

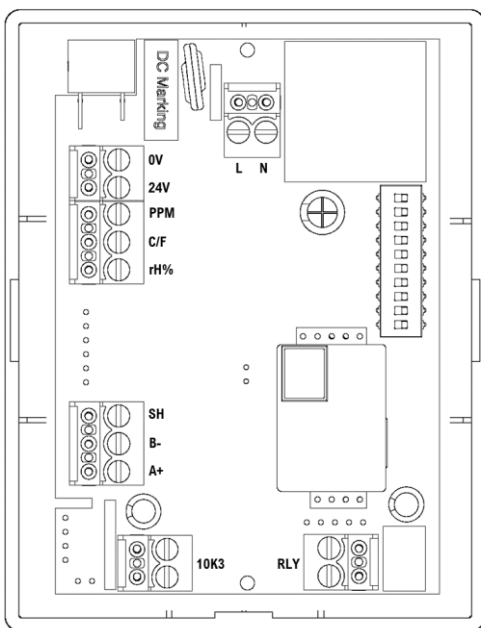
# Merlin RG Lite Series

## VRF REFRIGERANT GAS SENSORS

Designed for all areas being directly connected to low or mains voltage supply, e.g., residential, public, commercial, and light industrial environments, such as, food retailers, hotel rooms, apartments and offices which support the following outputs:

- ✓ Analog: 1x 0-10V signals for Refrigerants (PPM).
- ✓ Digital RS-485: Modbus RTU or BACnet MS/TP communication protocols.
- ✓ Thermistor output for 3<sup>rd</sup> party temperature monitoring.
- ✓ Excellent stability and strong anti-interference, long-life sensors.
- ✓ Fully calibrated.
- ✓ Designed in USA.
- ✓ Standard 3 year manufacturers warranty.

**Methane and R400 Blends:** R1234yf / R1234ze / R134a / R32 / R404a / R407c / R410a / R454a / R454b / R454c / R455a (Others on request)



CONNECTION	LABEL	TERMINATION
110V AC IN	POWER LINE IN	L (Line)
		N (Neutral)
24V AC/DC INPUT	24V IN	+24V
		0V (Common GND)
		PPM (RF Sensor O/P)
ANALOG OUT/P	+10V OUT	
DIGITAL OUT/P	RS-485	A+
		B-
		SH (Shield)
THERMISTOR	10K3	(No Polarity)
VFC RELAY	RLY 70mA	(Open/Close Circuit)

**NOTE: Connections depend on Model.**

# Technical Specification

Mechanical	Mounting	Wall Mounted
	Entry	1/2" DIA Rear Entry and snap offs for side trunking
	Size (W x H x D)	3.38 x 4.48 x 1.3" (Low Profile RS 3.38 x 4.48 x 0.98")
	Weight	37oz Max
Electrical	Enclosure	ABS UL Flame retardant – IP40
	24V AC/DC Power Rating	12-24VDC (11-32 VDC) / 24VAC, (20-27 VAC) 50-60Hz
	120VAC Power Rating	Nominal 110VAC, (90-250V AC), 50-60Hz
	Internal Fuse	Resettable PPTC 110VAC, 400mA
	Communication	127 units max
Environmental	Power Consumption	5W Max
	Operating Temperature	14 to 122°F
	Storage	32-86°F
	Room Humidity	0 to 95% RH (continuous) non-condensing.
	Atmospheric Pressure	80 to 110Pa
	Altitude	<9500ft
	Installation Cat (110V Voltage)	II (Class 2) Pollution Degree 2
I/Os	Installation Cat (24V Voltage)	III (Class 3) Pollution Degree 2
	Analog Outputs	1x Linear 0-10V/2-10V Refrigerant, Thermistor (10K3)
	Digital Networks	BACnet MS/TP / MODBUS RTU (Parity: None Data bit: 8bit Stop bit: 1)
Cable Spec	Relay Outputs	1x SPST 70mA
	Power	120VAC: 14 – 18 AWG
	Analog Output	24V: 18-22AWG
	Digital Output	18 – 22 AWG twisted pair + ground, shielded cable with 120 Ω characteristic impedance.
	Relays	18 – 22 AWG
User Interface	Language	English
	Optional Display	N/A
	LED Indications (Refrigerant Values Only)	Green: Power (OK) Yellow: Warning (Pre-Alarm) Red: Danger (Alarm)
Safety/EMC	Safety	IEC 61010-1
	Electromagnetic Compatibility	FCC
Sensing		
Refrigerants (ppm)		
Diffusion Type NDIR Dual Beam Technology Response: $t_{90} < 30s$ Warm Up Time: ~1 Minute @ 25°C Accuracy: $\pm 15\%$ of applied concentration Lifespan: 10 Years MTBF Resolution: 50ppm Long Term Zero Stability +3% of FS range/year		



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