



The cGas Detector is a digital transmitter that offers great flexibility at a lower cost with customized sensor combinations and specialized options for adding only the functionality you need. It can be configured with one or two gas sensors and is ideal for monitoring toxic, combustible and refrigerant gases in commercial and light industrial, non-hazardous (non-explosion rated) environments.

BACnet® or Modbus® output for communicating with a Controller or a Building Automation System is user selectable in the field. Pre-calibrated sensors with true Plug & Play Smart Sensor technology makes replacing sensors quick and easy. Powered by 24 VDC or ground reference AC, the digital cGas Detector has an LCD display, temperature compensation and the firmware and configuration can be upgraded in the field using the USB connection. Optional features include, RH and temperature monitoring, low temperature operation, relay and wash-down / water spray protection. The digital cGas Detector comes in a standard water / dust tight, corrosion resistant ABS / polycarbonate enclosure with a hinged, secured door. With the optional, factory installed splash guard (Option -S) the enclosure is IP54 rated and provides protection in water spray or wash down applications.

KEY FEATURES

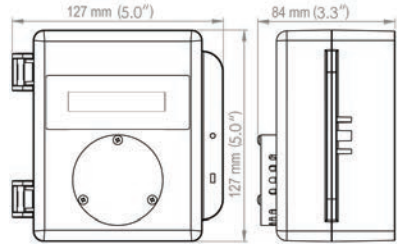
- » Up to 2 gas channel configurations
- » Field configurable BACnet® MS/TP RS-485 or Modbus® RTU RS-485 digital output signal
- » Easy Plug & Play Smart Sensor replacement at end of life
- » Bright LCD display
- » USB port for configuration changes and firmware upgrades
- » Optional RH & Temperature sensor (Option -RHT)*
- » Optional 2A SPDT dry contact relay (Option -RLY)*
- » Optional low temperature operation package (Option -LT)*
- » Optional factory installed splash guard (Option -S or Option -SN)
- » Standard water / dust tight, corrosion resistant enclosure (drip proof)
- » Sensor Calibration Extending Firmware (CEF) for parking applications

APPLICATIONS

- » Parking Garages/Car Parks
- » Vehicle Repair Shops
- » Ice Arenas
- » Commercial Pools
- » Battery Charging Rooms
- » Manufacturing Plants
- » Maintenance Facilities
- » ... and many more



TECHNICAL DRAWING



NOTE: Drawing above is shown with the splash guard (Option -S). Without the splash guard, the thickness of the unit is 76 mm / 3.0". With the sticky gas splash guard (Option -SN), the thickness of the unit is 123 mm / 4.86".

TECHNICAL SPECIFICATIONS

TARGET GAS

Electrochemical - Ammonia, Carbon Monoxide, Carbon Dioxide, Chlorine, Ethylene, Formaldehyde, Hydrogen, Hydrogen Sulphide, Nitrogen Dioxide, Nitric Oxide, Oxygen, Ozone, Sulphur Dioxide

Combustibles (catalytic) - Hydrogen, Methane, Propane, Ethanol or Dimethyl Ether, Methanol

Infrared - Carbon Dioxide

Solid State - R22, R134A, R402A, R404A, R407C, R410A, R422D, R438A, R448A, R449A, R507A, R513A, R514A, TVOC

PID - TVOC

MECHANICAL

Enclosure	ABS / Polycarbonate, IP54 rated with splash guard installed, copper coated interior to reduce RF interference
Weight	400 g / 14 oz
Size	127 x 127 x 76 mm / 5.0 x 5.0 x 3.0 inches

USER INTERFACE

Display (standard)	2-line by 16 character graphic LCD Operating Temp: 0°C to 40°C / 32°F to 104°F
Display (low temp) (Option -LT)	2-line by 16 character OLED display Operating Temp: -40°C to 40°C / -40°F to 104°F
Push Buttons	Initiate calibration and menu options with internal UP, DOWN and ENTER push buttons
USB Port	Internal port for USB memory stick for field configuration updated / firmware upgrades

INPUT / OUTPUT

Output (user configurable)	BACnet® MS/TP (version 1 rev 14) RS-485 or Modbus® RTU (version 1.1b3) RS-485
RH & Temperature	Option -RHT* user selectable units DegC, DegF
Relay	Option -RLY* one SPDT dry contact relay, rated 30 volts, 2 amps max



