SENSIDYNE®
Industrial Health & Safety Instrumentation

SENSALARM® FLEX

20.9

Ch 1		Ch 2
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UNIVERSAL GAS DETECTION SYSTEM

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SENSIDYNE®
Industrial Health & Safety Instrumentation

Sensidyne.com   Made in U.S.A.

SENSALERT ASI
ACK SENSALERT ASI
SENSALERT ASI
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IR CMB 100
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SENSIDYNE

SENSAir
FAIL LOW HIGH
%LEL
▲ PROGRAM ▼

Trusted Solutions for Gas & Flame Detection

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

www.Sensidyne.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 certified to ISO 9001 standards, and our Service facility and calibration laboratory are accredited to ISO 17025 standards. 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.

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

Detection at every point.

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

Plus many more common and specialty applications.

SENS*ALARM*® FLEX

Advanced Safety Universal Gas Detection System

All-in-One Solution with Flexibility for a Wide Range of Critical Safety Applications

Flexible Gas Monitor Configurations
» Advanced Fully-Configurable Gas Detection System
» Configurable for 1 or 2 Local or Remote Sensors
» 4 Customizable Modes of LED Strobe Lights Integrated into Enclosure Body
» Optional Strobe Light Stack
» 4 to 20 mA and Modbus Communication (TCP or RS-485)
» Up to 8 SPDT 5A Relays
» 95 dB Horn and External Reset Button
» Optional Battery Back-Up

Flexible "Plus Series" Intelligent Sensors
» Transportable Calibration
» Comprehensive On-Board Sensor Data
» Percent Remaining Sensor Life
» Plug-and-Play with Auto Configuration
» Time-stamped Min/Max Concentration and Calibration Data

Flexible Installation and Maintenance
» All-in-One Solution – Easy Set-Up, Low Install Cost
» Remote Sensor/Calibration - up to 100 Feet Away
» In-Situ Monitoring, Duct Mount, or Sample Draw
» Non-Intrusive Configuration/Maintenance Interface

"All Safe" Mode   "Fault" Mode

"Alert" Mode   "Alarm" Mode

NOTE: User can configure the action for each strobe mode.

SensAlarm FLEX is a complete turn-key gas detection system in one enclosure. The system is fully equipped with built-in LED strobes, horn, and highly-visible 7" color LCD screen. At the core of **SensAlarm FLEX** 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.

The **SensAlarm FLEX** sensor interfaces are universal in that they accept all Sensidyne **Plus Series sensors**. Monitoring in high, low or adjacent locations is simplified by remote mounting the sensor up to 100 feet away. 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.

SensAlarm FLEX 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 **Plus Series sensors**.

Detection at every point.

Local Detection

Remote Detection

Remote Mount

Duct Mount

SensAlarm Flex provides true installation and application flexibility for **local or remote mount** sensors to place the sensor closer to potential gas sources.

Optional LED Light Stack

Single or Dual 316 Stainless Steel Sensor Heads

Single or Dual Aluminum or Poly Sensor Heads

Technical Specifications

SENSORS

Gas .... All Sensidyne **Plus Series** sensors
ToD.................. Test-On-Demand available for specific toxic sensors

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; Standard Modbus RS-485 RTU or Ethernet TCP
Light Stack... (NEMA 4X) optional up to 4 strobes with red, amber, blue, and green strobes
Horn .... 95 dB piezo horn
Relays............. 4 standard SPDT configurable relays. Optional 4 more SPDT configurable relays. Contact ratings: 6 amps at 120 VAC or 28 VDC resistive, 3 amps at 240 VAC resistive.

ENCLOSURE

Material.............. Polycarbonate
Environment..... NEMA 4X design
Type...................... Wall mount with tabs
Overall Size....... W x H x D: 8 x 10 x 6 in. / 20.3 x 25.4 x 15.24 cm
Weight Range... 12.25-24.17 lbs / 4.57-9.02 kg (with 1-2 sensor heads)
Conduit............... 3/4 inch NPT connector supplied (side).
Temp..................... -4° to 122°F / -20° to 50°C
Humidity............. 0-90 %RH, non-condensing.
Location............. Indoor or Outdoor
Sensor Head..... Enclosure and retaining ring are black anodized aluminum, PVC, or 316 stainless steel; splash guard and most other accessories are made of PVC.
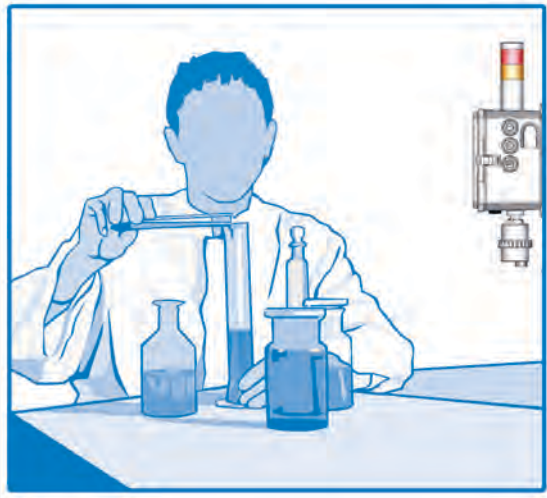
DISPLAYS & CONTROLS

