

D-GUARD²R



Digital Gas Detector with in-built Relay Board



Designed from the ground up to provide reliable, accurate and flexible gas detection, the D-Guard²R 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-Guard²R is powerful, yet simple to use, making it an ideal single solution detector with low ownership cost.

D-Guard²R 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-Guard²R 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-Guard²R 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-Guard²R 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-Guard²R 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-Guard²R 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

- 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 IP67/IP68 certified

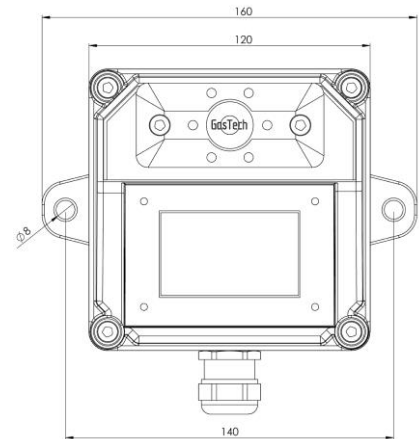
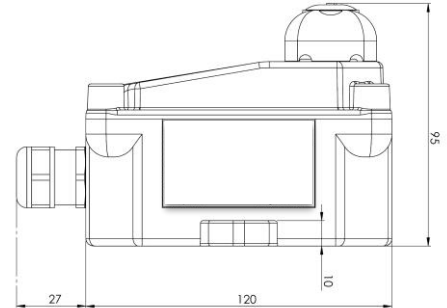


Sensor & 4-20mA Transmitter Specifications

TYPICAL RANGE OF GASES DETECTED*

| | |
|-------------------------------------|--|
| Ammonia (NH ₃) | 0 to 100 ppm in 1 ppm increments |
| Carbon Monoxide (CO) | 0 to 100 ppm in 1 ppm increments |
| Carbon Dioxide (CO ₂) | 0-1.5% v/v in 0.01% Vol increments |
| Chlorine (CL ₂) | 0 to 10 ppm in 0.1 ppm increments |
| Ethylene Oxide (ETO) | 0 to 20 ppm in 0.1 ppm increments |
| Hydrogen (H ₂) | 0 to 100 ppm in 0.5 ppm increments |
| Hydrogen Cyanide (HCN) | 0 to 50 ppm in 1 ppm increments |
| Hydrogen Sulfide (H ₂ S) | 0 to 200 ppm in 1 ppm increments |
| Hydrogen Chloride (HCL) | 0 to 200 ppm in 1 ppm increments |
| Methane (CH ₄) | 0-5% v/v /100% v/v in 0.01% or 1% increments |
| Methane (CH ₄) | 0-100% LEL in 1% increments |
| Nitric Oxide (NO) | 0 to 100 ppm in 1 ppm increments |
| Nitrogen Dioxide (NO ₂) | 0 to 10 ppm in 0.1 ppm increments |
| Oxygen (O ₂) | 0 to 25% in 0.1 %Vol increments |
| Ozone (O ₃) | 0 to 2 ppm in 0.01 ppm increments |
| Phosphine (PH ₃) | 0 to 1 ppm in 0.01 ppm increments |
| Sulfur Dioxide (SO ₂) | 0 to 10 ppm in 0.1 ppm increments |

*Increased sensors and detection range available on request.



SPECIFICATIONS

| | | | |
|-----------------------|--|--------------------------|---|
| Analogue output | Two wire 4-20mA | Accuracy / Repeatability | Less than AS2290.3, ANZ60079.29 and AS4641 |
| Digital Communication | HART 7.0 over two-wire loop | Sensor Style | 4 series sized plug in sensors |
| Indication | 400 x 240 pixel Graphical Back Light LCD display | Calibration | Non-intrusive, magnetic stylus |
| Relay Output 1 | Low Alarm - Single Pole Double Throw (SPDT) | Drift | Less than 3% signal loss per year |
| Relay Output 2 | High Alarm - Single Pole Double Throw (SPDT) | Dimensions | 120mm x 120mm x 95mm |
| Relay Output 3 | Fault - Normally Energised | Enclosure | Anti-static / UV stable chemical resistant Derlin |
| Input Power | 10-30VDC | Gland | 20mm nylon (IP68 Rated) |
| Response Time | Typical response T90 in less than 40 sec (Toxic) and less than 10 sec (CH ₄), cell dependent | IP Rating | IP66 and IP67 (1m for 30min) IP68 (1.2m for 1.5 hrs) |
| Operating Temperature | -20°C to +55°C | Warranty | 2 Years on Instrument Sensor warranty varies with cell |
| Humidity Range | 15-90% non-condensing | Part no. | 65-1080R-xxx (xxx denotes gas type) |