TGAES GAS DETECTOR

SIL-2

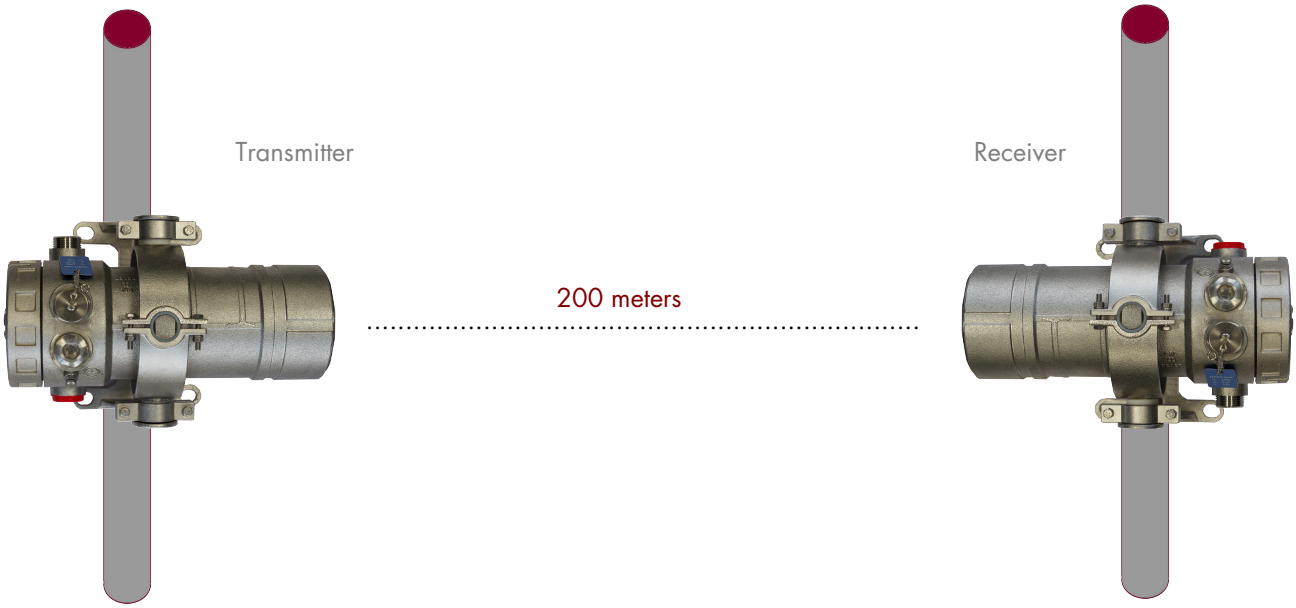
The TGAES hydrocarbon gas detector is an open path infrared gas detection system that provides continuous monitoring of combustible hydrocarbon gas concentrations in the range of 0 to 1,5 LEL/m, 0-2,5 LEL/m, 0-5 LEL/m, over a distance of 5 to 200 meters. Standard system outputs include 4-20 mA DC current output, with HART and RS-485 MODBUS communication. TGAES is capable of detecting most hydrocarbon gases and vapors including methane, ethane, propane, butane, propylene and others. No direct electrical interconnection between the two modules is required. The application of the TGAES system is allows to substitute for up to 10 fixed gas detectors.

The TGAES transmitter module illuminates a direct linear path ending at the TGAES receiver module. As flammable hydrocarbon gases intersect the light beam between by the two modules, certain IR wavelengths are absorbed by the gas, while other IR wavelengths are not. The amount of IR absorption is determined by the concentration of the hydrocarbon gas. A pair of optical detectors and associated electronics located in the receiver module measure the absorption. The change in the intensity of the absorbed light (active signal) is measured relative to the intensity of light at a non-absorbed wavelength (reference signal). The microprocessor computes the gas concentration and converts the value into a 4-20 mA current output signal (digital signal), which is then communicated to external control and annunciation systems. No filter wheel motors or other moving parts are utilized in either module.

Areas of Use	Feature and benefits
» Power stations and petroleum and gas stations » Storage of combustive-lubricating materials » Tank ships and other vessels » Vanish and dye industry » Storage of oily products » Oil and gas industry » LNG/PNG processing and storage	» 3 Colour LED status indicator (normal,fault,alarm) » High resistance to fog and humidity » Mean time between failure 35 000 hrs » Field replaceable units » Option of connection to SSS (48 Digit) LCD Display for easy viewing of detector status » One man easy field alignment via display or adjustable mounting arms » Non intrusive configuration of device » Quick and easy start up procedure (warm up time of Receiver <15 sec, Transmitter <5 sec.) » Continuous self checking to ensure stable full functionality at all times » Highest distance range in the industry » All outputs provided as standard

Simple Alignment

TGAES is extremely easy to align even at the longest distances. This is enabled by feature such as the mounting bracket which is easily adjustable in order to facilitate alignment even at distances of 200 meters. External HART Communicator and/or display can be used for further facilitation of alignment process.



