

D-GUARD²



Fixed Digital Gas Detector with IECEx

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.

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, available on selected models only,

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 IP68.



KEY FEATURES

- 2 Wire connection
- Available with or without HART 7.0 communications
- Leading edge NDIR methane detection
- Wide range of toxic gases monitored
- Ultra - Clear high-resolution display
- Display illumination
- Sensor temperature compensation available on selected models
- 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

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RANGE OF GASES DETECTED

Gas Name	Ordering Code with HART	Ordering code without HART	Range	Temperature Range	Temperature Compensation
Ammonia	65-1080-NH3-100	65-1080H-NH3-100	0-100 ppm	-20 to +40 °C	Yes
Ammonia	65-1080-NH3-500	65-1080H-NH3-500	0-500 ppm	-20 to +40 °C	No
Ammonia	65-1080-NH3-1000	65-1080H-NH3-1000	0-1000 ppm	-20 to +40 °C	No
Carbon Dioxide	65-1080-CO2	65-1080H-CO2	0-1.5 %vol	-20 to +40 °C	No
Carbon Monoxide	65-1080-CO-100	65-1080H-CO-100	0-100 ppm	-30 to +50 °C	Yes
Carbon Monoxide	65-1080-CO-500	65-1080H-CO-500	0-500 ppm	-30 to +50 °C	Yes
Carbon Monoxide	65-1080-CO-1000	65-1080H-CO-1000	0-1000 ppm	-30 to +50 °C	No
Chlorine	65-1080-CL2	65-1080H-CL2	0-10 ppm	-20 to +40 °C	Yes
Ethylene Oxide	65-1080-ETO	65-1080H-ETO	0-100 ppm	Accuracy +/-3% FS from +20 to +30 °C. +/- 10% from +10 to +40 °C.	Yes
Hydrazine	65-1080-N2H4	65-1080H-N2H4	0-1 ppm	-10 to +40 °C	No
Hydrogen Chloride	65-1080-HCL	65-1080H-HCL	0-100 ppm	-20 to +40 °C	No
Hydrogen Cyanide	65-1080-HCN-25	65-1080H-HCN-25	0-25 ppm	-40 to +40 °C	No
Hydrogen Cyanide	65-1080-HCN-50	65-1080H-HCN-50	0-50 ppm	-40 to +40 °C	Yes
Hydrogen Fluoride	65-1080-HF	65-1080H-HF	0-10 ppm	-20 to +40 °C	No
Hydrogen Sulphide	65-1080-H2S-10	65-1080H-H2S-10	0-10 ppm	-30 to +50 °C	Yes
Hydrogen Sulphide	65-1080-H2S-25	65-1080H-H2S-25	0-25 ppm	-30 to +50 °C	Yes
Hydrogen Sulphide	65-1080-H2S-100	65-1080H-H2S-100	0-100 ppm	-30 to +50 °C	Yes
Hydrogen Sulphide	65-1080-H2S-200	65-1080H-H2S-200	0-200 ppm	-30 to +50 °C	No
Methane	65-1080-CH4-5	65-1080H-CH4-5	0-5 %vol	-20 to +40 °C	No
Methane	65-1080-CH4-100	65-1080H-CH4-100	0-100 %vol	-20 to +40 °C	No
Nitrogen Dioxide	65-1080-NO2	65-1080H-NO2	0-10 ppm	-20 to +50 °C	Yes
Nitric Oxide	65-1080-NO	65-1080H-NO	0-100 ppm	-30 to +50 °C	Yes
Oxygen	65-1080-O2	65-1080H-O2	0-25 %vol	-30 to +55 °C	No
Ozone	65-1080-O3	65-1080H-O3	0-2 ppm	-20 to +40 °C	Yes
Phosphine	65-1080-PH3	65-1080H-PH3	0-5 ppm	-20 to +40 °C	No
Propane	65-1080-C3H8	65-1080H-C3H8	0-100 %LEL	-550 to +60 °C	No
Sulfur Dioxide	65-1080-SO2	65-1080H-SO2	0-10 ppm	-30 to +50 °C	Yes

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

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SPECIFICATIONS

 Specifications subject to change without notice

Analogue output	Two wire 4-20mA
Digital Communication	HART 7.0 over two-wire loop on selected models
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 (CH ₄), 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 acetal plastic
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 ANZEX 18.2002-0
IP Rating	IP66 IP68 (1.2m for 1.5 hrs)
Warranty	2 Years on Instrument Sensor warranty varies with cell



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