Critical Environment Technologies™

ANALOG OR DIGITAL GAS DETECTORS DATASHEET

cGas DETECTOR IR Refrigerant Transmitter

FIXED SYSTEMS



The cGas IR Refrigerant Detector provides continuous monitoring of a wide range of refrigerant gases commonly used in commercial refrigeration systems. Dual beam, non-dispersive infrared sensor technology overcomes the limitations of solid state refrigerant sensors, accurately detects refrigerant gases without cross interference from toxic or combustible gases and is low maintenance with a longer lifespan. Choose from 30+ types of refrigerant gas sensors commonly used in commercial refrigeration systems, including A2L refrigerants, SF6 and CO2 (R744). True Plug & Play Smart Sensor technology makes replacing sensors quick and easy.

The cGas IR Refrigerant Detector is available with analog output or digital output and comes with a relay and internal audible alarm. Powered by 24 VDC or ground referenced AC, it has an LCD display, temperature compensation, thermal resetting fuse and the firmware and configuration can be updated in the field using the USB connection. It 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.

Complies with refrigeration safety codes ASHRAE No 15-2001 Mechanical Standard and B-52 Code.

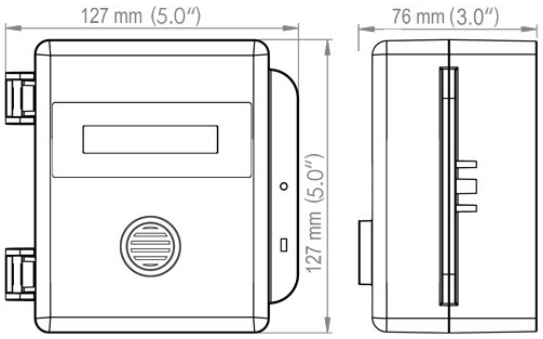
KEY FEATURES

» Accurate, low level leak detection
» Long life, non-dispersive infrared refrigerant sensor, dual beam technology
» Easy Plug & Play Smart Sensor replacement at end of life
» One linear 4-20 mA or 0-10 V analog output or BACnet® MS/TP RS-485 or Modbus® RTU RS-485 digital output
» 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)
» Bright LCD display
» USB port for configuration changes and firmware upgrades
» Optional low temperature operation package (Option -LT)
» Optional factory installed splash guard (Option -S)
» Standard water / dust tight, corrosion resistant enclosure (drip proof)
» RoHS compliant circuit board

APPLICATIONS

» Supermarkets / Grocery Stores / Convenience Stores
» Refrigerated Mechanical Rooms
» Commercial Chiller Equipment Rooms
» Food Storage / Cold Rooms / Walk-in Freezers
» Food Processing Plants
» Food Service Facilities
» ... and many more

TECHNICAL DRAWING



TECHNICAL SPECIFICATIONS

TARGET GAS

Infrared Refrigerants
R123, R134A, R143A, R22, R227ea, R402A, R404A, R407A, R407C, R407F, R410A, R417A, R422A, R422D, R427A, R434A, R438A, R442A, R448A, R449A, R450A, R452A, R453A, R507, R513A, R514A, R1233zd, RSF6 (Sulfur hexafluoride), R744 (CO_2)

Infrared A2L Refrigerants
R1234yf, R1234ze, R32, R454A, R454B, R455A

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 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
Internal Relay	1 SPDT relay rated 30 volts, 2 amp max
Internal Buzzer	Rated 90 dB @ 10 cm / 4 in, enable/disable

ELECTRICAL

Power Requirement	16-30 VDC, 3W, Class 2 12-27 VAC, 50-60 Hz, 3 VA, Class 2
Analog Wiring (CGAS-A models)	VDC (or ground referenced AC): 3-conductor 18 AWG (or larger) shielded, stranded within conduit

cGas DETECTOR IR Refrigerant Transmitter

TECHNICAL SPECIFICATIONS

Digital Wiring (CGAS-D models)	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 requires Option-LT
Operating Humidity	15 - 85% 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
RoHS compliant circuit boards
Listed by BTL

PRODUCT CODES

NOTE: The target gases listed are available in an analog transmitter or a digital transmitter. The lifespan of IR sensors is >5yrs.

