Fixed Type Gas Detectors

Continuous Gas Monitoring. Reliable Detection. Enhanced Industrial Safety.

Fixed Type Gas Detectors are designed for continuous monitoring and early detection of hazardous gas leaks in industrial environments. These systems help protect personnel, equipment and industrial facilities against potential fire, explosion and toxic gas exposure hazards.

Installed at strategically selected locations, fixed gas detectors continuously monitor gas concentrations in the surrounding atmosphere and transmit signals to Gas Detection Control Panels, PLC, DCS or SCADA systems for alarm generation and necessary safety actions.

Key Features & Benefits

- **Continuous Gas Monitoring:** Provides round-the-clock monitoring of combustible, toxic and oxygen gases.
- **Multiple Detection Technologies:** Available with Catalytic Combustion, Hotwire Semiconductor, Electrochemical and Infrared (IR) sensor technologies.
- **Diffusion & Suction Type:** Available in both diffusion-type and suction-type configurations to suit different industrial monitoring requirements.
- **Wide Gas Detection Capability:** Suitable for monitoring LPG, PNG, Methane, Propane, Hydrogen, Ammonia, Oxygen, Refrigerant gases and other industrial gases.
- **Early Leak Detection:** Provides timely warning of hazardous gas concentrations to minimise potential safety risks.
- **Multiple Output Options:** Available with 4–20 mA, relay contacts, RS485 Modbus and other communication interfaces, depending on the model.
- **Explosion-Proof Design:** Available with certified explosion-proof enclosures for installation in hazardous areas.
- **Local Indication:** Optional digital display and LED indication for gas concentration, alarm and fault conditions.
- **Industrial-Grade Construction:** Robust construction for reliable operation in demanding industrial environments.
- **System Integration:** Compatible with Gas Detection Control Panels, PLC, DCS, SCADA and plant safety systems.

Types of Fixed Gas Detectors

1. Diffusion Type Gas Detectors

Diffusion Type Gas Detectors detect gas concentrations through the natural movement of gas molecules into the sensor. These detectors are generally installed at strategically selected locations where continuous monitoring of the surrounding atmosphere is required.

Key Applications:

- General industrial gas leak monitoring
- LPG ,PNG, Hydrogen , Ammonia & other industrial gases installations.

- Chemical and petrochemical plants
- Gas storage and handling facilities
- Compressor rooms and process areas

2. Suction Type Gas Detectors

Suction Type Gas Detectors operate by drawing air or gas samples from the monitoring area through a sampling tube or probe using an internal or external sampling pump. The extracted sample is transported to the detector for gas concentration measurement.

These detectors are particularly useful for monitoring locations where direct installation of sensors is difficult or where remote sampling is required.

Key Applications:

- Remote gas leak monitoring
- Enclosed and restricted-access areas
- Multiple-point gas sampling applications
- Industrial process equipment monitoring
- Areas requiring sample extraction through tubing

Sensor Technologies

Fixed Type Gas Detectors are available with different sensor technologies to suit specific gas detection requirements.

1. Catalytic Combustion Type

Based on the catalytic combustion principle, these sensors detect combustible gases by measuring the change in electrical resistance caused by the heat generated during catalytic oxidation of the gas.

Typical Applications: LPG, Methane, Propane, Hydrogen and other combustible gases.

2. Hotwire Semiconductor Type

These sensors use semiconductor sensing elements whose electrical resistance changes in the presence of target gases. They are suitable for detecting selected combustible gases and vapours, depending on the sensor design.

Typical Applications: Combustible gases, LPG, solvent vapours and other specified gases.

3. Electrochemical Type

Electrochemical sensors detect specific gases through an electrochemical reaction that generates an electrical signal proportional to the gas concentration.

Typical Applications: Ammonia, Carbon Monoxide, Hydrogen Sulphide, Chlorine, Oxygen and other toxic gases, depending on the sensor configuration.

4. Infrared (IR) Type

Infrared gas detectors operate on the principle of infrared absorption by gas molecules at specific wavelengths. These sensors provide reliable detection of selected gases and are particularly suitable for hydrocarbon gas monitoring.

Typical Applications: Methane, LPG, Propane and other infrared-detectable hydrocarbon gases, depending on the detector model.

Purpose & Applications

Fixed Gas Detection Systems are widely used for continuous monitoring and protection in:

- LPG and PNG storage and handling facilities
- Oil & Gas industries
- Petroleum refineries and petrochemical plants
- Chemical and pharmaceutical industries
- Battery manufacturing and charging areas
- Hydrogen production and storage facilities
- Ammonia refrigeration plants
- Oxygen storage and distribution systems
- Power plants and industrial utilities
- Paint shops and solvent storage areas
- Compressor rooms and gas manifold installations
- Industrial process plants and confined-space monitoring areas

Technical Specifications

Parameter	Specifications
Target Gases	Combustible gases, toxic gases, oxygen and selected refrigerant gases
Detection / Sampling Type	Diffusion type and suction type
Sensor Technologies	Catalytic Combustion, Hotwire Semiconductor, Electrochemical and Infrared (IR)
Detection Range	%LEL for combustible gases; ppm for toxic gases; vol% for oxygen (model dependent)
Output Signal	4–20 mA, RS485 Modbus, relay contacts and other options (model dependent)
Display	Optional digital LCD/LED display
Alarm Indication	Local LED indication and optional audible/visual alarm
Power Supply	Typically 24 V DC (model dependent)
Enclosure	Industrial-grade housing with explosion-proof options
Ingress Protection	Available up to IP66/IP67, depending on model
Mounting	Wall, pipe or suitable industrial mounting arrangements

Operating Temperature	Model and sensor dependent
Calibration	Periodic inspection and calibration as per manufacturer's recommendations

Note: Actual specifications, detection ranges, sensor technologies, output configurations and certifications vary according to the selected gas detector model and manufacturer.

Brands We Deal In

ASCO India Technologies LLP offers fixed gas detection solutions from internationally recognised manufacturers:

- **New Cosmos – Japan**
- **Tecnocontrol – Italy**
- **Industrial Scientific – International**
- **Other Reputed/PESO approved brands**

Our Services

ASCO India Technologies LLP provides comprehensive services for industrial gas detection requirements:

- Supply of fixed type gas detectors
- Gas detection system design and engineering
- Detector selection and installation
- Diffusion and suction-type detection solutions
- Gas detection system integration with PLC/DCS
- Commissioning and functional testing
- Periodic inspection and calibration
- Annual Maintenance Contracts (AMC)



Suction type gas detector



Diffusion type gas detector



Referedgent gas detector



Industrial Gas Detector



Industrial gas detector (without display)



Detector calibration kit