



# ANALOG OR DIGITAL GAS DETECTORS DATASHEET

## ART Infrared Refrigerant Transmitter

FIXED SYSTEMS



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.

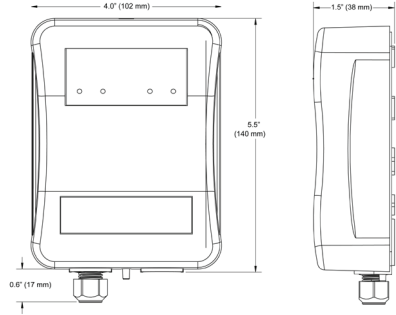
### KEY FEATURES

- » 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

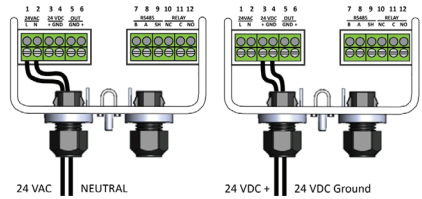
- » Supermarkets/Convenience Stores
- » Refrigerated Mechanical Rooms
- » Commercial Chiller Equipment Rooms
- » Food Storage/Processing Facilities
- » ...and many more

### TECHNICAL DRAWING



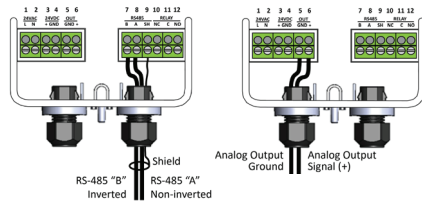
### WIRING

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

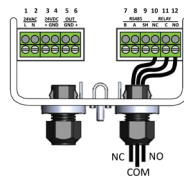


For Modbus® network communications wiring, use only 18 to 24 AWG shielded twisted pair wire with 120 ohm characteristic impedance.

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



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.





# ANALOG OR DIGITAL GAS DETECTORS DATASHEET

## 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

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

#### ELECTRICAL

<b>Power Requirement</b>	24 VDC @ 0.5 A min 24 VAC, 5VA min @ 50 - 60 Hz, 2.5 W max
<b>Wiring</b>	24 VAC or 24 VDC two-conductor shielded 14 to 22 awg stranded within conduit
<b>Communication: Modbus® RTU over RS-485</b>	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

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

#### SENSOR

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

#### USER INTERFACE

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

### TECHNICAL SPECIFICATIONS...con't

#### ENVIRONMENTAL

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

### PRODUCT CODES

#### Single Channel Sensor

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

<b>ART-S</b>	Splash / protective shield for wash-down applications
<b>CET-715A-CK1</b>	Calibration Kit for 17, 34, 58, 74, 100 L cylinders, 0.5 LPM flow regulator & adapter to fit 17 L cylinder
<b>SCS-8000-RPG</b>	Standard, small metal protective guard, 16-gauge, galvanized metal for transmitters