Senscient ELDS™

Carbon Dioxide-Specific Open Path Gas Detector

This laser-based, carbon dioxide (CO_2)-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.

Key Features

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

Advanced Laser-Sensing Technology

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.

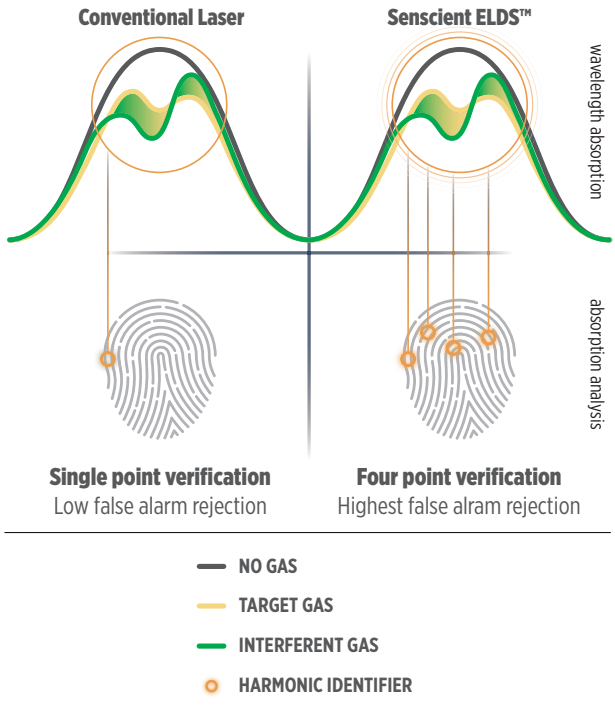
Bluetooth®

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



SAFEGUARDING
PEOPLE, PLACES, & THE PLANET

Senscient ELDS Technical Specifications

MSA
The Safety Company

SPECIFICATIONS	
GAS	Carbon Dioxide (CO_2)
RANGES	0-300,000 ppm.m
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)

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 1ExdIIBT5/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	CO_2
MEASURING RANGE	E.G. 0-300,000 ppm.m
PATH LENGTH	E.G. 5-40 m
CERTIFICATION	E.G. ATEX

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

MSA operates in over 40 countries worldwide. To find an MSA office near you, please visit ***MSAsafety.com/offices***.

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