Display................. 7 in. / 17.8 cm color LCD
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)
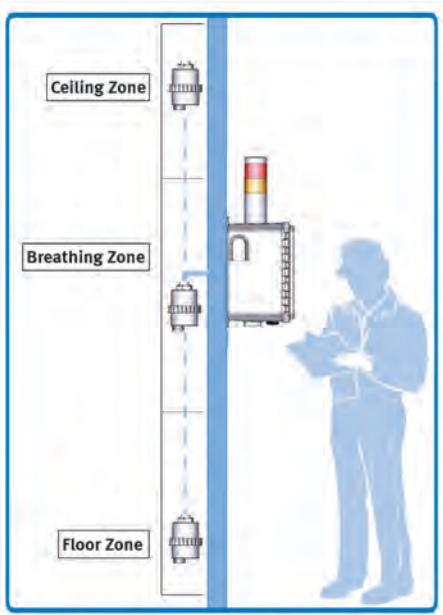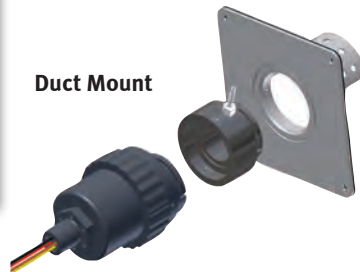Annunciators.... Audible (+95dB) & Visual single strobe with optional second strobe

APPROVAL RATINGS

TUV...................................... CAN/CSA C22.2 No. 61010-1-2012
UL 61010-1:2012
EN 61010-1:2010

CE Mark

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 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.
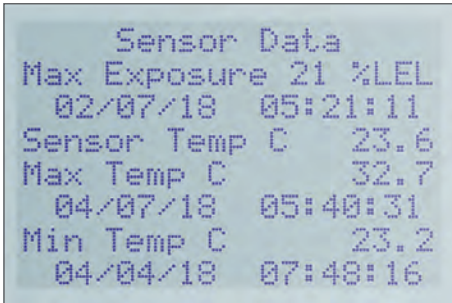
Detection at every point.
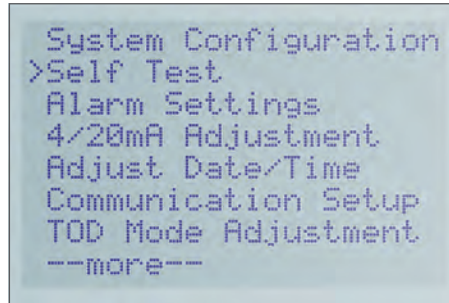
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SensAlert ASI Graphic Display and Menu
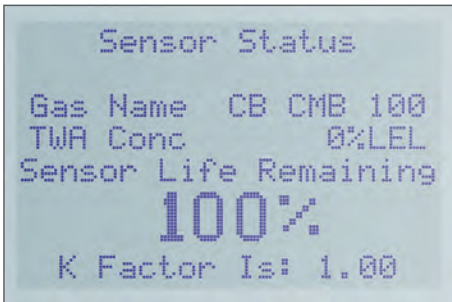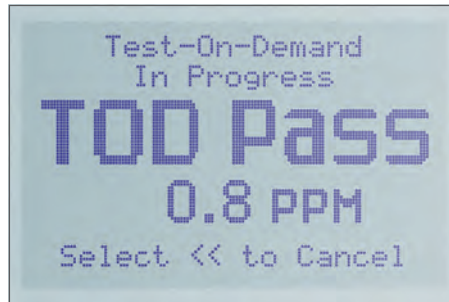

Main Display
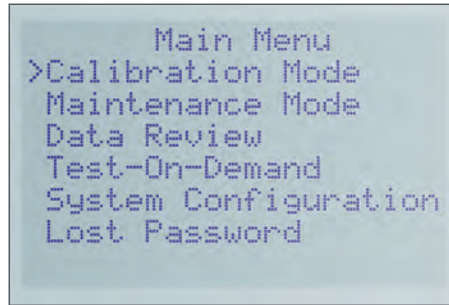
Main Menu

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 26 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/Power:
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 Link ...... 4-20mA current, non-isolated
2- or 3-wire options, RS-485 (Modbus), HART

Controls
Magnetic Keypad: .... ACK, << (Go Back), ▲, ▼
Security: .... Password Protected Configuration Menu

Displays
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
Temperature (Transmitter): .. -40°F to 158°F /-40°C to 70°C
Humidity (Transmitter) .... 0-90% RH, non-condensing
Temperature (Sensor): .... See Sensor Data Sheets
Humidity (Sensor): .... See Sensor Data Sheets
Moisture Resistance ..... IP54; IP56 with optional rainshield

Enclosure Options
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
Stainless Steel: .... Silver, 316 Stainless Steel
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: .... 13-16 lbs /5.9-7.3 kg
Long-dome .... Gray, Copper-free Cast Aluminum
Dimensions: .... 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
CE Mark .... ATEX Directive 2014/34/EU
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 details.

