



3M™ Simtronics™ 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

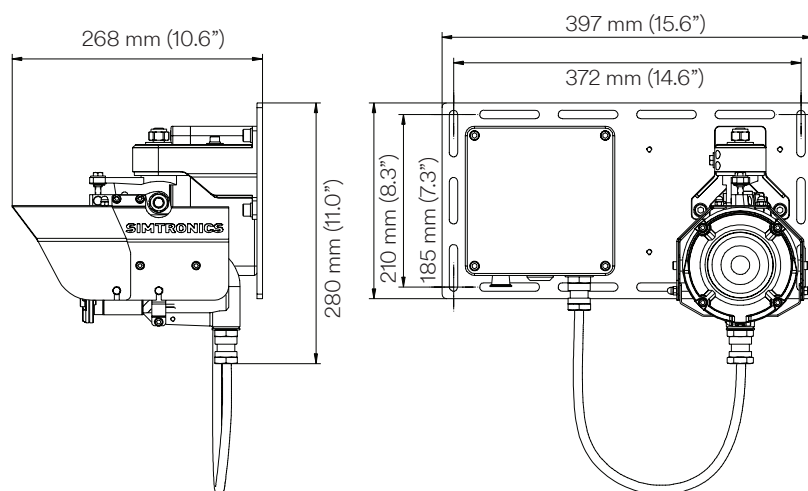
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Laser Open Path Gas Detector

Technical data

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
Warranty	
5 years full warranty on detector system	
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



3M 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.



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