

Senscient ELDS™

Ammonia-Specific Open Path Gas Detector



Key Features

- Ammonia-specific detection
- High sensitivity option
- No consumable sensing elements
- Daily auto functional test
- Bluetooth interrogation
- Retrievable event log

This laser-based, ammonia (NH₃)-specific, open path gas detector (OPGD) consists of a separate transmitter and receiver that detects gas escapes as they intersect its infrared beam in open areas, protecting process plants and personnel from the risk of toxic gas releases.

Laser OPGD is target gas-specific, provides the highest uptime availability in severe weather conditions, and increased sensitivity over traditional differential IR OPGD devices.

Daily automatic end-to-end functional testing removes the need for routine manual testing.

Advanced Laser-Sensing Technology

HARMONIC FINGERPRINT™

Harmonic Fingerprint™
Much like forensic fingerprint ID, the Harmonic Fingerprint uses multiple identifiers in the absorption analysis of the target gas to eliminate false alarms.



SimuGas™
Only the Senscient ELDS can check and record functional tests automatically everyday.



Zero Maintenance

The system has no consumable sensing elements and requires no routine calibration, significantly reducing operating costs.



Tuneable Lasers

Class 1 eye-safe lasers penetrate thick fog, heavy rain, and snow.



Bluetooth®

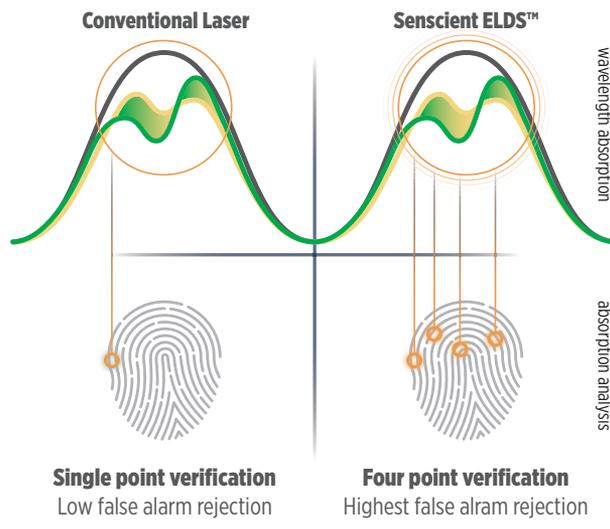
Stay Connected. Work Smarter. Bluetooth wireless technology for faster commissioning and troubleshooting while keeping workers out of harm's way.



Lock Cell

A 'sealed for life', target gas reference cell in the transmitter ensures laser wavelength lock, eliminating unrevealed detection failure.

Target Gas Verification



- NO GAS
- TARGET GAS
- INTERFERENT GAS
- HARMONIC IDENTIFIER

WE KNOW WHAT'S AT STAKE.

Senscient ELDS Technical Specifications



| SPECIFICATIONS | |
|----------------------------|--|
| GAS | Ammonia (NH ₃) |
| RANGES | 0-200 ppm.m (see Note 1) 0-1000 ppm.m 0-5000 ppm.m 0-15000 ppm.m (see Note 2) |
| PATH LENGTH | 5-40 m or 40-120 m (16-131 ft. or 131-394 ft.) |
| FORMAT | Individual transmitter (Tx) & receiver (Rx) |
| DETECTION PRINCIPLE | Enhanced Laser Diode Spectroscopy (ELDS) |

Note 1: Available in 5-40 m range only

Note 2: Available in 40-120 m range only

| PERFORMANCE | |
|----------------------|-----------------|
| RESPONSE TIME | T90 ≤ 5 seconds |
| REPEATABILITY | <±5% FSD |
| LINEARITY | <±5% FSD |

| ENVIRONMENTAL | |
|---|---|
| INGRESS PROTECTION | IP66/67 NEMA type 4/4X/6 |
| ENCLOSURE MATERIAL | 316L stainless steel |
| LENS MATERIAL TX | Faceted optical glass |
| LENS MATERIAL RX | Aspheric optical glass |
| OPERATING TEMPERATURE (CONTINUOUS) | -40°C to +60°C (ambient) [-40°F to 140°F] |
| HUMIDITY | 0-100% RH (non-condensing) |
| VIBRATION | 10-150 Hz, 2 g |
| EMC | EN50270 |

