

# Use of the gas alarm in refrigerated installations

**AKO-5220xx** series gas alarms have been designed to detect refrigerator gas leaks in refrigerated facilities.

Premature detection of a refrigerator gas leak improves the safety of the people working in the facility, and also can provide big savings in repair costs and prevent the product contained in the chambers from being damaged.

There are two different alarm models depending on the type of gas to detect, so make sure that you choose the correct version from the table.

## 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 detector to make your facility safe. Look at the following table to see each detector's sensitivity.

ALARM	DETECTOR INCLUDED	GASES IT DETECTS	PRE-ALARM	ALARM
AKO-52201	AKO-52211	R-134a, R-407C, R-410A, R-417A, R-409A, R-32	500 PPM*	1000 PPM*
AKO-52202	AKO-52212	R-404A, R-507A, R-22, R-23, R-422D, R-422A, R434A, R-437A, R-408A, R-403B, R-124, R407A		

\*The pre-alarm and alarm levels can slightly differ from the values shown in the table depending on the detected type of gas.

### Environmental conditions

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

- Smoke outlets in confined spaces (CO<sub>2</sub>, propane, etc.) or from engines (fork-lift trucks)
- Rooms where solvents, paints or refrigerator gases are handled
- Fruit ripening rooms (some fruits can emit gases during their ripening)
- Particularly damp areas, with condensation or the risk of becoming wet (the detector could be damaged)
- 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.

### 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.

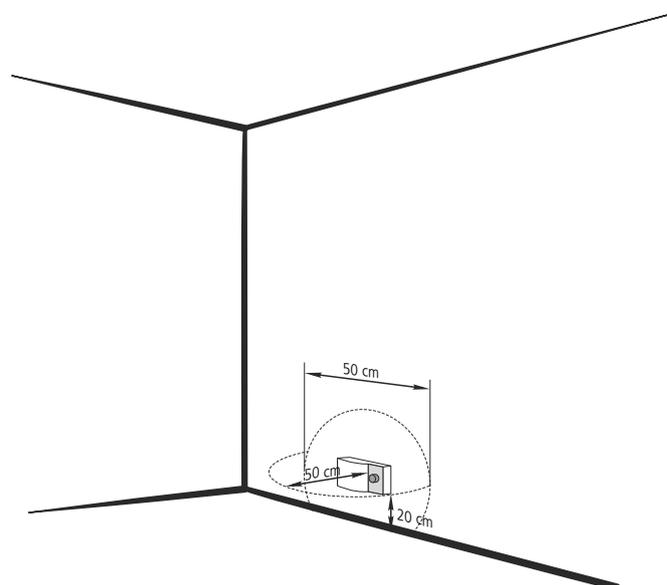
If you install it inside a chamber, avoid placing it next to the evaporator, as it will be affected by strong air currents, and a good place could be the chamber's recirculation exit, as if a leak occurs, the air currents will take it there.

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.
- If you install it low down (freon gases), place it 20 cm from the floor.



# Pre-alarm and alarm relays

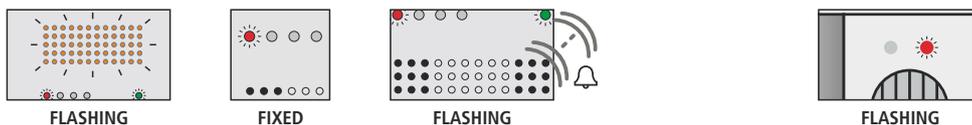
## Application

Pre-alarm and alarm relays are designed to provoke a reaction in the facility against certain gas leaks, which will allow us to minimise problems caused by them.

### PRE-ALARM

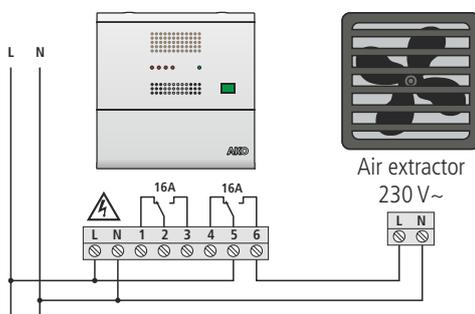
- Activation: Small transitory leaks, false detections caused by external agents (CO<sub>2</sub>, solvents, etc.), or the initial detection of a larger leak. The latter will cause a subsequent alarm activation as the gas concentration increases.

- 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.

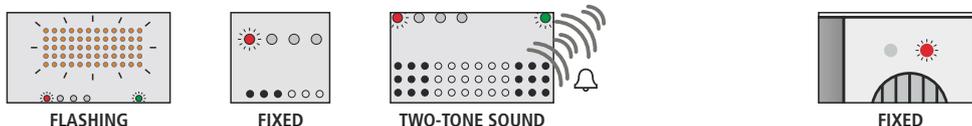
- Wiring



### ALARM

- Activation: Big leaks in the installation 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

