



REMORA[®] First

Complete module for Refrigerant Leak Detection

DS5334 Rev.4 dated 29/09/2025



Key Features

- Oleophobic filter and oil spray cover ensuring maximum protection against dust and contamination
- NDIR gas detection: no false alarm, no regular routine maintenance required
- 15+ years of expected lifetime
- Reliable detection of R-290, A2L Refrigerants and CO2
- Local relays for threshold alarms
- Easy integration with MODBUS protocol on RS-485
- Customizable interface (PokaYoka Automotive connector, NET standard connector, Cable)

General Description

The new REMORA First from NET is a complete, ready to use and cost-effective sensor module aimed at making refrigerant leak detection easy, affordable and effective in any application.

REMORA is based on a glass reinforced, flame retardant IP54 Polyamide enclosure, complete with integrated mounting holes. The gas inlet is protected by an oleophobic filter and an oil spray cover. All this ensures maximum protection against shocks, dust and contamination in any possible environment and application scenario.

REMORA gas detection is based on NET range of NDIR sensors – by a distance, the most complete on the market today, covering over 40 different common refrigerants across multiple platforms and detection ranges. NDIR detection ensures unparalleled gas selectivity, poison immunity, fail safe operation, long term stability and extended lifetime (15+ years). The sensing part is microprocessor based, providing a linearized and temperature compensated reading, as well as complete diagnostics information while running constant self-check and self-calibration routines.

NET has now over 15 years of experience in detecting refrigerants with NDIR technology and can

offer the best integration support available.

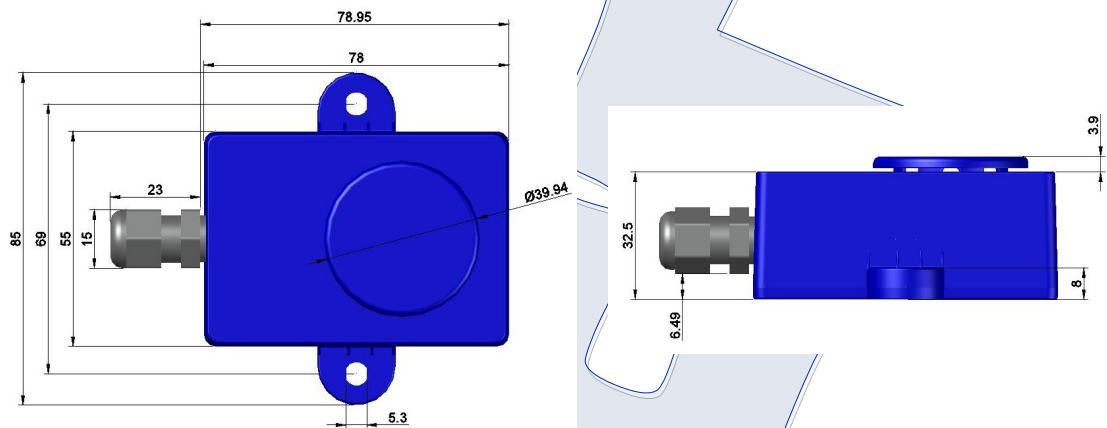
The REMORA module has a high-level interface with industry-standard 4-20mA analogue output and MODBUS protocol on RS-485, as well as local Threshold, Watchdog and fault alarm outputs. The power supply rating is 12...24VDC or 24VAC. The unit can be customized with different interface options, such as PokaYoka Automotive connector, NET standard connector and cable.

All the above makes the Remora sensor an ideal solution for any refrigerant leak detection solutions, from direct integration in HVAC/R equipment such as chillers, rooftop units or heat pumps, to environmental monitoring in cold rooms, machinery rooms or refrigerated transports as well as occupied spaces such as hotel rooms, hospitals or office buildings.

REMORA is undergoing the highest level of certification to ensure best-in-class reliability in Refrigerant Leak detection:

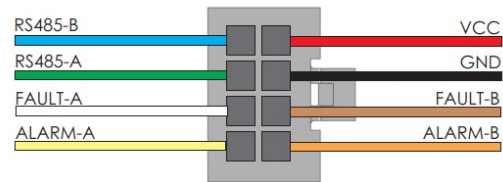
- ◇ IEC60335-2-40:2022 Annex LL.
- ◇ EN 61508:2010 Parts 1-7, EN 50402:2017 (SIL2).
- ◇ EN 61326 Part 1, EN 50270 (Electromagnetic compatibility).
- ◇ EN 60529:1991 (IP protection)

Mechanical specifications



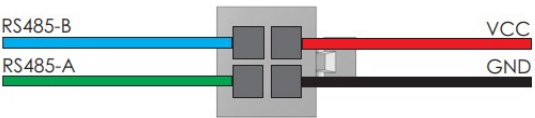
All measures are in mm.

Wiring scheme



Connector with 8 wires Molex micro fit 3.0 code:43025-0800

Possible Mating Connector Molex code: 43020-0801



Connector with 4wires Molex micro fit 3.0 code:43025-0400

Possible Mating Connector Molex code: 43020-0401

Certification details

Safety Certification	Test report number	Pending
	Reference standards	IEC60335-2-40:2022 Annex LL
Safety Integrity Certification	Test report number	Pending
	Reference standards	EN 61508:2010 Parts 1-7, EN 50402:2017
EMC Certification	Test report number	EMCTR_185536-0; EMCTR_185538-0
	Reference standards	EN IEC 61326-1:2021; EN 50270:2015;
IP Certification	Test report number	IPTR_185536-0
	Reference standards	EN 60529:1991+corr 1993+A1:2000+A2:2013+AC:2016

