FIXED SYSTEMS

Critical Environment Technologies™

ANALOG OR DIGITAL GAS DETECTORS DATASHEET

cGas DETECTOR CO_2 / R744 Transmitter



The cGas Carbon Dioxide Detector is a low maintenance, continuous gas monitoring device designed for use in non-explosion rated, commercial HVAC, commercial refrigeration systems, CO_2 enrichment processes and other applications that require the continuous monitoring of CO_2, for life, health and safety. With various low and high sensor ranges and units of measure it offers analog output or digital output, internal relay and audible alarm and 3 alarm levels that are fully programmable in the field. Powered by 24 VDC or ground referenced AC, the CO2 cGas Detector has an LCD display, temperature compensation and the firmware and configuration can be updated in the field using the USB connection. Pre-calibrated sensors with true Plug & Play Smart Sensor technology makes replacing sensors quick and easy.

The cGas CO_2 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 the enclosure is IP54 rated and provides protection in water spray or wash down applications.

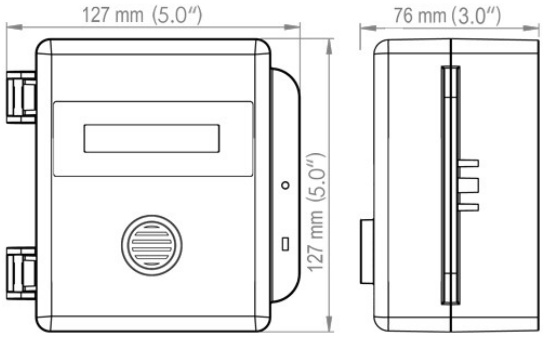
KEY FEATURES

» Long life, infrared Carbon dioxide sensor
» Smart Sensor replacement at end of life, comes pre-calibrated
» One linear 4-20 mA or 0-10 V analog output or BACnet® MS/TP RS-485 or Modbus® RTU RS-485 digital output
» Optional SPDT relay rated 30 volts, 2 amp max
» Optional internal audible alarm rated 90 dB @10 cm/4 in
» 24 VDC or VAC power (ground reference)
» Bright LCD display
» USB port for configuration updates and firmware upgrades
» Optional low temperature operation package (Option -LT)
» Optional RH & Temperature sensor (°C or °F)
» Optional factory installed splash guard (Option -S)
» Standard water / dust tight, corrosion resistant enclosure (drip proof)
» RoHS compliant circuit board

APPLICATIONS

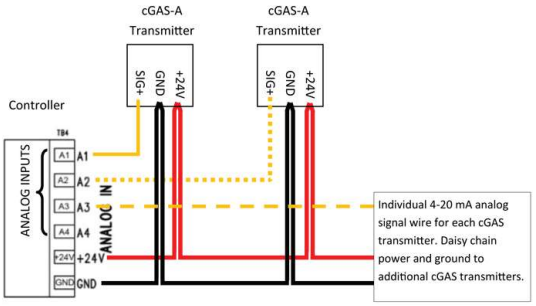
» Restaurants
» Fruit Ripening Rooms
» Greenhouse Plant Production
» Swimming Pools / Water Sanitation
» R744 Refrigeration Systems / Walk-in Coolers
» CO_2 Fire Extinguishing / Suppression Systems
» Dry Ice Production / Special Effects
» Antibacterial / Sterilization
» CO_2 Storage Rooms
» Chiller / Mechanical Rooms
» Beverage Bottling Facilities
» Wineries / Breweries
» ... and many more

TECHNICAL DRAWING

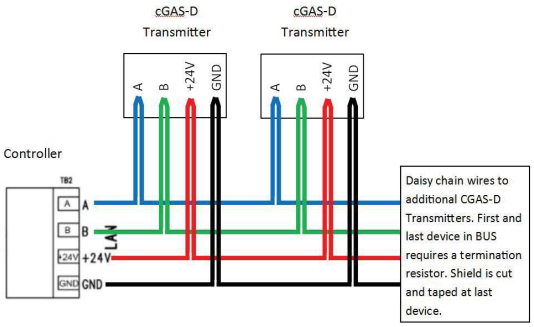


WIRING DIAGRAMS

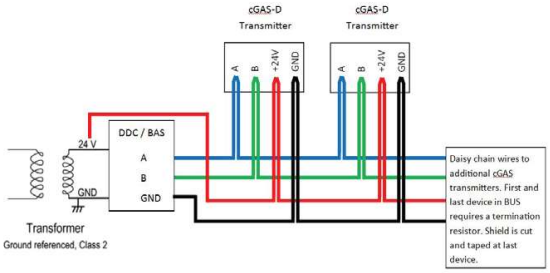
CGAS-A connected to an FCS Controller (3-wire VDC)



