

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



## Digital Gas Detector with in-built Relay Board

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

D-Guard<sup>2</sup>R comes standard with a built in relay board. This includes 3 relays; 2 for the low and high alarms set within the transmitter and a third for fault. This allows for a reduced system install and running cost by avoiding having to run additional wiring between other relay boards.

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 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. An optional HART communications port can be fitted to the side of the unit for less intrusive HART access.

D-Guard<sup>2</sup>R 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-Guard<sup>2</sup>R 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>R 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>R 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 and supplied service tool with magnetic stylus built in.

D-Guard<sup>2</sup>R is housed in a specialised highly impact resistant non-conductive plastic, static preventing enclosure, which is UV stable.



### KEY FEATURES

- Built in relay board
- 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
- High impact anti-static housing
- IP66 and IP68 certified

**D-GUARD<sup>2</sup>R****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
CO	Carbon Monoxide (H <sub>2</sub> Tolerant)	2,000	PPM	-30 to +50 °C	0-200
CO	Carbon Monoxide (H <sub>2</sub> Tolerant)	2,000	PPM	-30 to +50 °C	0-2000
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>	Sulfur 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>Relay Output 1</b>	Low Alarm - Single Pole Double Throw (SPDT)
<b>Relay Output 2</b>	High Alarm - Single Pole Double Throw (SPDT)
<b>Relay Output 3</b>	Fault - Normally Energised
<b>Input Power</b>	10-30VDC
<b>Response Time</b>	Typical response T90 in less than 40 sec (Toxic) and less than 10 sec (CH4), cell dependent
<b>Operating Temperature</b>	-20°C to +55°C
<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 year
<b>Dimensions</b>	120mm x 120mm x 95mm
<b>Enclosure</b>	Anti-static / UV stable chemical resistant Delrin
<b>Gland</b>	20mm nylon (IP68 Rated)
<b>IP Rating</b>	IP66 (1.2m for 1.5 hrs)
<b>Warranty</b>	2 Years on Instrument Sensor warranty varies with cell
<b>Part no.</b>	65-1080R-xxx (xxx denotes gas type)



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