



GROVELEY DETECTION

Groveley Detection Limited

Anchor Works, Groveley Road

Christchurch, Dorset

BH23 3HB

UK

T: +44 (0)1202 483497

F: +44 (0)1202 486658

E: sales@groveley.co.uk

Hydrogen Sulphide Laser Open Path Detector **GD1**

The Simtronics 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 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.

Features

- Optical infrared toxic gas detection with tuneable laser diode
- Large area of coverage
- High sensitivity and stability
- Heated optics, transmitter and receiver

Benefits

- Low cost of ownership as no sensor recalibration or replacement required
- Simplified alignment and set-up



Transmitter



Receiver

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*No-one ever regretted
buying quality...*

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TECHNICAL DETAILS

General

■ Detection method	Near IR laser scanning
■ IR-Source	Tuneable laser diode Laser Class 1, eye safe
■ Detector variants	H ₂ S Other gases on request
■ Range: H ₂ S	0 - 200 ppm.m
■ Path lengths	5 - 50m
■ Self test	Continuous
■ Calibration	Factory set, no field calibration

Performance

■ Lifetime stability:	Zero: ±2% of full scale deflection Span: ±3% of full scale deflection
■ Response time	5 seconds

Optics

■ Alignment ±0.3°
■ Heated optics (Transmitter and Receiver)
■ >90% obscuration

Output Signal

■ Standard	4-20mA source or sink, max. load impedance 500 Ohm HART®
■ Option	RS485/Modbus Protocol
■ Fault signals	Beam block / fault 1 mA Low signal 2 mA Warning 3 mA

Electrical

■ Power supply	24 V DC, range 18-32 V DC
■ Power consumption	< 15 W
■ Cable entry	M20

Temperature Range

■ Operating	-20°C to +45°C
■ ATEX flameproof	-55°C to +75°C
■ Humidity	100% RH

Material

■ Tx & Rx Housing	Stainless steel SIS2343 (ASTM 316)
■ Junction Box	GRP

Weight

■ Approx.	5.5 Kg per Tx or Rx
■ Approx.	2.0 Kg per Tx or Rx junction box



Dimensions

■ 201L x 124W x 254H (mm)

Warranty

■ 5 year warranty on detector system

Certification

■ ATEX rating Tx/Rx	 II 2 G Ex d IIC T6/T5
■ ATEX rating JB	 II 2 (1) G Ex emb(ia) IIC T4/T5/T6
■ ATEX certificate	DNV-2008-OSL-ATEX-18877X
■ IECEx	DNV 10.0002X
■ GOST-K	Pending
■ CSA	Class 1, Div 1, Groups B,C & D (Pending)
■ Ingress	IP66/IP67 IEC 60529
■ SIL	Suitable for use in SIL2 systems

Accessories

■ Alignment kit / Test cell / Sun shade

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