

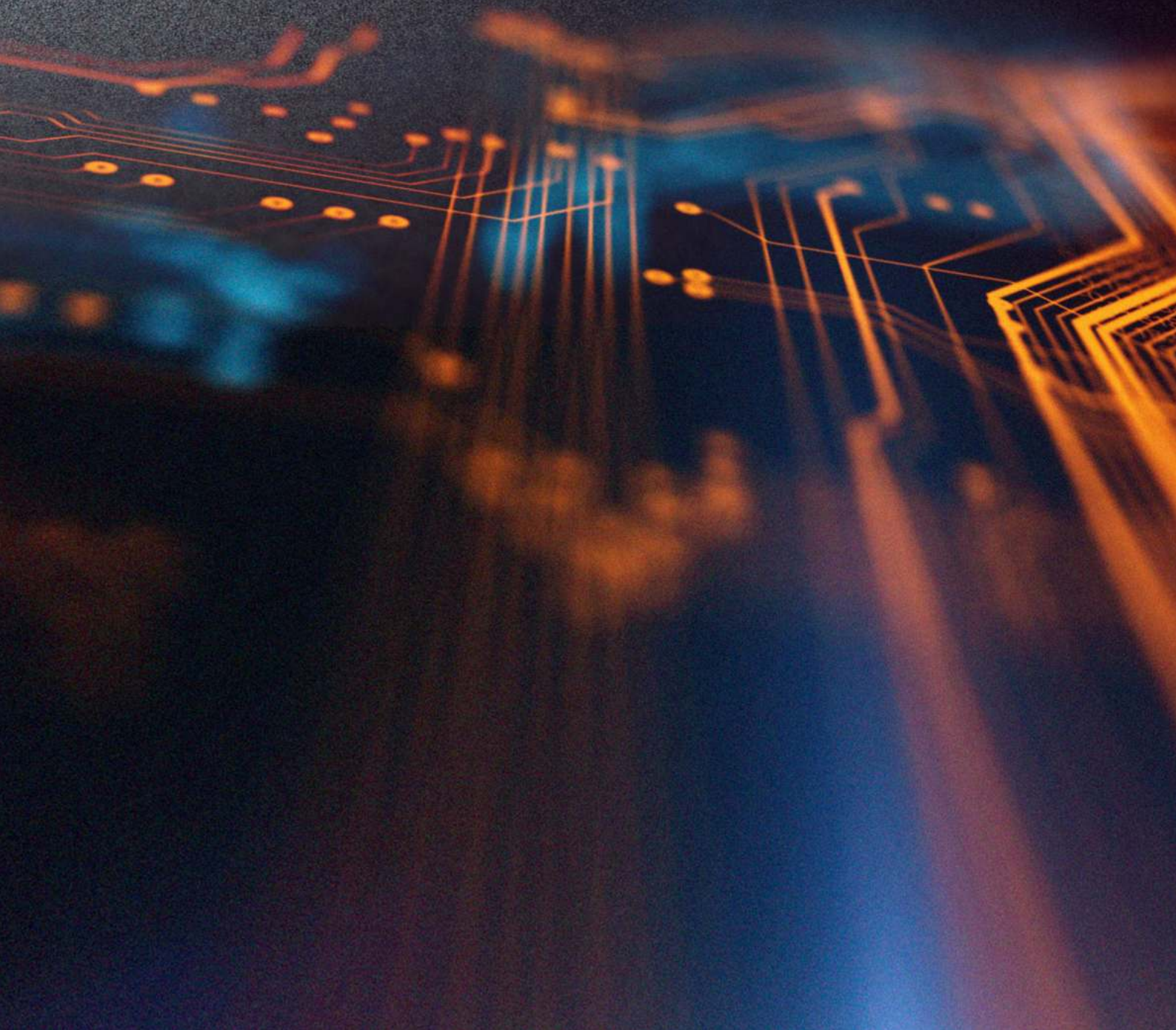


COMMERCIAL CATALOGUE

CONNECTED SOLUTIONS
FOR PRODUCT CARE
& ENERGY EFFICIENCY



AKO YEARS





MORE THAN 40 YEARS AS A REFRIGERATION PRODUCT AND SOLUTION MANUFACTURER

- **Vision and goals.**

AKO specialises in the design, development, manufacture and marketing of innovative, network-connected products and solutions for energy efficiency management, food safety and gas leak detection in commercial, industrial and logistic refrigeration.

- **Technological and innovative manufacturer.**

- 40% of staff are engineers.

- 20% of turnover is invested in R&D.

- **Headquartered in Barcelona, 8,000 m² for design, manufacture and marketing.**

- **Doing business in more than 65 countries.**

- **International patents for cold chain control.**

- **Recognised as an Innovative Company by the Spanish Ministry of Economy and Industry.**

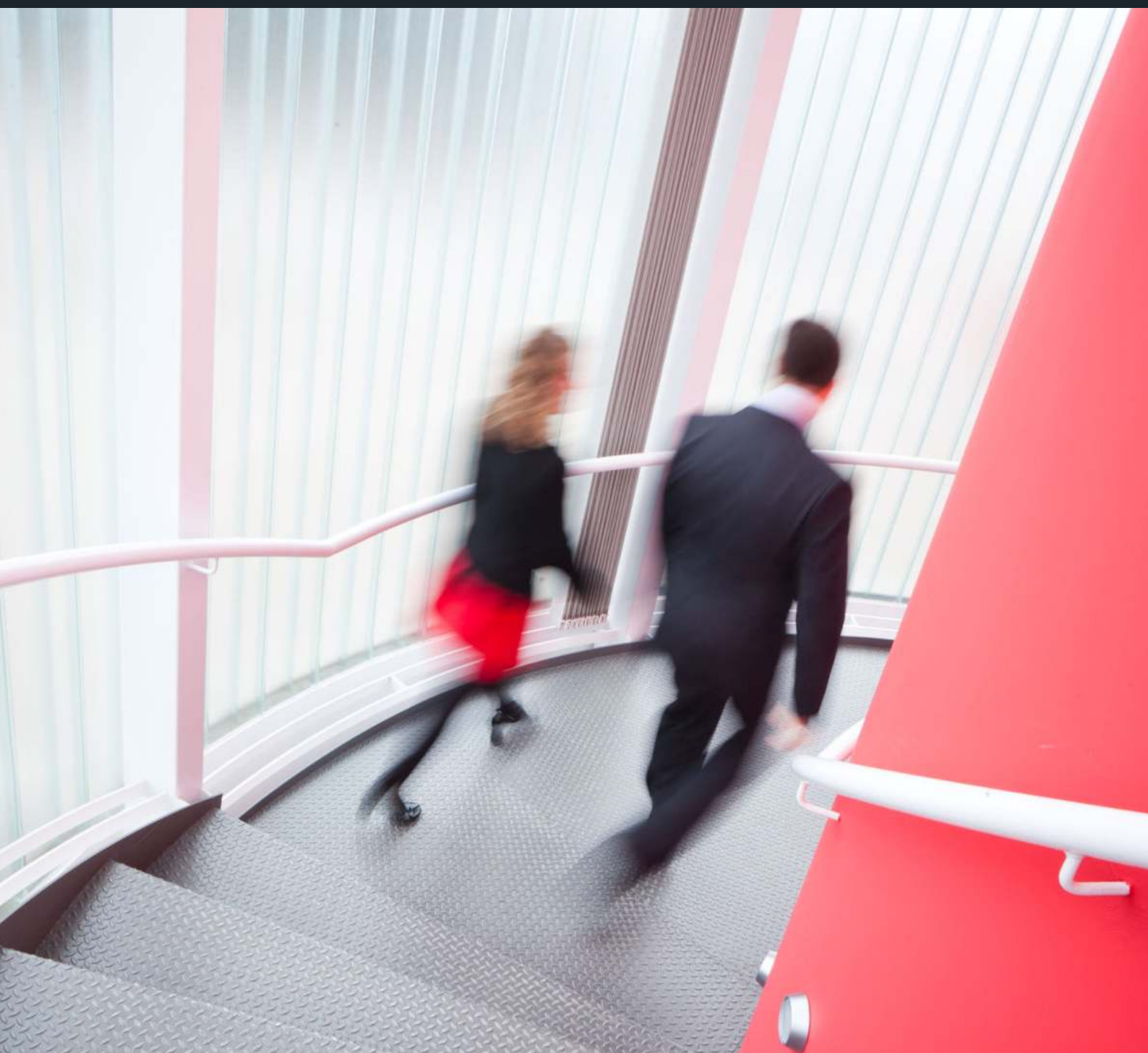
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0.

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LATEST DEVELOPMENTS

TEMPERATURE CONTROL FOR HIGH ENERGY EFFICIENCY IN COLD ROOMS

AKOCORE ADVANCE

Thanks to the development of the SELF-DRIVE® algorithm, you can increase energy efficiency, prolong and improve the conservation of the stored product and prolong the useful life of the facility.