Product specifications

General	Sensing Element:	NDIR sensor
	Operating temperature range	-40 +60°C
	Storage temperature range	-40 +85°C
	Maximum temperature cycle variations	± 1°C/min
	Operating humidity range	0-95% Relative with maximum dew point 40°C
	Operating pressure range	800-1200 mBar
	Enclosure	25% Glass Reinforced, Flame Retardant, Polyamide 66
	Enclosure Protection	IP54
	Enclosure Flame Rating	UL94-V0
	Calibration	Individually calibrated with temperature compensation. Test report supplied.
	Weight	<150gr
	MTBF	> 15 yrs (IR Source MTTF > 15 years)
Measurement	Sensing method	NDIR
	Range	%vol (up to 100%LFL)
	Alarm Threshold	Standard options 10% to 20% LFL
	Alarm hysteresis	2,5% LFL
	Response time	T ₉₀ <30 seconds
	Accuracy*	±2% LFL
	Resolution	0.5% LFL
	Temperature Performance	±5% LFL
	Pressure dependence	0.1 % to 0.2 % value per hPa
Electrical	Power Voltage	Nominal 12-24Vdc or 24VAC±10%
	Current Requirements	<200 mA
	Warm up time	60 s for full operation @ 25 °C 1 hour for full specification @ 25 °C

* Test conditions: 25°C ambient temperature and 1000hPa absolute pressure

Product specifications (continued)

Signal Output	Relays connection	1 Fault+1 Alarm SSR relays Normally closed or open. 350mA 50Vp
	Digital communication	Modbus protocol RS485 (Termination resistance of 120Ω normally present)
	Baud Rate	Standard 4800bps;options: 9600;19200;38400 bps

Available gases

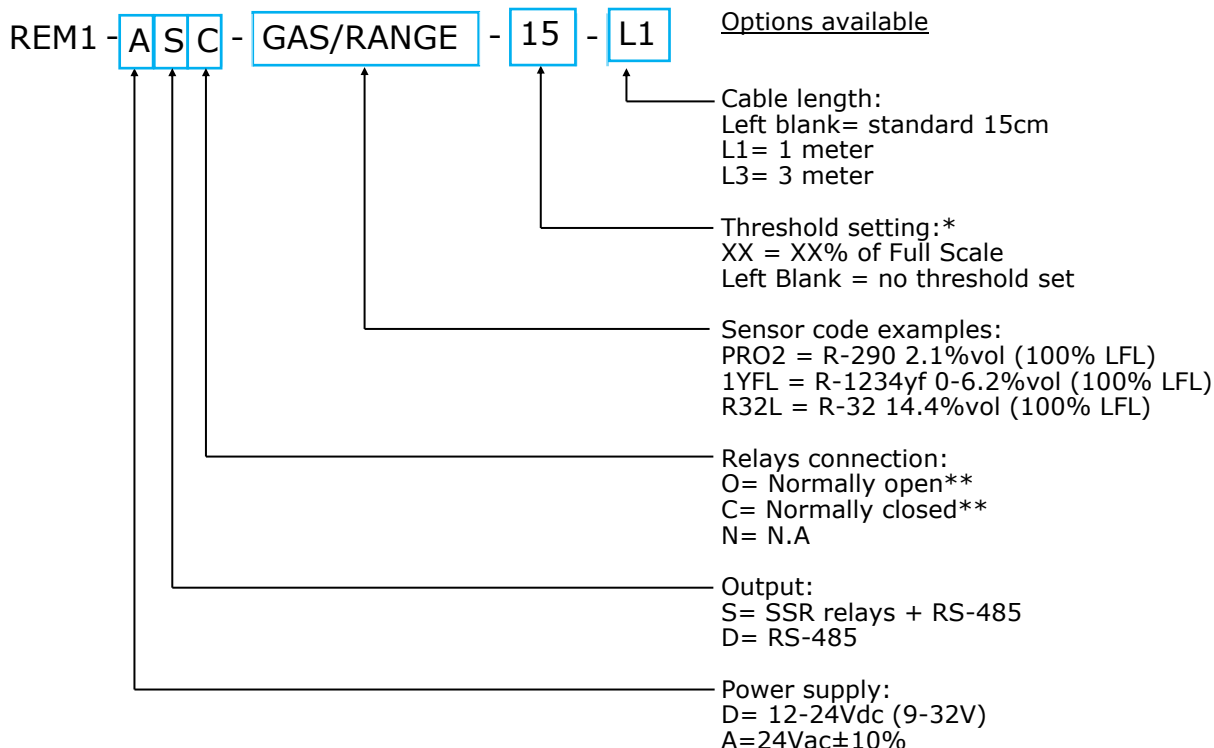
- R-290 (0-2.1%vol)
- R-1234yf (0-6.2%vol)
- R-1234ze (0-6.5%vol)
- R-32 (0-14.4%vol)
- R-454a (0-6.3%vol)
- R-454b (0-7.7%vol)
- R-454c (0-6.2%vol)
- R-455a (0-11.8%vol)
- R-744 (0-1%vol, 0-5%vol)

Technical highlights



Ordering details

When making an order, we kindly ask our customers to specify the basic physical and electrical properties that are needed for their specific application. This is made through the part number here below. The squared fields of the part number below can be modified according to the options on the right.



* Minimum threshold possible: 10% of Full Scale

** This is the status of the relays in case of alarm/fault condition

Warranty and warning

The WARRANTY of the product is 3 years from the purchased date against defects in materials or production. This warranty however is not valid for articles that have been broken, repaired by a third person or not used according to the instructions contained in this document or supplied with the products, related to the storage, installation, operation, maintenance, or servicing of the products.

Recalibration of the sensor will void the calibration warranty

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