SENSIDYNE®
Industrial Health & Safety Instrumentation

Dependable Solutions for Gas & Flame Detection

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

www.SensidyneGasDetection.com

Safety is not a convenience.

Sensidyne proudly designs, manufactures, and distributes gas monitoring systems relied upon by customers for detection of gas in critical safety applications for personnel safety and asset protection. Our customers know us by our quality products and commitment to service. We understand that our quality equals customer safety and productivity.

Quality assured.

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 ISO 9001:2008. We strive to ensure continuous improvement through ongoing review of our designs, supplier performance, and customer feedback.

Sensidyne Corporate Offices and Manufacturing Facility in St. Petersburg, Florida U.S.A.

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.

Detection at every point.

Trusted Supplier of Gas Detection to a Wide Range of Industries & Applications

Manufacturing, Chemicals & Solvents, Pharmaceuticals, and Building Materials

Ammonia for Fertilizer and Refrigeration Applications

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

Oil & Gas Refining, Processing, Transportation, and Distribution

Power Generation, Battery Rooms, Boilers, and Cooling Systems

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

And many more common and specialty applications.

SENSALERT® ASI

Advanced Safety Integrity for confidence in every safety application.

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 with up to four relays

Critical Protection with Global Approval

SensAlert ASI is third-party certified to IEC61508 Level 2 (SIL-2) for both hardware and software. SIL certification is assurance that the product received independent testing validation. 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 greatest 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 versatility through remote sensors and gassing, duct mount, and sample-draw to maximize application versatility.

Easiest to Install, Commission, Operate, and Maintain

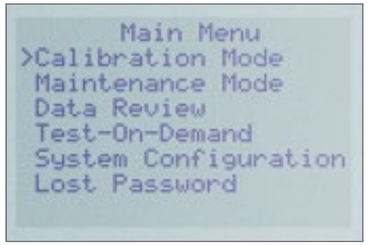
SensAlert ASI is engineered to overcome the challenges users face with traditional gas detectors. The universal instrument platform for all gas and sensor types provides common installation for each detection point with vertical or horizontal installation options and removable plug-type terminal blocks to simplify wiring and commissioning.

Detection at every point.

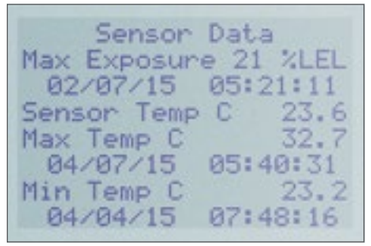
SENSIDYNE®
Industrial Health & Safety Instrumentation

SensAlert ASI Graphic Display and Menu

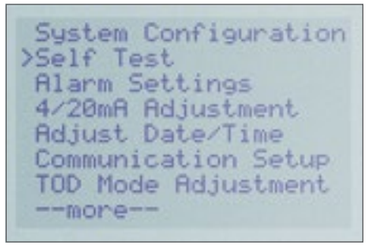
Main Display



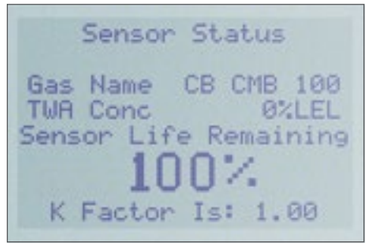
Main Menu



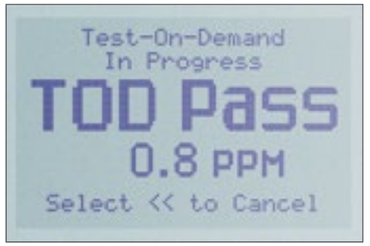
Sensor Data Review



System Configuration Menu



Predictive Sensor Life



Live Test-on-Demand Sensor Verification

Description	Horizontal	Vertical
SensAlert ASI Div 2, 2 wire | 3/4" NPT	S22-2STH-AA	S22-2STV-AA
SensAlert ASI Div 2, 3 wire | 3/4" NPT	S22-3STH-AA	S22-3STV-AA
SensAlert ASI Div 2, 3 wire with relay card | 3/4" NPT	S22-3RTH-AA	S22-3RTV-AA
SensAlert ASI Div 2, 3 wire with Modbus | 3/4" NPT	S22-3MTH-AA	S22-3MTV-AA
SensAlert ASI Div 2, 3 wire with Hart | 3/4" NPT	S22-3HTH-AA	S22-3VTV-AA
SensAlert ASI Intrinsically Safe, 3 wire | 3/4" NPT	S2S-3STH-AA	S2S-3STV-AA
SensAlert ASI Div 1, 2 wire | 3/4" NPT	S2X-2STH-AA	S2X-2STV-AA
SensAlert ASI Div 1, 3 wire | 3/4" NPT	S2X-3STH-AA	S2X-3STV-AA
SensAlert ASI Div 1, 3 wire with relay card | 3/4" NPT	S2X-3RTH-AA	S2X-3RTV-AA
SensAlert ASI Div 1, 3 wire with Modbus | 3/4" NPT	S2X-3MTH-AA	S2X-3MTV-AA
SensAlert ASI Div 1, 3 wire with Hart | 3/4" NPT	S2X-3HTH-AA	S2X-3HTV-AA

Available with 3/4" NPT or 25mm openings. See the Sensor Chart on page 18 for available gases and ranges.