DIGITAL GAS DETECTORS DATASHEET

cGas DETECTOR Digital Transmitter

FIXED SYSTEMS

TECHNICAL SPECIFICATIONS

ELECTRICAL

Power Requirement	16-30 VDC, 3W, Class 2 12-27 VAC, 50-60 Hz, 3 VA, Class 2
Wiring	VDC or VAC (ground referenced) 4-conductor shielded, 16 AWG stranded within conduit, network wiring (daisy-chain)
Fuse(s)	Automatic resetting thermal

ENVIRONMENTAL

Operating Temperature	0°C to 40°C (32°F to 104°F) temperatures below 0°C / 32°F require Option-LT
Operating Humidity	15 - 90% RH non-condensing

CERTIFICATION

Conforms to: CSA-C22.2 No. 205-12, UL508 (Edition 18):2018
Conforms to: EMC Directive 2014/30/EU EN 50270:2015, Type 1, EN61010
Conforms to: FCC. This device complies with Part 15 of the FCC Rules.
Listed by BTL

PRODUCT CODES

Single Channel - Electrochemical Sensors Lifespan

CGAS-D-NH3	Ammonia (NH ₃) sensor (0 - 500 ppm)	~2yr
CGAS-D-CO ¹	Carbon Monoxide (CO) sensor (0 - 200 ppm)	~6yr
CGAS-D-CL2	Chlorine (Cl ₂) sensor (0 - 5 ppm)	~3yr
CGAS-D-CL2-10	Chlorine (Cl ₂) sensor (0 - 10 ppm)	~3yr
CGAS-D-C2H4	Ethylene (C ₂ H ₄) sensor (0 - 200 ppm)	~2yr
CGAS-D-CH2O	Formaldehyde (CH ₂ O) sensor (0 - 5 ppm)	~2yr
CGAS-D-EH2	Hydrogen (H ₂) sensor (0 - 2,000 ppm)	~2yr
CGAS-D-H2S	Hydrogen Sulphide (H ₂ S) sensor (0 - 50 ppm)	~2yr
CGAS-D-NO	Nitric Oxide (NO) sensor (0 - 100 ppm)	~2yr
CGAS-D-NO2	Nitrogen Dioxide (NO ₂) sensor (0 - 10 ppm)	~3+yr
CGAS-D-O2	Oxygen (O ₂) sensor (0 - 25% volume)	~3yr
CGAS-D-O3	Ozone (O ₃) sensor (0 - 1 ppm)	~2yr
CGAS-D-SO2	Sulphur Dioxide (SO ₂) sensor (0 - 20 ppm)	~2yr

Single Channel - Internal Infrared Sensors Lifespan

CGAS-D-CO2-2K	Carbon Dioxide (CO ₂) sensor (0 - 2,000 ppm)	~8yr
CGAS-D-CO2-5K	Carbon Dioxide (CO ₂) sensor (0 - 5,000 ppm)	~8yr
CGAS-D-CO2-5%	Carbon Dioxide (CO ₂) sensor (0 - 5% vol)	~8yr
CGAS-D-CO2-10K	Carbon Dioxide (CO ₂) sensor (0 - 10,000 ppm)	~8yr

PRODUCT CODES

Single Channel - Internal Solid State Sensors Lifespan

CGAS-D-SR22	Refrigerants (R22) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR134A	Refrigerants (R134A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR402A	Refrigerants (R402A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR404A	Refrigerants (R404A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR407C	Refrigerants (R407C) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR410A	Refrigerants (R410A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR422D	Refrigerants (R422D) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR438A	Refrigerants (R438A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR448A	Refrigerants (R448A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR449A	Refrigerants (R449A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR507A	Refrigerants (R507A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR513A	Refrigerants (R513A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-SR514A	Refrigerants (R514A) sensor (0 - 2,000 ppm)	~5yr
CGAS-D-STVOC	TVOCs sensor (0 - 500 ppm)	~5yr

Single Channel - Internal Catalytic Sensors Lifespan

CGAS-D-CC2H6O-100	Ethanol or Dimethyl Ether (C ₂ H ₆ O) sensor (0 - 100% LEL)	~5yr
CGAS-D-CH2-100	Hydrogen (H ₂) sensor (0 - 100% LEL)	~5yr
CGAS-D-CCH4-100	Methane (CH ₄) sensor (0 - 100% LEL)	~5yr
CGAS-D-CCH4O-100	Methanol (CH ₃ O) sensor (0 - 100% LEL)	~5yr
CGAS-D-CC3H8-100	Propane (C ₃ H ₈) sensor (0 - 100% LEL)	~5yr

