



Technology of the Future  
Protection for today

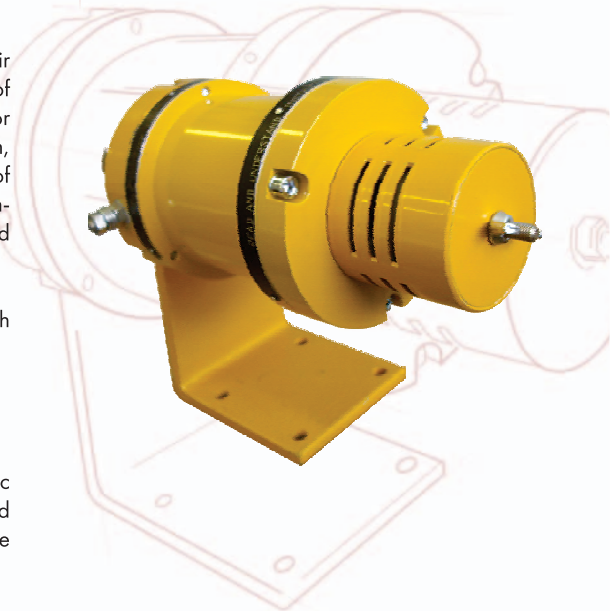
Model SGOES Gas Detector of JSC "Electronstandart-pribor" measures the concentration of hydrocarbon gases present in the monitored environment. The SGOES is configured to report alarms when the gas concentrations in the environment reach the two independently programmable levels, expressed as a percentage of the lower explosive limit (LEL) in air. As determined by application requirements, the SGOES is factory calibrated with one of eight hydrocarbon-based gases (typically methane or propane). Conversion factors are used to correct for gases other than the factory calibration gas.

The SGOES sensor detects and quantifies the presence of hydrocarbons by measuring their absorption of infrared light (IR). Because the device does not depend on the presence of oxygen in a mixture of gases, it can function effectively in environments where other sensor technologies cannot. Moreover, it is not sensitive to gases, such as nitrogen, oxygen, carbonic acid, ammonia, and hydrogen sulfide, that may adversely affect other types of sensors. This makes the SGOES an excellent choice for environments where non-hydrocarbon gases are present and where monitoring of hydrocarbons like methane and propane is required.

The explosion-proof design of SGOES makes it ideal for use in hazardous environments such as:

- Oil and gas facilities
- Refineries
- Pipelines
- Pumping stations
- Tank farms
- Loading racks.

The SGOES gas detector is typically used to implement fixed (stationary) automatic combustible gas/vapor warning systems or to analyze for the combustion of gases and vapors. The rugged SGOES design allows it to be used in harsh environments. It will operate from -40°C to +75°C (-40°F to +167°F) at relative humidity up to 95%.



# SGOES GAS DETECTOR

## Applications

- Drilling and production platforms
- Shipping tankers, freighters, and other vessels
- Fuel loading facilities
- Refineries, bulk terminals, and tank farms
- LNG/LPG processing and storage facilities
- Compressor stations and pipeline facilities
- Petrochemical, paint, and fertilizer plants
- Power plants and gas turbine facilities
- Transportation facilities (airports and subways)
- Oil and gas fired boilers / furnaces
- Environmental regulation monitoring

## Features and benefits

- Low power (<4.5W) operation for cost savings
- Versatile indoor/outdoor installation
- Industry standard digital, analog, and relay outputs are used for remote alarm and fault indications
- Resistance to vibration ensures reliability and durability
- Operates effectively in fog and high humidity
- Wide operating temperature range provides flexibility and reliability
- High sensitivity to all hydrocarbon gases/vapors for maximum property protection and personal safety
- Open path optical sensor - no physical contact between sensor and environment
- IR optical path obstruction monitoring (dust, paint, etc.) provides maintenance alerts

# SPECIFICATIONS

## Electrical Characteristics

Voltage	18 to 32 VDC
Power	2 W, standby 4.5 W, during alarm
Outputs	RS-485 Modbus RTU, HART, Ethernet 4-20 mA, analog (0 to 100% LEL) 2 alarm relays (isolated, dry contact type) with programmable thresholds fault relay indicating optical path obstruction

## Performance

Gases	methane, propane, butane, pentane, hexane, isobutane, cyclopentane, ethanol (The target gas is factory configurable according to customer request.)
Range	0 to 100% LEL (lower explosive level – in air)
Accuracy	±3% LEL, for 0 to 100% LEL
Humidity	Up to 95%, non-condensing (withstands up to 100% RH for short periods)
Response Time (for 100% LEL Methane)	50% full scale < 1.9 seconds 60% full scale < 10.5 seconds 90% full scale < 14.5 seconds
Operating Temperature	-40°C to +75°C (-40°F to +167°F)
Storage Temperature	-75°C to +185°C (-103°F to +356°F)
Ingress Protection	IP66

## Calibration

Factory calibrated at 0%, 20%, 50%, and 95% LEL with methane or propane. Calibration with NIST traceable calibration gas is optional.

## Options

Hood (for rain and snow protection)

Standard gas configuration options:

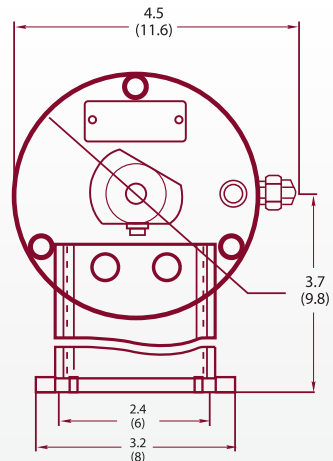
- methane
- propane
- butane
- pentane
- hexane,
- isobutane
- cyclopentane
- ethanol

Custom gas configuration: volatile organic compounds (VOC)

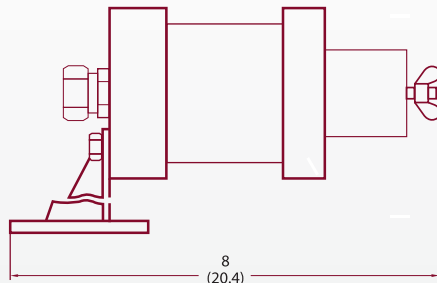
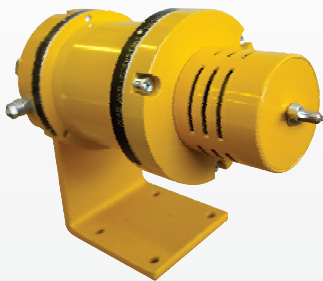
Optional calibration with gas mixtures directly traceable to NIST standard reference materials.

## Dimensions

Dimensions shown in inches (centimeters)



SGOES GAS DETECTOR



## Mechanical characteristics:

Material	Aluminum (standard); Stainless steel (optional)
Diameter	4.48" (11.4 cm)
Length	9.8" (24.8 cm)
Weight	7.7 lbs. (3.5 kg) w/mounting bracket
Conduit Entry	¾" – 14 NPT
Wiring	16 AWG (1.5mm) (for 1200m maximum)
Warranty	5 years

## Certification:



Class I, Division 1,  
Groups B, C & D,  
IP66



Certificate of Conformity:  
CE Mark for EMC (TUV)  
CE Mark for IECEx



Class I, Division 1,  
Groups B, C & D,  
T4 Ta = -40°C to + 85°C  
IP66



Ex B IIC T4 Ta =  
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