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 (12-30 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:..... 600 Ω maximum
- 2-wire 4-20 mA:..... 350 Ω maximum
- Relay:..... 3-Wire Only - One SPDT Configurable Relay
- Optional Card:..... Three (3) SPDT Configurable Relays
- Contact Ratings:.....5 Amps at 115 VAC or 30 VDC Resistive
- Communication Options .....4-20 mA, non-isolated 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 transmitters); 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
- Temp. (Sensor): .....See Sensor Data Sheets
- Humidity (Sensor):.....See Sensor Data Sheets
- Moisture Resistance ..IP54; IP56 with optional rainshield

Enclosure
- Standard: .....Blue, Copper-free Cast Aluminum
- Dimensions: ..... 6.7" W x 12.2" H x 6.5" D 170 mm W x 308 mm H x 165 mm D
- Weight Range:.....6-8 lbs 2.7-3.6 kg
- Long-dome ..... Gray, Copper-free Cast Aluminum
- Physical: ..... 6.3" W x 11.7" H x 7.1" D 160 mm W x 297 mm H x 180 mm D
- Weight Range:..... 7-8.7 lbs / 3.2-4.0 kg

Approval Ratings
- Explosion Proof .....NEC and CEC Class I Div 1, Grps A, B, C, D; Class II Grps E, F, G; Class III T4
- Flame proof..... ATEX EEx d[ia] IIC T4 II 2 [1] G
- Non-Incendive.....NEC and CEC Class I Div 2, *(Enclosed Break)*.. Groups A, B, C, D; Class II Grps E, F, G; Class III T4

ATEX EEx nC [ia] IIC T4 II 3 [1] G
- Intrinsic Safety.....NEC and CEC Class I Div 1, Grps A, B, C, D; Class II Grps E, F, G; Class III T4

ATEX EEx ia IIC T4 II 1 G
- FM Approved / CE Mark.....ATEX Directive 94/9/EC
- IECEx.....Zone 0: Display Ex d [ia] IIC T4 Sensor Ex ia IIC T4; Zone 1: Ex d [ai] IIC T4; Zone 2: EXnC [ia] IIC T4
- UL / IEC..... IEC 60079-0:2006, IEC 60079-11:1999, IEC 60079-15:2007
- SIL-2 Certified..IEC 61508 SIL-2 Parts 1,2, & 3 Hardware & Software. Fit for use in SIL-2 applications.

See approval drawings and sensor specification sheets for additional detail.

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.

SENSALERT® PLUS

Universal platform gas detection transmitter for safety applications.

SensAlert Plus is a robust gas detector for personnel safety applications and represents the evolution of smart sensor technology. As a universal platform, it accepts Infrared, Catalytic Bead, and Electrochemical sensors for detection of a wide range of gases.

- **Reliability with advanced functionality**
  - Predictive Sensor End-of-Life Indication
  - Missing or Non-functional Sensor Indication
  - Sensor Test-On-Demand, with On-board Gas Generator
- **Intrinsically safe sensor head**
  - Shop Calibrate and Hot-swap Gas Sensors in Classified Areas
  - Mount Sensor up to 100 ft./30 m. Away Without Rigid Conduit
- **Intelligent Plus Series sensors**
  - Auto-recognition and Set-up from Sensor Memory Provides Operating Parameters and Diagnostics for All Plus Transmitters
- **Global performance approvals**
  - Performance Tested and Certified to FM, ATEX, and CSA Standards
  - Unrestricted Hazardous Classified Area Installation and Operation
- **Flexible installation or retrofit**
  - 2-Wire and 3-Wire Transmitters with Enclosure Options
  - Non-intrusive Configuration and Maintenance Interface
  - Remote Sensor / Gassing, Duct Mount and Sample Draw
  - Configurable Alarms: Fault Conditions and Test-on-Demand

Increased Reliability

Intelligent and dependable firmware monitors the intelligent Plus sensor for changes that could effect performance. Sensor condition and maintenance notifications are displayed locally and can be sent to a controller or facility monitoring system via on-board relays, a virtual relay (assignable to a fault current), RS-485 Modbus, or HART. This thorough monitoring provides increased reliability.

Simple to Intall and Maintain

The SensAlert Plus Intrinsically Safe sensor head can be remote mounted up to 100 feet (30m) from the transmitter providing greater flexibility to position the transmitter in a personnel-accessible location while positioning the sensor closer to potential hazards. A wide range of sensors, accessories and remote gassing/sampling systems further simplify maintenance and provide installation flexibility.

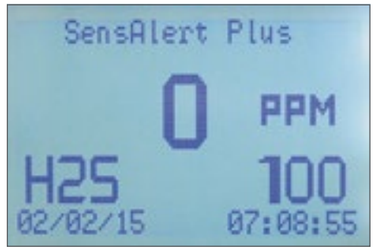
Reduced Cost of Ownership

Shop or field calibrate, then swap sensors under power to minimize maintenance and calibration time. A large backlit alphanumeric display with a non-intrusive user interface allows for configuration, setup, and data review without declassifying a hazardous area. SensAlert Plus is a universal transmitter allowing facility standardization across gas types, sensor technologies, and sensor ranges.

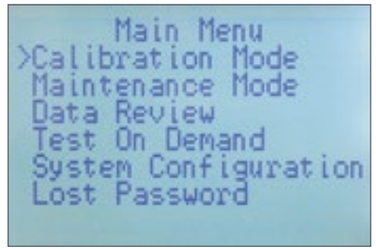
Detection at every point.

SENSIDYNE®
Industrial Health & Safety Instrumentation

SensAlert Plus Graphic Display and Menu

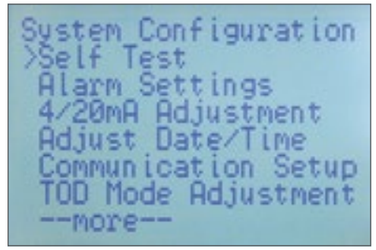


Main Display

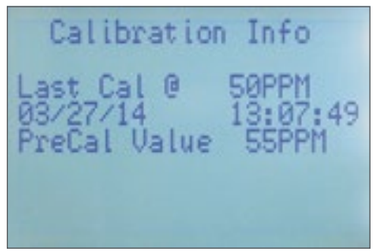


Main Menu

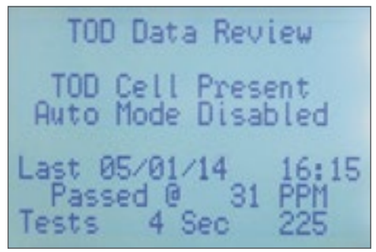
Data Review



System Configuration Menu



Calibration Review



Test-on-Demand Data Review

Description	Part Number
SensAlert Plus Div 2, 2 wire	820-0209-01
SensAlert Plus Div 2, 3 wire	820-0204-01
SensAlert Plus Div 2, 3 wire with relay card	820-0204-02 with 821-0219-01
SensAlert Plus Div 2, 3 wire with Modbus	820-0204-02 with 821-0221-01
SensAlert Plus Div 2, 3 wire with Hart	820-0204-02 with 821-0220-01
SensAlert Plus Intrinsically Safe, 3 wire	820-0204-04
SensAlert Plus Div 1, 2 wire	820-0207-01
SensAlert Plus Div 1, 3 wire	820-0206-01
SensAlert Plus Div 1, 3 wire with relay card	820-0206-02 with 821-0219-01
SensAlert Plus Div 1, 3 wire with Modbus	820-0206-02 with 821-0221-01
SensAlert Plus Div 1, 3 wire with Hart	820-0206-02 WITH 821-0220-01

