Use of the AKOGas alarm in refrigerated installations

AKO-55624 / 55724 series gas alarms have been designed to detect refrigerator gas in refrigerated facilities.

There are two different alarm models, depending on the type of gas in use, make sure you choose the correct version from the table below.

Detector location

The location of the detector is key to optimising leak detection, and several factors should be born in mind to define it:

Type of refrigerant/s used

The type of refrigerant gas to be detected affects the choice of the type of detector, and when different types of gas are used, you may have to use more than one d etector to make your facility safe. Look at the following table to see each detector's sensitivity.

	DESCRIPTION	GASES DETECTED	DEFAULT LEVELS		SECOND SET OF LEVELS	
			PRE-ALARM	ALARM	PRE-ALARM	ALARM
AKO-57613	Gas detector for ammonia (R-717)	R-717 (NH_3 / ammonia)	500 ppm	1000 ppm	-	-
AKO-57614	Universal gas detector	R-134a, R-22, R-404A, R-407A, R-407C, R-407F, R-409A, R-408A, R-410A, R-422A, R-422D, R-424A, R-434A, R-442A, R-448A, R-449A, R-450A, R-452A, R-453A, R-507A, R-513A	500 ppm	1000 ppm	1500 ppm	3000 ppm
AKO-57615	Gas detector for CO_2 (R-744)	R-744 (CO_2)	4000 ppm	8000 ppm	5000 ppm	10000 ppm
AKO-55624	Alarm station with 1 input	Depending on the detector connected	-	-	-	-
AKO-55724	Alarm station with 4 inputs	Depending on the detectors connected	-	-	-	-

Environmental conditions

Some environmental conditions may affect the detector and trigger false alarms, for example:

- Smoke outlets located in confined spaces or from engines, generators or motorised machinery (fork-lift trucks, etc.).
- Rooms where solvents, paints or refrigerator gases are handled
- Areas where fermentation and ripening processes of products (bread, pizza, fruit, etc.) may occur.
- Areas with strong ventilation (leaks are not detected due to high air renewal)

Please avoid installing the detector in the described areas, or in any case, install it in a place where it is the least affected.

Avoid installing the detector near products or devices that might give off CO_2 .Human breathing near the detector may increase the level of CO_2 and generate false alarms.

Keep the detector work environment free of chemical agents (solvent, paints, alcohol, cleaning products, silicone and derivatives, ethylene, etc.).

Installation location

If the detector is installed in outdoor areas, it should be located in a place protected from the rain, sun and inclemency of the weather in general, but near to areas with possible leak sources (joints, valves, etc.), as a leak not accumulating in a specific area is more probable in these areas.

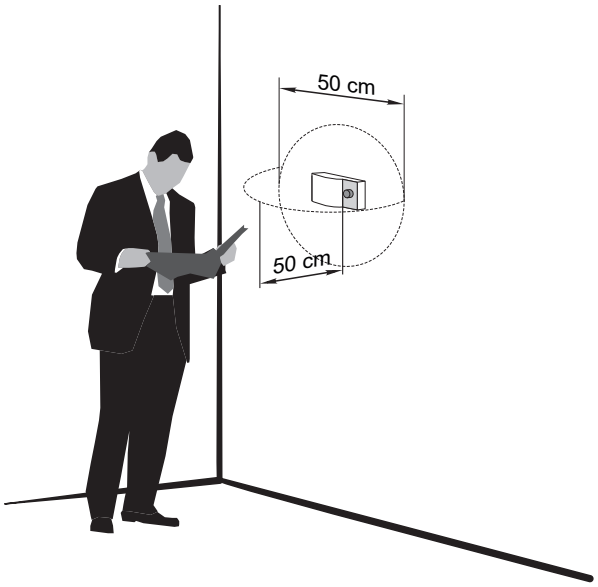
If you install it inside a chamber, avoid placing it next to the evaporator, as it will be affected by strong air currents, and a good place could be the chamber's recirculation exit, as if a leak occurs, the air currents will take it there.

If the installation place is the compressor room, look for the place where gas is most likely to accumulate, bearing in mind the environmental conditions and attempt for it to be near to possible points with a risk of leaks (joints, valves, etc.).