| CERTIFICATIONS/APPROVALS | |
|--|--|
| CSA AND UL | CLASS I DIV 1 GROUPS B, C & D T5 CLASS II/III DIV 1 GROUPS E, F & G T5 Ex d IIB + H ₂ T5 CLASS I, ZONE 1, AEx d IIB + H ₂ T5 T _{amb} = -40°C to +60°C [-40°F to 140°F] Entry: 3/4" NPT |
| ATEX / IECEX / UKEX / INMETRO | II GD Ex db IIC T5 Gb T _{amb} = -40°C to +60°C Gb [-40°F to 140°F] Ex tb IIIC T100°C [212°F] Db IP66/67 T _{amb} = -40°C to +60°C [-40°F to 140°F] Entry: M25 |
| CUSTOMS UNION OF RUSSIA, KAZAKHSTAN & BELARUS | EAC EX TR CU CoC IExdIIBT5/H2X Entry: M25 |

| SAFETY INTEGRITY | |
|--|--|
| Suitable for use in SIL 2 safety systems per IEC 61508 | |

| ELECTRICAL | |
|-----------------------------|---|
| OPERATING VOLTAGE | Tx & Rx +24VDC (+18 TO +32 VDC) |
| POWER CONSUMPTION | Tx = 12 W (max), Rx = 10 W (max) |
| OUTPUTS (ANALOG X 2) | 4-20 mA, configurable for 2 wire isolated or single wire, sink or source. |
| LOW SIGNAL | 3 mA (configurable 1 to 4 mA) |
| BEAM BLOCK | 2.5 mA (configurable 0 to 3.5 mA) |
| INHIBIT | 2 mA (configurable 1 to 3.5 mA) |
| FAULT | 0.5 mA (configurable 0 to 1 mA) |
| OVER RANGE | 21.5 mA (configurable 20 to 21.9 mA) |
| OUTPUT (DIGITAL X 2) | HART 7.1 & Modbus RTU supported |

| MECHANICAL | |
|--------------------------------|--|
| SIZE | Tx/Rx 140 mm dia. x 300 mm [5.5" dia. x 11.8"] |
| WEIGHT | Tx/Rx 12 kg [26.5 lb.] each (c/w bracket) |
| SUN / DELUGE PROTECTION | Tx & Rx supplied with sun shield/deluge protection |
| MOUNTING | Tx & Rx supplied with mounting brackets incorporating fixing holes/slots for flat surface or metal pole mounting. (Note: mounting poles should be of 4" to 6" [100 mm to 150 mm] diameter. Fixings/u bolts not included) |

| OPTICAL | |
|---|--|
| Uses Harmonic Fingerprint to ensure no false alarms during adverse environmental conditions, misalignment or partial obscuration. | |
| ALIGNMENT | ± 0.5° |
| OBSCURATION | Operates up to 95% |
| HEATED OPTICS | Tx & Rx lenses are continuously heated |
| LASER BEAM | CLASS 1 (Eye Safe) IEC 60825-1 |
| FDA ACCESSION NO. | 1410373-000 (for imports into USA) |

| CALIBRATION | |
|---|--|
| Factory calibrated for life; no routine calibration required. | |

| ORDERING INFORMATION | |
|---------------------------|-------------------|
| TO ORDER / SPECIFY | Senscient ELDS |
| GAS TYPE | NH ₃ |
| MEASURING RANGE | E.G. 0-1000 ppm.m |
| PATH LENGTH | E.G. 5-40 m |
| CERTIFICATION | E.G. ATEX |

| ACCESSORIES | |
|-----------------------------|--|
| Interface terminal (tablet) | |
| Optical alignment scope | |
| Gassing cell (optional) | |

Note: This Bulletin contains only a general description of the products shown. While product uses and performance capabilities are generally described, the products shall not, under any circumstances, be used by untrained or unqualified individuals. The products shall not be used until the product instructions/user manual, which contains detailed information concerning the proper use and care of the products, including any warnings or cautions, have been thoroughly read and understood. Specifications are subject to change without prior notice. MSA is a registered trademark of MSA Technology, LLC in the US, Europe, and other Countries. For all other trademarks visit <https://us.msasafety.com/Trademarks>.

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