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 (12-30 VDC): ..... 90 mA
- With opt. Relay Card and combustible sensors:.300 mA

Output and load resistance with 24 VDC at transmitter terminals:
- 3 wire 4-20 mA:..... 600 Ω maximum
- 2-wire 4-20 mA: ..... 350 Ω maximum
- Relay:..... 3-Wire Only - One SPDT Configurable Relay
- Optional Card:..... Three (3) SPDT Configurable Relays
- Contact Ratings:.....5 Amps at 115 VAC or 30 VDC Resistive
- Communication Options .....4-20 mA, non-isolated 2 or 4-wire options, 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 transmitters); displays Concentration and Measuring Units, Gas Name or Type, Sensor Span, Date and Time, Tag Number and System messages or Warnings

Environmental
- Temp. (Transmitter): ..... -22°F to 158°F /-29°C to 70°C
- Humidity (Transmitter).....0-90% RH, non-condensing
- Temp. (Sensor): .....See Sensor Data Sheets
- Humidity (Sensor):.....See Sensor Data Sheets
- Moisture Resistance ..IP54; IP56 with optional rainshield

Enclosure
- NEMA 4X:.....Polycarbonate
  - Dimensions: .....7.5" W x 12.6" H x 6.2" D / 190 mm W x 320 mm H x 157 mm D
  - Weight Range:..... 5.5-7.2 lbs / 2.5-3.3 kg
- Explosion-proof.....Copper-free, Cast Aluminum
  - Physical: ..... 5.5" W x 12.3" H x 4.6" [6.4"] D / 140 mm W x 312 mm H x 117 mm [163 mm] D
  - Weight Range:..... 6.1-8.7 lbs / 2.8-4.0 kg

Note: Brackets indicate large dome depth.

Approval Ratings
- Explosion Proof .....NEC and CEC Class I Div 1, Grps A, B, C, D; Class II Grps E, F, G; Class III T4
- Flame proof ..... ATEX EEx d[ia] IIC T4 II 2 [1] G
- Non-Incendive.....NEC and CEC Class I Div 2, (Enclosed Break) Grps A, B, C, D; Class II Grps E, F, G; Class III T4
- ATEX .....EEx nC [ia] IIC T4 II 3 [1] G
- Intrinsic Safety.... NEC | CEC Class I Div 1, Grps A, B, C, D; Class II Grps E, F, G; Class III T4
- ATEX .....EEx ia IIC T4 II 1 G
- CE Mark.....ATEX Directive 94/9/EC
- FM Approved
- IEC 60079-0:2006, IEC 60079-11:1999, IEC 60079-15:2007

See approval drawings and sensor specification sheets for additional detail.

FM APPROVED

FM Performance Certified Sensors

The Sensidyne Sensor Laboratory is a Factory Mutual (FM) certified facility. The laboratory is certified for sensor development and testing. The majority of Plus Series sensors are FM performance certified. This certification provides verification that sensors have undergone rigorous testing for accuracy, response time and environmental conditions. Each Plus Series sensor datasheet contains complete response characteristics, calibration instructions, and a cross interference table to assist user implementation of their monitoring applications.

SensAlarm PLUS

Advanced all-in-one gas detection system for local and remote gas detection.

Shown with optional second strobe.

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

Exceptional Capability

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

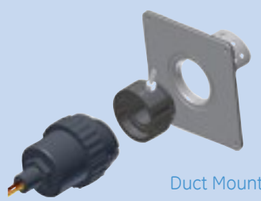
The SensAlarm Plus sensor head is universal in that it accepts all Sensidyne Plus sensors. Monitoring in high, low or adjacent locations is simplified by remote mounting the sensor head using 4 conductor cable. The automatic uploading of variables, alarm values and sensor information when a sensor is 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 sensors.

Detection at every point.

Application Flexibility

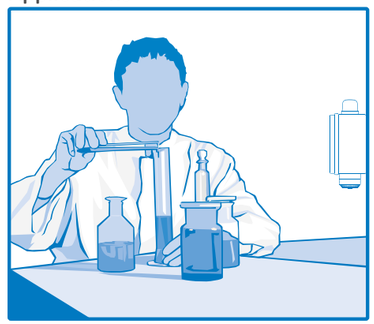


Duct Mount

Remote Mount

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.

Common SensAlarm Plus Applications



SensAlarm Plus used in a laboratory setting

SensAlarm Plus with remote kit for monitoring a gas storage room

Technical Specifications

Sensors

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

Electrical

Design .....Microprocessor 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 .....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 - 13.75 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.

Description	Part Number
SensAlarm Plus, one red strobe	820-0301-01
SensAlarm Plus, one red strobe w/ battery back-up	820-0301-02
SensAlarm Plus, with amber and red strobes	820-0301-03
SensAlarm Plus, with amber and red strobes w/ battery back-up	820-0301-04
SensAlarm Plus, one blue strobe	820-0303-01
SensAlarm Plus, one blue strobe w/ battery back-up	820-0303-02
SensAlarm Plus, one amber strobe	820-0304-01
SensAlarm Plus, with amber and blue strobe w/ battery back-up	820-0305-02
SensAlarm Plus remote sensor kit (100ft maximum)	821-0301-01
HART Communication Card - Installed	821-0302-01
RS-485 Modbus RTU Communication Card - Installed	821-0303-01

SensAir

Cost effective, heavy duty gas detector with performance.

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 316 stainless steel sensor housing
- 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 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-volume 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 plastic and 316 stainless steel sensor housing provide excellent corrosion resistance.

SensAir Configurations

"Blind" version omits local display for cost and security purposes.

Hand-held Controller provides local interface for blind (non-display) models.

