

# Gas Detection



## Automatic gas detection systems for the marine environment



Reliable gas detection systems are of vital importance for the purpose of saving lives and protecting the environment at sea. The Vimex Gas Detection System is a fully furnished system for detection of flammable and toxic gases for the most demanding marine applications.

Being designed to conform with IMO SOLAS Chapter II-2, «Fire Protection, Fire Detection and Fire Extinction», the system is particularly suited for monitoring enclosed rooms such as cargo pump rooms, ballast tanks, air ducts and void spaces.

The Vimex Gas Detection System is highly configurable to meet ship owner requirements, ship types and classification requirements. It can be delivered as an aspiration system with detection sensors integrated into the central alarm cabinet, with fixed sensors on different vessel locations or as a combination of both solutions.



The standard system is equipped with catalytic combustible sensors, but infra-red detectors are also available. Our system can be customised to include detection of oxygen or refrigerant gases, integration of bilge, fire and temperature alarms or other options as requested.

- Custom made system according to current rules and regulations
- Approved by DNV GL
- Measures all types of toxic gases and oxygen

- Catalytic combustible or IR sensors
- Support 24/7 with service facilities in major ports
- Annual on-board calibration and service
- Worldwide supply of calibration gases
- Installation in Zone 0 or Zone 1
- Safe and easy operation
- Local and remote monitoring
- Limited maintenance costs
- Simple replacement of modules
- High quality components from renowned manufacturers



The Vimex Gas Detection System consists of an alarm cabinet with a control panel, a number of gas detectors and an optional remote alarm panel.

The alarm cabinet is a stainless steel enclosure for floor or wall installation in safe area. The cabinet can also be designed for installation in hazardous areas.

The cabinet has a built-in audible alarm buzzer, but it is easy to add other external alarm devices, such as a rotating light and horn.

The wall mounted solution is used when the gas detectors are field-mounted in the hazardous areas. Gas concentrations measured by the detectors are then sent to the cabinet as electrical signals through standard transmission protocols.

The floor mounted solution is used if the complete gas sampling system is contained by the cabinet - including gas detectors, a suction pump, flow meters, flame arrestors, sample lines and all necessary fittings. The sample points are controlled by solenoid valves.

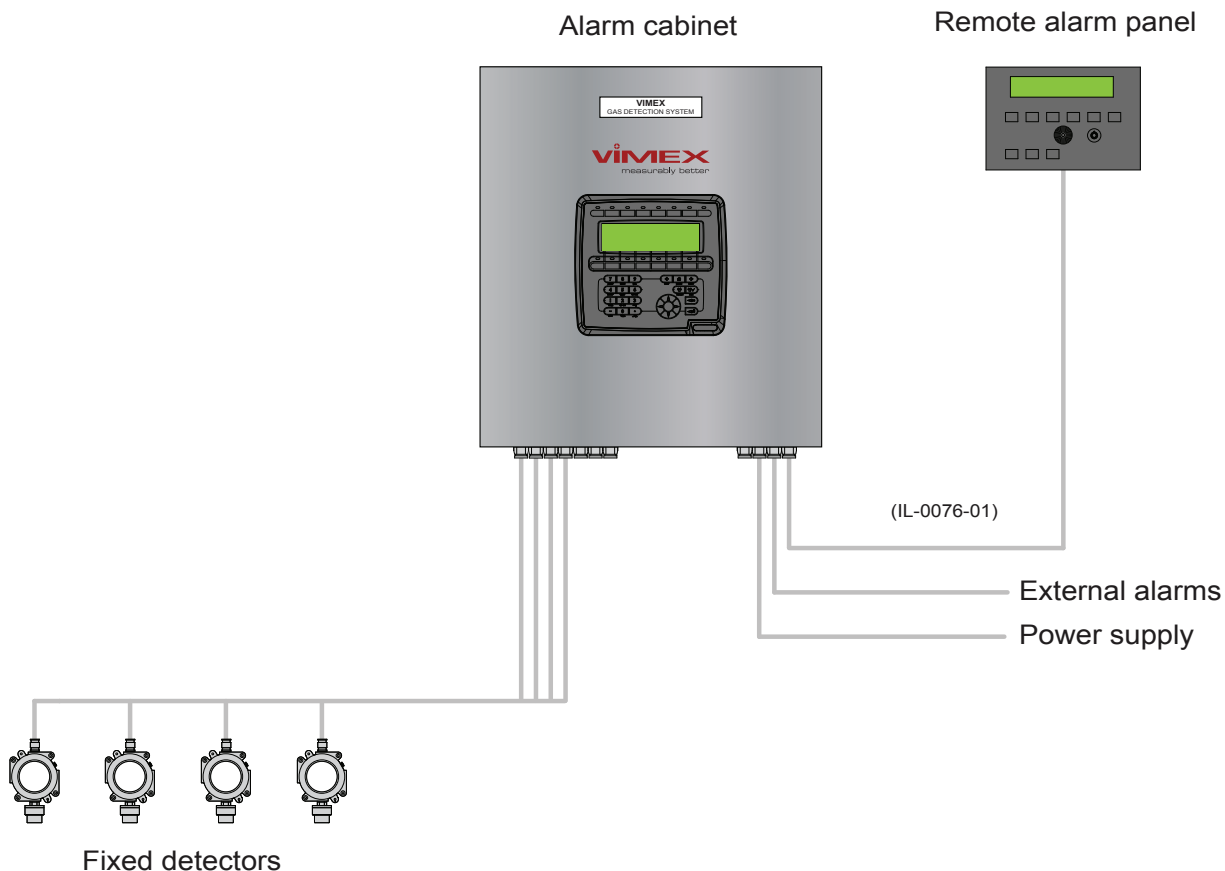
The floor mounted system will purge each line before sampling to remove moisture or other contaminants. Purging will also automatically take place if low suction pressure is detected. This will further trigger a flow alarm.

