AKO
we make it easy

Contents

AKO Electromecànica thanks you and congratulates you on the purchase of our product, the development and manufacture of which involved the most innovative technologies, as well as rigorous production and quality control processes.

Our commitment to achieving customer satisfaction and our continuous efforts to improve day by day are confirmed by the various quality certificates obtained.

This is a high performance, technologically advanced product. Its operation and the final performance achieved will depend, to a great extent, on correct planning, installation, configuration and commissioning. Please read this manual carefully before proceeding to install it and respect the instructions in the manual at all times.

Only qualified personnel may install the product or carry out technical support.

This product has been developed for use in the applications described in the manual. AKO Electromecànica does not guarantee its operation in any use not foreseen in this document and accepts no liability in the case of damage of any type which may result from incorrect use, configuration, installation or commissioning.

Complying with and enforcing the regulations applying to installations where our products are destined to be used is the responsibility of the installer and the customer. AKO Electromecànica accepts no liability for damage which may occur due to failure to comply with these regulations. Rigorously follow the instructions described in this manual.

In order to extend the lifetime of our products to the maximum, the following points must be observed:

Do not expose electronic equipment to dust, dirt, water, rain, moisture, high temperatures, chemical agents or corrosive substances of any type.
Do not subject equipment to knocks or vibrations or attempt to handle them in any way differently to that indicated in the manual.
Do not under any circumstances exceed the specifications and limitations indicated in the manual.
Respect the indicated environmental conditions for operation and storage at all times.
During installation and on completion of this, avoid the presence of loose, broken or unprotected cables or cables in poor condition. These may constitute a risk for the equipment and its users.

AKO Electromecànica reserves the right to make any modification to the documentation and the product without prior notification.

1.- Introduction

Optical and acoustic alarm and emergency lighting for low temperature or controlled atmosphere cold stores, consisting of a power supply for mounting outside the room and an illuminated push button to request help from inside.

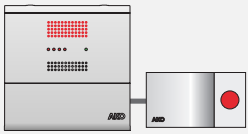
The system is powered from the 230 VAC mains and includes a battery to guarantee its operation in case of a power supply failure.

The equipment constantly monitors the connection status of the push buttons and warns if the connection is broken (monitored wiring function).

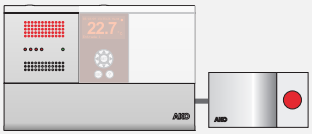
This equipment meets the EN 378 1 standard for cooling systems.

2.- Versions and references

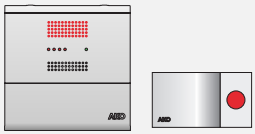
MODELS	TYPE	INPUTS (for push buttons)	PUSH BUTTONS INCLUDED	POWER SUPPLY
AKO-52063	Alarm + push button	1	1	230 Vac ±10% 50/60 Hz ± 3 Hz
AKO-52064	Alarm + push button	4	1	
AKO-520631	Alarm	1	0	
AKO-520641	Alarm	4	0	
AKO-156332	CAMCombi + push button	4	1	
AKO-156632	CAMCombi split + push button	4	1	
AKO-52062	push button	-	-	9 - 16 Vdc



AKO-52063
AKO-52064



AKO-156332
AKO-156632



AKO-520631
AKO-520641

AKO-52062

3.- Installation

The alarm must be installed in a location protected from vibration, water and corrosive gases, where the ambient temperature does not exceed the value shown in the technical data, and where the presence of at least one person is guaranteed during the time work is being carried out in the cold room.

In order for the alarms to have IP65 protection, the gasket should be properly installed between the apparatus and the perimeter of the panel cut-out where it is to be fitted.

3.1 Wall mounting

- Remove the front T of the equipment (Fig.1)
- Open the equipment and remove the front of the housing (Fig.2)
- Drill the holes needed for the cable entry glands using the pre-stamped centres on the sides of the housing for guidance.
- Drill 3 holes for fixing the housing on the centres marked 1,2,3 (Fig.3)
- Drill 3 holes in the wall to match the fixing holes previously drilled in the equipment.
- Fit the cable glands in the equipment.
- Insert the 3 screws and wall plugs through the housing into the holes in the wall and tighten.
- Insert the cables through the cables glands.
- Fit the front of the housing (Fig.2).
- Connect the battery before closing the housing.
- Insert and tighten bolts D, F (Fig.1)
- Connect the cables as shown in the wiring diagram, close the front T, insert and tighten bolts A, C (Fig.1)

3.2 Panel Mounting (maximum panel thickness: 3 mm)

- Remove cover T from the equipment (Fig.1).
- Open the equipment and separate the front part of the housing (Fig.2).
- Replace the gasket installed in the front panel with panel mounting gasket, bearing in mind its correct position.
- Make a hole in the panel of the specified size (214 x 214 mm). (Fig.4)
- Drill the holes needed for the cable entry glands using the pre-stamped centres on the sides of the housing for guidance.
- Finish drilling holes G, J with a 4 mm bit (Fig.3).
- Fit the cable glands in the equipment.
- Insert the cables into the glands.
- Fix the front onto the housing, through the panel, connect the battery, close the front and tighten the 44 mm bolts through holes D, F, G, J (Fig.3).
- After connecting the cables as shown in the wiring diagram, close cover T, and insert and tighten screws A, C (Fig.1).