- Easy start-up in just 2 steps, thanks to its auto-configuration menu.
- Defrost Lockout function to avoid facility overloads.
- Monitoring of the defrosting of a 2nd evaporator or the door heater to improve the efficiency of the installation.
- Remote or programmable change of the Setpoint Temperature with the CAMM Module device option.



THE MOST EFFICIENT SOLUTION IN TEMPERATURE AND HUMIDITY MONITORING

AKODATA

- Monitor all your facilities from anywhere, any time, using your computer, smartphone or tablet.
- Easy to plan, pre-programmed maintenance interventions thanks to the information provided by the AKONET.Cloud platform.
- Maximum installation simplicity thanks to its direct internet connection, its self-powering with batteries and its IP68 protection degree.

* Products based on NB (Narrow Band) technology are available wherever the operator has deployed such a network.



COMMUNICATION MODULE AND BLUETOOTH DEVICE CONNECTIVITY

CAMM MODULE

A new frontier in usability, connectivity and storage of key facility information, allowing access to the equipment from a mobile device.



- Easy and quick installation. Allows you to create, save and share parameter configurations.
- Local and remote connectivity without the need for a local network or web server, avoiding travel costs.
- Identifies errors during start-up, thanks to configuration and parametrisation changelogs.

THE NEW PLATFORM FOR EFFICIENT AND INTELLIGENT MANAGEMENT OF GEOGRAPHICALLY DISTANT DEVICES

AKONET.CLOUD



P. 104

- Remote access to all connected equipment, without the need for software installation or maintenance, from anywhere and on any device.
- User management, alarms and smart reports for a complete analysis of the facility and its status.
- Advanced notification procedures, configurable for sending via email, app and mobile.
- Full integration via Rest API with third party systems and apps.



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GAS MONITORS WITH INFRARED TECHNOLOGY FOR THE HIGHEST PROFITABILITY OF YOUR BUSINESS

AKOGAS NDIR

- AKO's family of infrared gas leak monitors is the best solution to reduce leakage from your refrigeration system by up to 75%, thanks to its monitoring system.
- A facility operating with 80% of its refrigerant gas capacity increases its electricity consumption by 15% as well as increasing the stress on the components of the refrigeration circuit.
- AKOGAS NDIR means savings on:
 - Refrigerant Refills (Direct Savings)
 - Energy Consumption (Indirect Savings)
 - Reduction in maintenance costs
 - Extension of the operating life of the system elements

A UNIQUE SYSTEM IN THE MARKET, A COMBINED GAS LEAK DETECTION AND TRAPPED PERSON SYSTEM

COMBI AKOGAS+AKOALARM












- A unique interface and advanced functionality to reduce operational costs during installation and after-sales service.
- Maximum quality and strict compliance with EN-378-1 and EN-378-3 standards.







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SOLUTIONS GUIDE

WORK ROOMS

	ADVANCED	EFFICIENT
TEMPERATURE CONTROL	 	 
GAS LEAK DETECTION	Early detection + People security   	Leak detection for people security   
	EN 378-3	EN 378-3
TEMPERATURE AND HUMIDITY MONITORING	 	
	Ideal for the constant monitoring of facility conditions.	





COMPRESSOR ROOMS

	UP TO 5 STAGES FOR CENTRAL COMPRESSOR UNITS
TEMPERATURE CONTROL	
GAS LEAK DETECTION	REGULATORY COMPLIANCE Early detection + People security   
	RD 138/2011 EN 378-3

DISPLAY CABINETS



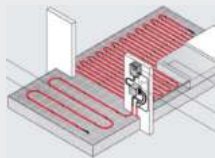
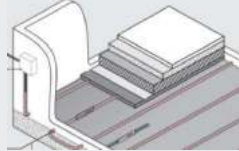
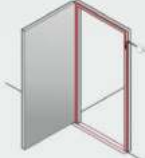
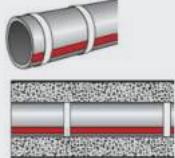
ELECTRONIC CONTROLLERS	AVOID ICE FORMATION AND CONDENSATION	MONITORING OF GAS LEAKS
		
TEMPERATURE AND HUMIDITY MONITORING		
 		

MONITORING SYSTEMS

 <p>Monitoring and control system for connected facilities, that is easy to install and configure from AKONET.Cloud for total access from any place and device. Faster and easier configuration and great usability thanks to its easy access via the AKONET.Cloud and AKONET.APP.</p>	 <p>Monitoring platform for geographically distributed facilities, allowing the access from anywhere and any device as easy as possible. Vast range of configuration, report, alarm reception and equipment visualisation data possibilities.</p>	 <p>Module for sending alarms via SMS using digital inputs. Fully configurable via mobile APP.</p>	 <p>Monitoring and remote management system for facilities, configurable for local or remote access. Allows the management of graphs that demonstrate the equipment's history, parameters and e-mailed alarm message email.</p>
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COLD ROOMS

TEMPERATURE AND HUMIDITY CONTROL	HEATER CABLE FOR REFRIGERATION SYSTEMS	
	 <p>Built-in antenna ideal for highly insulated rooms that may cause communication difficulties.</p>	 <p>Built-in external probe for effective monitoring of:</p> <ul style="list-style-type: none"> • Temperature of the stored product • Temperatures up to -50°C
	<p>* Products based on NB (Narrow Band) technology These are available where the operator has deployed such a network.</p>	
AVOID ICE FORMATION	 <p>Cold room entrance</p>	 <p>Cold room floor</p>
	 <p>Door frame</p>	 <p>Drainage and pipelines</p>



2-step installation wizard



Reduction in the number of defrosts required



Equipped with back-up battery



2 selectable alarm levels

1PPM

Leak detection from one part per million (ppm)



Increase of energy efficiency



Bluetooth device connection for displaying events, logs, programming, etc



Illuminated button














2 alarm levels programmable to any value











Total detection selectivity



SOLUTIONS GUIDE

COLD ROOMS

	ADVANCED	OPTIMAL	EFFICIENT
TEMPERATURE CONTROL	 IP65    	 IP65   	 IP65 

TRAPPED PERSON	PEOPLE SECURITY IN FREEZER ROOMS
	Alarm system with 10h battery life
	 IP65   EN 378-1

GAS LEAK DETECTION	EARLY DETECTION + PEOPLE SECURITY
	 IP68     EN 378-3
	LEAK DETECTION FOR PEOPLE SECURITY
	 IP68   EN 378-3

TRAPPED PERSON + REFRIGERANT GAS LEAKS	PEOPLE SECURITY IN FREEZER ROOMS
	 EN-378-1 EN 378-3
	PEOPLE SECURITY IN COLD ROOMS
	 EN 378-3

1.

COLD ROOM CONTROLLERS

- 01_ **ADVANCED COLD ROOM CONTROLLER**
- 02_ **EFFICIENT COLD ROOM CONTROLLER**
- 03_ **TEMPERATURE AND HUMIDITY CONTROLLER FOR
CONSERVATION AND RIPENING CHAMBERS**
- 04_ **MONITORING, DATA LOGGING AND MAINTENANCE TOOL**
- 05_ **ELECTRONIC CONTROLS FOR THREE-PHASE COLD ROOMS**
- 06_ **ELECTRONIC CONTROL PANELS FOR SINGLE AND THREE-PHASE
CONDENSER UNITS**

01_ ADVANCED COLD ROOM CONTROLLER

AKOCORE ADVANCE



AKOCORE ADVANCE

BENEFITS



OPTIMAL START-UP AND REGULATION

- Ultra-fast installation and start-up with two-step guidance.
- Ability to save and load default parameters with the CAMM Module*, through the CAMM Tool App.
- Acoustic and visual alarms built into the product.
- Optimum control of the system elements via SELF-DRIVE® mode, minimising defrosting, reducing the formation of ice inside the system and adapting to changing conditions of the room.



MAXIMUM EFFICIENCY AND REDUCED CONSUMPTION

- AKOCORE ADVANCE manages temperature regulation and the key elements of electricity consumption in cold rooms.
- It improves product conservation thanks to the drastic reduction in the number of compressor activation and the amount of defrosting required, optimising the time at the Set Point.
- Product care and product loss reduction.



ATTRACTIVE AND VERSATILE DESIGN

- IP65 across the whole range.
- Horizontal construction that allows its installation both to the side and above the door of the cold room.
- Large, clear and intuitive display with colour-coded icons.
- Quick access keys with the most common functions at the click of a button, for ease of use.



INCREASED CONNECTIVITY

- Modbus included.
- With the CAMM Module it is possible to connect your mobile phone via Bluetooth and control all the facility's relevant information and record important events. In addition, the CAMM module provides remote connectivity without the need for a network or web server, through the "Share" mode.
- Digital inputs to silence the alarm, remote change of Set Point, remote defrost activation or deactivation using control systems.