CGAS-D connected to an FCS Controller (4-wire VDC)



CGAS-D Connected to a BAS/DDC (4-wire VAC)



TECHNICAL SPECIFICATIONS

MECHANICAL	
Enclosure	Black ABS / Polycarbonate, copper coated interior to reduce RF interference, IP54 rated with splash guard installed

Critical Environment Technologies™

ANALOG OR DIGITAL GAS DETECTORS DATASHEET

cGas DETECTOR CO_2 / R744 Transmitter

FIXED SYSTEMS

TECHNICAL SPECIFICATIONS

Weight	400 g / 14 oz
Size	127 x 127 x 76 mm / 5.0 x 5.0 x 3.0 in

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 updates / firmware upgrades

INPUT / OUTPUT

Digital Output (CGAS-D models)	BACnet MS/TP (version 1 rev 14) RS-485 or Modbus RTU (version 1.1b3) RS-485 (user configurable in the field)
Analog Output (CGAS-A models)	One 4-20 mA output or jumper selectable 0-10 or 2-10 volts output
Relay	1 SPDT relay rated 30 volts, 2 amp max
Audible Alarm	Rated 90 dB @ 10 cm / 4 in enable/disable
RH & Temperature	Option -RHT* user selectable units DegC, DegF

ELECTRICAL

Power Requirement	16-30 VDC, 3W, Class 2 12-27 VAC, 50-60 Hz, 3 VA, Class 2
Digital Wiring	VDC or VAC (ground referenced) 4-conductor shielded, 16 AWG stranded within conduit, network wiring (daisy-chain)
Analog Wiring	VAC (ground referenced) 3-conductor shielded 18 AWG (or larger) stranded within conduit
Fuse(s)	Automatic resetting thermal

ENVIRONMENTAL

Operating Temperature	0°C to 40°C (32°F to 104°F) temperatures below 0°C / 32°F requires 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

ANALOG Single Channel Analog Transmitter	Infrared Sensor (Lifespan ~8 yrs)	DIGITAL Single Channel Modbus Transmitter
CGAS-A-CO2-5%	Carbon Dioxide (CO_2) sensor (0 - 5.0% vol)	**CGAS-D-CO2-5%**
CGAS-A-CO2-100%	Carbon Dioxide (CO_2) sensor (0 - 100.0% vol)	**CGAS-D-CO2-100%**
CGAS-A-CO2-2K	Carbon Dioxide (CO_2) sensor (0 - 2,000 ppm)	**CGAS-D-CO2-2K**
CGAS-A-CO2-5K	Carbon Dioxide (CO_2) sensor (0 - 5,000 ppm)	**CGAS-D-CO2-5K**
CGAS-A-CO2-10K	Carbon Dioxide (CO_2) sensor (0 - 10,000 ppm)	**CGAS-D-CO2-10K**
CGAS-A-CO2-20K	Carbon Dioxide (CO_2) sensor (0 - 20,000 ppm)	**CGAS-D-CO2-20K**

OPTIONS *(Factory installed)*

LT	Low temperature package with OLED display and internal heater for cold environment applications down to -40°C / -40°F
RBZ	1 SPDT dry contact relay rated 30 volts, 2 amps max with internal audible alarm rated 90 dB @ 10 cm / 4 in
RHT*	RH & Temperature sensor (°C or °F)
S	Splash Guard

ACCESSORIES

CET-SGC	Calibration clip for splash guard
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	Twin probe assembly for fixed system, two lengths of 1.23 m / 4 ft tubing, adapter plug and dust filter
SCS-8000-RSG	Small, 16 gauge metal protective guard

***NOTE:** The analog models have one analog output. If an analog gas model is ordered with Option -RHT, the information is for display purposes only; the one analog output is used for the gas readings

Modbus® is a registered trademark of Gould Inc. Corporation. BACnet® is a registered trademark of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

© 2023 Critical Environment Technologies Canada Inc. | Data subject to change without notice. | Toll Free: +1.877.940.8741 | www.critical-environment.com | 0511