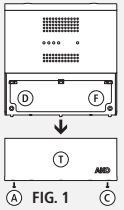


FIG. 1

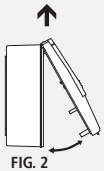


FIG. 2

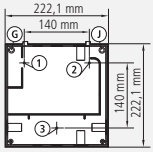


FIG. 3

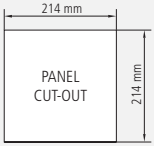
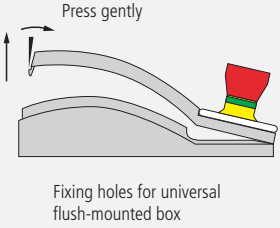
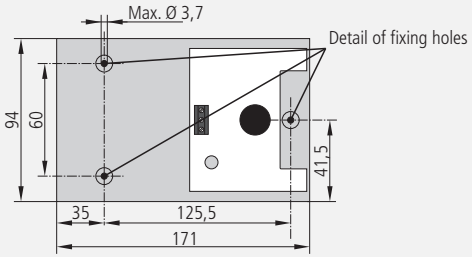


FIG. 4

3.3 Installing the push button

The push button must be installed inside the cold room, in a visible location at a height of no more than 125 cm. The equipment must be connected as shown in the wiring diagram described below.





3.4 Connection

Ensure the batteries are connected before switching on the equipment.

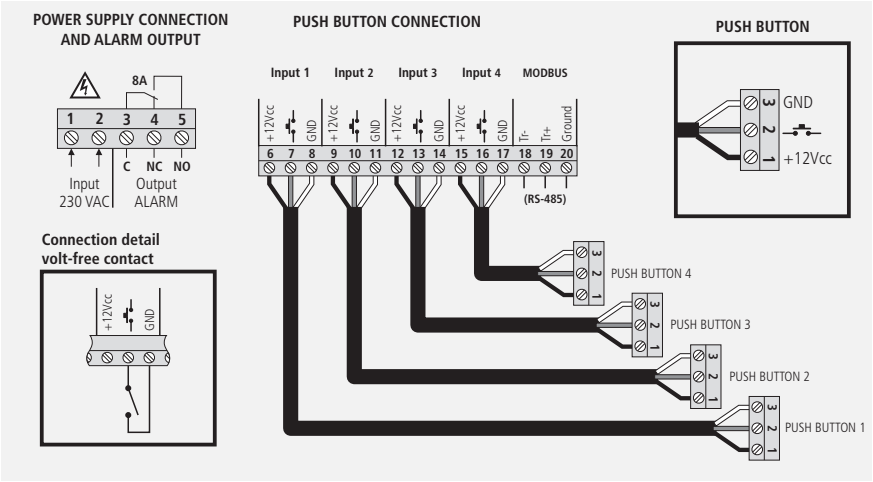
Always disconnect the power supply before making any connections.

The power supply circuit should be connected with a minimum 2 A, 230 V, switch located close to the unit. Power supply cables should be H05VV-F or H05V-K. The gauge will depend on local regulations, but should in no case be less than 1 mm2.

Cables for connecting the relay contact should have a sufficient gauge for the equipment to be connected.

If the cable supplied for connecting the push button is not used, use a V3V3-F type cable with three 0,5 mm2 wires and a minimum resistance of 300/500 V. The maximum distance is 100 m.

Any of the push buttons may be replaced by a volt-free contact, after first switching off the wiring monitoring function on the input in question (see section 3.5) and connecting it as shown in the sketch.



IMPORTANT: To avoid false alarms during the push button wiring process, always follow this order:

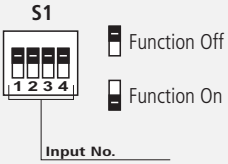
Set all the S1 microswitches in the up position > Connect the 3 cables, beginning with the GND cable > Set the S1 microswitches in their correct position (see next section).

3.5 Configuration

Monitoring the wiring

Set the wiring monitoring function on or off in each of the inputs (see page 7).

If a volt-free contact is used on any of the inputs, set the microswitch in the up position, which will switch the wiring monitoring off.