5-200 Meters

The TGAES measuring range is 5-200 meters, making it one of the longest in the industry. This allows you to substitute up to 10 point type detectors for 1 set of TGAES thereby lowering your costs related to products purchase as well as all types of installation, fabrication, cable laying work.

Heated Optics

TGAES has inbuilt heated optics facility to combat any ice or condensation build up and ensure devices stable operation even in the harshest environment such as offshore installations or the harsh climates of northern parts of the world.

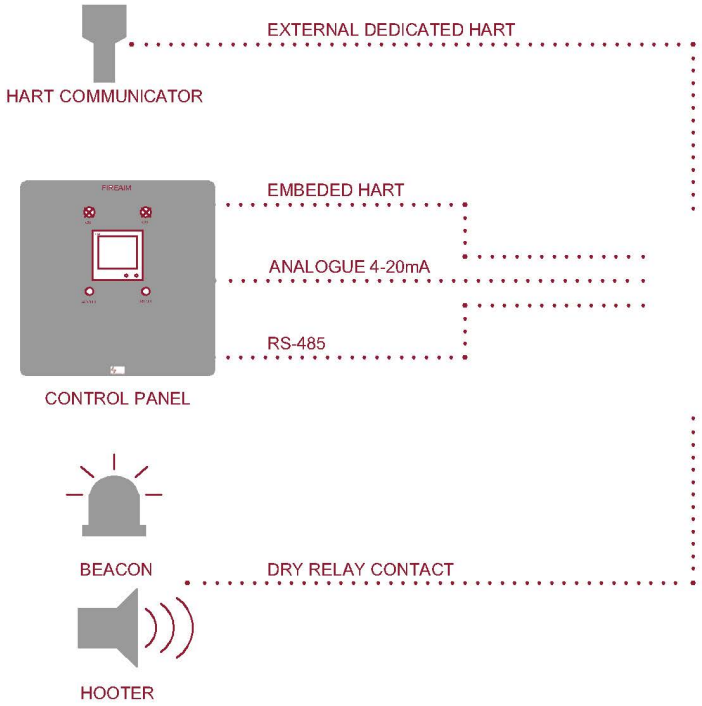
False Alarm Immunity

TGAES Open Path Gas Detector design makes it immune to false alarms sources such as the sun, welding, lighting or any other potential sources of radiation. The TGAES Transmitter has an ultra reliable Xenon flash lamp which enables the detector to have this kind of immunity towards potential false alarm sources.

PROTECTION FOR TODAY

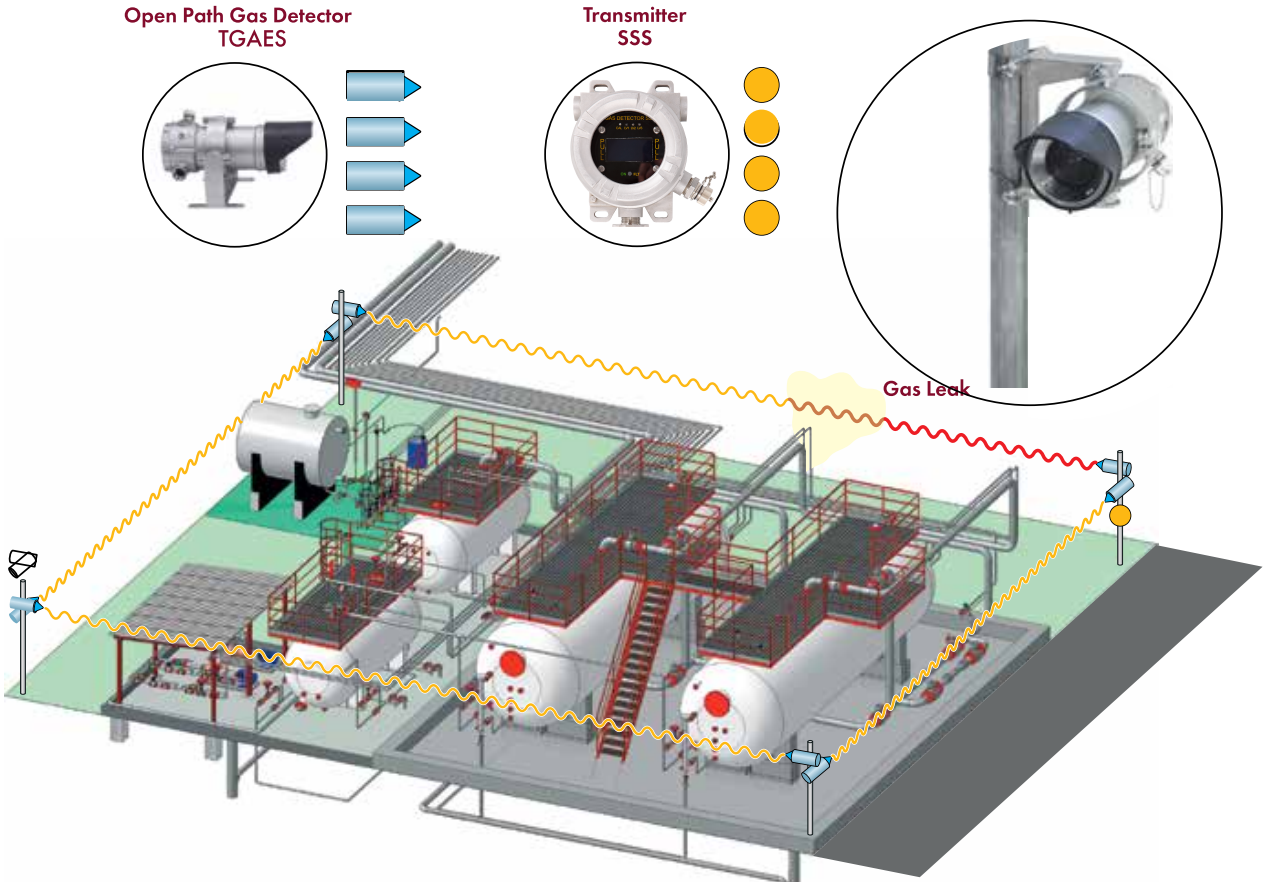
4 in 1:

Unlike other manufacturers TGAES comes as standard with all the necessary outputs. This allows for greater versatility of the device also, since all the outputs are there as standard and the device can be used with any system. This includes 4-20mA, RS-485 (MODBUS), HART (with External HART) and Relays.



TGAES & SSS Transmitter:

The TGAES is perfectly suitable to perimeter monitoring. The device can also be coupled with the SSS display for status monitoring and configuration/calibration functions if required. This is a great solution if the detector is installed at height and in difficult to view locations. Magnetic calibration can also be performed in TGAES itself.



TGAES GAS DETECTOR

Specification:

Voltage Supply:	24 VDC (18-32 VDC)
Power Consumption:	<15W (Transmitter) <15W (Receiver)
Outputs:	• 4-20mA • RS-485 • HART 7.0 • Relay
Transmitter lamp:	Ultra reliable xenon flash lamp

Operational Characteristics:

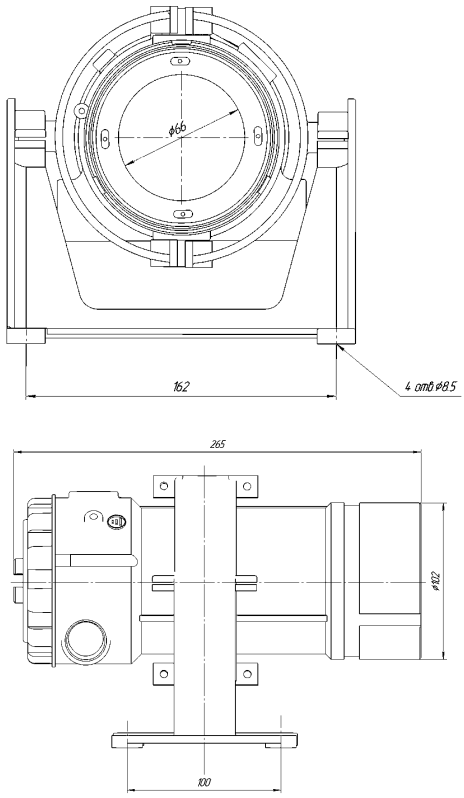
Gases Detected	Methane, Propane, Ethane (gases from groups C1-C12 are available upon request)
Detector Range	5-200 meters
Accuracy	+/- 0.25 LEL/m or 10% of applied gas concentration
Repeatability:	+/- 2% FS
Misalingment Tolerance	+/-1 degree
Measuring Range:	• 0-1.5 LEL/m • 0-2.5 LEL/m • 0-5.0 LEL/m
Response Time	T90: <3 sec.
Operating Temperature	-55°C to +70°C
Humidity Range	0-100% RH
Ingress Protection	IP66
Indication:	3 colour LED (normal,fault, alarm indication)
Ex Marking:	Ex d (ib op is) IIC T4 Gb Ex d (ib op is) IIC T6 Gb
SIL Rating:	SIL 2

Mechanical Characteristics

Material	Stainless Steel (SS316)
Cable Entry	2 x 3/4 NPT as standard for each module (other options on request)
Weight	8.0 kg (each module)
Warranty	2 years

Overall dimensions:

Dimensions shown in mm



Certification

SIL 2 (IEC 61508)
Class I, Division 1
Groups B, C & D
IP66

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Groups B, C & D
IP66

Ex d[ib op is] IIC T4 Gb
-55 °C ≤ Ta ≤ +70 °C
IP66