General standards

After choosing the location, please follow the standards listed below:

- The detector should have a free area (without objects, cupboards, pipes, etc.) with about 50 cm around it to allow the air to circulate, and be situated in a place with the least risk of receiving knocks possible.
- You should not pile up material near to the detector as it could hinder air circulation, which will prevent leaks being correctly detected.
- Taking into account the characteristics of the used cooling gas, the sensors of the detectors used to control the concentration should be positioned at eye height.



Advertencias

- Detectors measure gas concentration in a point, if the gas leak does not reach the detector, the alarm will not activate.
- Detectors cannot supervise areas, and if perimeter supervision is required, several detectors should be installed surrounding the area to be supervised.
- Thoroughly studying the location of the detector/s is recommended, bearing in mind the areas most sensitive to suffering leaks, the type of gas used, the size and shape of the room, the air flows, the maintenance work, etc.
- The detectors described have been designed to detect gas concentrations capable of affecting the environmental conditions of the room (movement of oxygen), and the detection of small coolant leaks is not guaranteed.

Pre-alarm and alarm relays

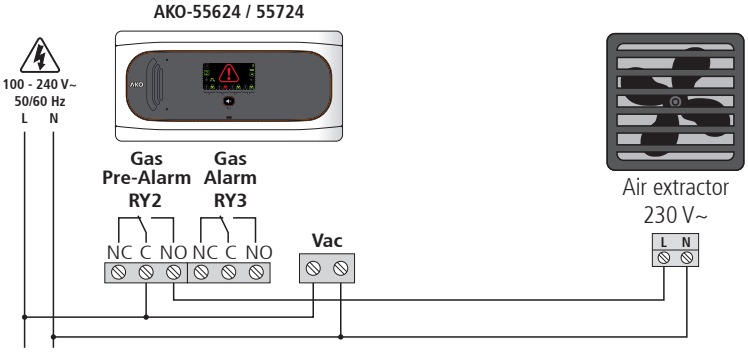
Application

The pre-alarm and alarm relays are designed to provoke a reaction in the facility when they detect refrigerator gas to minimise possible problems it may cause.

PRE-ALARM

- Activation: Small gas concentrations, false detections caused by external agents (CO2, solvents, etc.) or initial detection of higher concentrations. The latter will cause a subsequent alarm activation as the gas concentration increases.
- Signalling:

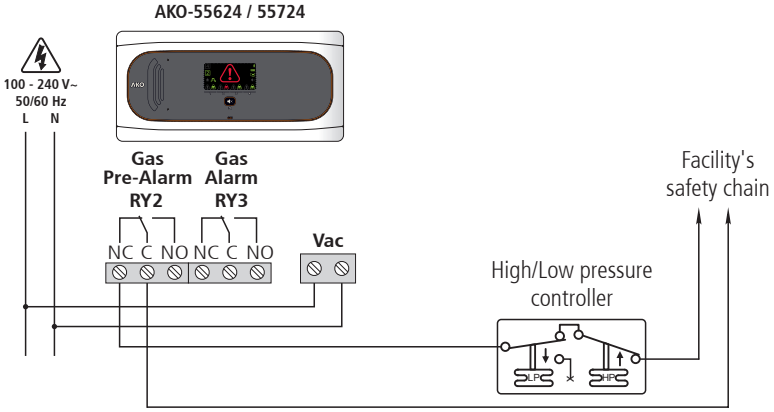
- Pre-alarm relay: As a rule, this will be used to activate the room's forced ventilation and this way rule out possible transitory leaks or false detections.
- Wiring



ALARM

- Activation: Considerable gas concentrations in the facility, may affect personal safety and in the medium-term, damage the products stored in the coldroom.
- Signalling:

- Alarm relay: Using this output is recommended to stop the installation connecting the alarm relay in series with the installation's safety chain.
- Wiring



*The input indicator corresponding to the active detector will turn on.

** Depending on the configuration

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We reserve the right to supply materials slightly different to those described in our Data Sheets. Updated information in our web site.

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