Embracing Intrinsic Safety for the ROI

I.S.

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.

SENSAIR®

Industrial Grade Gas Detection Meets Cost Effectiveness.

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, single gas design makes it the ultimate solution for OEM and high-volume applications.

Standard Sensor

Compact Sensor

Standard Sensor

Combustible:
Our most cost effective, hazardous area rated gas detector for chemical and hydrocarbon processing facilities.

- Factory Mutual (FM) and CSA Certified for Hazardous Classified Area Installation in Division 1 & Division 2 and ATEX / IECEx Zone 1 & Zone 2

- Available in Explosion-Proof 316 Stainless Steel and Aluminum Enclosures and Sensor Housings

- Robust, Poison-Resistant Catalytic Bead Sensor with Rapid Response

- Remote Mounted Sensor Option

- Sensor Offered in Standard or Compact Size Options

- On-Board Bright LED Display or Blind Models

- Non-Intrusive Zero & Span Adjustments

- 3-wire Design with 4-20mA Output

- Horizontal or Vertical Installation

Toxics and Oxygen Deficiency:
The ultimate solution for high-volume, price-sensitive gas detection installations.

- CSA Certified for Hazardous Classified Area Installation in Division 1 & Division 2 and ATEX/IECEx Zone 1 & Zone 2

- Aluminum, Stainless-Steel and Polymeric Enclosure and Sensor Holder Options

- Fast Response Electrochemical Sensors for Toxic Gases

- Highly Stable Electrochemical Sensors for Oxygen Deficiency Detection

- On Board Bright LED Display or Blind Models

- Non-Intrusive Zero & Span Adjustments

- 3-wire Design with 4-20mA Output; Options for Modbus and BACnet — Both Include 3 Additional Relays

- Horizontal or Vertical Installation

SensAir Configurations

![SensAir Combustible Point Gas Detector]

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

![Hand-held Controller with SensAir unit]

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

SensAir Models

SensAir 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 Combustible
　　Poison resistant catalytic bead. SensAir Combustible 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
　　　　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 Combustibles
　　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 details.***

ATEX ⟨Ex⟩ II 2G Ex db IIC T4 Gb
IECEX Ex db IIC T4 Gb
Class 1, Division 1, Groups B, C, D

For Standard Sensors:

Calibration Cup
#821-0611-01-R

Flow Block
#821-0612-01-R
(For Sample Draw)

Adaptor
#821-0615-02-R
(For Plus Accessories)

![Standard sensor accessories]

Rainshield
#821-0203-02

Duct Mount
#821-0614-01-R
(Adaptor)

Sensor Shield
#821-0610-01-R
(For Plus Series Calibration Plug)

For Compact Sensors:

Sensor Shield
(821-0603-01)

![Compact sensor accessories]

Flow Block
(821-0605-01)

Calibration Adapter
(821-0604-01)

PR

Poison Resistant Catalytic Bead Sensor in SensAir Combustible

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 Combustible is a proven proprietary poison resistant sensor, significantly reducing these problems and extending sensor life.

SENS*FLEX-2*

SensFlex-2 Dual Head Gas Detector for Application Versatility

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.

Detection at every point.
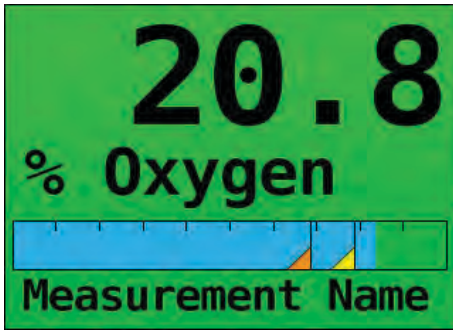
SensFlex Displays

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

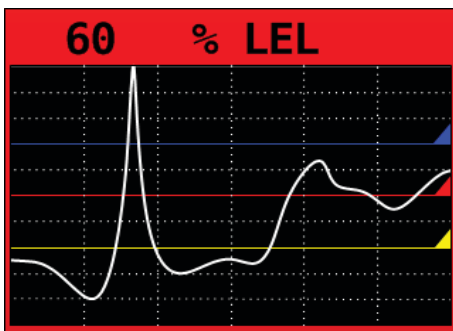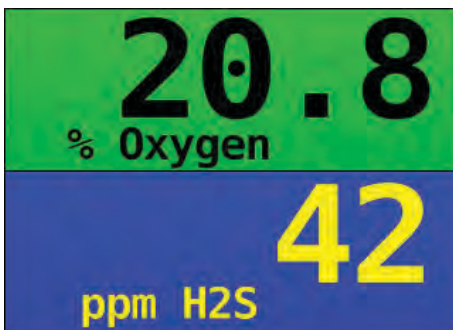| Gas Target/Type	Range
Acetylene	0-50% LEL
Ammonia	50 PPM, 100 PPM, 300 PPM, 500 PPM
Arsine	1 PPM
Bromine	1 PPM, 10 PPM
Carbon Dioxide	5% Vol, 1 PPM, 5 PPM
Carbon Monoxide	100 PPM, 500 PPM, 1000 PPM
Chlorine	5 PPM, 10 PPM, 20 PPM
Chlorine Dioxide	1 PPM, 5 PPM
Combustible (IR)	0-100% LEL
Combustible (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

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˚F 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

SENSFLEX-PID

SensFlex-PID - Fixed Photo-Ionization Detector (PID) Gas Detector

In SensFlex-PID, a flexible and highly-capable set of features combine to deploy of 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 a 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.