Sensor Shield (821-0603-01)

Flow Block (821-0605-01)

Calibration Adapter (821-0604-01)

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) 1000ppm 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) 1000ppm sensor
Hydrogen Chloride (HCl) 100ppm sensor
Hydrogen Chloride (HCl) 10ppm sensor
Hydrogen Cyanide (HCN) 20ppm 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 ..... Less than 500Ω 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
Security: ..... No local interface

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 ..... 316 Stainless Steel

General Purpose Models
Transmitter: ..... Polycarbonate
Sensor Housing ..... High density plastic

Approval Ratings

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

Hazardous Area Approved Models:
FM US and Canadian | NEC/CEC
Class I, Div 1, Groups A, B, C, D T4;
Non-incendive for installation in Class 1 Division 2 Groups A, B, C, D

ATEX
CE 0518 II 2 G Ex d IIC T4 (FM13ATEX0066)
II 3 G Ex nA d IIC T4 (FM13ATEX0084)

PR

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, minimizing these problems and extending sensor life.

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 Communication

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.

Description	Part Number
Class 1, Division 2, 123-230 VAC Strobe only for mounting by user – Red	208-0003-04
Alarm Annunciator, Dual Strobes, High Red, Low Amber, includes power supply	821-0005-02
Alarm Annunciator, Hi Red, Low Amber, and Sounder, including power supply	821-0005-03
Alarm Annunciator, Hi Red, Hi Sounder, including power supply	821-0005-04
Alarm Annunciator, Hi Red, Hi Sounder, no power supply	821-0005-08
Alarm Annunciator, Hi Sounder, Low Amber strobe, includes power supply	821-0005-01
3-Port Power Module, 10 watt, 24 VDC (85-265 VAC)	821-9904-01
Red GP Strobe Lamp for mounting by user 12-48 VDC, general purpose	7017414
Amber GP Strobe Lamp for mounting by user 12-48 VDC, general purpose	208-0002-02
Blue GP Strobe Lamp for mounting by user 12-48 VDC, general purpose	208-0002-06
GP 110 dB Horn for mounting by user 9-28 VDC, general purpose	7017380

Sample Draw System

Approved solution for monitoring gas in remote or difficult to access locations.

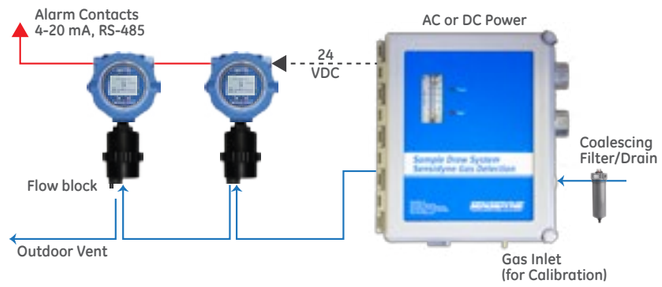
Sensidyne Sample Draw is the only FM listed system approved for sampling from a Class 1 Division 1 area and placement in a Class 1 Division 2 area. This system is a flexible solution for complex gas detection applications in remote and difficult to access locations.

- 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

Stay out of Hazardous Areas

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.



Description	Part Number
Pumped Sample Draw with 24 VDC power supply	821-0231-01
Aspirated Sample Draw with 24 VDC power supply	821-0232-01
Pumped Sample Draw without power supply	821-0231-02
Aspirated Sample Draw without power supply	821-0232-02
Coalescing filter & Close Nipple 1/8 NPT	821-0233-01

Installer to provide 24 VDC power when ordering 821-0231-02.

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;
DC Supply:..... UL60950-1, UL508, UL1310(3), 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.

SensFlex

SensFlex-2 and SensFlex-PID - Dual Head Gas Detector or Fixed PID System

SensFlex-2

SensFlex-PID

In SensFlex, a flexible and highly-capable set of features combine to provide dual-head point gas monitoring or deployment of a powerful Photo Ionization Detection (PID) sensor for detection of Volatile Organic Compounds (VOC).

- **Maximum Facility Flexibility**
  - Ethernet standard, communicates simultaneous Modbus TCP master/slave
  - Embedded web pages for remote configuration and display
  - Optional relays for alarm contacts and 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

Highly Flexibility Configurations to Meet Facility Requirements

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 thousands 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.

SensFlex-2 extends the SensFlex transmitter platform allowing simultaneous dual gas monitoring from two different sensors. This dual-head design is highly attractive in many applications where sensing previously required two separate transmitters. SensFlex-2 doubles the output capabilities providing independent output and communication for each sensor head. The display can cycle between sensors or split the screen showing the two measurements.

Detection at every point.

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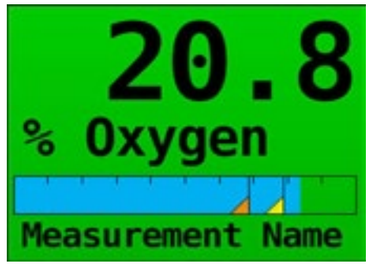
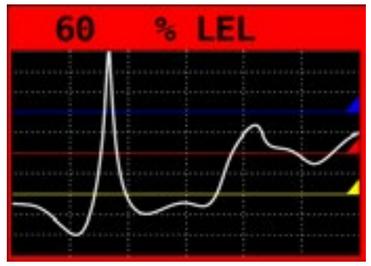
SensFlex Displays



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 Split Screen

Two channel mode displays both channels current reading and engineering units simultaneously.

SensFlex-2 Sensors

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

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

Technical Specifications

Sensors
PID, 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
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: ..... Painted Aluminum
Sensor Housing ..... 316 Stainless Steel
General Purpose Models
Transmitter: ..... Polycarbonate
Sensor Housing ..... High density plastic

Approval Ratings
See approval certificates for detailed approval classifications

Division 1 and 2 Group A, B, C, D

SENSCAST

The SensCast gas monitoring system is a cutting edge wireless platform providing the complete solution for gas detection signal communication throughout a plant or facility. SensCast is the 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 1 and 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 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.

