SENSIDYNE®
Industrial Health & Safety Instrumentation

# Senscient™ ELDS™ Series 1000 Methane

## Fulfilling the promise of open path gas detection (OPGD)

**About Senscient ELDS OPGD**

ELDS™ is a patented, new open path gas detection (OPGD) technology from Senscient. The innovative Enhanced Laser Diode Spectroscopy (ELDS) detection technology featured in our ELDS Series of open path gas detectors truly fulfills the promise of fit-and-forget open path gas detection...

- **Reliable detection of both toxic & flammable gases.**
- **Industry's first false-alarm free Open Path Gas Detector.** ELDS detection is molecular species specific, eliminating false alarms from common atmospheric or non-hazardous gases that plague traditional OPGD (or any NDIR or LDS technology) systems.
- **FIRST and ONLY open path toxic gas detector to meet current industry Safety Performance Standards.**
- **FIRST and ONLY gas detector with SimuGas™, an electronic, remote functionality check.**
- **3 orders of magnitude greater sensitivity for combustible gases versus conventional OP systems.**
- **Up to 60% reduction in gas detection project Cap Ex and COO, with true Fit-&-Forget functionality.**
- **Backed by a network of industry-leading gas detection solutions providers.**

**Senscient ELDS Series 1000 Methane Detector Features / Benefits:**

- Reliable, open path detection of methane at levels low enough to provide early warning for leakage of this highly flammable gas. Detection Limits for methane leak detection are orders of magnitude lower than any other OPGD product.
- No false alarms from any other hydrocarbon gases including diesel fumes or oil mist.
- True ease-of-installation, with vibration and misalignment tolerant optics.
- SimuGas™ feature provides ability to accomplish on-demand, remote functionality testing right from the control room or PLC!

**Applications:**

Offshore Platforms, FPSO's, Onshore Petrochemical facilities and Refineries.

**Theory of Operation:**

Using a separate transmitter and receiver configuration, Senscient ELDS Series 1000 Methane OPGD systems can detect and measure methane over distances between 5 and 200 m. The ELDS technique measures the Harmonic Fingerprint introduced onto the transmitter's laser beam(s) by absorption by any target gas in the monitored path.

Senscient

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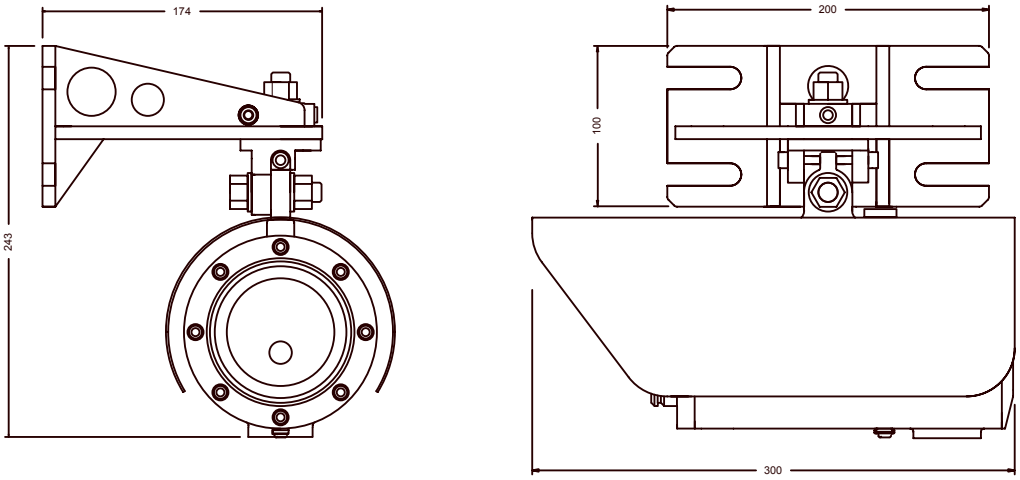


### Specifications:

| | |
|---|---|
| Gas | Methane |

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| | |
|---|---|
| Gas | Methane |
| Ranges | 0-1 LEL.m |
| Path-Length | 5-40 m = Short = S |

### Performance:

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|---|---|
| Response Time | T90 =< 3 seconds |
| Resolution | 0.5% FSD |
| Repeatability | =< +/- 2% FSD |
| Linearity | =< +/- 2% FSD |
| Zero Drift | =< +/- 1% FSD |
| Span Drift | =< +/- 2% FSD |
| Min. Alarm Threshold | 10% FSD |

### Environmental:

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|---|---|
| Ingress Protection | IP66, NEMA 4X/6 |
| Enclosure Material | 316L stainless steel |
| Operating Temperature | -40° C to +60° C |
| Humidity | 0 – 100% RH (non-condensing) |
| Vibration | 10 -150 Hz, 2g |
| Meteorological | |
| Visibility | Operates @ Met. Visibility > = Path-Length |
| Certification/Approval: | Class 1 Div 1 Groups B C & D, (IIB + H2) T5 Tamb = -40° C to +60° C |
| | Class 1 Zone 1 AExd/Exd (IIB + H2) T5 Tamb = -40° C to +60° C |
| | Supply Entry ¾" NPT - 14 TPI |
| | II 2 G, Exd (IIB + H2) T5 Tamb = -40° C to +60° C |
| | Supply Entry M25 |
| | ATEX under FM Evaluation |

### Electrical:

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|---|---|
| Operating Voltage | +14V from +12V |
| Operating Voltage | +24 V nominal, operates correctly for supply voltages between +14 V and +32 V |
| Power Consumption | TX = +12W (max), RX = +10W (max) |
| Output (Analogue) | 4-20 mA (2 wire, isolated)<br>Configurable for single wire, sink or source<br>Capable of driving 0-600 Ohm load |
| Low Signal | 3 mA (configurable 1 mA to 4 mA) |
| Beam Block | 2.5 mA (configurable 0 mA to 3.5 mA) |
| Inhibit | 2 mA (configurable 1 mA to 4 mA) |
| Fault | 0 mA |
| Optional Output (Digital) | RS485 (Isolated), MODBUS protocol (Digital outputs not included in FM Performance) |

### Mechanical:

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|---|---|---|
| Size | TX/RX | 140 mm dia. x 300 mm |
| Weight | TX/RX | 12 kg each |
| Mounting | TX & RX units supplied fitted to a mounting bracket which incorporates holes / slots for fixing on flat surfaces or metal poles (4" to 6" diameter - requires U bolts). | |

### Optical:

The unit will operate correctly, without spurious readings or faults during conditions of misalignment or partial obscuration.

| | |
|---|---|
| Alignment | +/- 0.5° |
| Obscuration | >95% |
| Heated Optics | The window-lenses of the TX and RX units are heated. |
| Calibration, Testing & Maintenance: | |
| Calibration | Units supplied factory calibrated for the specified target gas or gases. Units should not require re-calibration in service. |

Part Number: S-1021-1

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