* CAMM module included in AKO-16524A (in AKO-16525A it can be installed optionally).

APPLICATIONS

Cold rooms and freezer rooms.

AKOCORE ADVANCE regulates itself using its SELF-DRIVE® algorithm and with only 2 probes:



It optimises the working time of the drain resistance, significantly reducing electricity consumption.

It detects the state of the refrigerant in the evaporator.



It regulates the fan to take advantage of the thermal inertia of the evaporator, achieving:

- Reduced number of compressor activations.
- Reduced energy consumption.
- Less mechanical stress due to fewer compressor activations.



It detects the formation of ice in the evaporator.



It determines the Heat Transfer Ratio between the cold room and the evaporator.



It minimises the number and duration of defrosts:

- Reduced thermal stress.
- Increased time at the set-point.
- Reduced energy consumption.
- Reduced risk of gas leakage.

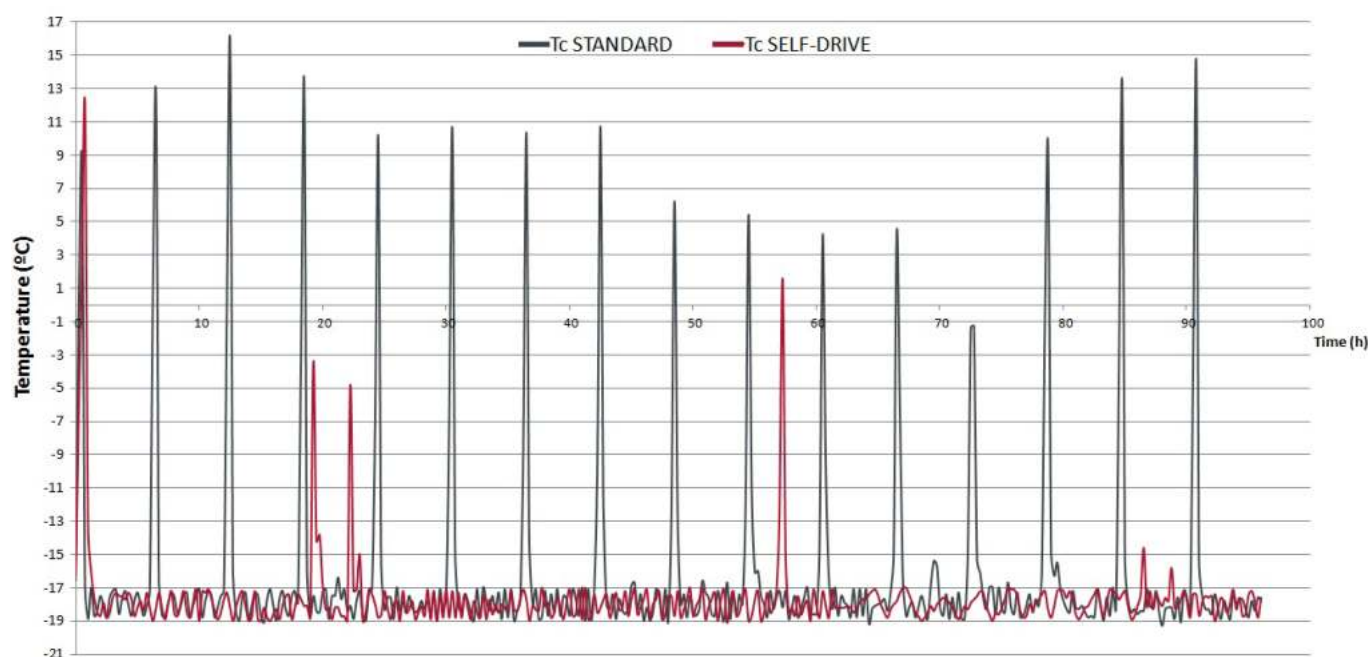


It monitors door opening, reducing ambient/room heat transfer and increasing temperature stability.



COMPARISON OF OTHER TEMPERATURE CONTROLLERS VS. THE AKOCORE ADVANCE CONTROLLER

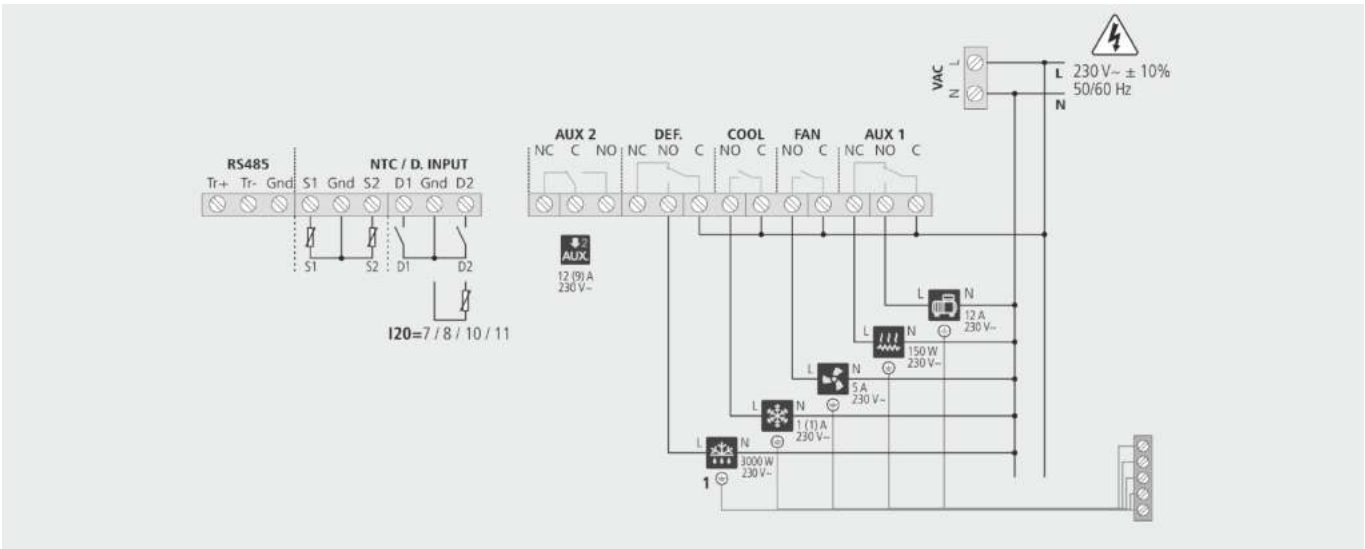
Drastic reduction in the number of defrosts and electricity consumption.



IMPROVED TEMPERATURE CONTROL FOR OPTIMUM PRODUCT PRESERVATION



ELECTRICAL CONNECTIONS



AKO-16524A / AKO-16525A

TECHNICAL SPECIFICATIONS

Power supply AKO-16524A / AKO-16525A		230 V~ ± 10%, 50 ± 5%
Maximum power absorbed during use		6.3VA
Nominal maximum current		15A
A DEFROST relay - SPDT - 20 A	NO	(EN60730-1: 15 (15)A 250V~)
	NC	(EN60730-1: 15 (13) A 250 V~)
FAN Relay - SPST - 16 A		(EN60730-1: 12 (9) A 250V~)
COOL Relay - SPST - 16 A		(EN60730-1: 12 (9) A 250 V~)
AUX relay 1- SPDT - 20 A	NO	(EN60730-1:15 (15)A 250V~)
	NC	(EN60730-1: 15 (13)A 250 V~)
AUX relay 2 - SPDT - 16 A	NO	(EN60730-1: 12 (9) A 250 V~)
	NC	(EN60730-1: 10 (8) A 250 V~)
No. of relay operations		EN60730-1:100,000 operations
Dimensions		290 mm (W) x 141 mm (H) x 84.4 mm (D)
Probe temperature range		-50.0 °C to 99.9 °C
Resolution, set point and differential		0.1 °C
Thermometric accuracy		±1°C
NTC probe tolerance at 25°C		±0.4 °C
Input for NTC probe		AKO-14901
Ambient operating temperature		-10 °C to 50 °C
Ambient storage temperature		30 °C to 60 °C
Protection degree		IP65

MODELS

Description	Model	CAMM Module*	Packaging
Temperature controller	AKO-16524A	Included	1 unit
	AKO-16525A	Optional	

*See information about the CAMM Module on page 24

02_ EFFICIENT COLD ROOM CONTROLLERS

AKOCORE



BENEFITS



MAXIMUM EASE OF INSTALLATION

- Mounting to wall with only 3 screws and front side opening with hinges that allows fastening with only one hand.
- Terminals placed on screen-printed plate, and all connections performed on the bottom of the equipment with ample interior space.
- Upper and lower IP65 cable entry (using cable gland), and also at the rear for installations where you want to hide the wiring (Not IP65 in this case).