Single Channel - Internal Infrared Sensors

Analog Models		Digital Models
CGAS-A-IR123	R123 sensor (0-500 ppm)	**CGAS-D-IR123**
CGAS-A-IR134A	R134A sensor (0-2,000 ppm)	**CGAS-D-IR134A**
CGAS-A-IR143A	R143A sensor (0-2,000 ppm)	**CGAS-D-IR143A**
CGAS-A-IR22	R22 sensor (0-2,000 ppm)	**CGAS-D-IR22**
CGAS-A-IR227EA	R227EA sensor (0-2,000 ppm)	**CGAS-D-IR227EA**
CGAS-A-IR32	R32 sensor (0-2,000 ppm)	**CGAS-D-IR32**
CGAS-A-IR402A	R402A sensor (0-2,000 ppm)	**CGAS-D-IR402A**
CGAS-A-IR404A	R404A sensor (0-2,000 ppm)	**CGAS-D-IR404A**
CGAS-A-IR407A	R407A sensor (0-2,000 ppm)	**CGAS-D-IR407A**
CGAS-A-IR407C	R407C sensor (0-2,000 ppm)	**CGAS-D-IR407C**
CGAS-A-IR407F	R407F sensor (0-2,000 ppm)	**CGAS-D-IR407F**
CGAS-A-IR410A	R410A sensor (0-2,000 ppm)	**CGAS-D-IR410A**
CGAS-A-IR417A	R417A sensor (0-2,000 ppm)	**CGAS-D-IR417A**
CGAS-A-IR422A	R422A sensor (0-2,000 ppm)	**CGAS-D-IR422A**
CGAS-A-IR422D	R422D sensor (0-2,000 ppm)	**CGAS-D-IR422D**
CGAS-A-IR427A	R427A sensor (0-2,000 ppm)	**CGAS-D-IR427A**
CGAS-A-IR434A	R434A sensor (0-2,000 ppm)	**CGAS-D-IR434A**
CGAS-A-IR438A	R438A sensor (0-2,000 ppm)	**CGAS-D-IR438A**
CGAS-A-IR442A	R442A sensor (0-2,000 ppm)	**CGAS-D-IR442A**
CGAS-A-IR448A	R448A sensor (0-2,000 ppm)	**CGAS-D-IR448A**
CGAS-A-IR449A	R449A sensor (0-2,000 ppm)	**CGAS-D-IR449A**

PRODUCT CODES

CGAS-A-IR450A	R450A sensor (0-2,000 ppm)	**CGAS-D-IR450A**
CGAS-A-IR452A	R452A sensor (0-2,000 ppm)	**CGAS-D-IR452A**
CGAS-A-IR453A	R453A sensor (0-2,000 ppm)	**CGAS-D-IR453A**
CGAS-A-IR454A	R454A sensor (0-2,000 ppm)	**CGAS-D-IR454A**
CGAS-A-IR454B	R454B sensor (0-2,000 ppm)	**CGAS-D-IR454B**
CGAS-A-IR455A	R455A sensor (0-2,000 ppm)	**CGAS-D-IR455A**
CGAS-A-IR507A	R507A sensor (0-2,000 ppm)	**CGAS-D-IR507A**
CGAS-A-IR513A	R513A sensor (0-2,000 ppm)	**CGAS-D-IR513A**
CGAS-A-IR514A	R514A sensor (0-2,000 ppm)	**CGAS-D-IR514A**
CGAS-A-IRSF6	Sulfur Hexafluoride sensor (0-2,000 ppm)	**CGAS-D-IRSF6**
CGAS-A-IR1233ZD	HFO R1233ZD sensor (0-2,000 ppm)	**CGAS-D-IR1233ZD**
CGAS-A-IR1234YF	HFO R1234YF sensor (0-2,000 ppm)	**CGAS-D-IR1234YF**
CGAS-A-IR1234ZE	HFO R1234ZE sensor (0-2,000 ppm)	**CGAS-D-IR1234ZE**

OPTIONS (Factory installed)

LT	Low temperature package with OLED display and internal heater for cold environment applications down to -40°C / -40°F
S	Splash Guard

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
SCS-8000-RSG	Small, 16 gauge metal protective guard
SCS-8000-WSG	Small, 16 gauge metal protective splash guard

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)

© 2024 Critical Environment Technologies Canada Inc. | Data subject to change without notice. | Toll Free: +1.877.940.8741 | www.critical-environment.com | 0228