

ANALOG OR DIGITAL GAS DETECTORS DATASHEET

cGas DETECTOR VRF IR Refrigerant Transmitter

FIXED SYSTEMS



Designed with a sleek, low-profile aesthetic to blend seamlessly into publicly occupied spaces, the cGas VRF single-channel gas detector is ideal for modern energy-efficient buildings utilizing Variable Refrigerant Flow (VRF) HVAC systems. It provides continuous monitoring for acute refrigerant leaks in environments where gas accumulation could lead to oxygen depletion, ensuring occupant safety. It is secured by a mounting plate that can be used with or without a junction box.

The cGas VRF IR detector ensures occupant safety by meeting ASHRAE 15-2024 and CSA B52:23 standards, with alarm setpoints set well below the Refrigerant Concentration Limit (RCL) to provide early leak detection while minimizing false alarms. It features alarm level thresholds designed to activate relays to isolate or shut down refrigerant supply lines, start exhaust ventilation and trigger remote visual and audible alarms. The detector supports analog output as well as BACnet® and Modbus® communication protocols for integration with controllers or building automation systems. Designed with Plug & Play Smart Sensor Technology for easy installation and maintenance, it operates on 24 VDC or ground-referenced AC and includes an LCD display, internal buzzer, relay, temperature compensation, and a thermal resetting fuse. Firmware and configuration can be upgraded in the field via a USB connection, ensuring flexibility and long-term reliability.

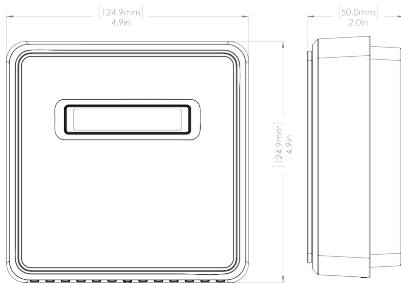
KEY FEATURES

- » Acute refrigerant leak detection
- » Long life, non-dispersive infrared refrigerant sensor, dual beam technology
- » Low profile to reduce noticeability in public spaces
- » Easy Plug & Play Smart Sensor replacement at end of life, comes pre-calibrated
- » Analog models have one 4-20 mA analog output or 0-10 volt or 2-10 volt, etc. output
- » Digital models have user in the field configurable BACnet® MS/TP RS-485 or Modbus® RTU RS-485 digital output signal to a BAS
- » 1 SPDT relay rated 30 volts, 2 amp max
- » Internal audible alarm rated 90 dB @10 cm/4 in
- » 24 VDC or VAC power (ground reference)
- » USB port for configuration updates and firmware upgrades
- » RoHS compliant circuit board

APPLICATIONS

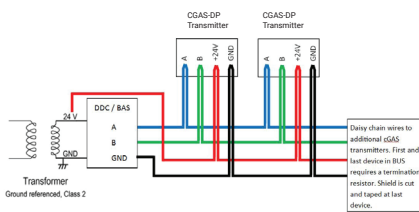
- » Hotels
- » Office Buildings
- » Hospitals
- » Apartment Buildings
- » Retirement Homes
- » Shopping Malls
- » Supermarkets
- » Theaters / Auditoriums
- » Schools / Universities, Dormitories
- » ... and many more

TECHNICAL DRAWING

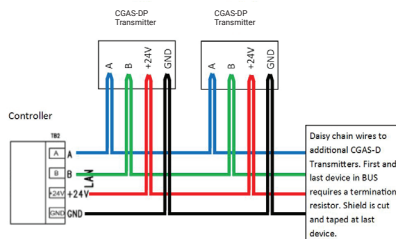


WIRING DIAGRAM

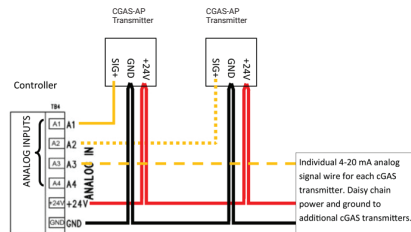
CGAS-DP Connected to a BAS/DDC (4-wire VAC)