EFFICIENT START-UP AND REGULATION

- Ultra-fast installation and start-up with two-step guidance.
- Possibility to save and load default parameters with the CAMM Module, through the CAMM Tool App.
- Acoustic and visual alarms built into the product.
- Possibility of managing the door heater and defrosts of a second evaporator or defrosting processes for three-phase compressors.



ATTRACTIVE AND VERSATILE DESIGN

- IP65 across the whole range.
- Horizontal construction that allows its installation both to the side and above the door of the cold room.
- Large, clear and intuitive display with colour-coded icons.
- Quick access keys with the most common functions at the click of a button, for ease of use.



INCREASED CONNECTIVITY

- Modbus as standard.
- With the CAMM Module it is possible to connect your mobile phone via Bluetooth and control all the facility's relevant information and record important events. In addition, the CAMM module provides remote connectivity without the need for a network or web server, through the "Share" mode.
- Digital inputs to silence the alarm, remote set point alteration, remote defrost activation or deactivation via load control systems.

APPLICATIONS

Cold rooms and freezer rooms.

AUTONOMOUS INSTALLATION CONTROL



Compressor



Fans



Solenoid



Defrosting



DISTRIBUTED INSTALLATION CONTROL

Fans



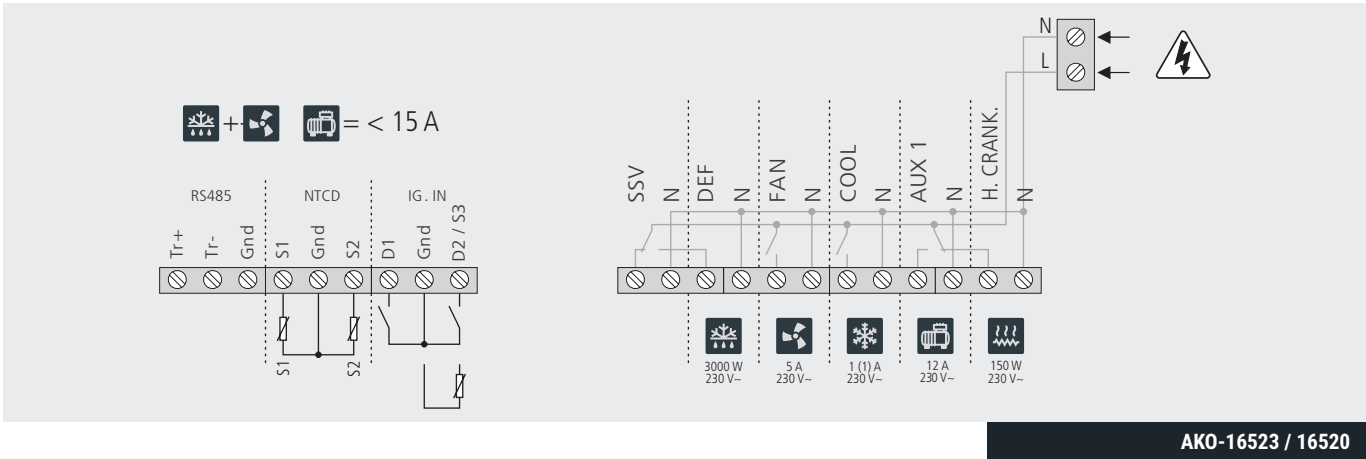
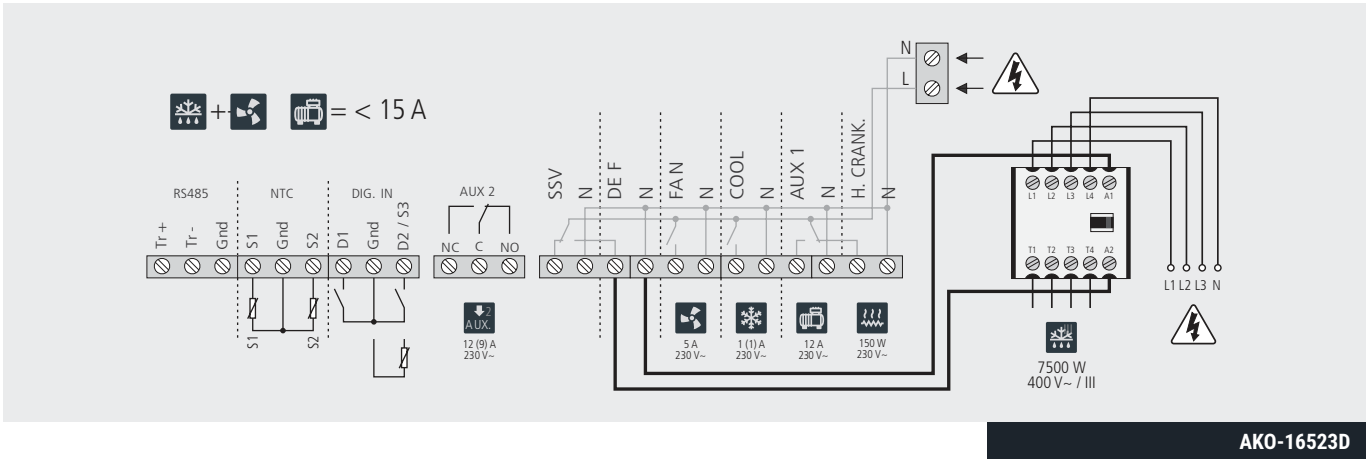
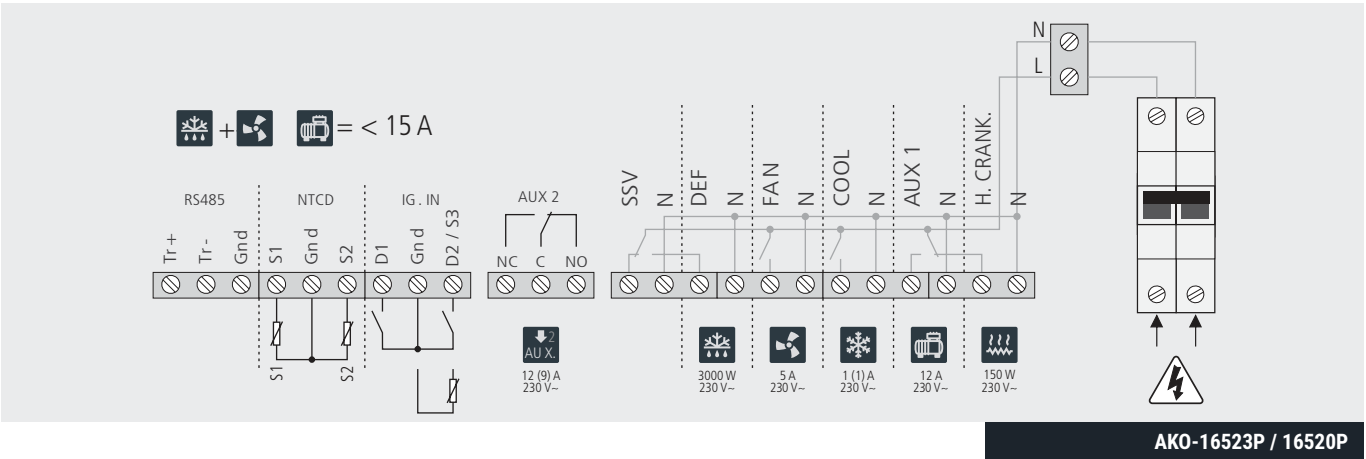
Solenoid



Defrosting



ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply	AKO-16523 / AKO-16523P / AKO-16523D	230 V~ ± 10%, 50 ± 5%
	AKO-16520 / AKO-16520P	120 V ~ ± 8% - 12%, 50 ± 5%
Maximum power absorbed during use		15 W
Nominal maximum current		15
A SSV Relay / DEFROST - SPDT - 20 A	NO	EN60730-1: 15 (15) A 250 V~)
	NC	EN60730-1: 15 (13) A 250 V~)
FAN Relay - SPST - 16 A		EN60730-1: 12 (9) A 250 V~)
COOL Relay - SPST - 16 A		EN60730-1: 12 (9) A 250 V~)
AUX relay 1 / H.CRANK. - SPDT - 20 A	NO	EN60730-1: 15 (15) A 250 V~)
	NC	EN60730-1: 15 (13) A 250 V~)
AUX 2 relay - SPDT - 16 A	NO	EN60730-1: 12 (9) A 250 V~)
	NC	EN60730-1: 10 (8) A 250 V~)
Contactor (AKO-16523D)	AC	20 to 400 V~ (III)
	AC3	9 to 400 V~ (III)
No. of relay operations		EN60730-1:100,000 operations
Probe temperature range		-50.0 °C to 99.9 °C
Resolution, set point and differential		0.1 °C
Thermometric accuracy		±1 °C
NTC probe tolerance at 25 °C		±0.4 °C
Input for NTC probe		AKO-14901
Maximum power absorbed in operation		10 VA
Ambient operating temperature		-5 °C to 40 °C
Protection degree		IP 65
Installation category		II s/ EN 61439-1
Pollution level		II s/ EN 61439-1
Double insulation between power supply, secondary circuit and relay output.		
Dimensions		290 mm (W) x 141 mm (H) x 84.4 mm (D)
Internal buzzer		

MODELS

Description	Model	Power supply	Packaging
4 relays temperature controller	AKO-16523	230V	6 units
	AKO-16520	120V	
5 relays temperature controller with electrical protection	AKO-16523P	230V	
	AKO-16520P	120V	
5 relays temperature controller and Power contactor	AKO-16523D	230V	

03_ TEMPERATURE AND HUMIDITY CONTROLLER FOR CONSERVATION AND RIPENING CHAMBERS

AKOCORE



BENEFITS



MAXIMUM EASE OF INSTALLATION

- Mounting to wall with only 3 screws and front side opening with hinges that allows fastening with only one hand.
- Terminals placed on screen-printed plate, and all connections performed on the bottom of the equipment with ample interior space.
- Upper and lower IP65 cable entry (using cable gland), and also at the rear for installations where you want to hide the wiring (Not IP65 in this case).