The system will also apply counter pressure on all sampling lines not being selected. This will prevent water entering the sampling lines if overpressure develops in the enclosed spaces, for example in ballast tanks.

#### HAZARDOUS AREA, ZONE 1

#### SAFE AREA

#### BRIDGE / ECR



The control panel is designed with user-friendliness in mind - holding control buttons and self-explaining display menus and commands. Typical operations are alarm acknowledgement and manual stream selection.

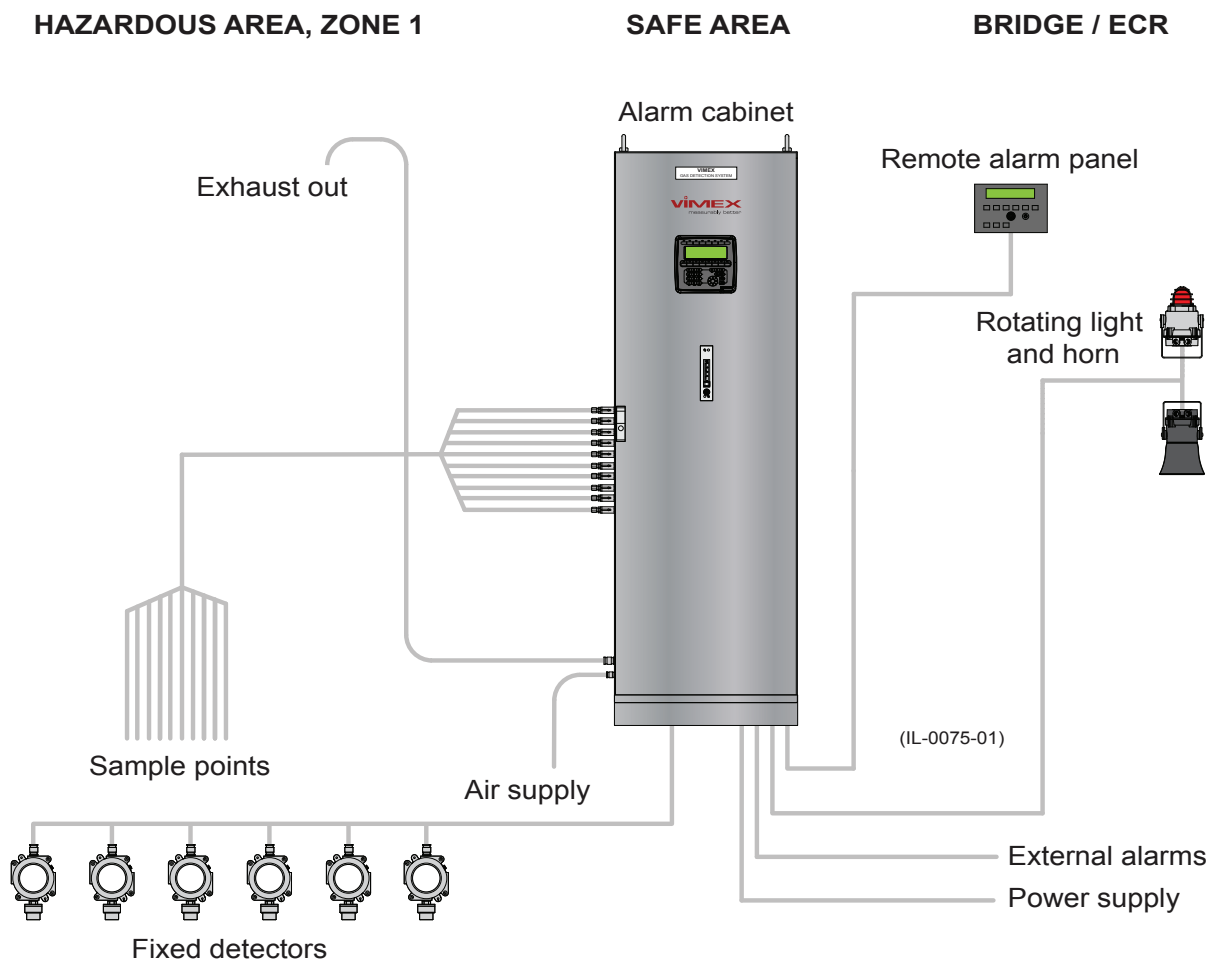
The control panel will be located as required by the ship owner. It will normally be installed as a stand-alone unit in the Cargo or Engine Control Room (CCR/ECR) or be mounted in the cabinet front.

The sampling system is based on a sequential scanning method. This means that all sampling points are monitored individually in a repeating cycle. The system is scalable for up to 50 sampling points.

Management of system processes, including alarm generation and interfacing peripheral units, is provided by an internal fail-safe Programmable Logic Controller.

An optional remote alarm panel can be connected to the cabinet. The remote panel can only be used for monitoring purposes.

The Vimex Gas Detection System is designed as a stand-alone system, but it is possible to interface our system with principal vessel systems in control rooms or on the bridge.



