SGOES GAS DETECTORS

Model SGOES Gas detector of ESP measures the presence of hydrocarbon gases present in the monitored environment.

The SGOES is configured to report alarms when the gas concentration in the environment reaches 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.

SGOES is not sensitive to gases, such as nitrogen, oxygen, carbonic acid, ammonia, and hydrogen sulfide, which could adversely affect other types of sensor, and can operate in environments where oxygen is not present.

SIL-2

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

- Oil and Gas facilities
- Refineries
- Pipelines
- Pumping stations
- Petrochemical, paint and fertilizer plants
- Loading racks

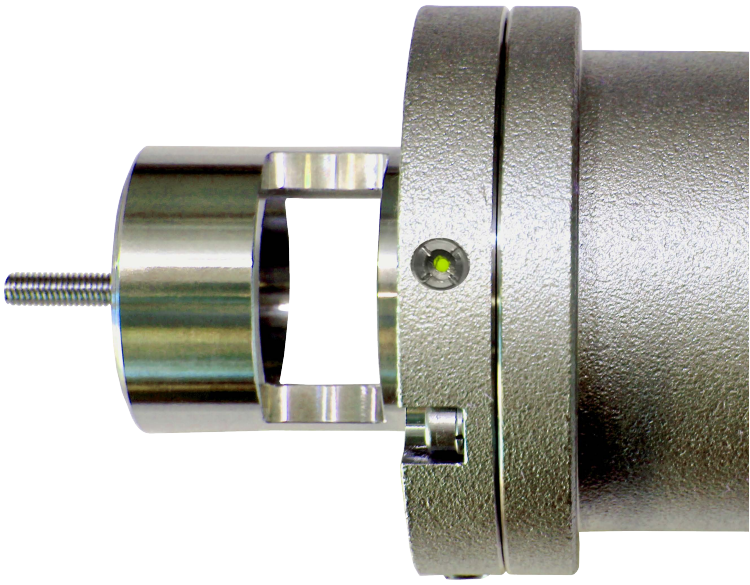
The SGOES detector has industry standard output 4-20mA, dry contact relays, RS-485 and HART inbuilt which provides compatibility with most control and safety systems used today.

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 -55°C to +85°C.

Areas of Use	Feature and benefits
» Tank farms » Fuel loading facilities » Refineries, bulk terminals » LNG/CNG compressor » Compressor stations and pipeline facilities » Power plants and gas turbine facilities » Transportation facilities(airports subways » Oil and gas fired boilers/furnaces » Environmental regulation monitoring » Drilling and production platforms » Shipping tankers	» Constant self check for any internal component failure. » Quick warm up time of detector (15 seconds from cold start) » Non intrusive, one man configuration and calibration of device » Industry standard digital, analog and relay outputs are used for alarm and fault indications » Able to operate at 75% optical path obscuration » Heated optics prevent accumulation of snow, ice and condensation » External HART port for easy servicing of detector (compatible with any standard HART communicator) » Option for integrated alphanumeric display for displaying current concentration, fault, over limit (SS316/Al) » Optical path obstruction monitoring.

Heated Optics

SGOES Gas detector has standard inbuilt heated optics facility to eliminate condensation/ice build up on optical elements. The SGOES detector is based on multi beam, non focusing infrared absorption principle quantifies the presence of hydrocarbons by measuring their absorption of infrared light(IR). The SGOES also posses optical path monitoring for any obstructions to ensure correct operation of device at all times.