EFFICIENT START-UP AND REGULATION

- Ultra-fast installation and start-up with two-step guidance.
- Possibility to save and load default parameters with the CAMM Module, through the CAMM Tool App.
- Acoustic and visual alarms built into the product.
- Possibility of managing the door heater or defrosts of a second evaporator.



ATTRACTIVE AND VERSATILE DESIGN

- IP65 across the whole range.
- Horizontal construction that allows its installation both to the side and above the door of the cold room.
- Large, clear and intuitive double display with colour-coded icons.
- Quick access keys with the most common functions at the click of a button, for ease of use.



INCREASED CONNECTIVITY

- Output relay for drying using hot gas or support resistance.
- 4-20mA output and analogic input to control humidifier.
- Modbus as standard
- Monitoring through AKONET or AKONET.Edge

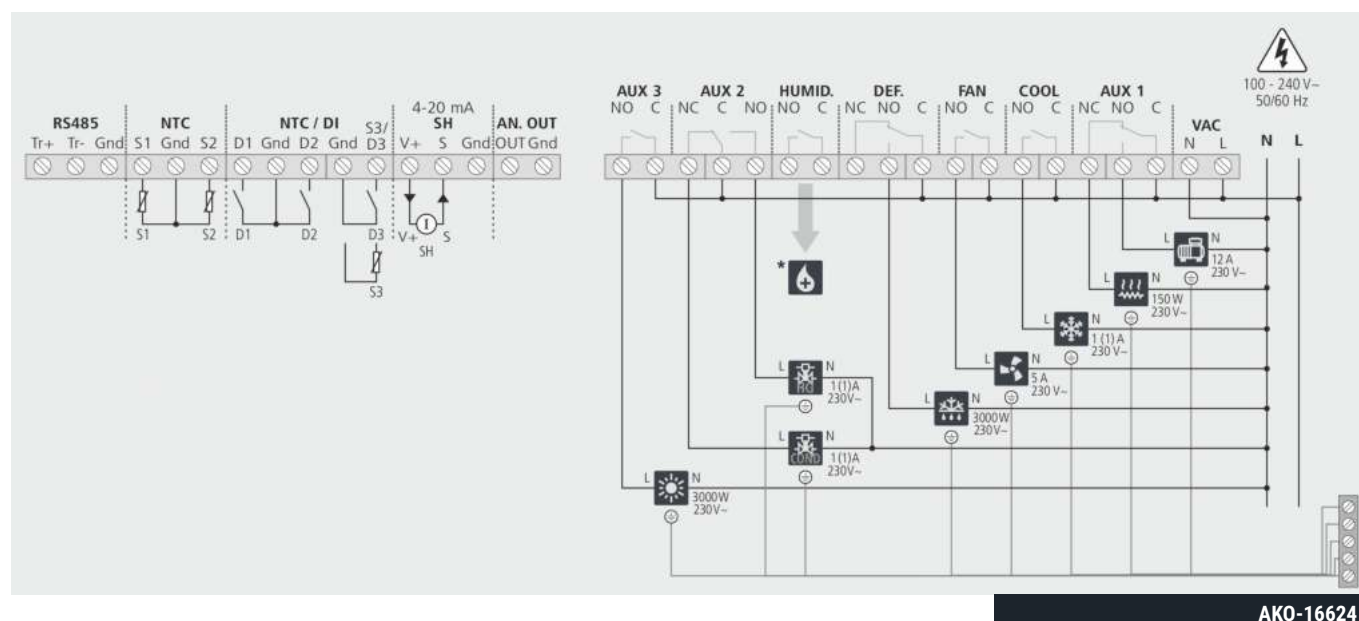
APPLICATIONS

Control temperature and humidity is a key factor in food industry to avoid water loss of the product (thereby, reducing its weight), preserve the quality and freshness and reducing product waste.

The controller AKO-16624 ensures an appropriate conditions of temperature and humidity thanks to its control algorithm, preserving the quality of the stored product and minimising product losses.

- Drying rooms.
- Cheese production and preservation.
- Greenhouses.
- Flowers storage and preservation.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

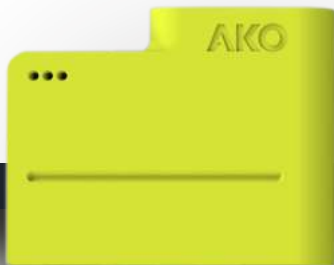
Power supply		100 - 240 V~, 50 / 60 Hz
Nominal maximum current		15 A
DEF relay. - SPDT - 20 A	NO	(EN60730-1: 15 (15) A 250 V~)
	NC	EN60730-1: 15 (13) A 250 V~)
FAN Relay - SPST - 16 A		EN60730-1: 12 (9) A 250 V~)
COOL Relay - SPST - 16 A		EN60730-1: 12 (9) A 250 V~)
HUMID relay - SPST - 16 A		EN60730-1: 12 (9) A 250 V~)
AUX relay 1 / H.CRANK. - SPDT - 20 A	NO	EN60730-1: 15 (15) A 250 V~)
	NC	EN60730-1: 15 (13) A 250 V~)
AUX 2 relay - SPDT - 16 A	NO	EN60730-1: 12 (9) A 250 V~)
	NC	EN60730-1: 10 (8) A 250 V~)
AUX 3 Relay - SPST - 16 A		EN60730-1: 12 (9) A 250 V~)
No. of relay operations		EN60730-1:100,000 operations
Probe temperature range		-50.0 °C to 99.9 °C
Resolution, set point and differential		0.1 °C
Thermometric accuracy		±1 °C
NTC probe tolerance at 25 °C		±0.4 °C
Humidity probe input		Analogue, 4-20 mA
Humidity input range		4 mA: 0% HR - 20 mA: 100% HR
Ambient operating temperature		-10 °C to 50 °C
Protection degree		IP 65

MODELS

Description	Model	Power supply	Packaging
Temperature and humidity controller for chambers	AKO-16624	90-240VAC	6 units

04_ MONITORING, DATALOGGING AND MAINTENANCE TOOL

CAMM MODULE



CAMM MODULE

BENEFITS



INSTALLATION

- Reduces installation time, and makes it easier to set up equipment.
- The unit can be set up via a mobile phone. The device can also be used to create, save and share parameters and template configurations with other installers.



START-UP

- Provides information on the performance and use of the facility after start-up.
- Identifies errors in the start-up of the equipment, thanks to amendment records in configuration and parametrisation.



AFTER SALES

- The room's activity is monitored and logged to optimise its regulation.
- Local and remote connectivity using the mobile without the need for a local network or web server, to access key maintenance information, avoiding costly trips to the facility.

APPLICATIONS

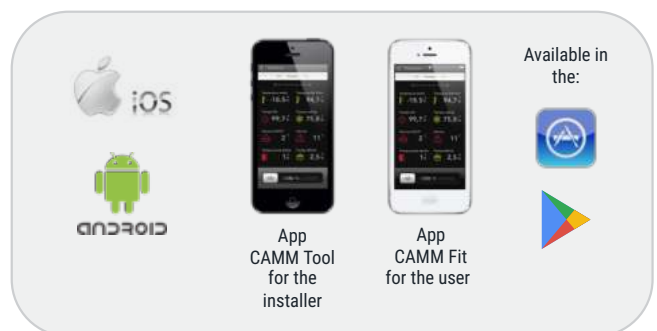
Refrigeration and freezer rooms, compressor rooms, as bluetooth connectivity module and registration in AKOCORE and AKOGAS devices.



