



Gas Detection for Heating, Ventilation, & Air Conditioning (HVAC) Systems in Commercial and Industrial Facilities

Detection Combustible & Toxic Gases
and Monitoring Oxygen Levels

SENSALERT® ASI

Industry-leading reliability, SensAlert ASI is the ideal fixed-point gas detector for critical safety applications. Flexible configurations and a simple interface provide maximum application versatility while remaining the easiest to install, commission, operate, and maintain.



- Functional Safety, unquestionable reliability**
Third-party SIL-2 certification validating long-term reliability
Sensors are performance tested and certified providing assured capability
Sensor Test-On-Demand, with on-board gas generator
- Universal platform with Intrinsically Safe sensor head**
Replace sensors without area declassification or work permits
Shop calibrate then hot-swap gas sensors in classified areas
Remote mount sensor up to 100 ft./30 m. away without rigid conduit
Modbus, HART, and 4-20 mA communication options
- Intelligent Plus Series sensors**
Auto-recognition and set-up from sensor memory
Extensive sensor range for Flammables/Combustibles, Toxics, and Oxygen
Compatible with all Plus Series sensor ranges and technologies
- Flexible installation or retrofit**
2-wire and 3-wire transmitter models with global performance approvals
Unrestricted installation and operation in hazardous classified areas
Non-intrusive configuration and maintenance Interface
Configurable alarms & warnings for hazard mitigation and notification



For price sensitive applications SensAir provides a reliable and low cost alternative to premium gas detectors. These robust gas detectors have long-life sensors and simple user interfaces. Available for hazardous and non-hazardous classified installations, SensAir is an excellent choice for retrofit and large quantity applications as commonly found in HVAC systems.

Gas Detection for HVAC Systems

Modern HVAC systems deliver air to manned and unmanned areas for comfort and health of occupants. While these systems are more advanced than ever, an appropriately matched and engineered solution for gas detection is a critical element for the safety of occupants. And while common to consider residential or commercial spaces when thinking of HVAC systems, these systems are also found within industrial facilities such as chemical process and petroleum plants where they perform critical functions for workers and support personnel. Both the more common residential and commercial as well as industrial HVAC systems require attention and consideration since ventilation systems can transport combustible and toxic gases from a source to other areas, bringing the dangerous gases into non-hazardous areas, like control rooms, living quarters, electrical switch rooms, and equipment rooms.

Government agencies, industry groups and many leading companies have established procedures for exhaust/ventilation system safety to minimize the potential for the inadvertent transport of dangerous gases. These regulations can be found in one of several sources governing your facility to include NFPA, NEC, and OSHA regulations. Through early detection, gas detectors reduce the risks of releases migrating to other

facility areas by signaling operators and occupants that their safety may be at risk.

HVAC Dangers and Risks
Air velocity, dilution, and stratification are common challenges for gas detection within HVAC systems. Since air flows turbulently through ducts at 2,000 – 6,000 ft/min (23 – 68 mph), selected sensors must be designed to withstand high ventilation rates.

Gas detection sensors deployed within HVAC systems must have low detection levels and remain accurate given the high air velocity found within these systems. A second challenge for gas sensing gas released within HVAC systems is dilution. As air enters the ductwork, it mixes with circulated air that dilutes gas concentration. As a result, gas sensors tailored for duct applications must be highly sensitive. Low detection limits enable operators to set warning and alarm set points at a few parts per million, as low concentrations of detected gas may be indicative of much higher concentrations in the air stream. Engineered mounts that place the sensor within the duct can be very helpful in ensuring early detection.

Stratification presents a challenge for gas detection since duct networks contain bends, expansions, contractions, and other directional features. Contractions and expansions can create

vortexes where gases can accumulate leading to improper sampling of air. Preventing risks as a result of uneven mixing, detection systems are designed with extended sampling lengths or distributed across the duct width to ensure optimal area coverage.

Exhaust/ventilation systems are often exposed to the ingress of smoke, combustible, and toxic gases from hazardous areas. To reduce their vulnerability, these systems should be equipped with gas sensors, which are installed in a manner that anticipates the adverse effects of ventilation rate, dilution and stratification in order to detect gas accumulations in the low parts per million.

Monitoring for Gas Hazards
As air comes in from the outside and downstream of the air return. Sensors should be mounted along the duct cross section in order to ensure optimal area coverage and static mixers are introduced to prevent gas stratification. Sensidyne offers a range of sensor technologies for early and rapid detection of gases within HVAC systems. Mounting options include direct mounting, remote sensor mounting inside the ductwork and remote sampling to bring samples across the face of sensor.

FM Certified Gas Detection Sensors for Natural Gas Processing Plants

Part Number	Gas	TLV TWA	NIOSH IDLH	Sensor Span Units	Response Time, T-50	Operating Temperature, Humidity
823-0201-22	NH3	25 PPM	300 PPM	0-50 PPM	11 sec	-4° to 122° F, 15-90% RH
823-0201-21	NH3	25 PPM	300 PPM	0-100 PPM	11 sec	-4° to 122° F, 15-90% RH
823-0201-41	NH3	25 PPM	300 PPM	0-300 PPM	10 sec	-4° to 122° F, 15-90% RH
823-0206-23	H2S	1 PPM	100 PPM	0-10.0 PPM	10 sec	-40° to 122 F°, 15-90% RH
823-0206-22	H2S	1 PPM	100 PPM	0-50 PPM	10 sec	-40° to 122 F°, 15-90% RH
823-0206-21	H2S	1 PPM	100 PPM	0-100 PPM	10 sec	-40° to 122 F°, 15-90% RH
823-0205-52	CO2	0.50%	4.00%	0-5.00%	60 sec	-4° to 122 F°, 15-95% RH
823-0219-23	CO	25 PPM	1,200 PPM	0-100 PPM	10 sec	-4° to 122 F°, 15-90% RH
823-0219-22	CO	25 PPM	1,200 PPM	0-500 PPM	10 sec	-4° to 122 F°, 15-90% RH
823-0240-31	O2	19.50%	18.00%	0-25%	4 sec	-4° to 122 F°, 5-90% RH
823-0221-21	NO2	1 PPM	20 PPM	0-10.0 PPM	10 sec	-4° to 122 F°, 15-90% RH
823-0218-22	SO2	2 PPM	100 PPM	0-10.0 PPM	10 sec	-4° to 122 F°, 15-90% RH
823-0218-21	SO2	2 PPM	100 PPM	0-20.0 PPM	10 sec	-4° to 122 F°, 15-90% RH
823-0211-51	NGLs, CH4	10% LEL	- -	0-100% LEL	10 sec	-13° to 167 F°, 15-90% RH

SENSALERT PLUS

Universal Point Gas Detector Accepting Combustible
(Infrared or Catalytic), Toxic, and Oxygen Gas Sensors



The new 40/40I Triple IR (IR3) Flame Detector detects fuel and gas fires at long distances with the highest immunity to false alarms. The 40/40I IR3 can detect a 1ft² (0.1m²) gasoline pan fire at 215 ft (65m) in less than 5 seconds. The 40/40I is the most durable and weathe-resistant flame detector currently on the market. Due to increased reliability, the 40/40 Series warranty period has been extended to 5 years and is SIL2 approved to IEC 61508.



SafEye 700 Open Path Gas Detector has superior Xenon Flash with 10 year warranty and 3-years on the electronics. Made of all 316L ss, it has heated optics to withstand severe environmental conditions and a data port for maintenance or configuration changes. Path lengths up to 460 feet are available.

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