Critical Environment Technologies™

ANALOG OR DIGITAL GAS DETECTORS DATASHEET

ART Infrared Refrigerant Transmitter

The ART gas detector is a state-of-the-art, fixed, non-dispersive infrared refrigerant transmitter used to detect a wide range of refrigerant gases. The fast-responding sensor accurately detects refrigerant gas leaks without cross interference from combustible or toxic gases. It can be used as a stand alone system or integrated into a building management system (BMS).

The ART can be connected to a gas detection system using analog output wiring or Modbus® network communications wiring. It is compatible with the QCC Quad Channel controller and the FCS Flexible Control System controller as either an analog or digital transmitter.

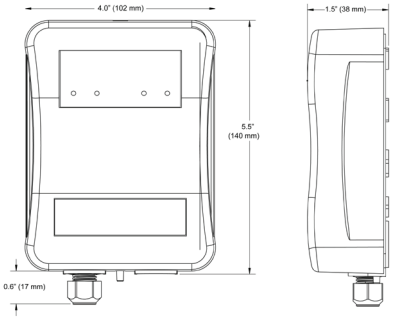
KEY FEATURES

- Single channel, long life, non-dispersive infrared refrigerant sensor
- Accurate, low level leak detection with no cross interference from non-refrigerant gases
- One internal relay
- Internal audible alarm
- Detects a wide range of refrigerants
- Modbus® RTU interface to connect to BAS/BMS systems
- Bright, alpha-numeric, LED display with visual and audible alarms
- User selectable Modbus® or analog output: 4-20 mA, 0-5V, 1-5V, 0-10V, 2-10V
- RoHS compliant circuit boards

APPLICATIONS

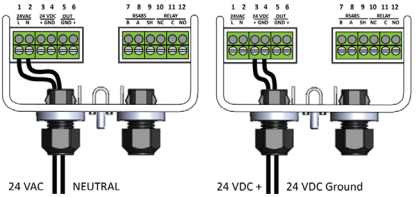
- Supermarkets/Convenience Stores
- Refrigerated Mechanical Rooms
- Commercial Chiller Equipment Rooms
- Food Storage/Processing Facilities
- ...and many more

TECHNICAL DRAWING

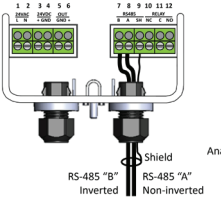


WIRING

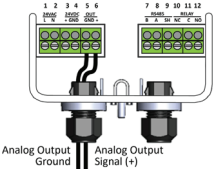
Either 24VAC or 24VDC may be used to power the ART. Use two wires between 14 and 22 AWG stranded within conduit.



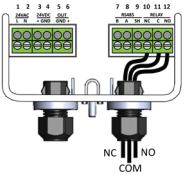
For Modbus® network communications wiring, use only 18 to 24 AWG shielded twisted pair wire with 120 ohm characteristic impedance.



For analog output wiring, connect two 18 to 20 AWG wires to terminal block positions 5 and 6, noting ground and signal poalrity.



For relay output wiring connect NO, NC or both, using 18 to 20 AWG wires to terminal block positions 10, 11 and 12, noting normally open, closed and common connectors.



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ART Infrared Refrigerant Transmitter

FIXED SYSTEMS

TECHNICAL SPECIFICATIONS

CALIBRATED TO TARGET GAS TYPES

R22, R32, R123, R134a, R404a, R407a, R407c, R407f, R410a, R422a, R422d, R427a, R448a, R449a, R507, R513a, R514a, R452b, HFO1234YF, HFO1234Ze, HFO1233ZD

MECHANICAL

Enclosure	ABS, white (previous models were black) Snap-in cable gland for 0.115 to 0.25" cable
Weight	180 g / 0.40 lbs / 6.3 oz
Size	100 x 140 x 40 mm 4.0 x 5.5 x 1.5 in

ELECTRICAL

Power Requirement	24 VDC @ 0.5 A min 24 VAC, 5VA min @ 50 - 60 Hz, 2.5 W max
Wiring	24 VAC or 24 VDC two-conductor shielded 14 to 22 awg stranded within conduit
Communication: Modbus® RTU over RS-485	Baud rate: 9,600 or 19,200 (selectable) Start bits: 1 Data bits: 8 Parity: none, odd, even (programmable) Stop bits: 1 or 2 (programmable) Retry time: 500 ms (minimum) End of msg: silent 3.5 characters

INPUT / OUTPUT

Analog Outputs	4 - 20 mA; 0 - 5 V; 0 - 10 V; 1 - 5 V ; 2 - 10 V
Relays	1 relay rated 1 A @ 24 VAC / VDC (0.5 A, 125 V AC UL rating)

SENSOR

Type	Non-dispersive Infrared, 5-7 year life
Range	0 - 3,500 ppm
Squelch	Readings below 75 ppm are squelched by default. Meaning, when filtering is disabled the unit will respond to concentrations sub -10 ppm.
Response Time T_{90}	90 seconds

USER INTERFACE

Display	Red 4-digit alpha-numeric LED display; Power LED
Fault Monitoring	Fault codes presented to user
Audible Alarm	80 dB @ 10cm Internal buzzer; enable / disable
Alarm Delay	Selectable; 0 - 15 minutes

TECHNICAL SPECIFICATIONS...con't

ENVIRONMENTAL

Operating Temperature	-30°C to 40°C (-22°F to 104°F)
Humidity	5 - 90% RH non-condensing
Altitute	0 to 3,050 m / 10,000 ft

PRODUCT CODES

Single Channel Sensor

ART-B-R22	R22 sensor (0 - 3,500 ppm)
ART-B-R32	R32 sensor (0 - 3,500 ppm)
ART-B-R123	R123 sensor (0 - 3,500 ppm)*
ART-B-R134A	R134a sensor (0 - 3,500 ppm)
ART-B-R404A	R404a sensor (0 - 3,500 ppm)
ART-B-R407A	R407a sensor (0 - 3,500 ppm)
ART-B-R407C	R407c sensor (0 - 3,500 ppm)
ART-B-R407F	R407f sensor (0 - 3,500 ppm)
ART-B-R410A	R410a sensor (0 - 3,500 ppm)
ART-B-R422A	R422a sensor (0 - 3,500 ppm)
ART-B-R422D	R422d sensor (0 - 3,500 ppm)
ART-B-R427A	R427a sensor (0 - 3,500 ppm)
ART-B-R448A	R448a sensor (0 - 3,500 ppm)
ART-B-R449A	R449a sensor (0 - 3,500 ppm)
ART-B-R452B	R452b sensor (0 - 3,500 ppm)
ART-B-R507A	R507a sensor (0 - 3,500 ppm)
ART-B-R513A	R513a sensor (0 - 3,500 ppm)
ART-B-R514A	R514a sensor (0 - 3,500 ppm)
ART-B-HFO1234YF	HFO1234YF sensor (0 - 3,500 ppm)
ART-B-HFO1234ZE	HFO1234Ze sensor (0 - 3,500 ppm)
ART-B-HFO1233ZD	HFO1233ZD sensor (0 - 3,500 ppm)

* Lowest reliable detectable level is 75 ppm; will not meet B52 code.

CERTIFICATION

CE, UL/CSA/ IEC / EN 61010-1

ACCESSORIES

ART-S	Splash / protective shield for wash-down applications
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-RPG	Standard, small metal protective guard, 16-gauge, galvanized metal for transmitters