Detection at every point.

SensFlex Displays
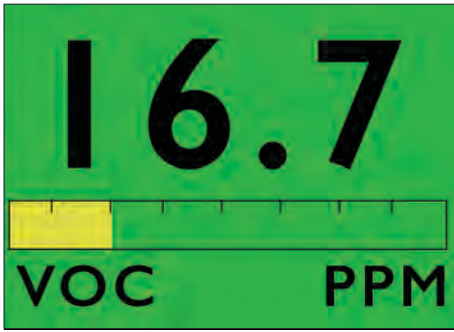
Bar Graph Screen

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.
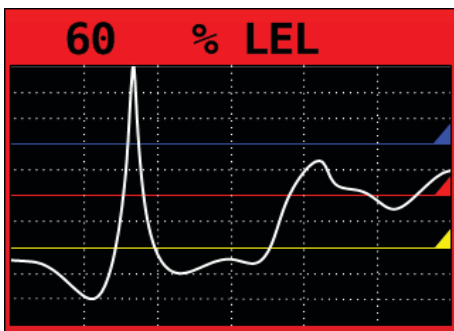
30-Minute Trend Screen

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

VOC Gas	PID 10.6eV Response Factor	Limit Values	100% LEL (% by Volume)	5% LEL (ppm)
Acetone	0.7	250 ppm TWA	2.5	1250 ppm
Benzene	0.5	1 ppm TWA	1.2	600 ppm
Hexane	4.2	500 ppm TWA	1.0	500 ppm
Hydrogen Sulphide	4.0	5ppm TWA	4.0	2000 ppm
Isopropyl Alcohol (also propan-2-ol)	4.4	200 ppm TWA	2.0	1000 ppm
Styrene	0.4	20 ppm TWA	1.0	500 ppm
Toluene	0.5	20 ppm TWA	1.0	500 ppm

Consult the factory or your local Sensidyne representative for full table of gases and compounds detectable with SensFlex-PID.

SensCast

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.

Detection at every point.

Example SensCast System Drawings

HMI via Computer or Mobile Device Browser

SensCast Receiver for up to 32 Points - NEMA 7 Enclosure

Datalogger

Relayer with Display and up to 5 SPDT Relays

SensCast Dual Head Transmitter

Wireless Controller Collecting Output from SensCast Receiver

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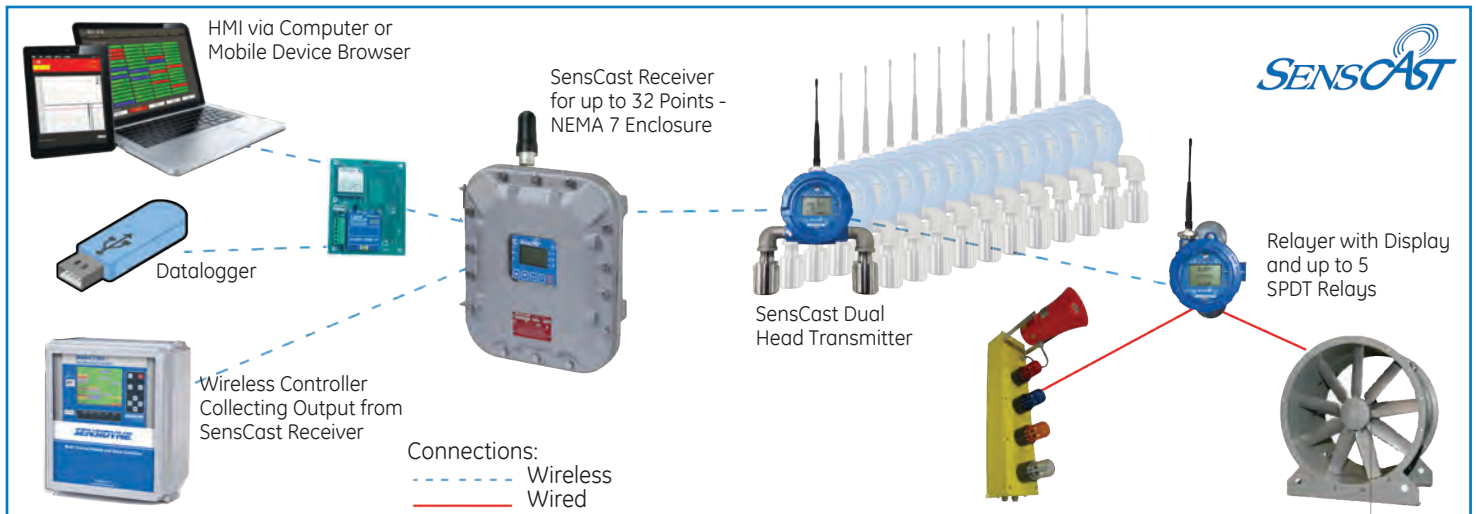
Drawing 1: *SensCast Transmitters transmit wirelessly to the SensCast Receiver. The Receiver sends Transmitter output via wifi or Modbus (wireless or wired). The SensCast Relayer actively "listens" for alarm or fault conditions and activates annunciators or hazard mitigation systems connected to one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

Wireless Controller Collecting up to 64 Points.

