



CGAS-SC-CO-NO2-2AO-DV Self Contained Controller

Self Contained Controller with Electrochemical Carbon Monoxide (CO) Sensor and Nitrogen Dioxide (NO₂) Electrochemical Sensor

Dimensions: Size Weight	8 x 6.07 x 3.16 in (20.3 x 15.4 x 8 cm) without optional splash guard (Option -S) 750 g / 1.65 lbs
Construction:	Black ABS / Polycarbonate blend, water/dust tight, corrosion resistant
System Power:	Low voltage: 16 – 30 VDC /12 – 28 VAC, 50/60 Hz, 10W, Class 2 Line voltage: 100 – 240V AC +/-10%, 50/60 Hz, 10W, 1-phase
Operating Temperature:	0°C to +40°C (32°F to 104°F), -40°C (-40°F) with low temperature Option -LT
Operating Humidity:	15 to 95% non-condensing
Indicators:	LCD display 2 x 16 characters with LED panel indicating alarm status 1, 2 and 3 for any channel and FAULT
Output (user selectable):	Two analog outputs jumper selectable current or voltage BACnet® MS/TP (version 1 rev 14) RS-485, or Modbus® RTU (version 1.1b3) RS-485 Horn/strobe output terminal
Relay	2 internal SPDT dry contact relays, rated 5 amps @ 240 VAC
Audible Alarm	Standard: Internal buzzer, rated 76 dB @ 3 m (10 ft) Option -A: Side mounted buzzer, rated 90 dB @ 30 cm (1 ft) Option -WA: Water tight, side mounted buzzer, rated 85 dB @ 60.96 cm (2 ft) User selectable Temporal 4 sound pattern
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
Life Span	Approximately 3 years (application dependent)
UL Listed	UL2075
Sensor Range:	0 – 200 ppm (standard)
Minimum Detection:	2 ppm (with regular calibration maintenance of sensor)
Accuracy:	<1ppm
Repeatability:	< ±3% CO equivalent
Sensitivity Drift:	<5 % per year
Response Time:	<30 seconds
Resolution:	Display resolution 1 ppm Sensor resolution: <1 ppm
Cross Sensitivity:	H2@1000 ppm = <35ppm, NO@50ppm = <10ppm, C2H6O@200ppm = <1ppm, CL2@15 = <1ppm, C2H4@100ppm = <96ppm, C2H2@100ppm = <90ppm
Nitrogen Dioxide Sensor:	
Type	Electrochemical
Life Span	Approximately 3 years (application dependent)
UL Listed	UL2075
Sensor Range:	0 – 10.0 ppm
Minimum Detection:	0.1 ppm (with regular calibration maintenance of sensor)
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%



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PRODUCT SPECIFICATION

	signal per month (with regular calibration of sensor)
Response Time:	<25 seconds
Resolution:	Display resolution: 0.1ppm Sensor resolution: ± 0.1 ppm
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%
Safety:	Automatic resetting thermal overload fuse (reset capabilities to 500 times)
Wiring:	Low voltage: 24 VDC or 24 VAC 2-conductor, 14 - 18 AWG stranded within conduit Line voltage: VAC 3-conductor (Line, Neutral, Protective Earth Ground), 18 AWG stranded within conduit Network wiring (daisy-chain): 4-conductor, 16 AWG, stranded within conduit
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 ft ² / 464 to 929 m ² 40 to 56 foot / 12 to 17 meter radius, application dependent
Suggested Alarm Setpoints	Carbon Monoxide: Low: 25 ppm / Mid: 50 ppm / High: 100 ppm Nitrogen Dioxide: Low: 0.7 ppm / Mid: 1 ppm / High: 1.5 ppm
Certifications: (tested to)	CSA-C22.2 No 61010-1, UL 61010-1 (Edition 3) RoHS compliant circuit boards Listed by BTL This device complies with part 15 of the FCC Rules
Note:	Never install gas detectors in the direct path of moving air. Replacement for DCC-E-TCO-NO2B

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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