxiate</td>
<td>T&lt;sub&gt;90&lt;/sub&gt;</td>
<td>T-60: &lt;12 sec</td>
<td>10 20 50 Yes</td>
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<tr>
<td>823-0249-51</td>
<td>Combustibles IR Acetylene</td>
<td>50% LEL -- Iridescent</td>
<td>C2H2</td>
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<td>823-0229-21</td>
<td>Diborane</td>
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<td>B2H6</td>
<td>2.9 0.1 ppm 15 ppm</td>
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<tr>
<td>823-0245-21</td>
<td>Ethylene Oxide (ETO)</td>
<td>10.0 ppm FM EC, ND</td>
<td>C2H4O</td>
<td>1.5 1 ppm 800 ppm</td>
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<tr>
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<td>10.0 ppm -- EC, ND</td>
<td>F2</td>
<td>1.3 0.1 ppm 25 ppm</td>
<td>C</td>
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<tr>
<td>823-0215-22</td>
<td>Fluorine</td>
<td>25.0 ppm -- EC, ND</td>
<td>F2</td>
<td>1.3 0.1 ppm 25 ppm</td>
<td>C</td>
<td>T-60: 10 30 1 5 No</td>
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<tr>
<td>823-0230-21</td>
<td>Germane</td>
<td>1.00 ppm -- EC, ND</td>
<td>GeH4</td>
<td>2.7 0.2 ppm</td>
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<td>T-60: 30 0.20 0.50 1.00 Yes</td>
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<td>Hydrogen Specific PPM</td>
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<td>Hydrogen Specific LEL</td>
<td>100% LEL -- EC, ND</td>
<td>H2</td>
<td>0.07 Asphyxiate</td>
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<tr>
<td>Use HCl</td>
<td>Hydrogen Bromide</td>
<td>10.0 ppm -- EC, ND</td>
<td>HBr</td>
<td>2.8 3 ppm 30 ppm</td>
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<td>823-0208-21</td>
<td>Hydrogen Chloride</td>
<td>10.0 ppm FM EC, ND</td>
<td>HCl</td>
<td>1.3 2 ppm 50 ppm</td>
<td>S</td>
<td>15 30 5.0 10.0 No</td>
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<tr>
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<td>Hydrogen Chloride</td>
<td>20.0 ppm FM EC, ND</td>
<td>HCl</td>
<td>1.3 2 ppm 50 ppm</td>
<td>S</td>
<td>15 30 5.0 10.0 Yes</td>
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<tr>
<td>823-0208-41</td>
<td>Hydrogen Chloride</td>
<td>100 ppm FM EC, ND</td>
<td>HCl</td>
<td>1.3 2 ppm 50 ppm</td>
<td>S</td>
<td>15 30 5.0 10.0 Yes</td>
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<tr>
<td>823-0203-21</td>
<td>Hydrogen Cyanide</td>
<td>20.0 ppm FM EC, D3</td>
<td>HCN</td>
<td>0.9 4.7 ppm 50 ppm</td>
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<td>10 30 4.0 6.0 Yes</td>
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<tr>
<td>823-0207-21</td>
<td>Hydrogen Fluoride</td>
<td>10.0 ppm FM EC, D</td>
<td>HF</td>
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<td>Hydrogen Fluoride</td>
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<td>HF</td>
<td>0.7 0.5 ppm 30 ppm</td>
<td>C</td>
<td>15 45 2.0 3.0 No</td>
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<tr>
<td>823-0206-22</td>
<td>Hydrogen Sulfide</td>
<td>50 ppm FM EC, ND</td>
<td>H2S</td>
<td>1.2 1 ppm 100 ppm</td>
<td>S</td>
<td>10 30 10 15 Yes</td>
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<td>Hydrogen Sulfide</td>
<td>100 ppm FM EC, ND</td>
<td>H2S</td>
<td>1.2 1 ppm 100 ppm</td>
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<td>10 30 10 15 Yes</td>
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<td>823-0206-23</td>
<td>Hydrogen Sulfide</td>
<td>10 ppm FM EC, ND</td>
<td>H2S</td>
<td>1.2 1 ppm 100 ppm</td>
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<td>10 30 10 15 No</td>
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<td>823-0253-21</td>
<td>Methanol</td>
<td>500 ppm FM EC, ND</td>
<td>CH4O</td>
<td>1.1 200 ppm 6000 ppm</td>
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<tr>
<td>823-0242-21</td>
<td>Nitric Oxide</td>
<td>100 ppm -- EC, ND</td>
<td>NO</td>
<td>1 25 ppm 100 ppm</td>
<td>S</td>
<td>5 15 25 50 75 Yes</td>
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<tr>
<td>823-0221-21</td>
<td>Nitrogen Dioxide</td>
<td>10.0 ppm FM EC, ND</td>
<td>NO2</td>
<td>1.6 1 ppm 20 ppm</td>
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<td>10 40 3.0 5.0 9.0 Yes</td>
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<tr>
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<td>Oxygen</td>
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<td>O2</td>
<td>1.1 &lt;19.5% &lt;18%</td>
<td>n/a</td>
<td>10 15 19.5 23.5 18.0 Yes</td>
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<td>Ozone</td>
<td>2.00 ppm -- EC, ND</td>
<td>O3</td>
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<td>Phosgene</td>
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<td>Silane</td>
<td>10.0 ppm -- EC, ND</td>
<td>SiH4</td>
<td>1.3 5 ppm</td>
<td>S</td>
<td>T-60: 30 2.5 5.0 7.5 Yes</td>
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<td>Sulfur Dioxide, H2S Filtered</td>
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<td>SO2</td>
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<td>SO2</td>
<td>2.3 2 ppm 100 ppm</td>
<td>n/a</td>
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</tbody>
</table>

Detection at every point.

2. Gas Data are from ACGIH (TLV-TWA) and NIOSH (IDLH) but may be noted as Ceiling or STEL. The user is responsible for verifying table data.
3. D: Sensor life is directly proportional to target gas exposure. ND: Sensor is not depleted by exposure to target gas and life is expected to be more than 2 years.
In addition to our range of fixed gas and flame detection products, Sensidyne is a leading provider of Colorimetric Gas Detector Tubes and high-quality industrial health & safety products designed to protect personnel and facilities in industrial applications worldwide.

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