AKOCORE
AKOGAS



CAMM MODULE
AKO-58500



* CAMM module included in AKO-16524A (in AKO-16525A it can be installed optionally).

LOCAL AND REMOTE CONNECTIVITY WITH THE CAMM MODULE IN SHARE MODE



Share mode allows you to share all the information logged in the CAMM module in order to access it remotely, having all the data and events at your fingertips and in a very simple way without the need to travel.

TECHNICAL SPECIFICATIONS

Internal power supply		Li-Ion battery 3.7 V 100 mAh
Maximum power usage		50 mA
Self-sufficiency	On stand-by	4 months
	Whilst connected	4 hours
Ambient operating temperature		-30 °C to 50 °C
Ambient storage temperature		-20 °C to 60 °C
Permissible humidity range		0 - 95 % RH (without condensation)
Dimensions		46 mm x 36.5 mm x 12.2 mm
Compatible with the apps		AKO CAMM Tool AKO CAMM Fit

MODELS

Description	Model	Packaging
CAMM module for Bluetooth connectivity and data logging	AKO-58500	1 unit

05_ ELECTRONIC CONTROLS FOR THREE-PHASE COLD ROOMS

PROPlus



BENEFITS



QUICK AND EASY INSTALLATION

- Interior terminal board for a ease of connection.
- Quick programming menu, with the most common parameters (Set Point, Defrost).
- Easy access to the magneto-thermal protection, thanks to its frontal positioning.



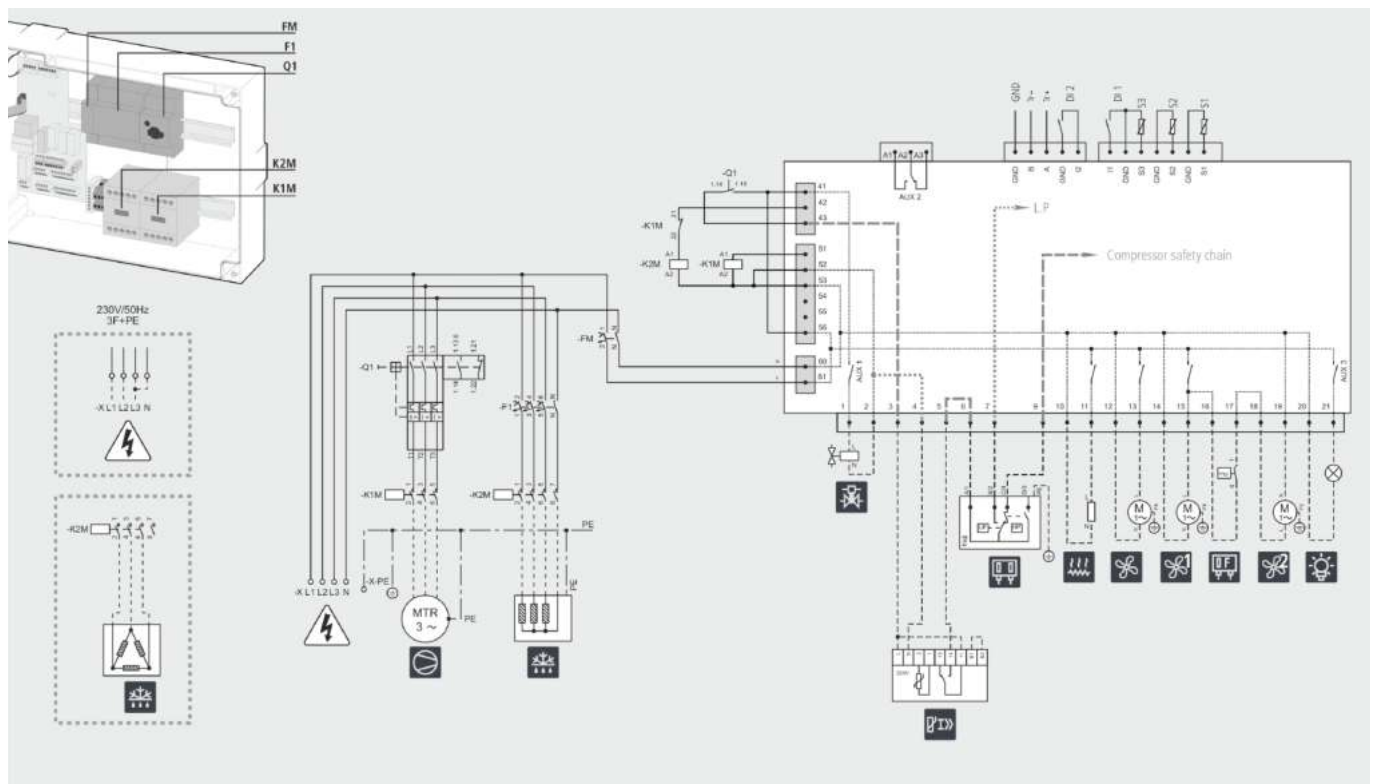
ROBUST DESIGN

- IP65 protection degree for installation in humid environments.
- Electronic panels with magneto-thermal protection up to 25A, for the control of cold rooms and to cover a wide range of applications.

APPLICATIONS

Three-phase refrigeration and three-phase cold rooms.

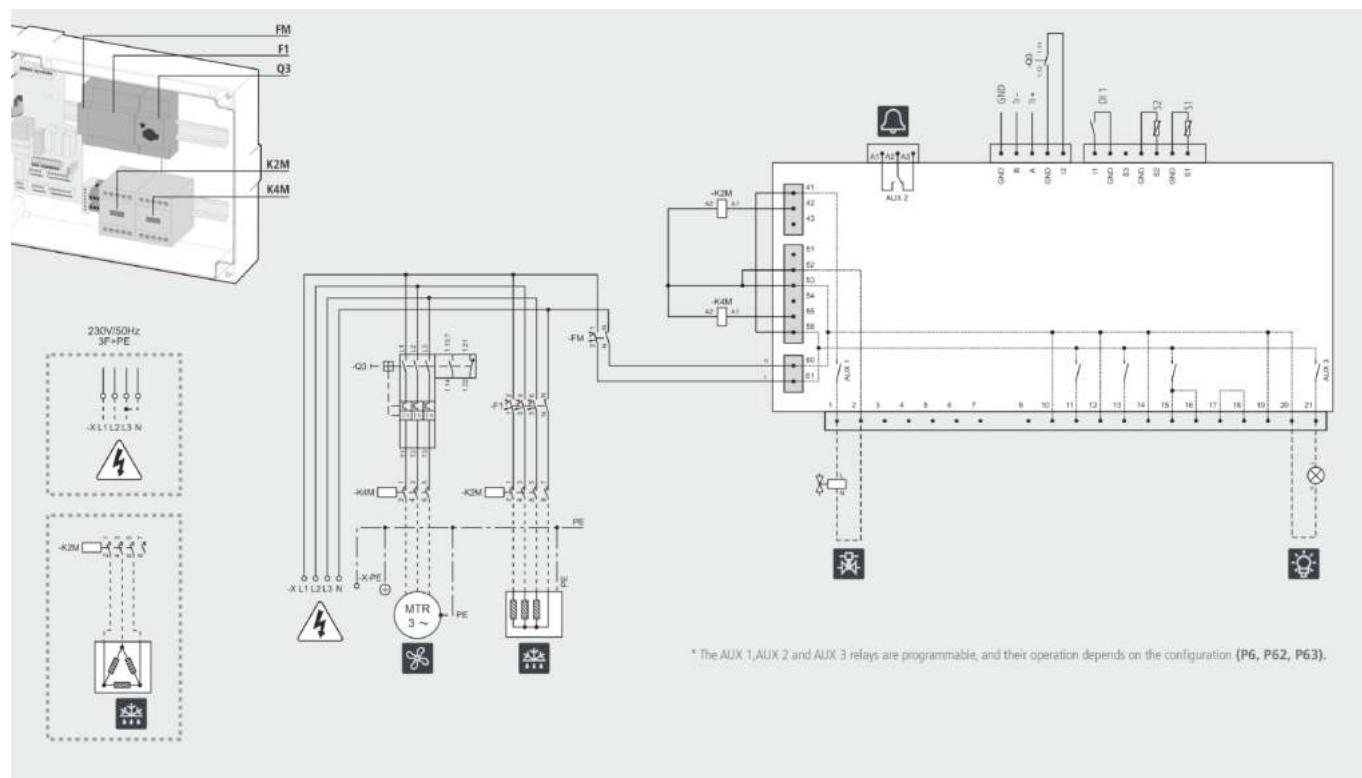
ELECTRICAL CONNECTIONS



AKO-15690/1/2/3



ELECTRICAL CONNECTIONS



AKO-15699-1

TECHNICAL SPECIFICATIONS

Rated voltage Un	400 V~ ±10 % 50 Hz ±5 %
Rated voltage Ue	230 V~ ±10 % 50 Hz ±5 %
ALARM relay	8A at 250V, cosj=1
Resolution	0.1 °C
Probe temperature range	-45.0 °C to 99.9 °C
Thermometric accuracy	±1 %
Ambient operating temperature	0°C to +50°C
Accuracy of the NTC probe at 25 °C	± 0.4 °C
Maximum power absorbed during use	30 VA
Ambient operating temperature	-5 °C to 40 °C
Ambient storage temperature	-30 °C to 70 °C
Protection degree	IP65
Dimensions	400 x 300 x 135 mm
Protection degree of the datalogger	IP65
Double insulation between power supply, secondary circuit and relay output.	
Internal buzzer	

