



PRODUCT SPECIFICATION

CGAS-SC-02 Self Contained Controller

Low Voltage Self Contained Controller with Electrochemical Oxygen (O₂) Sensor

Dimensions:	8 x 6.07 x 3.16 in (20.3 x 15.4 x 8 cm) without optional splash guard (Option -S)
Size Weight	750 g / 1.65 lbs
Construction:	Black ABS / Polycarbonate blend, water/dust tight, corrosion resistant
Sensor: Type	Electrochemical capillary type
Life Span	2-3 years
Gases Detected:	Oxygen (O ₂)
Sensor Range:	0 – 25% vol standard
System Power:	16 – 30 VDC /12 – 28 VAC, 50/60 Hz, 10W, Class 2
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):	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)
Accuracy:	No data available
Repeatability:	< 2% of signal
Pressure Sensitivity	<0.1% change of output @ 20 kPa
CO₂ Sensitivity:	+0.1 % change in output / % CO ₂ @ 5% CO ₂
Clean Air Output Drift:	< 2% change @ 3-months
Response Time:	< 15 seconds T ₉₀ from 20.9% to 0%
Resolution:	Display resolution: 0.1% vol Sensor resolution: ± 0.05% vol
Warm Up Time:	Minimum 2 hours before looking at the readings If after a minimum of 2 hours the gas reading is not 20.9%, do a respan.
Safety:	Automatic resetting thermal overload fuse (reset capabilities to 500 times)
Wiring:	24 VDC or 24 VAC 2-conductor, 14 - 18 AWG stranded within conduit Network wiring (daisy-chain) 4-conductor, 16 AWG, stranded within conduit
Sensor Mounting:	Breathing Zone 4 to 6 ft / 1.2 to 1.8 m from the floor
Monitoring Area:	5000 ft ² / 465 m ²
Suggested Alarm Points	Low Alarm: descending 19.5 % vol, Mid Alarm: ascending 23% vol, High Alarm: descending 18.5% vol
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.

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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.
- Continuous exposure to high concentrations of sulphide compounds like hydrogen sulphide can poison an oxygen sensor.
- Oxygen sensors require 99.9% nitrogen (N₂) for a true zero. During calibration, recommend doing the span first, followed by zeroing.
- 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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