Highest Operating Temperature

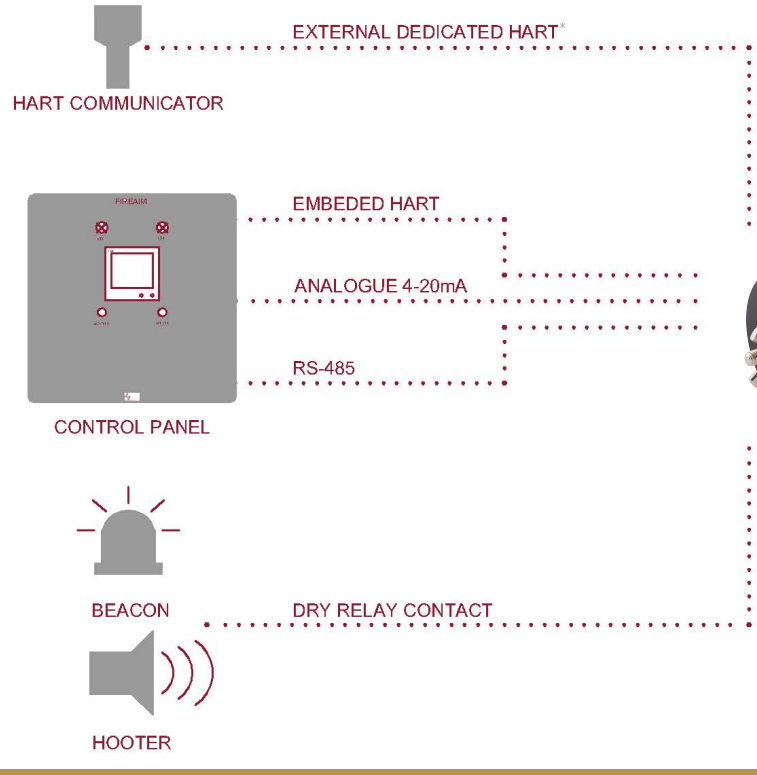
SGOES Gas detector is internationally certified for operating in temperatures from -55C to +85C, the highest in the industry. SGOES has temperature compensation built in for ensuring faultless operation within the operating temperature limits.

Failsafe & Stable:

The SGOES dual compensated optical elements ensure that span drift and zero drift are negligible during the operation of the device and chances of false alarm are reduced to 0 ensuring that SGOES can perform time and time again. In addition to that the SGOES continuously performs internal condition monitoring for detection any electrical component or sensor faults.

4 in 1

Unlike other manufacturers SGOES comes as standard with all the necessary outputs. This means no hidden costs, for the customer. This will include



Electrical Characteristics

Voltage:	24 VDC (operating range from 18 to 32 VDC)
Power:	<2W standby <4,5W during alarm <7,9W heated optic
Outputs:	– 4-20mA – RS-485 – HART (option for external HART port available) – 3 isolated dry contact relays (low alarm, high alarm, fault/ optical path obstruction)

Performance

Gases:	Methane, Propane, Hexane (Gases from groups C1- C12 are available upon request)
Range:	0 to 100% LEL
Accuracy:	+/- 2% LEL (for 0 to 100% LEL)
Humidity:	Up to 98% non-condensing
Response Time:	50% full scale <1.9 sec 90% full scale < 4.5 sec
Operating Temperature:	-55°C to +85°C
SIL Rating:	SIL 2 certified
Ingress Protection:	IP66/IP67
Ex Level:	1Ex d IIC T4 Gb 1Ex d IIC T6 Gb
Repeatability:	+/- 2% FSD
Zero Drift:	<2% FSD (per year)

Mechanical characteristics:

Material :	Aluminum/SS316
Size Dimension :	300x190x120mm (No display) 370x190x120mm (With Display)
Weight :	5.0 kg (No Display) 7.0 kg (With Display)
Conduit entry :	1/2 NPT 2 cable entries)
Wiring :	16 AWG (1.5mm) (for 1200m maximum)
Warranty:	2 years

Calibration

Factory calibrated at 0%, 50% and 90% LEL with methane or propane or other gasses. Calibration with NSIT calibration gas is optional.

Visual Indication

- Tri colour LED status indicator (Red, Yellow, Green)
- Local alphanumeric integrated display with indication of % LEL concentration
- Fault and Over Limit indication

Certification

FM APPROVED

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

TÜV SÜD

SIL-2 (IEC 61508)
-55°C to +85°C
0-98% RH

Ex CE

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

IEC IECEx

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

ABS

HART COMMUNICATION FOUNDATION