MODBUS address

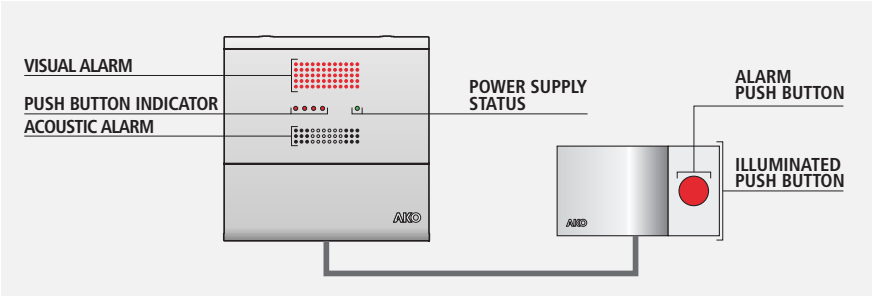
Determine the MODBUS address of the alarm during commissioning.

This address may be changed later by software, in which case the function of this microswitch will be cancelled.

Micro	Address
	96 (Decimal)
	97 (Decimal)
	98 (Decimal)
	99 (Decimal)

Check correct operation of the alarm after it has been configured.

4.- Equipment description



POWER SUPPLY STATUS

Indicator steady: 230 VAC supply connected.

Indicator flashing: No 230 VAC supply, battery healthy.

Indicator off: No power 230 VAC supply, battery discharged.

ALARM STATUS

Alarm OFF: Visual alarm indicator, push button indicators and acoustic alarm all off.

Alarm ON: Visual alarm indicator flashing, corresponding push button indicator lit and acoustic alarm sounding continuously.

Cable fault: Visual alarm indicator flashing, corresponding push button indicator lit and acoustic alarm sounding intermittently (5 consecutive tones every 2 minutes).

5.- Operation

In standby, the illuminated indicator of the push button will be permanently on even if the electrical supply fails, provided that the battery is not discharged..

Press the push button to activate the alarm. The acoustic and visual alarm will operate and the indicator of the corresponding push button will light up steadily.

To deactivate the alarm, turn the push button clockwise until it is released; the alarm will stop.

The alarm always operates even if the electrical supply fails, provided that the battery is not discharged.

Battery duration is approximately 10 hours.*

The alarm output allows external warning equipment to be activated (remote alarms, auxiliary sirens, etc.).

In case of power failure, if the battery is discharged, the relay will switch to alarm mode.

RS-485 communication is available for connecting to a computer. This communication, used with the AKO-5004 or AKO5005, allows you to read the status of the alarm inputs and the battery and to change the equipment's MODBUS configuration.

You can connect the alarm to a computer by connecting it to an existing AKO equipment network (MODBUS), or via an exclusive AKO "**USB/RS485 Conversion Module**".

*Duration with 4 push buttons connected and the alarm activated at a temperature of 5 - 30ºC.

MONITORING THE WIRING

The equipment continuously monitors the status of the wiring. If a cable breaks or is wrongly connected, the wiring fault alarm is activated (see "Alarm status").

If any of the push buttons connected is not included in the equipment, it may be that it is incompatible with this function, which would cause wiring false alarms. If the alarm persists even after you have checked that both the wiring and the connections are correct, switch off this function by setting the corresponding microswitch in the up position (see section 3.5).

In any case, remember to check the correct operation of the alarm after it has been configured.

6.- Maintenance

Clean the surface of the alarm using a soft cloth, soap and water. Do not use abrasive detergents, petrol, alcohol or solvents.

This equipment has built-in accumulators which must be replaced when the autonomy of the equipment is less than the duration shown in the specifications. At the end of the equipment life cycle, the accumulators must be taken to a selective disposal centre or returned to the equipment manufacturer.

7.- Technical data

Supply ..... 230 VAC ± 10%, 50/60 Hz
Maximum power absorbed ..... 15 VA
Autonomy of lighting + alarm ..... > 10 hours (*)
Accumulators ..... Ni-MH 1.6 Ah
Auxiliary relay ..... 230 Vac, 8A, cos φ = 1
Power supply working temperature ..... 0 °C to 50 °C
Push button working temperature ..... -50 °C to 50 °C
Power supply storage temperature ..... -30 °C to 70 °C
Push button storage temperature ..... -50 °C to 70 °C
Protection ..... IP 65
Installation category ..... II s/ EN 61010-1
Polution classification ..... II s/ EN 61010-1
Double insulation between supply, secondary circuit and relay output.
Cold room alarm - 1 push button **AKO-52063**
Cold room alarm - up to 4 push buttons **AKO-52064**
Spare push button with 2 m of cable **AKO-52062**
Spare power supply for AKO-52063 ..... **AKO-520631**
Spare power supply for AKO-52064 ..... **AKO-520641**
(*) Power supply working temperature ..... from 5 °C to 30 °C
Sound pressure level ..... 90 dB(A) at 3 meters