Single Channel - Internal PID Sensors

CGAS-D-SPL	TVOC sensor (0 - 30 ppm)
CGAS-D-SPH	TVOC sensor (0 - 300 ppm)

Single Channel - Remote Detection

CGAS-D-R	No internal sensor, add ESH-A Remote Sensor
CGAS-D-RT	No internal sensor, add remote analog transmitter

Single Channel - RH and Temperature Sensor

CGAS-D-RHT	Internal Relative Humidity and Temperature sensor
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¹CO sensor UL2075 Approved

PRODUCT CODES

Dual Channel - Two Internal Electrochemical Sensors		
CGAS-D-CO-N02 ¹	Carbon Monoxide (CO) sensor (0 - 200 ppm) & Nitrogen Dioxide (NO ₂) sensor (0 - 10 ppm)	~6yr ~3+yr
CGAS-D-CO-O2 ¹	Carbon Monoxide (CO) sensor (0 - 200 ppm) & Oxygen (O ₂) sensor (0 - 25% vol)	~6yr ~3yr
CGAS-D-CO-C2H4 ¹	Carbon Monoxide (CO) sensor (0 - 200 ppm) & Ethylene (C ₂ H ₄) sensor (0 - 200 ppm)	~6yr ~2yr
CGAS-D-CO-H2S ¹	Carbon Monoxide (CO) sensor (0 - 200 ppm) & Hydrogen Sulphide (H ₂ S) sensor (0 - 50 ppm)	~6yr ~2yr
CGAS-D-CO-NO ¹	Carbon Monoxide (CO) sensor (0 - 200 ppm) & Nitric Oxide (NO) sensor (0 - 100 ppm)	~6yr ~2yr
CGAS-D-H2S-SO2	Hydrogen Sulphide (H ₂ S) sensor (0 - 50 ppm) & Sulphur Dioxide (SO ₂) sensor (0 - 20 ppm)	~6yr ~2yr

Dual Channel One Internal Electrochemical Sensor + Remote Detection		
CGAS-D-CO-R	Internal Carbon Monoxide (CO) sensor (0 - 200 ppm), add ESH-A Remote Sensor	
CGAS-D-NO2-R	Internal Nitrogen Dioxide (NO ₂) sensor (0 - 10 ppm), add ESH-A Remote Sensor	
CGAS-D-CO-RT	Internal Carbon Monoxide (CO) sensor (0 - 200 ppm), add remote analog transmitter	
CGAS-D-NO2-RT	Internal Nitrogen Dioxide (NO ₂) sensor (0 - 10 ppm), add remote analog transmitter	

ESH-A Remote Sensors		
ESH-A-CC2H2-100	Catalytic combustible Acetylene (C ₂ H ₂) ESH-A Remote Sensor (0 - 100% LEL)	~5yr
ESH-A-CH2-100	Catalytic combustible Hydrogen (H ₂) sensor (0 - 100% LEL)	~5yr
ESH-A-CCH4-100	Catalytic combustible Methane (CH ₄) sensor (0 - 100% LEL)	~5yr
ESH-A-CC3H8-100	Catalytic combustible Propane (C ₃ H ₈) sensor (0 - 100% LEL)	~5yr
ESH-A-SPL	TVOC PID sensor (0 - 30 ppm)	
ESH-A-SPH	TVOC PID sensor (0 - 300 ppm)	
ESH-A-JET	Infrared Propane (C ₃ H ₈) sensor (0 - 100% LEL)	~8yr

OPTIONS (Factory installed)		
LT*	Low temperature package with OLED display and internal heater for cold environment applications down to -40°C / -40°F	
RLY *	1 SPDT dry contact relay, rated 30 volts, 2 amps max	
RHT *	RH & Temperature sensor (°C or °F)	
S	Splash Guard for non sticky gases, factory installed	
SN	Splash Guard for sticky gases (Cl ₂ , O ₂) and configurations with internal NO ₂ sensor, factory installed	

*IMPORTANT NOTES ON OPTIONS:

-RHT is available with all single channel configurations **except** sticky gas sensors (Cl₂, ClO₂, HCl, HCN, O₂, PH₃) and is available with dual channel configurations that have a CO sensor, UL2075 approved CO sensor is not available with RH and Temperature sensor