MODELS

Condensing Unit			Evaporator			Light 230 V-I	Model	Packaging
Compressor 400 V-III	Condenser		Fans		Defrosting 400 V-III			
	230 V-I	400 V-III	230 V-I	400 V-III				
2.5 - 4 A	3A	–	4A	–	7,000 W	250 W	AKO-15690	1 unit
4 - 6.3 A	3A	–	4A	–	7,000 W	250 W	AKO-15691	
6.3 - 10 A	3A	–	4A	–	10,200 W	250 W	AKO-15692	
10 - 16 A	3A	–	4A	–	10,200 W	250 W	AKO-15693	
–	–	–	5A	–	10,200 W	250 W	AKO-15697	
–	–	–	–	1.6-2.5 A	10,200 W	250 W	AKO-15699	
–	–	–	–	6.3-10 A	20,000 W	250 W	AKO-15699-1	

06_

ELECTRONIC CONTROL PANELS FOR SINGLE AND THREE-PHASE CONDENSING UNITS

PROCOOL

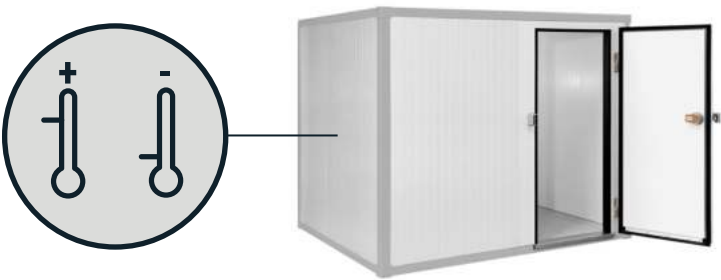


ELECTRONIC CONTROL PANELS

BENEFITS

Electronic Panels for Single and Three Phase Condensing Units, with adjustable Electrical Protection between 3 and 25A. Versions available for single and three-phase evaporator and/or condenser fans, with or without single and three-phase defrosting.

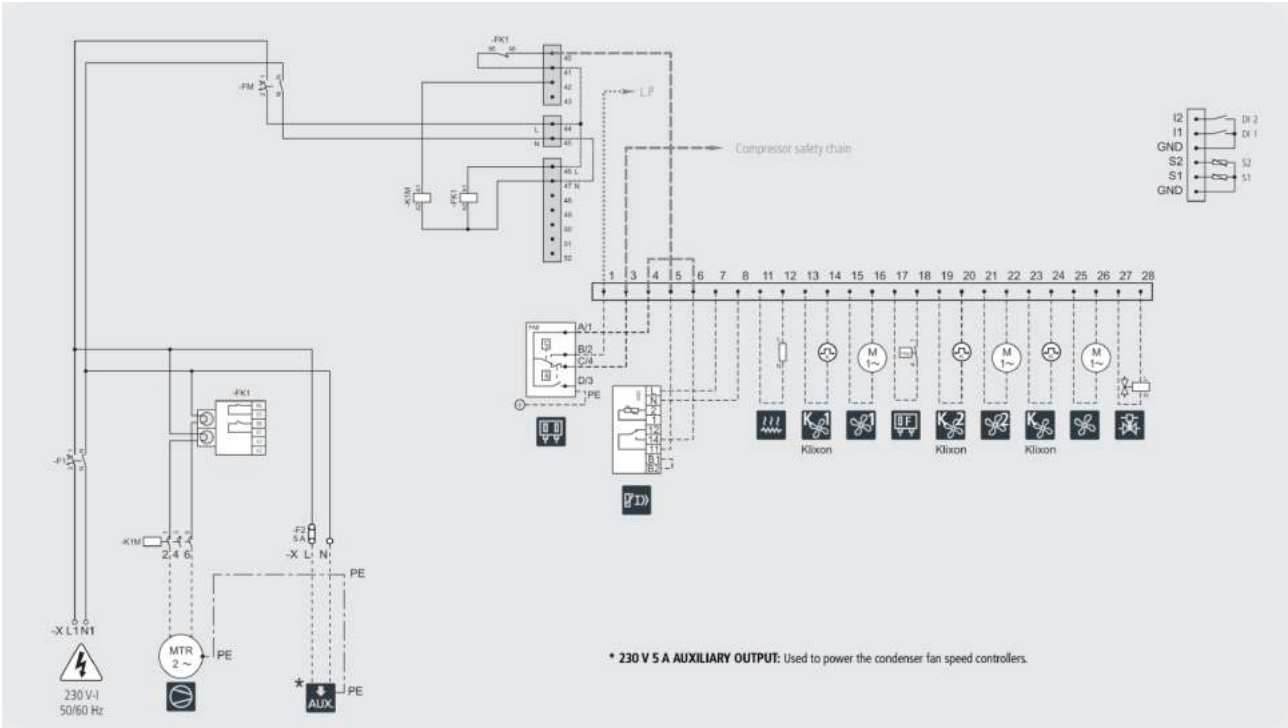
There are also two versions for the Control that are specifically for Three Phase Condensing Units only, with single and three-phase fans.



APPLICATIONS

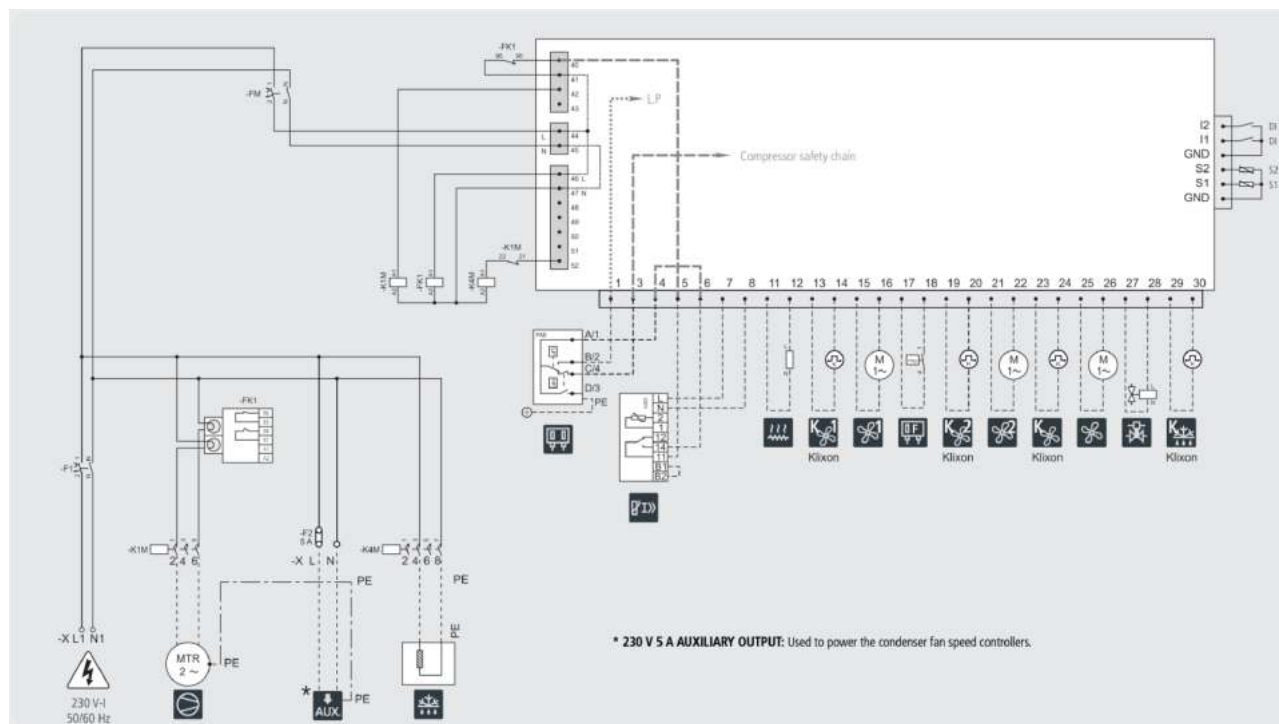
Refrigeration and freezer rooms up to 10CV.