DCS/PLC via Wireless Modbus

SensCast Receiver for up to 32 Points

SensCast Transmitters

Relayer with Display and up to 5 SPDT Relays

HMI via Computer Browser

Connections:
- - - - - - Wireless
———— Wired
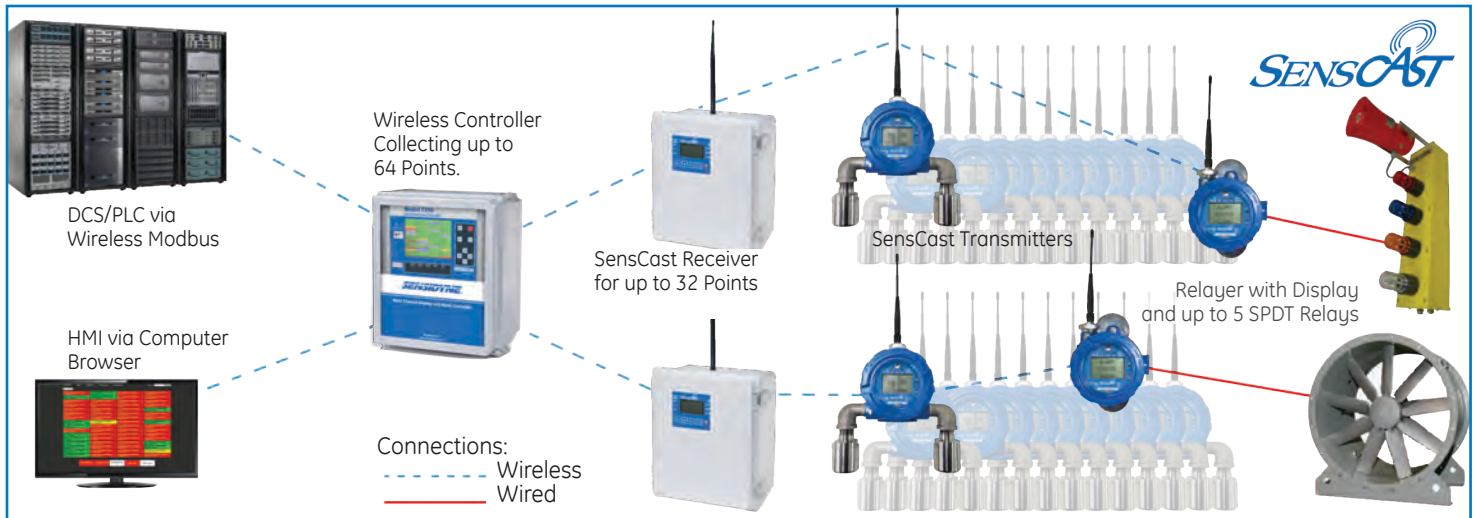
Drawing 2: *Two independent networks consisting of a Receiver and 32 SensCast Transmitters (or 16 Dual Head Transmitters) exist in one facility. A Sensidyne wireless-enabled controller (Model 7200 shown) collects all 64 outputs sending them to a DCS or PLC via wireless Modbus. A SensCast Relayer actively "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. Internal 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.

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.

Description	Part Number
Alarm Annunciator, Dual Strobes, High Red, Low Amber, includes power supply	821-0016-02
Alarm Annunciator, Hi Red, Low Amber, and Sounder, including power supply	821-0016-03
Alarm Annunciator, Hi Red, Hi Sounder, including power supply	821-0016-04
Alarm Annunciator, Hi Red, Hi Sounder, no power supply	821-0016-08
Alarm Annunciator, Hi Sounder, Low Amber strobe, includes power supply	821-0016-01
3-Port Power Module, 10 watt, 24 VDC (85-265 VAC)	821-9904-01
Class 1, Division 2, 123-230 VAC Strobe only for mounting by user – Red	208-0003-04
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

Detection at every point.

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.
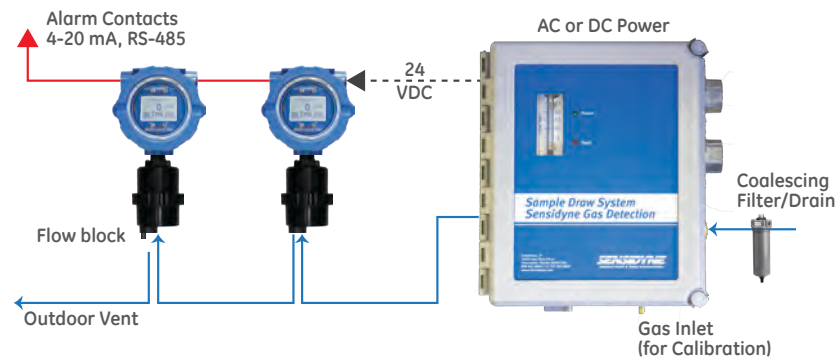
Technical Specifications

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 U.S. ...... FM 3600:2011, FM 3611:2004, FM3819:2005, ANSI/ISA 61010-1:2004
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, 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.

