

Digital Transmitters - GAS DETECTION 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. It can be used as a stand alone system or integrated into a building management system (BMS).

Available in two models - Broadband or Gas Specific - both with a fast-responding sensor that accurately detects refrigerant gas leaks without cross interference with other gases.

The ART-B (broadband sensor) Transmitter is used as a cost-effective, general purpose, gross leak detector and is factory tested and certified.

If distinct gas detection is required, the Gas Specific model (eg. ART-R410A) available and is factory certified and calibrated to the target refrigerant.

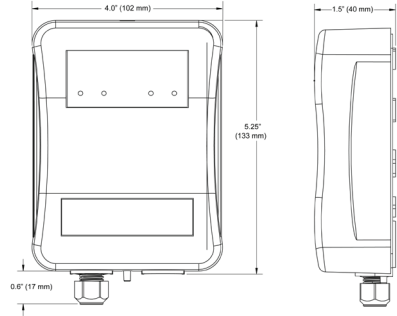
KEY FEATURES

- » Long life, non-dispersive infrared refrigerant sensor allows for accurate, low level leak detection with no cross interferences from other gases
- » Two models available: Broadband or Gas Specific
- » Detects a wide range of refrigerants
- » No field calibrations required
- » Modbus® RTU interface to connect to BAS/BMS systems
- » On-board alarm relay
- » Bright, alpha-numeric, LED display with visual and audible alarms
- » User selectable, analog output: 4-20 mA, 0-5V, 1-5V, 0-10V, 2-10V
- » RoHS compliant circuit boards

APPLICATIONS

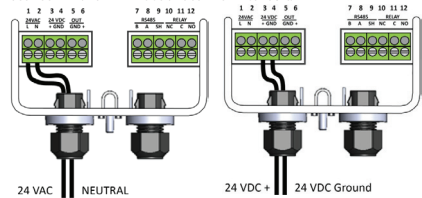
- » Supermarkets/Convenience Stores
- » Refrigerated Mechanical Rooms
- » Commercial Chiller Equipment Rooms
- » Food Storage/Processing Facilities
- » Wineries
- » Schools
- » Hospitals
- » Maintenance Facilities
- » and many more

TECHNICAL DRAWING



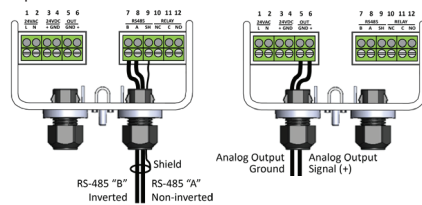
WIRING

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

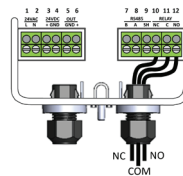


For Modbus® network communications wiring, use only 18 to 24 AWG shielded twisted pair wire with 120 ohm characteristic impedance.

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.



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TECHNICAL SPECIFICATIONS

GAS TYPES

Refrigerants	
Group 1	R123, R134a, R404a, R407a, R407c, R407f, R410a, R427a, R507
Group 2	R422a, R422d, HF01234yf, HF01234ze
Group 3	R22

MECHANICAL

Enclosure	ABS (UL94V-0 rated)
Weight	180 g (0.40 lbs) (6.3 oz)
Size	4.0" x 5.9" x 1.5" (102 mm x 150 mm x 40 mm)

ELECTRICAL

Power Requirement	24 VDC, 24 VAC, 50 - 60 Hz, 2.5 W max
	Baud rate: 9,600 or 19,200 (selectable)
	Start bits: 1
Communication:	Data bits: 8
Modbus® RTU over RS-485	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 (0.5A, 125V AC UL rating)

SENSOR

Type	Non-dispersive Infrared
Range	0 - 3,500 ppm (0 - 1,000 ppm for R123)
Response Time T_{90}	< 5 minutes

USER INTERFACE

Display	Green LED Power ON indicator and bright, alpha-numeric LED real-time display
Visual Alarm	Red 4-digit LED display
Fault Monitoring	Fault codes presented to user
Audible Alarm	Internal buzzer; enable / disable
Alarm Delay	Selectable; 0 - 15 minutes

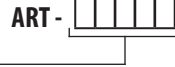
ENVIRONMENTAL

Operating Temperature	-30°C to 40°C (-22°F to 104°F)
Humidity	5 - 90% RH non-condensing

PRODUCT CODES

Broadband Models

ART-B1	Broadband sensor Group 1 refrigerants (0-3,500 ppm)
ART-B2	Broadband sensor Group 2 refrigerants (0-3,500 ppm)
ART-B3	Broadband sensor Group 3 refrigerants (0-3,500 ppm)



Gas Specific Model

Single Channel Sensor:

R123	R123 sensor (0 - 1,000 ppm)
R134A	R134a sensor (0 - 3,500 ppm)
R404A	R404a sensor (0 - 3,500 ppm)
R407A	R407a sensor (0 - 3,500 ppm)
R407C	R407c sensor (0 - 3,500 ppm)
R407F	R407f sensor (0 - 3,500 ppm)
R410A	R410a sensor (0 - 3,500 ppm)
R427A	R427a sensor (0 - 3,500 ppm)
R507	R507 sensor (0 - 3,500 ppm)
R422A	R422a sensor (0 - 3,500 ppm)
R422D	R422d sensor (0 - 3,500 ppm)
HF01234YF	HF01234yf sensor (0 - 3,500 ppm)
HF01234ZE	HF01234ze sensor (0 - 3,500 ppm)
R22	R22 sensor (0 - 3,500 ppm)

OPTIONS (To be added at the end of the "Part Number" above.)

ART-S	Splash guard for areas requiring additional protection from wash down
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CERTIFICATION

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

ACCESSORIES

Calibration Kit for 17, 34, 58, 74, 103 L cylinders, 0.5 LPM flow regulator & adapter to fit 17 L cylinder	CEI-715A-KC1
Metal protective guard, large, 16 gauge, galvanized	SCS-8000-SPG

