



CRITICAL ENVIRONMENT TECHNOLOGIES

GAS DETECTION SENSOR SPECS

CGAS-D-CO-NO2 Transmitter

SENSOR SPECIFICATIONS

CGAS-D-CO-NO2 Transmitter

GENERAL

SIZE	5.0 x 5.0 x 3.0 in (127 x 127 x 76 mm) without optional splash guard (Option -S)
WEIGHT	14 oz / 400 g
CONSTRUCTION	Black ABS / Polycarbonate blend, water/dust tight, corrosion resistant
SYSTEM POWER	4-wire: 16-30 VDC, 3W, Class 2 4-wire: 12-27 VAC, 50-60 Hz, 3 VA, Class 2
OPERATING TEMPERATURE	0°C to +40°C (32°F to 104°F), -40°C (-40°F) w/low temperature Option -LT
OPERATING HUMIDITY	15 to 90% non-condensing
INDICATORS	LCD digital display, 2-line x 16 character, backlit
COMMUNICATION	BACnet® MS/TP (version 1 rev 14) RS-485, or Modbus® RTU (version 1.1b3) RS-485
RELAY AND AUDIBLE (OPTION -RBZ)	1 SPDT dry contact relay rated 30 volts, 2 amp max Internal buzzer, rated 90 dB @ 10 cm / 4 in, enable/disable
WARM UP TIME	3 minutes after power up (to full operation)
GASES DETECTED	Carbon Monoxide (CO) and Nitrogen Dioxide (NO ₂)

CARBON MONOXIDE SENSOR

TYPE	Electrochemical
SENSOR RANGE	0 – 200 ppm (standard)
LIFESPAN	Approximately 3 years (application dependent)
RESPONSE TIME	<30 seconds
MINIMUM DETECTION	2 ppm (with regular calibration maintenance of sensor)
RESOLUTION	Display resolution 1 ppm Sensor resolution: <1 ppm



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ACCURACY	<1ppm
REPEATABILITY	< ±3% CO equivalent
SENSITIVITY DRIFT	<5 % per year
CROSS SENSITIVITY	H2@1000ppm = <35ppm, NO@50ppm = <10ppm, C2H6O@200ppm = <1ppm, CL ₂ @15 = <1ppm, C2H4@100ppm = <96ppm, C2H2@100ppm = <90ppm
COMPLIES WITH	UL2075, 2nd Edition, Standard for Gas and Vapour Detectors and Sensors

NITROGEN DIOXIDE SENSOR

TYPE	Electrochemical Nitrogen Dioxide (NO ₂)
SENSOR RANGE	0 – 10.0 ppm
LIFESPAN	Approximately 3+ years (application dependent)
RESPONSE TIME	<25 seconds
MINIMUM DETECTION	0.1 ppm (with regular calibration maintenance of sensor)
RESOLUTION	Display resolution: 0.1ppm Sensor resolution: ±0.1 ppm
ACCURACY	±0.1 ppm @ STP, across measurement range at time of calibration and at calibration concentration + calibration gas concentration error
REPEATABILITY	±2% (with regular calibration maintenance of sensor)
SENSITIVITY DRIFT	Zero: <+/-0.02 ppm (with regular calibration maintenance of sensor) Span: <2% signal per month (with regular calibration of sensor)
CROSS SENSITIVITY	Relative to Nitrogen dioxide = 100%, Hydrogen Sulphide = <40%, Hydrogen = <1%, Sulphur Dioxide = <1%, Ammonia = <1%, Nitric Oxide = <20%, Ethanol = <1%, Carbon Monoxide = <1%, Chlorine = <70%
COMPLIES WITH	UL2075, 2nd Edition, Standard for Gas and Vapour Detectors and Sensors



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ADDITIONAL INFORMATION

SAFETY

Automatic resetting thermal overload fuse (reset capabilities to 500 times)

WIRING

VDC or VAC (ground referenced) 4-conductor shielded, 16 -18 AWG stranded within conduit, network wiring (daisy-chain)

SENSOR MOUNTING

Breathing Zone - slightly lighter than air
4 to 6 ft (1.2 to 1.8 m) from finished floor

MONITORING AREA

7,000 to 10,000 ft² / 464 to 929 m²
50 foot / 15 meter radius, application dependent

ALARM SETPOINTS

Carbon Monoxide: Low: 25 ppm / Mid: 50 ppm / High: 100 ppm
Nitrogen Dioxide: Low: 0.70 ppm / Mid: 1.00 ppm / High: 1.50 ppm

CERTIFICATIONS (TESTED TO)

CSA: C22.2 NO.205-12 UL: UL508 (Edition 18): 2018
CE: EMC Directive 2014/30/EU, EN50270:2015, Type 1, EN61010
CO sensor complies with UL2075, 2nd Edition
Listed by BTL
RoHS compliant circuit boards
This device complies with part 15 of the FCC Rules

Note: Never install gas detectors in the direct path of moving air.

CONDITIONS AFFECTING ELECTROCHEMICAL SENSORS

- Typically designed to operate between -10°C and +50°C, do not exposed to extreme temperatures for prolonged periods of time. Repeated or prolonged exposure to temperatures like 60-65°C / 140-149 can lead to evaporation of the electrolyte and shifts in baselines readings.
- Do not expose to high moisture for extended periods of time.
- Prolonged exposure to extremely high gas concentrations can compromise sensor performance.
- Paint fumes, cleaning products, dust, sand, water, insects can reduce lifespan and compromise performance. Avoid exposure to high concentrations of solvent vapours both during storage and operation.
- Before initial use after production may be stored at room temperature ideally at 20°C / 68°F and 60%RH or preferably in the fridge for up to 6 months. Beyond this period, the sensor performance is likely to deteriorate, such as with longer response time and lower sensitivity regardless of whether sensor has been used or not.
- The more exotic gases (chlorine, ozone etc.) tend to have shorter life spans than the more common gases (CO, nitrogen dioxide)
- Install gas detector vertically so the display is over top of the sensor vent and device is flat against a wall or column. Never install gas detectors in the direct path of moving air.



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