Alarm Contacts
4-20 mA, RS-485

AC or DC Power

24 VDC

Coalescing Filter/Drain

Flow block

Outdoor Vent

Gas Inlet (for Calibration)

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.

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

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 × 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 × 12.8" H × 6.3" D 28.4 W × 32.5 H × 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.

Description	Part Number
SensAlert 4-Channel Controller	7013227-3
Controller with Red Strobe	7013227-4
Controller with Dual Strobe	Call Factory
Controller for Use with SensAir Combustible	7013227-5

Detection at every point.

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-Plus 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

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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-3) 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-3) 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.

![SPECTREX INC. logo]

SharpEye 40/40 Models

D-Series: 40/40D-I
Multispectrum Quad-Sense IR3 for an exceptional ultra fast detection of hydrocarbon fires at up to 300 ft. (90 m) in under 50 msec

D-Series: 40/40D-M
Multispectrum Quad-Sense IR3 for an exceptional ultra fast detection of hydrogen at up to 165 ft. (50 m) and hydrocarbon fires at up to 300 ft. (90 m) in under 50 msec

D-Series: 40/40D-LB
Integrated UV/IR channels for an ultra fast detection of hydrocarbon-based fuel and gas, hydroxyl, hydrogen, metal, inorganic fires in under 20 msec

D-Series: 40/40D-L4B
Integrated UV/IR channels for an ultra fast detection of hydrocarbon-based fuel and gas fires in under 20 msec

C-Series: 40/40C-I
Multispectrum Quad-Sense IR3 detection of hydrocarbon-based fuel and gas fires at up to 215 ft. (65 m).

C-Series: 40/40C-M
Multispectrum Quad-Sense IR3 detection of hydrocarbon fires and hydrogen flames at up to 215 ft. (65 m).

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C-Series: 40/40C-LB
Integrated UV/IR channels for a fast detection of hydrocarbon and hydrogen flames in under five seconds.

C-Series: 40/40C-L4B
Integrated UV/IR channels for a fast detection of hydrocarbon-based fuel and gas, hydroxyl, hydrogen, metal and inorganic fires in under five seconds.

SharpEye 20/20 Models - mini

The 20/20 models are mini triple spectrum infrared flame detectors (IR3) with high performance and high reliability in a compact size for when space is at a premium. Lightweight and cost effective, there's an indoor model perfect for retail (20/20MPI) and an outdoor model suitable for more harsh conditions (20/20MI).

Technical Specifications

Detectors
Vary by model - see individual spec sheets

Performance
Response Time .... Typically 5 seconds
Adjustable Time Delay .... Up to 30 seconds
Sensitivity Range........................Selectable - see datasheet
Field of View .... Horizontal up to 100°, Vertical up to 95°
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 × 3/4" - 14NPT conduits or 2 × M25 × 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 w/ electro polish finish
Dimensions ....Detector 4" x 4.6" x 6.18" (101.6 × 117 × 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 - SIL3 (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.

SPECTREX INC.

SafEye for Combustible and Toxic Gas Detection Applications

SafEye Quasar 900 (901-904) – Combustible Hydrocarbon Detection

Safeye Quasar 900 quickly and sensitively detects a wide range of gases from distances up to 660 feet (200 meters) – 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 200 feet (60 meters) and due to their inherent stability and sensitivity, the minimum detectable level is 50 PPM.m.

Technical Specifications

Detected Gas
SafEye Quasar 900 ....C1 - C8
(See separate Specs for the 950 and 960 toxic detectors)

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)
Minimum Detectable Level ....0.15 LEL.m
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 Compatible ....The RS-485 input/output provides complete data information to a PC and receives control 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 II 2(2)G D
Ex db eb ib [ib Gb] IIB + H2 T4 Gb
Ex tb IIIC T135°C Db
Ta = −55°C to +65°C
FM/FMC Approved per:
Class I Div 1 Groups B, C and D
Class II,III Div 1 Groups E, F and G
TR CU/EAC Approved per:
1Ex d e ib [ib Gb] IIB + H2 T4 Gb X
Ex tb IIIC T135°C Db X
Inmetro Approved per:
Ex db eb ib [ib Gb] IIB_H2 T4 Gb
Ex tb IIIC T135°C Db
Performance
Approved per FM6325 and tested by FM per EN60079-29-4
Reliability
SIL2 per IEC61508 (TUV)

