# GD1-C02

### Laser Open Path Gas Detector

Fail safe
Fast speed of response
Calibration free

The Simtronics GD1 sets a new standard for toxic gas detection. Using a tuneable laser diode the GD1 delivers enhanced coverage and fail safe detection. The performance improvement marks a genuine step change for safety systems and life cycle cost savings.



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 tuneable 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 speed of response 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-C02 is complemented by the GD10P-C02 point IR detector.



### IRES BENEFITS

Optical infrared CO2 gas detection No sensor recalibration or replacement Tuneable laser diode / laser scanning Superior detector stability and specificity. No undisclosed source of failure Suitable for use in SIL 2 systems Large area of coverage Fewer devices cover the same risk High sensitivity Suitable for personnel safety purposes. Fast acting Fastest possible speed of response Vibration and misalignment tolerant optics Ease of alignment and setup Heated optics, transmitter and receiver High performance in arduous conditions **HART®** Non-proprietary user interface and

improved preventative maintenance



## GD1 - CO2

### **Technical Data**

**GENERAL** 

Detection method Near IR laser scanning Tuneable laser diode Signal source Laser Class 1, eye safe

Detected gas

0 - 250,000 ppm.m Range

5 - 50 m Path length Self test Continuous

Calibration Factory set, no field recalibration

**PERFORMANCE** 

Lifetime stability Zero: ±2% of Full scale deflection

Span: ±3% of Full scale deflection

Response time 5 sec.

**OPTICS** 

±0.30 Alignment

Optics Heated (Transmitter and Receiver)

Obscuration >90%

**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

**ELECTRICAL** 

Power supply 24 V DC, range18-32 V DC

Power consumption <15 W M20 Cable entry

**TEMPERATURE RANGE** 

-40°C to + 65°C (-40°F to +149°F) Operating 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

**WEIGHT** 

5.5 Kg (12 lbs) per Tx or Rx unit Approx.

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

Ex d IIC T6/T5

**APPROVALS** 

⟨Ex⟩ II 2 G ATEX rating Tx/Rx (Ex) II 2 (1) G Ex emb[ia] IIC T4/T5/T6 ATEX rating JB

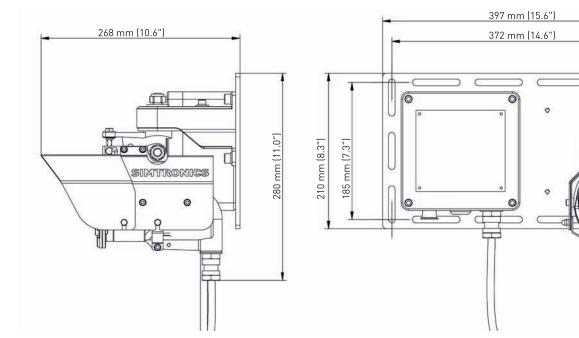
ATEX certificate DNV 08 ATEX 18877X

DNV 10.0002X **IECEx** Ingress IP66/IP67 IEC 60529

SIL Suitable for use in SIL2 systems

**ACCESSORIES** 

GD1-X00-TT01 Alignment kit GD1-X00-TT02 Test cell





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