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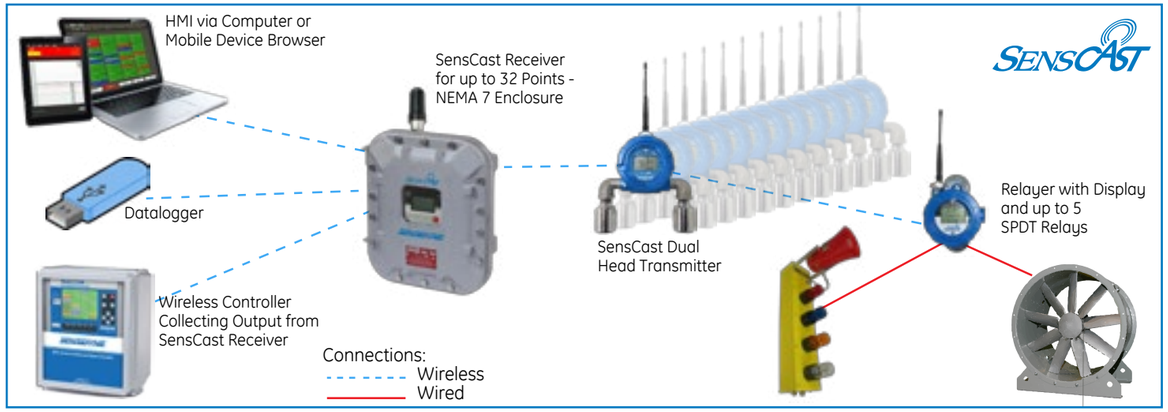
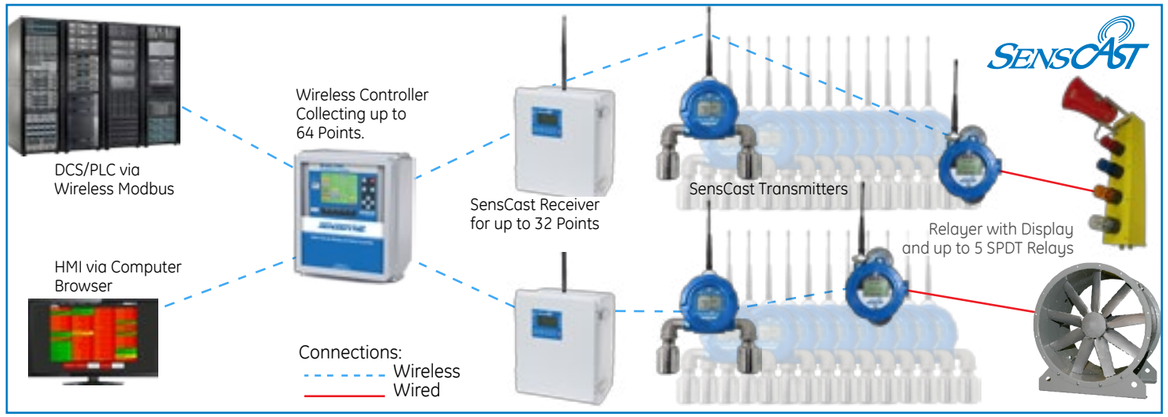
Example SensCast System Drawings



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

Transmitter:
Single and Dual Head models for oxygen and toxic gas monitoring. Div 2 and GP enclosures options. Battery powered.

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.

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.

SharpEye™

- **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 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.

Detection at every point.

SENSIDYNE®
Industrial Health & Safety Instrumentation

SPECTREX INC.

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 1ft² (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 (& 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.

Technical Specifications

Detectors
Vary by model - see specification sheet

Performance
- Response Time ..... Typically 5 seconds
- Adjustable Time Delay Up to 30 seconds
- Sensitivity Range..... Selectable - see datasheet
- Field of View ..... Horizontal up to 75°, up to Vertical 80°
- Built-in-Test (BIT)..... Automatic (and Manual)

Environmental
Temperature Range
- Operating:..... -67°F to +167°F (-55°C to +75°C)
- Option: ..... -67°F to +185°F (-55°C to +85°C)
- Storage: ..... -67°F to +185°F (-55°C to +85°C)
- Humidity ..... Up to 95% non-condensing; withstands up to 100% RH for short periods
- Heated Optics ..... Eliminate condensation and icing on the window

Electrical
- Operating Voltage ..... 24 VDC nominal (18-32 VDC)
- Power Consumption .Standby: Max. 90mA (110mA with heated window)
- Alarm: Max. ..... 130mA (160mA with heated window)
- Cable Entries ..... 2 x 3/4" - 14NPT conduits or 2 x M25 x 1.5 mm ISO
- Wiring ..... 12 - 22AWG (2.5mm2 - 0.3mm2)
- Electrical Input
  - Protection ..... According to MIL-STD-1275B
  - Electromagnetic Compatibility ..... EMI/RFI protected to EN61326-3 and EN61000-6-3
  - Electrical Interface ..... The detector includes twelve (12) terminals with five (5) wiring options (factory set)

Outputs
- Relays ..... Alarm, Fault and Auxiliary SPST volt-free contacts rated 2A at 30 VDC 0-20mA (stepped) .....
- Sink (source option) ..... configuration
- Fault: ...0 +1mA Normal: 4mA ± 10% Alarm: 20mA ± 5%
- BIT Fault: .2mA ± 10% Warning: 16mA ± 5% Resistance Loop: 100-600 Ω
- HART Protocol ..... Optional HART communications on the 0-20mA analog current (FSK) - used for maintenance, configuration changes and asset management, available in mA source output wiring options
- RS-485 ..... RS-485 Modbus compatible communication link that can be used in computer controlled installations

Mechanical
- Materials .Stainless Steel 316L with electro polish finish
- Dimensions ..... Detector 4" x 4.6" x 6.18" (101.6 x 117 x 157 mm)
- Weight Detector (St.St.) 6.1 lb (2.8 kg) Tilt mount 2.2 lb (1.0 kg)
- Environmental Standards Meets MIL-STD-810C for Humidity, Salt & Fog, Vibration, Mechanical Shock, High Temp, Low Temp
- Water and Dust ..... IP66 and IP67 per EN60529, NEMA 250 6P

Approval Ratings
Hazardous Area
- ATEX and IECEx Ex II 2 GD,
- Ex de IIC T5 (Ta -55°C to +75°C)
- Ex de IIC T4 (Ta -55°C to +85°C)
- Ex tD A21 IP66/X7 T 95°C
- Ex tD A21 IP66/X7 T 105°C
- FM/FMC/CSA Class I Div. 1, Groups B, C & D
- Class II/III Div. 1, Groups E, F & G

Performance
- EN54-10 (VdS); FM3260

Reliability
- IEC61508 - SIL2 (TUV)

SafEye Open Path Gas Detectors

Toxic and Combustible Open Path Gas Detection for Wide Area Coverage

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.