40-meter path
7m wide cloud
20% LEL
40% LEL
70% LEL
Point type detector
SafEye Source
SafEye Detector
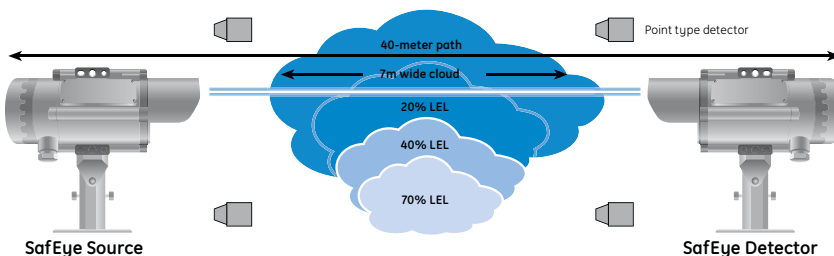
Depict the relationship between fixed point gas detectors and SafEye 900 Open-Path will measure 20% LEL x 7m = 1.4 LEL.m - well above 1 LEL.m alarm level

100m
1m
Gas Cloud 100% LEL
SafEye Source
SafEye Detector
1 LEL Meter
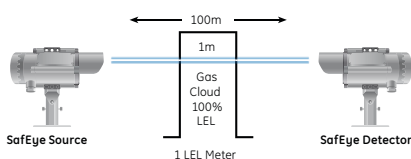
1 LEL meter (1 LEL.m) = a cloud of 100% LEL methane gas that is 1 meter wide

100m
20m
Gas Cloud 5% LEL
SafEye Source
SafEye Detector
1 LEL Meter
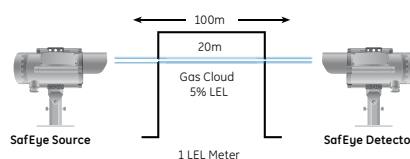
1 LEL meter (1 LEL.m) = a cloud of 5% LEL methane gas that is 20 meter wide

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 SensAlarm 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. This is the ultimate use of Transportability.

Contact the Sensidyne Service Team at 800-451-9444, +1 727-530-3602 x783, or GasDetectionService@Sensidyne.com.

Detection at every point.

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 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

Test-On-Demand (ToD)
Type S 821-0204-06
Type C 821-0204-02

Sensor Head
O-ring
821-0217-01

Remote Calibration
Adapter
821-0218-01
PVC: 821-0218-02

Sensor Shield
821-0214-01

Calibration Plug
821-0223-01

Rainshield
821-0203-01
w/Cal Port 823-0203-02

Bayonet Sensor
Holder
821-0209-01

Bayonet Remote
Calibration Adapter
7013442

Duct Mount
Accessory
821-0209-02

Remote Sensor Kit
STD 821-0207-01
XP 821-0207-02

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	Part #	Description
009824-68	Acetylene, 1.25% vol / 50% LEL in Air	009824-79	Hydrogen Cyanide, 25 ppm in Nitrogen
009824-57	Ammonia, 25 ppm in Nitrogen	009824-33	Hydrogen Sulfide, 25 ppm in Nitrogen
009824-38	Ammonia, 50 ppm in Nitrogen	009824-10	Hydrogen Sulfide, 50 ppm in Nitrogen
009824-78	Ammonia, 150 ppm in Nitrogen	009824-6	Hydrogen, 2% vol / 50% LEL in Air
009824-67	Ammonia, 300 ppm in Nitrogen	009824-90	Isobutylene, 200 ppm in Air (for PID)
009824-4	Carbon Monoxide, 50 ppm in Nitrogen	009824-2	Methane, 1.5% vol / 30% LEL in Air
009824-53	Chlorine, 2 ppm in Nitrogen	009824-3	Methane 2.5% vol / 50% LEL in Air
009824-34	Chlorine, 5 ppm in Nitrogen	009824-61	Propane 1.05% Vol / 50% LEL in Air
009824-44	Chlorine, 10 ppm in Nitrogen	009824-8	Sulfur Dioxide, 5 ppm in Nitrogen
009824-56	Hydrogen Chloride, 5 ppm in Nitrogen	009824-39	Sulfur Dioxide, 10 ppm in Nitrogen
009824-37	Hydrogen Chloride, 10 ppm in Nitrogen	009824-12	Zero Air, 100% Volume,
009824-42	Hydrogen Chloride, 50 ppm in Nitrogen	009824-15	Zero Gas for Infrared 100% Nitrogen
009824-54	Hydrogen Cyanide, 10 ppm in Nitrogen	009824-25	Zero Gas for others incl. IR, 20.9% O2
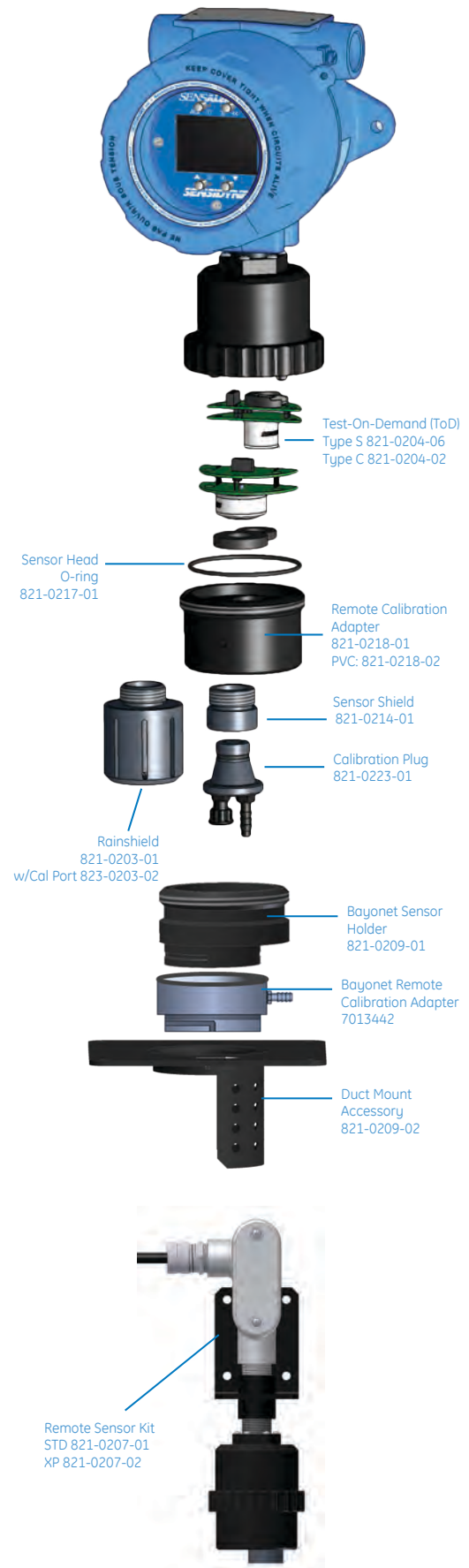
Plus Series Sensor Data

