



# SENSCIENT ELDS™

## CARBON DIOXIDE SPECIFIC OPEN PATH DETECTOR

Open path carbon dioxide (CO<sub>2</sub>) gas detectors are used to monitor for fugitive emissions, protect personnel, and warn of plant failure. These devices are typically located around the perimeter of a plant, process or storage area; or positioned in close proximity to specific items of a plant, that pose a real risk of gas escape: e.g. compressors, pump sets, pressure reducers, valves and pipe flanges.

## ADVANCED SENSING TECHNOLOGY

HARMONIC  
FINGERPRINT™

SimuGas™  
SAFETY INTEGRITY

**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.

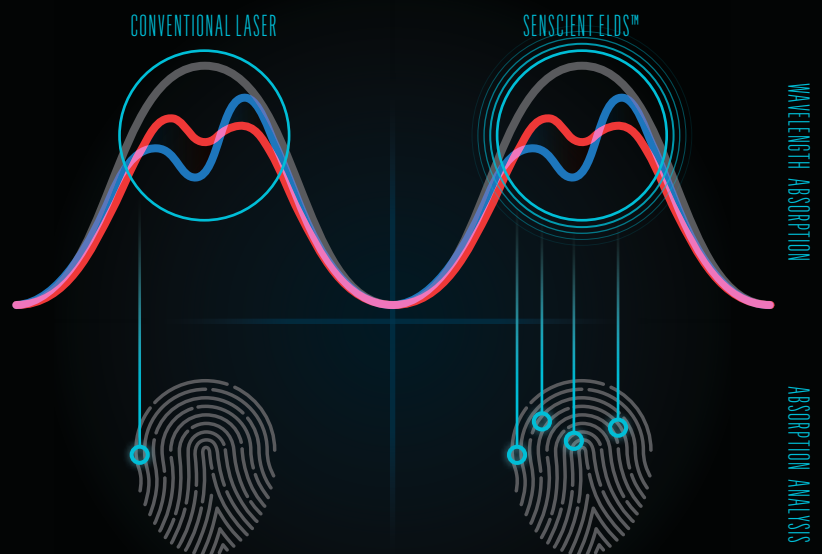
**SimuGas™** Only the Senscient ELDS™ can check and record functional tests automatically everyday.

**Zero Maintenance** The system does not require consumable sensing elements or calibrations, significantly reducing operation costs for time and materials spent on maintenance.

**Tuneable Lasers** Class 1 eye safe lasers penetrate thick fog, heavy rain, and snow further than differential infrared based detectors.

**Bluetooth®** Stay Connected. Work Smarter. Bluetooth wireless technology for faster commissioning and troubleshooting while keeping workers out of harms way.

**Lock Cell** A real target gas sample eliminates laser drift and maintains Harmonic Fingerprint™ lock continuously all day.



**Single point verification**  
Low false alarm rejection

**Four point verification**  
Highest false alarm rejection

— NO GAS    — TARGET GAS    — INTERFERENT GAS  
○ HARMONIC IDENTIFIER

# TECHNICAL SPECIFICATIONS

## Specifications

GAS	CARBON DIOXIDE (CO <sub>2</sub> )
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)

## Performance

RESPONSE TIME	T90 ≤ 3 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	-55°C TO +60°C (AMBIENT) [-67°F TO 140°F]
HUMIDITY	0 - 100% RH (NON-CONDENSING)
VIBRATION	10 - 150 Hz, 2 g
EMC	EN50270

## Certification/Approvals

<b>CSA AND UL:</b>	<b>CUSTOMS UNION OF RUSSIA,</b>
CLASS I DIV 1 GROUPS B, C & D T5	KAZAKHSTAN & BELARUS:
CLASS II DIV 1 GROUPS E, F & G T5	EAC EX TR CU CoC
CLASS III DIV 1	IEExd IIB T5 / H2X
Ex d IIB + H <sub>2</sub> T5	ENTRY: M25
CLASS I, ZONE 1, AEx d IIB + H <sub>2</sub> T5	
Tamb = -40°C TO +60°C [-40°F TO 140°F]	<b>INMETRO:</b>
ENTRY: 3/4" NPT	Ex d IIB + H <sub>2</sub> T5 Gb
	Ex tb IIIC T100°C Db IP66/67
<b>ATEX / IECEX:</b>	Tamb: -40°C TO +60°C [-40°F TO 140°F]
II 2 GD Ex d IIB + H <sub>2</sub> T5	ENTRY: M25
Tamb -40°C TO +60°C Gb [-40°F TO 140°F]	
Ex tb IIIC T100°C [212°F]	
Tamb = -40°C TO +60°C [-40°F TO 140°F]	
Db IP66/67	
ENTRY: M25	

## Safety Integrity

SUITABLE FOR USE IN SIL2 SAFETY SYSTEMS PER IEC 61508

## Electrical

OPERATING VOLTAGE	Tx & Rx +24VDC (+18 TO +32 V DC)
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 m)
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" [100MM TO 150MM] DIAMETER. FIXING BOLTS / U BOLTS ARE NOT SUPPLIED)

## 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 <sub>2</sub>
MEASURING RANGE:	E.G. 0-300,000 ppm.m
PATH LENGTH:	E.G. 5-40 m
CERTIFICATION:	E.G. ATEX

## Accessories

- APPROVED INTERFACE TERMINAL (PC)
- INTERFACE TERMINAL (TABLET)
- OPTICAL ALIGNMENT SCOPE
- GASSING CELL (OPTIONAL)
- SNOW COWL (OPTIONAL)

Note: This bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products. Specifications subject to change without notice.

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