SafEye™

- **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.

Detection at every point.

SENSIDYNE®
Industrial Health & Safety Instrumentation

SPECTREX INC.

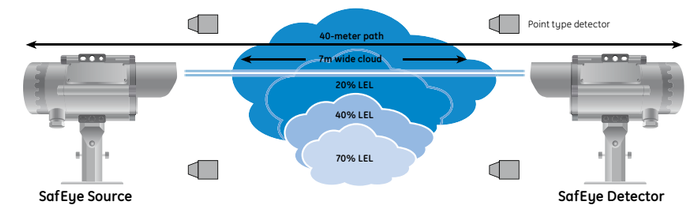
SafEye for Combustible and Toxic Gas Detection Applications

SafEye Quasar 900 – Combustible Hydrocarbon Detection

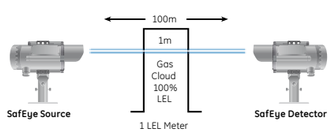
Safeye Quasar 900 quickly and sensitively detects a wide range of hydrocarbon gases – including alkanes (methane to hexane) and ethylene with a minimum detectable level is 0.15 LEL.m. No need for any manual adjustment or standard test gas, due to the built-in calibration of the SafEye Quasar 900.

SafEye Quasar 950 & 960 – Ammonia and Hydrogen Sulfide Detection

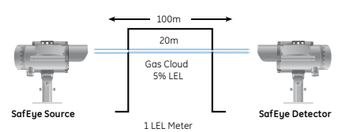
SafEye Quasar 950 delivers rapid detection of Hydrogen Sulfide (H2S) gas while SafEye Quasar 960 provides quick detection of Ammonia (NH3). Both instruments can detect gas in ranges up to 263 feet (80 meters) and due to their inherent stability and sensitivity, the minimum detectable level is 50 PPM.m.



Depict the relationship between fixed point gas detectors and SafEye 900 Open-Path will measure 20% LEL x 7m = 1.4 LEL.m - well above 1 LEL.m alarm level



1 LEL meter (1 LEL.m) = a cloud of 100% LEL methane gas that is 1 meter wide



1 LEL meter (1 LEL.m) = a cloud of 5% LEL methane gas that is 20 meter wide

Technical Specifications

Detected Gas
- SafEye Quasar 900 ..... C1 - C8
- SafEye Quasar 950 ..... Hydrogen Sulfide
- SafEye Quasar 960 ..... Ammonia

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 0-8 LEL.m ethylene
- Spectral Response ..... 2.0 - 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 ..... Safety system – 3 years Flash source bulb – 10 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 (specify) ..... 2 x 3/4" – 14NPT conduits or 2 x M25 x 1.5mm ISO
- Electrical Input Protection per MIL-STD-1275B
- Electromagnetic Compatibility ..... EMI/RFI protected per EN50270

Outputs
- 0-20mA Current Output ..... Sink (source option) configuration - maximum load of 500 ohm at 18-32 VDC
- Gas reading 4-20mA
- Obscuration/beam block 2mA
- Normal, zero reading 4mA
- Zero calibration mode 1mA
- Maintenance call 3mA
- Fault 0mA
- Misalignment 2.5mA
- RS-485 Interface – Modbus ..... The RS-485 input/output provides complete data information to a PC and receives control
- Compatible commands from the PC or handheld unit
- HART ..... HART communications on 0-20mA analog current (FSK) – used for maintenance and asset management
- Visual Status Indicator ...3 color LED: Green – Power on, Yellow – Fault, Red – Alarm

Approval Ratings

Hazardous Area
- ATEX/IECEx Approved per Ex d e ib [ib Gb] IIB + H2 T4 Gb Ex tb IIIC T135°C Db
- 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.

- 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
- Reliability SIL2 per IEC61508 (TUV)

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.

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

Technical Specifications

Electrical
Power.....85-264 VAC, 50/60 Hz or 24 VDC
Input.....Four 4-20 mA (2 or 3-wire signals). Can use Sensidyne I.S. Barrier.
Outputs.....Discrete non-isolated 4-20 mA (600 ohm load), and 2-wire RS485 Modbus RTU

Controls and Display
LCD Display.....Backlit Alphanumeric
LED Display .....3 Digit x 0.5 Inch Tall Red LED
Controls .....Internal push-button programming for all variables with security capability. Reset button for alarms and calibration mode

Environmental
Temperature .....32° to 113°F (0° to 45°C)
Humidity .....5-95 %RH, non-condensing

Enclosure
Material.....Fiberglass, lockable, and wall mounted with 3/4 inch EMT openings
Dimensions .....11.2" W x 12.8" H x 6.3" D
28.4 W x 32.5 H x 16.0 D cm.
Weight ..... 10.0 lbs. (4.5 Kg)

Approval Ratings
UL Listed
NEMA 4X Enclosure

See specification sheet for additional detail and page 18 for sensor compatibility.

Model 7200 Controller

Local and remote control and display of up to sixty-four inputs.

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 webserver 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 webserver
- 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

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.

Accessories and Calibration

Tools to solve difficult gas detection applications and maintain calibration.

Remote Sensor Mounting
Extension kits are provided to mount sensors high, low or in difficult locations – up to 50ft (16m) with SensAlert and 100ft (30m) with SensAlert Plus

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.

