



GD1-CO₂

Laser Open Path Gas Detector



Presentation

The GD1-CO₂ has been designed with features that provide an effective response to the detection of carbon dioxide (CO₂).

The GD1-CO₂ can be used onshore or offshore and is particularly suited to the detection of CO₂ in carbon capture and storage (CCS) applications as well as where CO₂ is used for enhanced oil recovery (EOR).

At the heart of the detector is a tunable laser diode that eliminates environmental effects from sun, rain and fog. The laser scans single absorption lines where there is no interference from other gases.

The GD1-CO₂ needs no recalibration and can replace multiple standard detectors to cover the same risk.

The complete optomechanical design and construction is so stable that an ultra fast response time can be achieved whilst providing unparalleled service life and detector stability, thus saving on maintenance and service costs.

Supplied with worldwide hazardous area approvals. Suitable for use in systems with SIL 2 requirement.

For modern detection systems the GD1-CO₂ is complemented by the GD10P-CO₂ point IR detector.

Features

- Fail safe
- Fast response time
- Calibration free
- Operates up to 98% of obscuration



GD1-CO₂

Laser Open Path Gas Detector

General

Technology	New IR laser scanning
Signal source	Tuneable laser diode Laser Class 1, eye safe
Detected gas	CO ₂
Range	0 - 250,000 ppm.m
Path length	5 - 75 m
Self test	Continuous
Calibration	Factory set, no field recalibration

Performance

Lifetime stability	Accuracy <±4% of full range Repeatability <±4% of full range
Response time	5 sec.

Optics

Alignment	±0.30°
Optics	Heated (Transmitter and Receiver)
Obscuration	>98% (allowable signal loss)

Output signal

Standard	4-20mA source or sink, max. load impedance 500 Ohm HART ®
Fault signals	Fault 1 mA Beam Block 2 mA Warning 3 mA (optional)

Electrical

Power supply	24V DC, range (18 - 32V DC)
Power consumption	<15 W
Cable entry	M25

Temperature range

Operating	-55°C to +65°C (-67°F to +149°F)
Hazardous area	-55°C to +75°C (-67°F to +167°F)
Humidity (operation)	100% RH

Material

Tx and Rx Housing	Stainless steel (ASTM 316)
Junction Box	GRP

Weight

Approx.	5.5 Kg (12 lbs) per Tx or Rx unit
Approx.	2.0 Kg (4.4 lbs) per Tx or Rx junction Box

Dimensions

Tx and Rx Housing	Ref. outline drawing
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Warranty

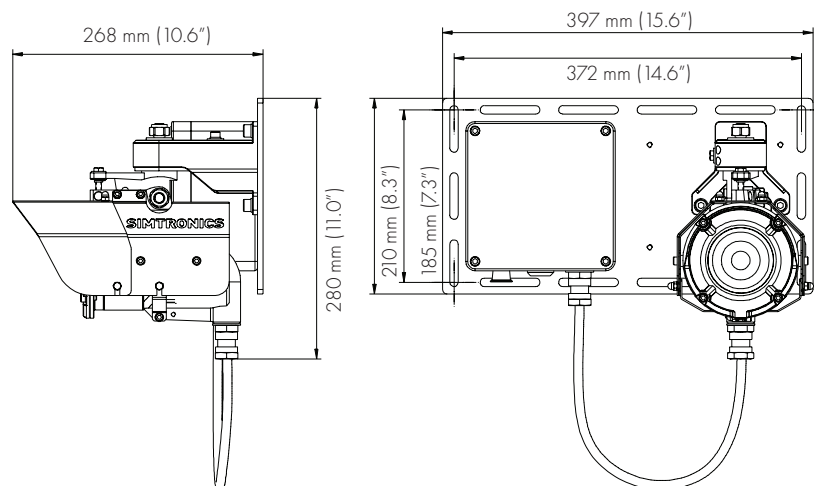
	5 years full warranty on detector system
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Approvals

ATEX rating Tx/Rx	II 2 G	Ex d [op is] IIC T6/T5 Gb
ATEX rating JB	II 2 G	Ex e IIC T5 Gb
IECEx	DNV 10.0002X (JB: PRE 14.0040)	
Ingress	IP66/IP67 according to IEC 60529	
SIL	Suitable for use in SIL2 systems	

Accessories

GD1-X00-TT01	Alignment kit
GD1-X00-TT05	Test cell



Teledyne Gas & Flame Detection quality assurance programmes demand the continuous assessment and improvement of all our products. Information in this leaflet could thus change without notification and does not constitute a product specification.