

RDS-324-M

Refrigerant Detection Sensor

RefriScout



- Fast response time
- Excellent accuracy
- LED indicator built-in
- Zero cross-sensitivity
- Wide temperature range
- Low power consumption
- Easy attachment magnet
- 15 plus years long lifetime
- Sensor faulty status output
- No field calibration required
- Maintenance free operation

OVERVIEW

RefriScout is a family of A2L and A3 Refrigerant Detection Sensors designed for HVAC&R equipment manufacturers to meet the demanding safety requirements from regulatory bodies. By utilizing an advanced Solid-State optoelectronic based NDIR (Non-Dispersive Infrared) gas sensing technology, every RefriScout RDS is capable of providing fast response and reliable detection to the refrigerant leakage with exceptionally long operation lifetime.

R32, R454A/B/C, and R455A are high energy efficiency, low-GWP refrigerants and rated as A2L mildly flammable agents; any leakage could result in risk of fire potential. The RefriScout RDS is designed to help HVAC&R manufacturers meet the requirements of IEC 60335-2-40 and UL 60335-2-40, 4th edition Annex LL for A2L & A3 refrigerant applications. Compact design allows sensor to be easily mounted within Heat Pumps, Air-Conditioning units and Refrigeration equipment, or close to where refrigerant leakage could potentially occur.

The RDS-324-M is capable of detecting the leakage of R32, R454A/B/C, and R455A refrigerants of HVAC&R equipment and providing measured data with Modbus RTU (RS485) protocol for mitigation control and/or BA/BMS system integration. A rigid housing enclosed conformal-coated electronics provides excellent

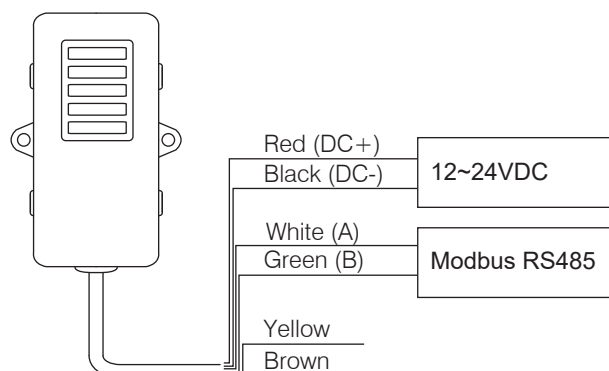
ingress protection from dust, oil, moisture and condensed water. Each sensor is individually calibrated at factory to ensure fast response with accurate detection. Automatic Baseline Calibration (ABC) helps deliver 15 plus years of maintenance-free operation lifetime even in the harshest environment.

APPLICATION NOTES

1. Because R32, R454A/B/C, R455A are heavier than air, the sensor **MUST** be mounted in low-lying areas (typically within 30-45cm from floor/bottom) at places where refrigerant leak could potentially occur, like evaporation coils, valve joints, and pumps.
2. Sensors should be mounted **VERTICALLY** on the wall of equipment enclosures or machinery rooms.
3. Do **NOT** mount the sensor on horizontal surface with window face **UPWARD** to prevent dust accumulation on sensor membrane.
4. Avoid placing sensors directly in front of ventilation openings or in “dead zones” like stagnant corners where air does not flow.
5. Avoid poking white membrane while installing the sensor.

PRELIMINARY

WIRING DESCRIPTION



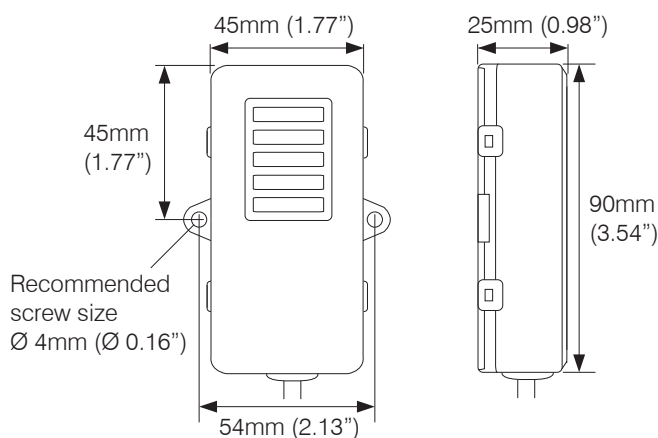
Wire	Description
Red (DC+)	12~24VDC power supply
Black (DC-)	0V, ground
White (A)	Modbus RS485A
Green (B)	Modbus RS485B
Yellow	Reserved
Brown	Reserved

SPECIFICATIONS

Power supply	12~24 VDC
Power consumption	<20 mA
Measured gas	R32, R454A/B/C, R455A
Alarm output	Modbus RTU (RS485)
Alarm threshold	Programmable
Fault status	Error code
Measured range	0-100% LFL
Accuracy	±2.5% LFL within 0-25%
Response time	< 15 seconds
ABC period	720 hours, factory default enabled
Life expectancy	> 15 years
Ingress protection	IP 54
Cable*	60cm AWG24 6C
Op. humidity	Max. 95% RH
Op. temperature	-40°C~70°C (-40°F~158°F)
Dimensions	90 x 45 x 25 mm (3.54" x 1.77" x 0.98")

* OEM-specified cable length and connector available.

DIMENSIONS



IMPORTANT NOTICE

1. This document is solely intended to provide relevant information for HVAC&R equipment designers ("Buyer") who are developing equipment or systems that incorporate RefriScout product ("Product"). All data in this document are obtained from proprietary engineering practices with standard laboratory test conditions. Buyer understands and agrees that Buyer remains responsible for using its independent analysis, valuation, and judgment in designing Buyer's systems and products.
2. IR-TEC neither makes warranties with respect to the accuracy or completeness of the information contained in this document nor grants any license to any intellectual property rights or any other rights of IR-TEC or any third party with respect to the information in this document. IR-TEC ASSUMES NO LIABILITY FOR ANY LOSSES INCURRED BY BUYER OR THIRD PARTIES ARISING FROM THE USE OF SUCH INFORMATION IN PRODUCT DESIGN OR APPLICATIONS.
3. The Product is neither intended nor warranted for use in equipment or systems that require extraordinarily high levels of quality and/or reliability and/or a malfunction or failure of which may cause loss of human life, bodily injury, serious property damage or serious public impact.
4. Though IR-TEC works continuously to improve the Product's quality and reliability, Buyer is responsible for complying with safety standards and for providing adequate designs and protections for Buyer's hardware, software and systems to minimize risk and avoid situations in which a malfunction or failure of the Product could cause loss of human life, bodily injury or any kind of property damage.
5. IR-TEC reserves the right to make changes to the information of this document without prior notice. This document may not be reproduced, duplicated, or translated, in any form, in whole or in part, without prior written consent of IR-TEC.