Part #	Description
009824-78	Ammonia, 150 ppm in Nitrogen
009824-57	Ammonia, 25 ppm in Nitrogen
009824-67	Ammonia, 300 ppm in Nitrogen
009824-38	Ammonia, 50 ppm in Nitrogen
009824-4	Carbon Monoxide, 50 ppm in Nitrogen
009824-44	Chlorine, 10 ppm in Nitrogen
009824-53	Chlorine, 2 ppm in Nitrogen
009824-34	Chlorine, 5 ppm in Nitrogen
009824-37	Hydrogen Chloride, 10 ppm in Nitrogen
009824-56	Hydrogen Chloride, 5 ppm in Nitrogen
009824-42	Hydrogen Chloride, 50 ppm in Nitrogen

Part #	Description
009824-54	Hydrogen Cyanide, 10 ppm in Nitrogen
009824-79	Hydrogen Cyanide, 25 ppm in Nitrogen
009824-6	Hydrogen, 2 %vol / 50 %LEL in Air
009824-3	Methane 2.5 %vol / 50 %LEL in Air
009824-2	Methane, 1.5 %vol / 30 %LEL in Air
009824-61	Propane 1.05%Vol / 50 %LEL in Air
009824-39	Sulfur Dioxide, 10 ppm in Nitrogen
009824-8	Sulfur Dioxide, 5 ppm in Nitrogen
009824-12	Zero Air, 100% Volume,
009824-25	Zero Gas for others incl. IR, 20.9% O2
009824-15	Zero Gas for Infrared 100% Nitrogen

Plus Series Sensor Data

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

Part Number	Target Gas or Vapor	Sensor Data			Gas Data[2]				ToD Cell	Response Time		Default Alarms			SensAlert 4 Channel
		Span	FM	Type[1,3]	Formula	Density	TLV-TWA	IDLH		T50	T90	Low	High	Hi-High	
823-0249-51	Acetylene IR	50% LEL	--	Infrared	C2H2	0.9	Asphyxiate	- -	n/a	- -	45	10	20	50	Yes
823-0201-22	Ammonia	50 ppm	FM	EC-LI, D3	NH3	0.6	25 ppm	300 ppm	n/a	11	70	15	25	35	Yes
823-0201-21	Ammonia	100 ppm	FM	EC-LI, D	NH3	0.6	25 ppm	300 ppm	n/a	11	70	25	35	75	Yes
823-0201-41	Ammonia	300 ppm	FM	EC-LI, D	NH3	0.6	25 ppm	300 ppm	n/a	10	50	35	75	150	Yes
823-0201-42	Ammonia	500 ppm	FM	EC-LI, D	NH3	0.6	25 ppm	300 ppm	n/a	10	50	50	100	- -	No
823-0212-21	Arsine	1.00 ppm	--	EC, ND3	AsH3	2.7	0.05 ppm	3 ppm	S	- -	30	0.10	0.20	0.50	Yes
823-0222-21	Bromine	10 ppm	FM	EC, D	Br2	5.5	3.0 ppm	3 ppm	C	- -	40	- -	- -	- -	No
823-0222-41	Bromine	1.00 ppm	--	EC, D	Br2	5.5	3.0 ppm	3 ppm	C	- -	45	- -	- -	- -	No
823-0205-53	Carbon Dioxide IR	5.00% Vol.	FM	Infrared	CO2	1.5	0.50%	3.00%	n/a	- -	30	0.5	1.0	3.0	Yes
823-0219-23	Carbon Monoxide	100 ppm	FM	EC, ND	CO	0.94	25 ppm	1,200 ppm	n/a	10	30	25	50	75	Yes
823-0219-22	Carbon Monoxide	500 ppm	FM	EC, ND	CO	0.94	25 ppm	1,200 ppm	n/a	10	30	25	75	200	Yes
823-0219-43	Carbon Monoxide	1000 ppm	FM	EC, ND	CO	0.94	25 ppm	1,200 ppm	n/a	10	30	25	75	- -	No
823-0219-41	Carbon Monoxide	100 ppm	FM	EC-LI, D	CO	0.94	25 ppm	1,200 ppm	n/a	10	30	25	50	75	Yes
823-0219-42	Carbon Monoxide	500 ppm	FM	EC-LI, D	CO	0.94	25 ppm	1,200 ppm	n/a	10	30	25	75	200	Yes
823-0202-22	Chlorine	5.00 ppm	FM	EC, ND	Cl2	2.5	0.5 ppm	10 ppm	C	10	40	0.5	1.0	1.5	Yes
823-0202-42	Chlorine (H2S Resistant)	5.00 ppm	--	EC, ND	Cl2	2.5	0.5 ppm	10 ppm	C	- -	45	0.5	1.0	1.5	Yes
823-0202-21	Chlorine	10.0 ppm	FM	EC, ND	Cl2	2.5	0.5 ppm	10 ppm	C	10	40	0.5	1.0	1.5	Yes
823-0202--41	Chlorine (H2S Resistant)	10.0 ppm	--	EC, ND	Cl2	2.5	0.5 ppm	10 ppm	C	- -	45	0.5	1.0	1.5	Yes
823-0202-23	Chlorine	20.0 ppm	--	EC, ND	Cl2	2.5	0.5 ppm	10 ppm	C	10	30	2	5	10	No
823-0202-43	Chlorine (H2S Resistant)	100 ppm	--	EC, ND	Cl2	2.5	0.5 ppm	10 ppm	C	- -	45	5	10	20	Yes
823-0239-41	Chlorine Dioxide	1.00 ppm	FM	EC, ND	ClO2	2.3	0.1 ppm	5 ppm	C	- -	30	0.10	0.30	0.50	Yes
823-0239-42	Chlorine Dioxide	5.00 ppm	FM	EC, ND	ClO2	2.3	0.1 ppm	5 ppm	C		30				No
823-0211-31	Combustibles, General	100% LEL	FM	Catalytic	- -	- -	Asphyxiate	- -	n/a	T-60: <12 sec		10	20	50	Yes
823-0211-33	Comb. H2, ETO, Acetylene	100% LEL	--	Catalytic	- -	- -	Asphyxiate	- -	n/a	T-60: <5 sec		10	20	50	Yes
823-0210-41	Hydrogen Specific LEL	100% LEL	--	EC, ND	H2	0.07	Asphyxiate	- -	n/a	40	120	10	20	50	Yes
Part Number	Target Gas or Vapor	Span	FM	Type[1,3]	Formula	Density	TLV-TWA	IDLH	ToD	T50	T90	Low	High	Hi-High	SensAlert 4 Channel
		Sensor Data			Gas Data[2]					Cell		Default Alarms			