## Technical specifications

### Gas measurements

- Hydrocarbons (HC)
- Hydrogen sulphide (H<sub>2</sub>S)
- Oxygen (O<sub>2</sub>)
- Carbon monoxide (CO)
- Hydrogen (H<sub>2</sub>)
- Refrigerant gases
- Other gases on request

### Sampling system

- 1 to 50 sample points
- Sample cycle < 45 minutes

### Cabinet dimensions (HxWxD)

- 1900 x 600 x 400 mm (floor)
- 500 x 500 x 300 mm (wall)

### Cabinet materials

- Cold rolled corrosion treated steel plate
- Final coating: Epoxy varnish
- Colour: RAL 7035 Grey

### Alarms

- Low and high level gas alarm
- Low flow alarm

### Communication

- Serial interface RS-485 / TCP
- Modbus RTU

### Power supply

- 110/230 VAC, 50/60 Hz @ 10 A
- 600 VA (max)

### Air supply

- 6 to 8 barg

### Environmental specifications:

- Ambient temperature -25 °C to +70 °C
- Humidity relative up to 100 % at all relevant temperatures
- Vibration 0.7 g

### Type approval

- DNV GL



Founded in 1982, Vimex AS has developed to become a leading market specialist in the field of maritime installations – developing and manufacturing fuel monitoring equipment, high level and overflow alarm systems, gas detection systems, vapour alarm systems and calibration equipment for precision pressure and temperature measurements. In 2018 the Vimex brand was incorporated in Norsk Analyse AS, following a merger between the two companies.

*Please note that datasheet specifications are subject to change without prior notice!*