-RLY is available with all single channel configurations **except** CO₂ and sticky gas sensors (Cl₂, O₂)

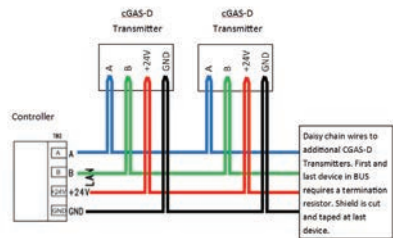
-RHT and -RLY are both available with CGAS-D-CO

ACCESSORIES

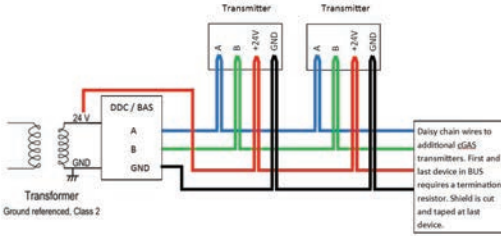
CET-SGC	Calibration Adapter Clip for Option -S
CET-715A-CK1	Calibration Kit for 17, 34, 58, 74, 100 L cylinders, 0.5 LPM flow regulator & adapter to fit 17 L cylinder
DUCT KIT 301A	Metal probe assembly for fixed system, two lengths of 1.23 m / 4 ft tubing, adapter plug and dust filter (available for use with select gases)
SCS-8000-RSG	Small, 16 gauge protective guard
SCS-8000-WSG	Small, 16 gauge protective splash guard

WIRING DIAGRAMS

4- Wire VDC to an FCS Controller



4- Wire VAC to a BAS, DDC or other control panel (requires a 24 VDC power supply or a 24VAC Class 2 or better transformer.



CGAS-D AVAILABLE OPTIONS BY PRODUCT GAS CODE

Product Gas Code	CAN I ADD THESE OPTIONS?				
	-RLY	-RHT	-RHT + -RLY	-LT	Splash Guard
-CO2-2K	NO	YES	NO	YES	S
-CO2-5K	NO	YES	NO	YES	S
-CO2-10K	NO	YES	NO	YES	S
-CO2-5%	NO	YES	NO	YES	S
-NH3	YES	YES	NO	YES	S
-CO	YES	YES	YES	YES	S
-CL2 /-CL2-10	NO	NO	NO	YES	SN
-C2H4	YES	YES	NO	YES	S
-CH2O	YES	YES	NO	YES	S
-EH2	YES	YES	NO	YES	S
-H2S	YES	YES	NO	YES	S
-NO	YES	YES	NO	YES	S
-NO2	YES	YES	NO	YES	SN
-O2	YES	YES	NO	YES	S
-O3	NO	NO	NO	YES	SN
-SO2	YES	YES	NO	YES	S
-CH2-100	YES	YES	NO	YES	S
-CC2H6G-100	YES	YES	NO	YES	S
-CCH4-100	YES	YES	NO	YES	S
-CCH4O-100	YES	YES	NO	YES	S
-CC3H8-100	YES	YES	NO	YES	S
-SPL	YES	YES	NO	YES	S
-SPH	YES	YES	NO	YES	S
-SR22	YES	YES	NO	YES	S
-SR134A	YES	YES	NO	YES	S
-SR402A	YES	YES	NO	YES	S
-SR404A	YES	YES	NO	YES	S
-SR407C	YES	YES	NO	YES	S
-SR410A	YES	YES	NO	YES	S
-SR422D	YES	YES	NO	YES	S
-SR438A	YES	YES	NO	YES	S
-SR448A	YES	YES	NO	YES	S
-SR449A	YES	YES	NO	YES	S
-SR507A	YES	YES	NO	YES	S
-SR513A	YES	YES	NO	YES	S
-SR514A	YES	YES	NO	YES	S
-STVOC	YES	YES	NO	YES	n/a
-R	YES	YES	NO	YES	
-RT	YES	YES	NO	YES	

CGAS-D- DUAL CHANNEL CONFIGURATIONS:

CGAS-D-CO-NO2	NO	YES	NO	YES	SN
CGAS-D-CO-C2H4	NO	YES	NO	YES	S
CGAS-D-CO-H2S	NO	YES	NO	YES	S
CGAS-D-CO-O2	NO	YES	NO	YES	S
CGAS-D-CO-NO	NO	YES	NO	YES	S
CGAS-D-H2S-SO2	NO	NO	NO	YES	S