Part Number	Target Gas or Vapor	Sensor Data			Gas Data[2]				ToD Cell	Response Time		Default Alarms			SensAlert 4 Channel
		Span	FM	Type[1,3]	Formula	Density	TLV-TWA	IDLH		T50	T90	Low	High	Hi-High	
823-0211-51	Combustibles IR	100% LEL	FM	Infrared	Hydrocarbons		Asphyxiate	- -	n/a	T-60: <12 sec		10	20	50	Yes
823-0249-51	Combustibles IR Acetylene	50% LEL	--	Infrared	C2H2	0.9	2,500 ppm	- -	n/a	T-60: <16sec		10	20	50	Yes
823-0229-21	Diborane	1.00 ppm	--	EC, ND	B2H6	2.9	0.1 ppm	15 ppm	S	- -	300	0.1	0.2	0.5	Yes
823-0245-21	Ethylene Oxide (ETO)	10.0 ppm	FM	EC, ND	C2H4O	1.5	1 ppm	800 ppm	n/a	15	140	1	2	3	Yes
823-0215-21	Fluorine	10.0 ppm	--	EC, ND	F2	1.3	0.1 ppm	25 ppm	C	10	30	1	5	- -	No
823-0215-22	Fluorine	25.0 ppm	--	EC, ND	F2	1.3	0.1 ppm	25 ppm	C	10	30	1	5	- -	No
823-0230-21	Germane	1.00 ppm	--	EC, ND	GeH4	2.7	0.2 ppm	- -	S	- -	30	0.20	0.50	1.00	Yes
823-0210-21	Hydrogen Specific PPM	1000 ppm	FM	EC, ND	H2	0.07	Asphyxiate	- -	n/a	20	70	100	250	500	Yes
823-0210-41	Hydrogen Specific LEL	100% LEL	--	EC, ND	H2	0.07	Asphyxiate	- -	n/a	40	120	10	20	50	Yes
Use HCl	Hydrogen Bromide	10.0 ppm	--	EC, ND	HBr	2.8	3 ppm	30 ppm	n/a						No
823-0208-21	Hydrogen Chloride	10.0 ppm	FM	EC, ND	HCl	1.3	2 ppm	50 ppm	S	15	30	5.0	10.0	- -	No
823-0208-22	Hydrogen Chloride	20.0 ppm	FM	EC, ND	HCl	1.3	2 ppm	50 ppm	S	15	30	5.0	10.0	15.0	Yes
823-0208-41	Hydrogen Chloride	100 ppm	FM	EC, ND	HCl	1.3	2 ppm	50 ppm	S	12	40	10.0	20.0	30.0	Yes
823-0203-21	Hydrogen Cyanide	20.0 ppm	FM	EC, D3	HCN	0.9	4.7 ppm	50 ppm	n/a	10	30	4.0	6.0	10	Yes
823-0207-21	Hydrogen Fluoride	10.0 ppm	FM	EC, D	HF	0.7	0.5 ppm	30 ppm	C	15	45	2.0	3.0	7.0	Yes
823-0207-22	Hydrogen Fluoride	20.0 ppm	FM	EC, D	HF	0.7	0.5 ppm	30 ppm	C	15	45	2.0	3.0	- -	No
823-0206-22	Hydrogen Sulfide	50 ppm	FM	EC, ND	H2S	1.2	1 ppm	100 ppm	S	10	30	10	15	30	Yes
823-0206-21	Hydrogen Sulfide	100 ppm	FM	EC, ND	H2S	1.2	1 ppm	100 ppm	S	10	30	10	15	30	Yes
823-0206-23	Hydrogen Sulfide	10 ppm	FM	EC, ND	H2S	1.2	1 ppm	100 ppm	S	10	30	10	15		No
823-0253-21	Methanol	500ppm	FM	EC, ND	CH4O	1.1	200ppm	6000ppm	n/a	15	60				No
823-0242-21	Nitric Oxide	100 ppm	--	EC, ND	NO	1	25 ppm	100 ppm	S	5	15	25	50	75	Yes
823-0221-21	Nitrogen Dioxide	10.0 ppm	FM	EC, ND	NO2	1.6	1 ppm	20 ppm	C	10	40	3.0	5.0	9.0	Yes
823-0240-22	Oxygen	25.0%Vol	FM	EC, D	O2	1.1	<19.5%	<18%	n/a	10	15	19.5	23.5	18.0	Yes
823-0243-22	Ozone	2.00 ppm	--	EC, ND	O3	1.6	0.1 ppm	5 ppm	C	- -	150	0.10	0.20	0.50	Yes
823-0247-21	Phosgene	1.00 ppm	--	EC, ND	COCl2	3.4	0.1 ppm	2 ppm	C	60	120	0.1	0.5	- -	No
823-0213-21	Phosphine	1.00 ppm	--	EC, ND	PH3	1.2	0.3 ppm	50 ppm	S	- -	30	0.15	0.30	0.60	Yes
823-0214-21	Silane	10.0 ppm	--	EC, ND	SiH4	1.3	5 ppm	- -	S	- -	30	2.5	5.0	7.5	Yes
823-0218-22	Sulfur Dioxide, H2S Filtered	10.0 ppm	FM	EC, ND	SO2	2.3	2 ppm	100 ppm	n/a	10	15	2.0	4.0	- -	No
823-0218-21	Sulfur Dioxide, H2S Filtered	20.0 ppm	FM	EC, ND	SO2	2.3	2 ppm	100 ppm	n/a	10	15	2.0	4.0	8.0	Yes
Part Number	Target Gas or Vapor	Span	FM	Type[1,3]	Formula	Density	TLV-TWA	IDLH	ToD	T50	T90	Low	High	Hi-High	SensAlert 4 Channel
		Sensor Data			Gas Data[2]					Cell		Default Alarms			

1. Terms: EC = Electrochemical, LI = Low Interference, D = Depleting Sensor, ND = Non-Depleting Sensor.
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.

SENSIDYNE®

Industrial Health & Safety Instrumentation

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.

Visit our websites to learn more about products available in your area.

Sensidyne.com | SensidyneGasDetection.com | SensidyneNoiseDosimeters.com

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Sensidyne, LP | 1000 112th Circle North, Suite 100 | St. Petersburg, Florida 33716
Tel: 800-451-9444 / +1 727-530-3602 | E-mail: info@Sensidyne.com | Web: www.SensidyneGasDetection.com