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

Part Number	Target Gas or Vapor	Sensor Data			Gas Data [2]				ToD	Response Time		Default Alarms			SensAlert 4 Channel
		Span	FM	Type [1,3]	Formula	Density	TLV-TWA	IDLH	Cell	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
823-0201-43	Ammonia	250 ppm	--	EC-LI, D	NH3	0.6	25 ppm	300 ppm	n/a	10	50	25	55	75	No
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	n/a	--	30	0.1	0.2	0.5	Yes
823-0222-21	Bromine	10 ppm	FM	EC, D	Br2	5.5	3.0 ppm	3 ppm	C	--	40	--	--	--	No
823-0222-22	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.	--	Infrared	CO2	1.5	0.50%	3.00%	n/a	--	30	0.5	1	3	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	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	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	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	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	0.1	0.3	0.5	Yes
823-0239-42	Chlorine Dioxide	5.00 ppm	FM	EC, ND	ClO2	2.3	0.1 ppm	5 ppm	C	--	30	0.5	1	1.5	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
823-0210-61	Hydrogen Specific LEL	100% LEL	--	EC, ND	H2	0.07	Asphyxiate	--	n/a	40	120	10	20	50	Yes
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	n/a	--	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

Part Number	Target Gas or Vapor	Sensor Data			Gas Data [2]				ToD	Response Time		Default Alarms			SensAlert 4 Channel
		Span	FM	Type [1][3]	Formula	Density	TLV-TWA	IDLH	Cell	T50	T90	Low	High	Hi-High	
823-0245-22	Ethylene Oxide (ETO)	500 ppm	--	EC, ND	C2H4O	1.5	1 ppm	800 ppm	n/a	15	60	200	250	400	No
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	- -	n/a	- -	30	0.2	0.5	1	Yes
823-0210-21	Hydrogen Specific PPM	1000 ppm	FM	EC, ND	H2	0.07	Asphyxiate	- -	n/a	20	70	100	250	500	Yes
823-0210-61	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	10	- -	No
823-0208-22	Hydrogen Chloride	20.0 ppm	FM	EC, ND	HCl	1.3	2 ppm	50 ppm	S	15	30	5	10	15	Yes
823-0208-41	Hydrogen Chloride	100 ppm	FM	EC, ND	HCl	1.3	2 ppm	50 ppm	S	12	40	10	20	30	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	6	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	3	7	Yes
823-0207-22	Hydrogen Fluoride	20.0 ppm	FM	EC, D	HF	0.7	0.5 ppm	30 ppm	C	15	45	2	3	- -	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	200	250	400	No
823-0242-21	Nitric Oxide	100 ppm	--	EC, ND	NO	1	25 ppm	100 ppm	n/a	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	5	9	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	Yes
823-0243-21	Ozone	1 ppm	--	EC, ND	O3	1.1	<19.5%	<18%	C	- -	150	0.1	0.2	0.5	No
823-0243-22	Ozone	2.00 ppm	--	EC, ND	O3	1.6	0.1 ppm	5 ppm	C	- -	150	0.1	0.2	0.5	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	n/a	- -	30	0.15	0.3	0.6	Yes
823-0214-21	Silane	10.0 ppm	--	EC, ND	SiH4	1.3	5 ppm	- -	n/a	- -	30	2.5	5	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	4	- -	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	4	8	Yes
823-0218-23	Sulfur Dioxide, H2S Filtered	100 ppm	--	EC, ND	SO2	2.3	2 ppm	100 ppm	n/a	5	30	10	15	20	No

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.

Detection at every point.

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.

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www.Sensidyne.com

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