

C-Series Refrigerant Leak Detection System



Refrigerant leak detection is considered a fundamental component and compliance necessity in commercial refrigeration system design. Regardless of refrigerant type, reducing leaks is important for a variety of performance, environmental and safety reasons. The Copeland C-Series Refrigerant Leak Detection System (CRLDS) monitors indoor air for any refrigerant leaks and can detect a wide range of gases. The CRLDS can be used standalone or with the Site Supervisor or E2/E3 controllers. You can use the CRLDS to continuously monitor for refrigerant leaks or as part of compliance monitoring or a refrigerant management program.

Benefits

Refrigerant leak monitoring can help:

- Reduce energy consumption and keep equipment cooling properly
- Protect people, products, and equipment from dangerous situations and costly failures

Features

- Capable of detecting HFC/HFO gases and CO₂ depending on model
- Available in two configurations
 - **Built-in version** - leak sensing head located on the hardware device
 - **Remote version** - leak sensing head attached to cable to allow hardware to be located separately from the sensor
- Can connect to Copeland controllers like Site Supervisor, E2 and E3 through analog output, relays or an RS485 Modbus serial connection
- Simple visual indication of current operating status provided by three LEDs (green/red/orange)

The CRLDS mobile app simplifies configuration, interaction and troubleshooting. The CRLDS mobile app helps simplify configuration of and interaction with the Copeland C-Series Refrigerant Leak Detection System. Bluetooth® connectivity delivers vital system data to your mobile device in real time. Easy access to modify, configure, troubleshoot and manage the CRLDS for simple and intuitive interaction.

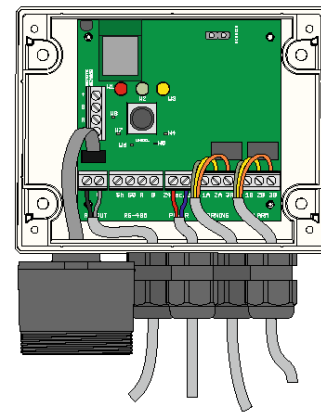
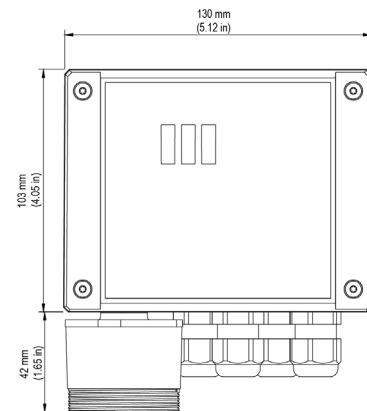
- Connect to the CRLDS using a mobile app available in both the App Store™ and Google Play Store™. This mobile app can be used for:
 - Configuration: modify alarm thresholds, configure Modbus settings, modify relay behavior, and manage Analog output settings
 - Maintenance: check correct functioning of the device for quick troubleshooting
 - Calibration, complete with calibration report
- Display of current gas concentration measurement in parts per million (PPM) and indication of alarm/fault status
- Calibration kit available for periodic calibration and can be performed using the mobile app or via Modbus communication. CO₂ version does not require calibration.
- Analog Output Type

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Specifications

Technical Specifications	Semiconductor Version	Infrared Version
Power supply voltage**	24VDC/AC +/- 20%, 5W, 50/60Hz (Recommended P/N 250-2541 DIN rail mount 24VDC @ 15W power supply)	
User Interface	App with Bluetooth®	
Analog Output	4-20mA / 0-10V / 1-5V / 2-10V selected via software	
Serial Communication	Modbus® RS485 isolated server	
Digital Output 1 SPDT	Alarm - relay 1 A/24 VDC/AC, resistive load	
Digital Output 2 SPDT	Warning/FAULT - relay 1 A/24 VDC/AC, resistive load	
Relay Failsafe	Yes; Selectable	
Selectable Delay	0-20 min; 1-minute steps, selectable via Modbus register/app	
Hysteresis	± 10% of the threshold value	
IP Protection	IP67	
Typical Operating Range	0-1000 ppm	0-10000 ppm
Sensing Element	Pre-calibrated (also available as a spare part) with certificate	
Remote Cable Length	5 meters	
Storage Temperature	-40°F to +122°F (-40 °C to +50 °C)	
Storage Humidity	5-90% relative humidity, non-condensing	
Storage Position	Any	
Operating Temperature	-40°F to +122°F (-40 °C to +50 °C)	
Operating Humidity	5-90% relative humidity, non-condensing	
Maximum Installation Altitude	2000 meters (6561 ft.)	
Operating Position	Intended for vertical mounting with the sensor at the bottom	
Precision*	<-10%/+15%	±5%
Start-up Time*	5 minutes	2 minutes
Working Life*	5 years	7 years
Calibration Procedure Requirements	12 months	Not required



*Reference conditions at 77°F (25°C) 50% RH atmospheric pressure 101.3 kPa

**The device is intended to be supplied from an isolated Limited Energy Source per UL61010-1, 3rd edition cl. 9.4 or Limited Power Source per UL60950-1 or Class 2 per NEC

Order Information

CRLDS-1000 and CRLDS-CO₂ Gas Detector Part Numbers

Part Number	Description
809-1207	CRLDS Calibration Kit
809-1209	CRLDS, 0-1000ppm, Remote, SC, Group 1*
809-1210	CRLDS, 0-1000ppm, Remote, SC, Group 2**
809-1211	CRLDS, 0-1000ppm, Wall Mount, SC, Group 1*
809-1212	CRLDS, 0-1000ppm, Wall Mount, SC, Group 2**

Part Number	Description
809-1213	CRLDS, 0-10000ppm, Wall Mount, IR, CO ₂
809-1214	CRLDS, 0-10000ppm, Remote, IR, CO ₂
809-1221	CRLDS Sensor Module IR CO ₂ 10000ppm
809-1222	CRLDS Sensor Module SC HFC/HFO Group 1 1000ppm
809-1223	CRLDS Sensor Module, SC HFC/HFO Group 2 1000ppm

*Group 1 Gases: R32, R407A, R407C, R407F, R410A, R448A, R449A, R452A, R452B, R454A, R454B, R454C, R455A, R464A, R465A, R466A, R468A, R507A

**Group 2 Gases: R22, R134a, R404A, R450A, R513A, R1234yf, R1234ze, R1234zde

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