

GD1 - H2S

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 has been designed with features that provide an effective response to the detection of gas hazards in a wide range of industrial environments from offshore production facilities to wastewater treatment plants.

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

Unlike traditional methods for detecting H2S (MOS or EC cell), the GD1 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.

The detector is supplied with worldwide hazardous area approvals, is suitable for SIL2 applications and comes with a 5 year warranty.

FEATURES

- Laser open path toxic gas detection
- Tuneable laser diode / laser scanning
- No undisclosed source of failure
- Large area of coverage
- High sensitivity
- Fast acting
- Vibration & misalignment tolerant optics
- Heated optics, transmitter and receiver

HART®

BENEFITS

- No sensor recalibration or replacement
- Superior detector stability and specificity
- Suitable for use in SIL 2 systems
- Fewer devices cover the same risk
- Suitable for personnel safety purposes
- Fastest possible speed of response
- Ease of alignment and setup
- High performance in arduous conditions
- Non-proprietary user interface and improved preventative maintenance



Technical Data

GENERAL

Detection method	Near IR laser scanning
IR-Source	Tuneable laser diode Laser Class 1, eye safe
Detected gas	H2S
Range	0 - 200 ppm*m 0 - 500 ppm*m 0 - 1000 ppm*m 0 - 2000 ppm*m 0 - 5000 ppm*m 0 - 20000 ppm*m
Path length	5 - 75m
Self test	Continuous
Calibration	Factory set, no field recalibration

PERFORMANCE

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

OPTICS

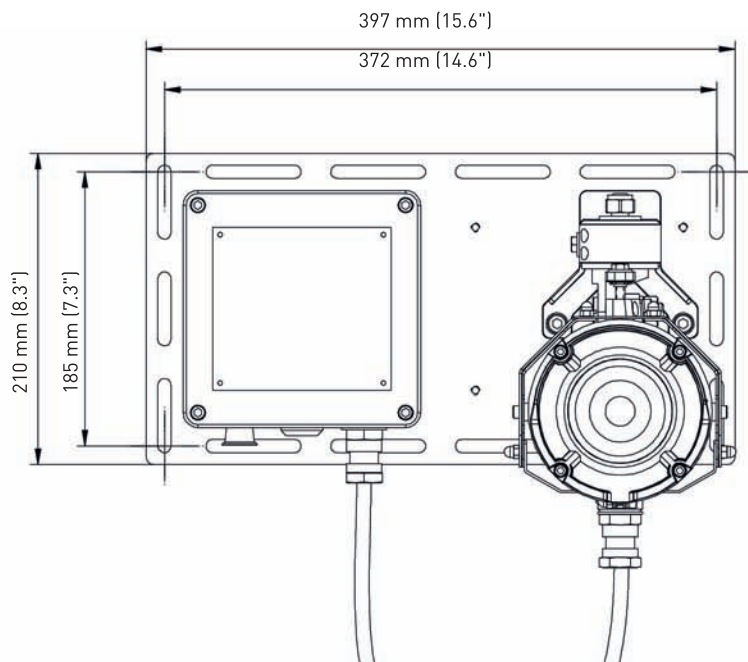
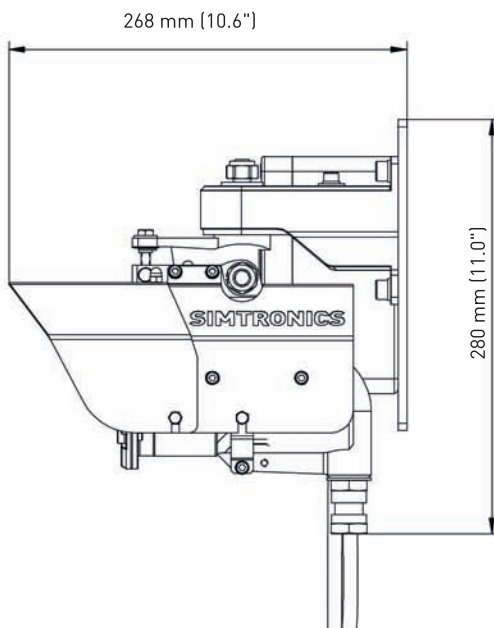
Alignment	±0.3°
Optics	Heated (Transmitter and Receiver)
Tolerable obscuration	98% (Allowable signal loss)

OUTPUT SIGNAL

Standard	4-20mA source or sink HART®	
Fault signals	Fault	1 mA
	Beam Block	2 mA
	Warning	3 mA

DIMENSIONS

Tx and Rx Housing	Ref. outline drawing
-------------------	----------------------



ELECTRICAL

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

TEMPERATURE RANGE

Storage	-40°C to +75°C (-40°F to +167°F)
Operating	-40°C to +65°C (-40°F to +149°F)
ATEX Flameproof	-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
Approx.	2.0 Kg (4.4 lbs) per Tx or Rx Junction Box

WARRANTY

5 years full warranty on detector system

APPROVALS

ATEX rating Tx/Rx	II 2 G	Ex d IIC T6/T5
ATEX rating JB	II 2 G	Ex e IIC T4/T5/T6
ATEX certificate	DNV 08 ATEX 18877X	
IECEX	DNV 10.0002X	
Ingress	IP66/IP67 IEC 60529	
SIL	Suitable for use in SIL2 systems	

ACCESSORIES

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