

# D-GUARD<sup>2</sup>



Digital Gas Detector with HART communications

Designed from the ground up to provide reliable, accurate and flexible gas detection, the D-Guard<sup>2</sup> 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-Guard<sup>2</sup> is powerful, yet simple to use, making it an ideal single solution detector with low ownership cost.

D-Guard<sup>2</sup> 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-Guard<sup>2</sup> 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 guid-

ance for carrying out calibration and configuration tasks.

Sensor temperature compensation results in long term stability, accuracy and reliability. D-Guard<sup>2</sup> 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-Guard<sup>2</sup> to give a true measurement of dynamic gas monitoring performance. As standards begin to emerge requiring such testing to be carried out, D-Guard<sup>2</sup> is equipped to make the task simple.

D-Guard<sup>2</sup> 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-Guard<sup>2</sup> is housed in a specialised highly impact resistant non-conductive plastic, static preventing enclosure, which is UV stable. Ingress protection includes IP66 and 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 IP68 certified

**D-GUARD<sup>2</sup>****RANGE OF GASES DETECTED**

Gas Type	Gas Name	Cell Design Range	Unit	Notes	Standard Range Available
O <sub>2</sub>	Oxygen	Linear to 30%	% VOL	-30 to +55 °C	0-25%
O <sub>2</sub> (5yr)	Oxygen	Linear to 30%	% VOL	-30 to +50 °C	0-25%
CO	Carbon Monoxide	5,000	PPM	-30 to +50 °C	0-100
CO	Carbon Monoxide	5,000	PPM	-30 to +50 °C	0-500
CO	Carbon Monoxide	5,000	PPM	-30 to +50 °C	0-1000
H <sub>2</sub> S	Hydrogen Sulphide	100	PPM	-30 to +50 °C	0-10
H <sub>2</sub> S	Hydrogen Sulphide	100	PPM	-30 to +50 °C	0-25
H <sub>2</sub> S	Hydrogen Sulphide	100	PPM	-30 to +50 °C	0-200
NO <sub>2</sub>	Nitrogen Dioxide	50	PPM	-20 to +50 °C	0-10
NH <sub>3</sub>	Ammonia	100	PPM	-20 to +40 °C	0-100
NH <sub>3</sub>	Ammonia	500	PPM	-20 to +40 °C	0-500
NH <sub>3</sub>	Ammonia	1000	PPM	-20 to +40 °C	0-1000
CL <sub>2</sub>	Chlorine	50	PPM	-20 to +40 °C	0-10
SO <sub>2</sub>	Sulphur Dioxide	50	PPM	-30 to +50 °C	0-20
NO	Nitric Oxide	250	PPM	-30 to +50 °C	0-100
HCL	Hydrogen Chloride	30	PPM	-20 to +40 °C	0-200
ETO	Ethylene Oxide	100	PPM	Accuracy +/-3% FS from +20 to +30 °C. +/- 10% from +10 to +40 °C.	0-20
HCN	Hydrogen Cyanide	30	PPM	-40 to +40 °C	0-25
HCN	Hydrogen Cyanide	30	PPM	-40 to +40 °C	0-50
PH <sub>3</sub>	Phosphine	10	PPM	-20 to +40 °C	0-5
O <sub>3</sub>	Ozone	1	PPM	-20 to +40 °C	0-2
N <sub>2</sub> H <sub>4</sub>	Hydrazine	1	PPM	-10 to +40 °C	0-1
HF	Hydrogen Fluoride	10	PPM	-20 to +40 °C	0-10
CH <sub>4</sub>	Methane	5	% VOL	-20 to +40 °C	5% VOL
CH <sub>4</sub>	Methane	100	% LEL	-20 to +40 °C	0-100% LEL
CH <sub>4</sub>	Methane	100	% VOL	-20 to +40 °C	0-100% VOL
CO <sub>2</sub>	Carbon Dioxide	1.5	% VOL	-20 to +40 °C	1.5% VOL
C <sub>3</sub> H <sub>8</sub>	Propane	4	% VOL	-550 to +60 °C	0-100% LEL

Range in PPM	Displayed Resolution in PPM
0-1	0.01
0-99	0.1
0-999	1
0-1000+	1

Contact your technical consultant or distributor for different gases, ranges or resolutions that are not listed here.

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## SPECIFICATIONS

 Specifications subject to change without notice

<b>Analogue output</b>	Two wire 4-20mA
<b>Digital Communication</b>	HART 7.0 over two-wire loop
<b>Indication</b>	400 x 240-pixel Graphical Back Light LCD display
<b>Input Power</b>	Group IIB 13 - 28V Group IIC 13 - 28V Group I 13 - 22V
<b>Response Time</b>	Typical response T90 in less than 40 sec (Toxic) and less than 10 sec (CH4), cell dependant
<b>Certified Operating Temperature</b>	-20°C to +70°C Group IIC (-20°C to +55°C NDIR Version and all other variants)
<b>Humidity Range</b>	15-90% non-condensing
<b>Accuracy / Repeatability</b>	Less than AS2290.3, ANZ60079.29 and AS4641
<b>Sensor Style</b>	4 series sized plug in sensors
<b>Calibration</b>	Non-intrusive, magnetic stylus
<b>Drift</b>	Less than 3% signal loss per 12 months
<b>Dimensions</b>	120mm x 120mm x 95mm
<b>Enclosure</b>	Anti-static / UV stable chemical resistant Delrin
<b>Certification – Intrinsically Safe</b>	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 ANZEX 18.2002-0
<b>IP Rating</b>	IP66 IP68 (1.2m for 1.5 hrs)
<b>Warranty</b>	2 Years on Instrument Sensor warranty varies with cell
<b>Part no.</b>	65-1080-xxx (xxx denotes gas type) 65-1080G-xxx (non-certified version)



t +61 8 6108 0000

e [info@gastech.com](mailto:info@gastech.com)w [gastech.com](http://gastech.com)**HEAD OFFICE**24 Baretta Road  
Wangara WA 6065  
Phone: +61 8 6108 0000**SYDNEY OFFICE**21/25 Narabang Way  
Belrose NSW 2085  
Phone: +61 2 9451 0054**BRISBANE OFFICE**PO Box 349  
Cannon Hill Qld 4170  
Phone: +61 7 3160 0901