CGAS-DP Connected to an FCS Controller (4-wire VAC)



CGAS-AP Connected to an FCS Controller (3-wire VDC)





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TECHNICAL SPECIFICATIONS

MECHANICAL	
Enclosure	Polycarbonate, white, low profile
Weight	400 g / 14 oz
Size	124.9 x 124.9 x 50.0 mm 4.9 x 4.9 x 2.0 inches

USER INTERFACE	
Display	2-line by 16 character graphic LCD Configured for simple display mode
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	
Digital Output (CGAS-DP 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-AP 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
Buzzer	Rated 90 dB @ 10 cm / 4 in enable/disable
Sensor Resolution	0 - 5,000 ppm = 25 ppm 0 - 10,000 ppm = 50 ppm 0 - 100% LEL = 1% LEL
RH and Temperature (Option -RHT)	User selectable DegC or DegF (analog models current output is for gas reading)

ELECTRICAL	
Power Requirement	16-30 VDC, 3W, Class 2 12-27 VAC, 50-60 Hz, 3 VA, Class 2 24V recommended
Digital Wiring	VDC or VAC (ground referenced) 4-con- ductor 18 - 22 AWG twisted, shielded, stranded within conduit network wiring (daisy-chain)
Analog Wiring	VDC (or ground referenced AC) 3-conduc- tor 16 - 18 AWG shielded, stranded within conduit VAC 4-conductor shielded 18 AWG stranded within conduit
Fuse(s)	Automatic resetting thermal

ENVIRONMENTAL	
Operating Temperature	0°C to 40°C (32°F to 104°F)
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	
This device complies with Part 15 of the FCC Rules.	
Listed by BTL	

PRODUCT CODES

Single Channel Analog Transmitter	Infrared Refrigerant Sensors	Single Channel Modbus Transmitter
CGAS-AP-IR134A-5K	R134A (0 - 5,000 ppm)	CGAS-DP-IR134A-5K
CGAS-AP-IR404A-5K	R404A (0 - 5,000 ppm)	CGAS-DP-IR404A-5K
CGAS-AP-IR407C-5K	R407C (0 - 5,000 ppm)	CGAS-DP-IR407C-5K
CGAS-AP-IR410A-10K	R410A (0 - 10,000 ppm)	CGAS-DP-IR410A-10K
CGAS-AP-IR449A-5K	R449A (0 - 5,000 ppm)	CGAS-DP-IR449A-5K
CGAS-AP-IR32-10K	A2L R32 (0 - 10,000 ppm)	CGAS-DP-IR32-10K
CGAS-AP-IR32-100	A2L R32 (0 - 100 % LEL)	CGAS-DP-IR32-100
CGAS-AP-IR454A-100	A2L R454A (0 - 100 % LEL)	CGAS-DP-IR454A-100
CGAS-AP-IR454B-100	A2L R454B (0 - 100 % LEL)	CGAS-DP-IR454B-100
CGAS-AP-IR454C-100	A2L R454C (0 - 100 % LEL)	CGAS-DP-IR454C-100
CGAS-AP-IR455A-100	A2L R455A (0 - 100 % LEL)	CGAS-DP-IR455A-100
CGAS-AP-IR1234YF-5K	A2L R1234YF (0 - 5,000 ppm)	CGAS-DP-IR1234YF-5K
CGAS-AP-IR1234YF-100	A2L R1234YF (0 - 100 % LEL)	CGAS-DP-IR1234YF-100
CGAS-AP-IR1234ZE-5K	A2L R1234ZE (0 - 5,000 ppm)	CGAS-DP-IR1234ZE-5K
CGAS-AP-IR1234ZE-100	A2L R1234ZE (0 - 100 % LEL)	CGAS-DP-IR1234ZE-100

OPTIONS (Factory installed)

RHT	RH & Temperature sensor (°C or °F)
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