

RD-VRF Refrigerant Gas Detection Specification

Gas Detection Equipment

- A. Refrigerant VRF Detector RD-VRF: Single, dual-level detector using NDIR sensors with a 10 year life; suitable over a temperature range of 14°F to 122°F (-10°C to 50°C); with 2 default alarm levels based on sensor type: 1,000ppm or 10%LEL and 2,000ppm or 20%LEL (field adjustable).
 - 1. Manufacturer:
 - a. MACURCO INC. (Basis of Design)
 - 2. Field Calibratable with Macurco Cal-Kit 1 and appropriate gas and concentration
 - 3. User Interface: Status Indicating Multicolor LED, Buzzer, and Hidden Display for configuration, testing, verification
 - 4. User Adjustable Settings with the onboard display and buttons
 - 5. Warranty: 2 Year Limited
 - 6. Internal Relays (Adjustable Setpoints)
 - a. Relay 1 (1,000PPM or 10%LEL) - 2A @ 30VDC, SPDT
 - b. Relay 2 (2,000PPM or 20%LEL) - 2A @ 30VDC, SPDT
 - 7. Range: Sensor dependent 0-5,000 ppm, 0-10,000 ppm, 0-100%LEL
 - 8. MODBUS RTU Output
 - 9. Ambient Humidity: 10-90% non-condensing
 - 10. Low Level Alarm: Refer to controls drawings
 - 11. High Level Alarm: Refer to controls drawings
- B. Provide all valves, horns and strobes as indicated on the drawings. Controls contractor to provide all relays and interconnect wiring for horn/strobes, BMS integration, and appliance shutdown.
- C. Installation shall be completed by controls contractor or mechanical contractor



RD-VRF Refrigerant Detector

Overview

The Macurco RD-VRF Refrigerant Gas Detector is engineered to provide continuous monitoring of refrigerant leaks in VRF (Variable Refrigerant Flow) systems and other related applications. A refrigerant leak can present serious safety risks, including oxygen depletion that may lead to asphyxiation or, in the case of combustible refrigerants, the potential for explosion. To address these hazards, the RD-VRF incorporates two programmable alarm levels that deliver early warning and critical alerts. The unit includes two onboard relays, enabling automatic activation of safety measures such as shutting down or isolating refrigerant supply lines, engaging exhaust ventilation, triggering local or remote alarms, and integrating with building safety systems. Standard Modbus RS-485 communication provides seamless connectivity with Building Management Systems (BMS), allowing centralized monitoring and control. Purpose built for VRF installations, the RD-VRF supports compliance with refrigerant safety codes while enhancing occupant protection and operational reliability in commercial, hospitality, educational, and healthcare environments

Specifications

Size:	5.157"(H) x 5.088"(W) x 1.861"(D)
Weight:	0.5 lb. (8 oz.)
Enclosure:	Aesthetically pleasing low profile White Polycarbonate, IP42
Operating Temperature:	14°F to 122°F (-10°C to 50°C)
Operating Humidity:	0% to 95% RH non-condensing
Status Light Indicators:	Green - Power, Red Blinking - Alarm, Amber Blinking - Fault
Inputs	Power Input: 14-24VDC/14VAC-120V (50 to 60 Hz) Low Voltage: 3W (max), 48mA normal/74mA full alarm Line Voltage: 4.3W (max at 120VAC), 50 to 60 Hz
Outputs	
Relay Rating (2):	2A @ 30VDC, SPDT
MODBUS:	Modbus RTU RS-485
Audible indicator:	Buzzer, 80 dB at 1', 57dB at 10'

User Interface

Status Lights:	Green - Power, Red Blinking - Alarm, Amber Blinking - Fault
Buzzer:	Buzzer, 80 dB at 1', 57dB at 10'
Display:	Hidden Display for configuration, testing, verification Allows for buzzer silence, relay control functionality, addressing, etc.

Quality

Quality:	REACH/RoHS
-----------------	------------

