D-GUARD²

Digital Gas Detector with HART communications

Designed from the ground up to provide reliable, accurate and flexible gas detection, the D-Guard² incorporates leading edge technology. From the basic design philosophy that includes functional safety compatible techniques, through to the advanced functionality that provides repeatable and dependable performance. D-Guard² is powerful, yet simple to use, making it an ideal single solution detector with low ownership cost.

D-Guard² offers world leading 2-wire loop powered NDIR methane and carbon dioxide monitoring capability, allowing greater numbers of detectors to be driven from smaller power supplies, reduced cable diameters and reduced barrier complexity. For medium to large installations, this allows for a reduced system install and running cost.

Oxygen monitoring applications now benefit from the optional use of next generation 5 year life oxygen sensors, giving excellent dependability and further reducing system ownership costs.

Inclusion of HART communications over the 2-wire connection enables access to a greater depth of information than is possible over a basic current loop signal. Real time gas readings, diagnostic information and sensor testing are available via the HART link. Remote current loop rescaling and test mode triggering is also possible via the HART link.

D-Guard² includes a high resolution ultra low power display with super clear text and graphics. The display offers visibility in low light spaces right through to use in direct sunlight. The user interface is intuitive and provides on screen guidance for carrying out calibration and configuration tasks.

Sensor temperature compensation results in long term stability, accuracy and reliability. D-Guard² continually monitors the sensor temperature and applies corrections to both the zero operating point and the response to gas, allowing the detector to remain steady under zero gas conditions and accurate when measuring gas concentration.

Response time testing functionality is integral to D-Guard² to give a true measurement of dynamic gas monitoring performance. As standards begin to emerge requiring such testing to be carried out, D-Guard² is equipped to make the task simple.

D-Guard² has been designed to efficiently allow the use of a single board to cover all detector types and ranges for toxic gases, oxygen, flammable gases and carbon dioxide. Configuration is simple and quick via the user interface.

D-Guard² is housed in a specialised highly impact resistant non-conductive plastic, static preventing enclosure, which is UV stable. Ingress protection includes IP66 and IP67/IP68.

KEY FEATURES

- 2 Wire connection
- HART 7.0 communications
- Leading edge NDIR methane detection
- 5 year, O2 sensor option
- Wide range of toxic gases monitored
- Ultra - Clear high resolution display
- Display illumination
- Full sensor temperature compensation
- Integrated dynamic response testing
- Timed/HART triggered sensor self-test
- Continuous operating condition monitoring
- Non-intrusive setup and calibration
- Guided intuitive user interface
- Detector isolate feature
- Group I and Group II intrinsically safe
- High impact anti-static housing
- IP66 and IP67/IP68 certified

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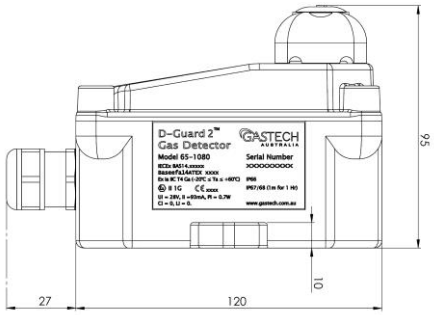
D-GUARD²

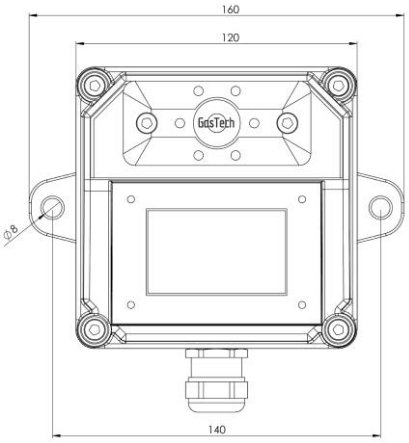
Sensor & 4-20mA Transmitter Specifications

TYPICAL RANGE OF GASES DETECTED*

Ammonia (NH3)	0 to 100 ppm in 1 ppm increments
Carbon Monoxide (CO)	0 to 100 ppm in 1 ppm increments
Carbon Dioxide (CO2)	0-1.5% v/v in 0.01% Vol increments
Chlorine (CL2)	0 to 10 ppm in 0.1 ppm increments
Ethylene Oxide (ETO)	0 to 20 ppm in 0.1 ppm increments
Hydrogen (H2)	0 to 100 ppm in 0.5 ppm increments
Hydrogen Cyanide (HCN)	0 to 50 ppm in 1 ppm increments
Hydrogen Sulfide (H2S)	0 to 200 ppm in 1 ppm increments
Hydrogen Chloride (HCL)	0 to 200 ppm in 1 ppm increments
Methane (CH4)	0-5% v/v /100% v/v in 0.01% or 1% increments
Methane (CH4)	0-100% LEL in 1% increments
Nitric Oxide (NO)	0 to 100 ppm in 1 ppm increments
Nitrogen Dioxide (NO2)	0 to 10 ppm in 0.1 ppm increments
Oxygen (O2)	0 to 25% in 0.1 %Vol increments
Ozone (O3)	0 to 2 ppm in 0.01 ppm increments
Phosphine (PH3)	0 to 1 ppm in 0.01 ppm increments
Sulfur Dioxide (SO2)	0 to 10 ppm in 0.1 ppm increments

*Increased sensors and detection range available on request.





SPECIFICATIONS

Analogue output	Two wire 4-20mA
Digital Communication	HART 7.0 over two-wire loop
Indication	400 x 240 pixel Graphical Back Light LCD display
Input Power	Group IIB 13 - 28V Group IIC 13 - 28V Group I 13 - 22V
Response Time	Typical response T90 in less than 40 sec (Toxic) and less than 10 sec (CH4), cell dependant
Certified Operating Temperature	-20°C to +70°C Group IIC (-20°C to +55°C NDIR Version and all other variants)
Humidity Range	15-90% non-condensing
Accuracy / Repeatability	Less than AS2290.3, ANZ60079.29 and AS4641

Sensor Style	4 series sized plug in sensors
Calibration	Non-intrusive, magnetic stylus
Drift	Less than 3% signal loss per 12 months
Dimensions	120mm x 120mm x 95mm
Enclosure	Anti-static / UV stable chemical resistant Derlin
Certification – Intrinsically Safe	IECEx Ex ia I Ma (-20°C ≤Ta ≤ +55°C) IECEx Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +70°C) IECEx Ex ia IIB T4 Ga (-20°C ≤ Ta ≤ +55°C) ATEX Ex I M1 / II 1G
IP Rating	IP66 and IP67 (1m for 30min) IP68 (1.2m for 1.5 hrs)
Warranty	2 Years on Instrument Sensor warranty varies with cell
Part no.	65-1080-xxx (xxx denotes gas type) 65-1080G-xxx (non-certified version)

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