Senscient ELDS™ Series 1000 for Methane

Overview

This Open Path Gas Detector (OPGD) is specific to Natural Gas / Methane (CH\textsubscript{4}). The separate transmitter and receiver assemblies are certified for use in potentially explosive atmospheres and can detect CH\textsubscript{4} over distances of 5 to 200 metres.

Constructed in high grade corrosion resistant 316L Stainless Steel this device is ideally suited for onshore and offshore, open and enclosed environments.

With no consumable parts and the patented daily auto-self testing facility; called SimuGas™; the Senscient ELDS™ CH\textsubscript{4} detector offers significant installed and operational cost savings over conventional fixed point flammable gas detectors.

Applications:

Open path Natural Gas / CH\textsubscript{4} gas detectors are used to monitor for fugitive emissions, protect plant from the risk of explosion. These devices are typical located to provide a detection barrier around the perimeter of a plant, process or storage area; or positioned in close proximity to specific items of plant, that pose a real risk of gas escape: e.g. compressors, pump sets, pressure reducers, valves and pipe flanges.

• Oil & gas exploration rigs
• Oil & gas production platforms
• Gas processing plants
• Gas terminals & processing plant
• Gas compressor & metering stations
• Gas fired power plants
• Petrochemical refineries
• Metals manufacturing plant
• Waste water treatment plants
• Landfill sites

Features:

• Ultra narrow wavelength operation - Improved availability in heavy fog and rain compared to conventional, Infra Red devices
• SimuGas™ daily auto gas testing – No manual intervention or on-going cost for routine gas testing.
• Fastest speed of response (<3 seconds) – Increased safety by providing earlier warning.
• Capable of increased sensitivity to 3 orders of magnitude over conventional IR devices - providing earlier warning
• CH\textsubscript{4} specific – No false alarms from other hydrocarbon gases, as experienced with many other flammable gas detection technologies.
• Bluetooth™ connectivity – No physical intervention needed for interrogation, event log downloading and trouble shooting.

About Senscient ELDS™

Senscient’s Enhanced Laser Diode Spectroscopy (ELDS™) product range builds upon the proven benefits of laser based gas sensing, taking this sensing principle to the next level. Patented technologies such as the Harmonic Fingerprint™ and SimuGas™ provide the highest levels of gas specificity, false alarm rejection and safety integrity in the most challenging operating conditions.

Detectable gases include: Methane (CH\textsubscript{4}), Ethylene (C\textsubscript{2}H\textsubscript{4}), Ammonia (NH\textsubscript{3}), Carbon Dioxide (CO\textsubscript{2}), Hydrogen Sulphide (H\textsubscript{2}S), Hydrogen Chloride (HCl), Hydrogen Fluoride (HF) and Multihydrocarbons (MHC). Other gases to be added.

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Specifications:

Gas
Ranges
Path Length
Format

Mechanical:

Size
Weight
Sun / Deluge Protection
Mounting

Performance:

Response Time
Repeatability
Linearity

Optical:

Uses HARMONIC FINGERPRINT™ to ensure no false alarms during adverse environmental conditions, misalignment or partial obscuration.

Ingress Protection
Enclosure Material
Lens Material Tx
Lens Material Rx
Operating Temperature
Humidity
Vibration
EMC

Environmental:

IP66/67 NEMA type 4/4X/6
316L stainless steel
Faceted Optical Glass
Aspheric Optical Glass
-55°C to +60°C (ambient)
0 – 100% RH (non-condensing)
10 – 150 Hz, 2 g
ENS0270

Certification/Approvals:

Customs Union of Russia, Kazakhstan & Belarus
 CSA and UL
Class I Div 1 Groups B C & D T5
Class II Div 1 Groups E F & G T5
Class III Div 1
Ex d IIB + H2, T5
Class I, Zone 1, AEx d IIB + H2, T5
Tamb = -40°C to +60°C
Entry: ¼” NPT

ATEX / IECEx
II 2 GD Exd IIB + H2, T5
Tamb = -40°C to +60°C
and Ex tb IIC T100°C
Tamb = -40°C to +60°C Db IP66/67
Entry: M25

Safety Integrity

Suitable for use in SIL2 Safety Systems per IEC 61508

Electrical:

Operating Voltage
Power Consumption
Outputs (Analog x 2)

Low Signal
Beam Block
Fault
Over range
Output (Digital x 2)

Notes:

Note 1: FM performance approval on this range
Approval No. FM3049893

Note 2: Only available in 5-40m and 40-120m path lengths

Calibration:

Factory calibrated for life, no routine calibration required.

Ordering Information:

To order / specify:
Senscient ELDS 1000,
Gas type: CH₄
Measuring Range:
0-1 LEL.m - See Note 1 below
0-5 LEL.m
0-1000 ppm.m - See Note 2 below
5-40 m or 40-120 m or 120-200m
Individual Transmitter (Tx) & Receiver (Rx)

Accessories:

Approved Interface terminal (PC)
Interface terminal (Tablet)
Optical Alignment Scope
Gassing Cell (Optional)
Snow Cowl (Optional)

Distributed by:

Senscient ELDS 1000,
Gas type: CH₄
Measuring Range:
0-1 LEL.m - See Note 1 below
0-5 LEL.m
0-1000 ppm.m - See Note 2 below
5-40 m or 40-120 m or 120-200m
Individual Transmitter (Tx) & Receiver (Rx)

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