ESPSafety

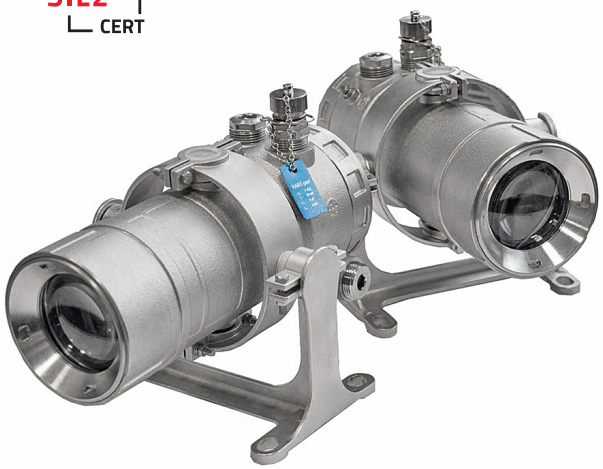
TGAES

GAS DETECTOR

The Model **TGAES** hydrocarbon gas detector is an open path gas detection system that provides continuous monitoring of combustible hydrocarbon gas concentrations in the range of 0 to 5 LEL/m, over a distance of 15 to 650 feet (5 to 200 meters). Standard system outputs include 4-20mA, HART and RS-485 Modbus RTU serial communication. **TGAES** is capable of detecting most hydrocarbon gases and vapors including methane, propane, butane, propylene and others. No direct electrical connection between the two modules is required. In some applications, one **TGAES** detection system can provide protection equivalent to as many as eight point 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 the two modules, certain IR wavelengths are absorbed by the gas, while other IR wavelengths are not. A pair of optical detectors and associated electronics located in the receiver module measures the absorption for both the active wavelength and reference wavelength. The ratio of absorption between the active and reference wavelengths determines the amount of gas intersecting the beam along its entire length. A microprocessor computes the gas concentration and converts the value into a 4-20mA signal and MODBUS register value.

SIL2 CERT

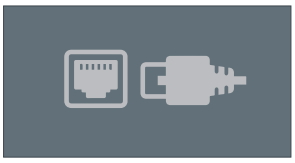


THE LONGEST DETECTION RANGE

Monitors a path distance of up to 650ft (200m).

OPERATES AT ANY OUTDOOR CONDITIONS

TGAES distinguishes hydrocarbon gas even when obscured by rain, fog, dust, snow or blowing sand.



EASY ALIGNMENT

Use HART communicator or software via RS485 for the fine alignment.

3 YEAR WARRANTY

Long reliable product life, low cost to operate over time.

Features and Benefits

- Detects methane and most common hydrocarbon gases including ethane, propane, butane and propylene with equal sensitivity
- Detection range of up to 200m
- T90 less than 5 seconds
- Corrosion-resistant 316 stainless steel enclosures
- Widest operating temperature range: -40°F to +140°F, (-40°C to +60°C)
- Ultra-reliable xenon flash-lamp
- Tri-color status LED or 96 character LCD for full graphical indication w/ Vector
- 4-20mA analog, MODBUS digital and relay outputs
- Convenient HART communicator port
- Primary heater protects optics from ice and secondary heater protects the internal electronics
- Able to operate even when obscured by fog, rain, dust, snow, or blowing sand.

Applications

- Power stations and storage facilities
- Tank ships and other vessels
- Refineries, bulk terminals, tank farms
- LNG/LPG processing and storage
- Chemical, paint and fertilizer plants
- Power plants and gas turbines
- Transportation facilities

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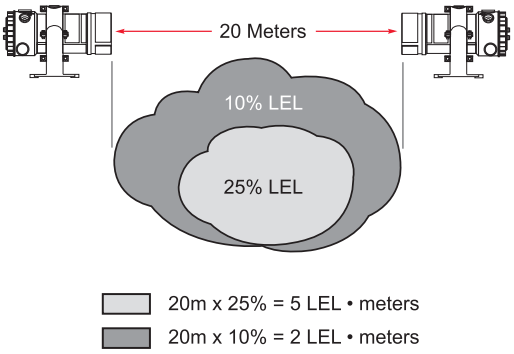
ELECTRICAL CHARACTERISTICS

Voltage	18 to 32 VDC (not including heater) Transmitter: 7.0W @ 24VDC Receiver: 6.0W @ 24VDC
Maximum Power Consumption	Transmitter: 15.0W @ 24VDC Receiver: 15.0W @ 24VDC ** low power consumption version is available upon request (RX <12 W, TX<8 W)*
Detectable Gases	Methane, propane, ethane, isobutylene, pentane, cyclopentane, hexane, propylene, methanol 1.0 LEL m 2.5 LEL m 5.0 LEL m
Detection Range	from 15ft to 650ft (5 to 200m)
Visual Indicators	Tri-color LED: Red: Alarm; Yellow: Fault; Green: Normal
Output Signals	RS-485 Modbus RTU; Dry contact relays 4-20 mA; HART
Response	T90 < 3 seconds
Accuracy	+/- 0.25 LEL- meters or 10% of applied gas range
Temperature	-40°F to +140°F Operating (-40°C to +60°C) 0 - 100% relative humidity
Housing	316L Stainless Steel with dual 3/4" NPT cable entry ports
Dimensions	Length: 10.43" (265 mm) Diameter: 4.5" (108 mm) Weight: 16 Lbs. (7.5 kg) each module with mounting bracket
Warranty	3 years
Included Components	TGAES transmitter module
	TGAES receiver module
Standard Accessories	Protective hoods for receiver and transmitter; ESP Commander RS-485 configuration and monitoring software for Windows-compatible PC
Optional Components	The Vector Field Display for local/remote display option; HART interface cable

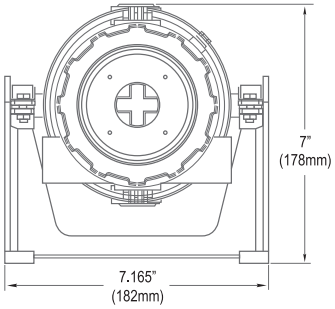
FIELD OF VIEW

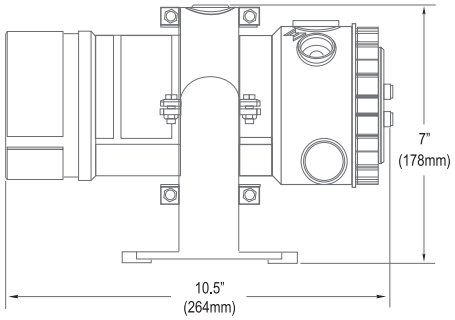


The measurement of combustible gas and air along the optical path length is expressed in LEL• meters, a unit of measurement for the amount of gas present in the length of the light beam.

Dimensions

in Inches (millimeters)





CERTIFICATIONS

FM APPROVED
Class I, Division 1
Groups B, C & D
T4 Ta = -40°F to +140°F
(-40°C to +60°C)
IP66

CSA
Class I, Division 1
Groups B, C & D
T4 Ta = -40°F to +140°F
(-40°C to +60°C)
IP66

Ex CE
Ex d IIC T4
-40°F to +140°F
(-40°C to +60°C)
IP66

IEC IECEx
Ex d IIC T4
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