

Senscient ELDS™ Series 2000 H2S

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 2000 H2S Hydrogen Sulfide Detector Features / Benefits:

- Reliable, open path detection of hydrogen sulfide at levels low enough to protect personnel from the toxic hazard.
- Faster response than any other hydrogen sulfide detection technology.
- No need to replace or re-calibrate sensors.
- 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.

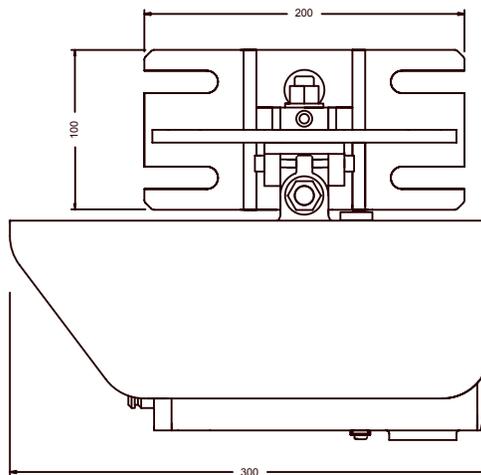
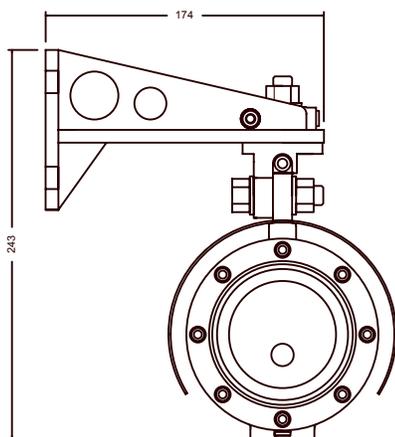
Theory of Operation:

Using a separate transmitter and receiver configuration, Senscient ELDS Series 2000 H2S OPGD systems can detect and measure hydrogen sulfide over distances between 5 and 40 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.



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Specifications:

Gas Hydrogen sulfide
 Ranges 0-100 ppm.m, 0-250 ppm.m, 0-1000 ppm.m
 Path-Length 5 – 40 m = Short = S

Performance:

Response Time T90 <= 5 seconds
 Resolution 0.5% FSD
 Repeatability <= +/- 2% FSD
 Linearity <= +/- 2% FSD
 Zero Drift <= +/- 1% FSD
 Span Drift <= +/- 2% FSD
 Min. Alarm Threshold 5 ppm.m over 5 m (25ppm.m)

Environmental:

Ingress Protection IP66/67, NEMA 4X/6P
 Enclosure Material 316 stainless steel
 Operating Temperature -40° C to +65° C
 Humidity 0 – 100% RH (non-condensing)
 Vibration 10 – 150 Hz, 2 g
 EMC EN50270
 Meteorological Visibility Operates @ Met. Visibility > = Path-Length

Certification / Approvals:

Designed to comply with US and Canadian standards*:
 Class 1 Div 1 Groups B C & D, (IIB + H2) T5 Tamb = -40° C to +65° C
 Class 1 Zone 1 AExd/Exd (IIB + H2) T5 Tamb = -40° C to +65° C
 Supply Entry ¾" NPT - 14 TPI

Designed to comply with ATEX (Europe) standards*:
 II 2 G, Exd (IIB + H2) T5 Tamb = -40° C to +65° C
 Supply Entry M25



* Pending performance approval

Electrical:

Operating Voltage +24 V nominal, operates correctly for supply voltages between +12 V and +32 V
 Power Consumption TX = 10 W (max), RX = 7.5 W (max)
 Output (Analogue) 4-20 mA (2 wire, isolated)
 Configurable for single wire, sink or source
 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
 Output (Digital) RS485 (Isolated), MODBUS protocol

Mechanical:

Size TX/RX 140 mm dia. x 300 mm
 Weight TX/RX 9 kg
 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 90%
 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 Numbers:

Senscient ELDS V-GGGG-C

Where:-

V = S = Short Range
 GGGG = 2051 = 0-100 ppm.m H2S
 = 2052 = 0-250 ppm.m H2S
 = 2053 = 0-1000 ppm.m H2S
 C = 1 = FM/CSA
 = 2 = ATEX

E.g. Senscient ELDS S-2052-1 is a short range Senscient ELDS OPGD calibrated for 0-250 ppm.m H2S with FM & CSA approval.

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