ELECTRICAL CONNECTIONS

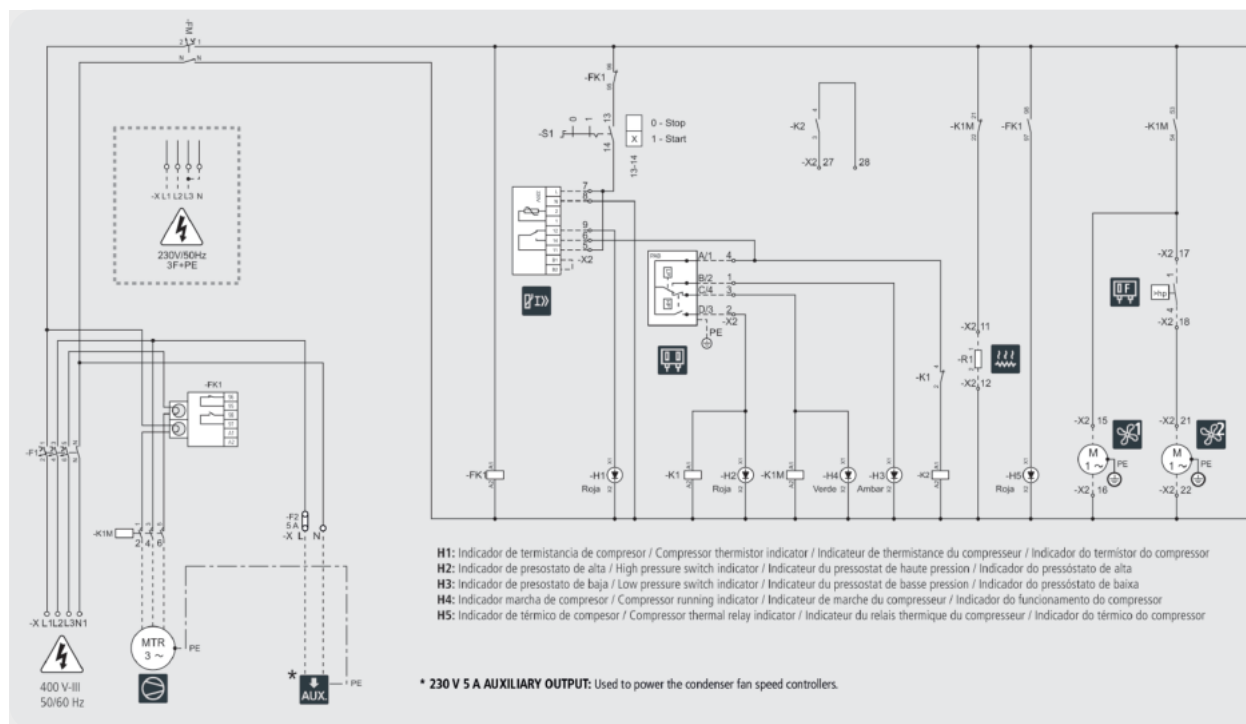


AKO-17520

ELECTRICAL CONNECTIONS

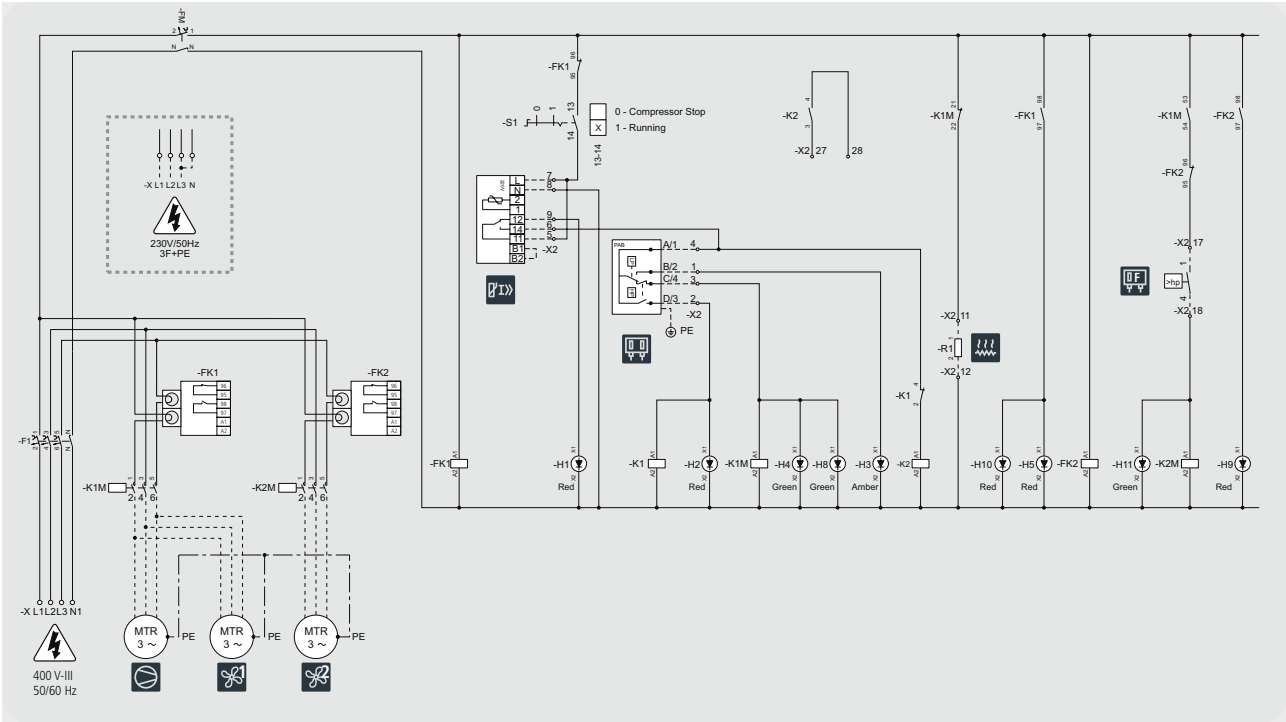


AKO-17521

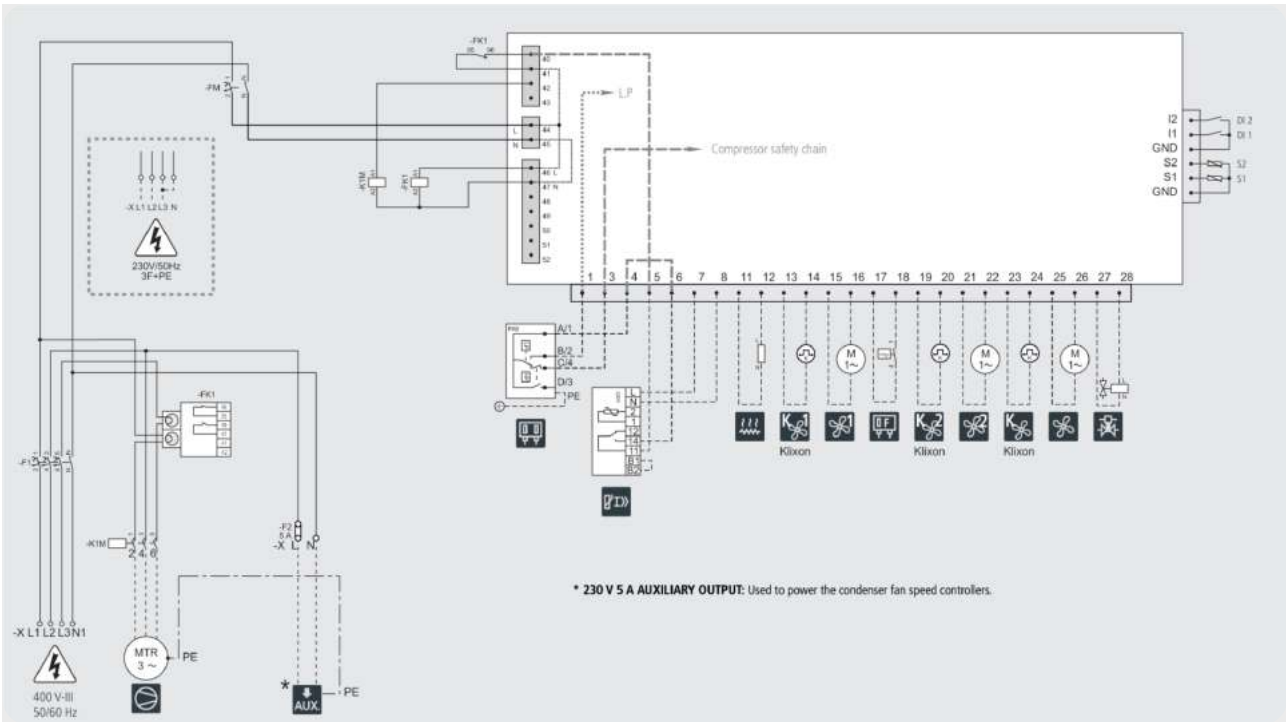


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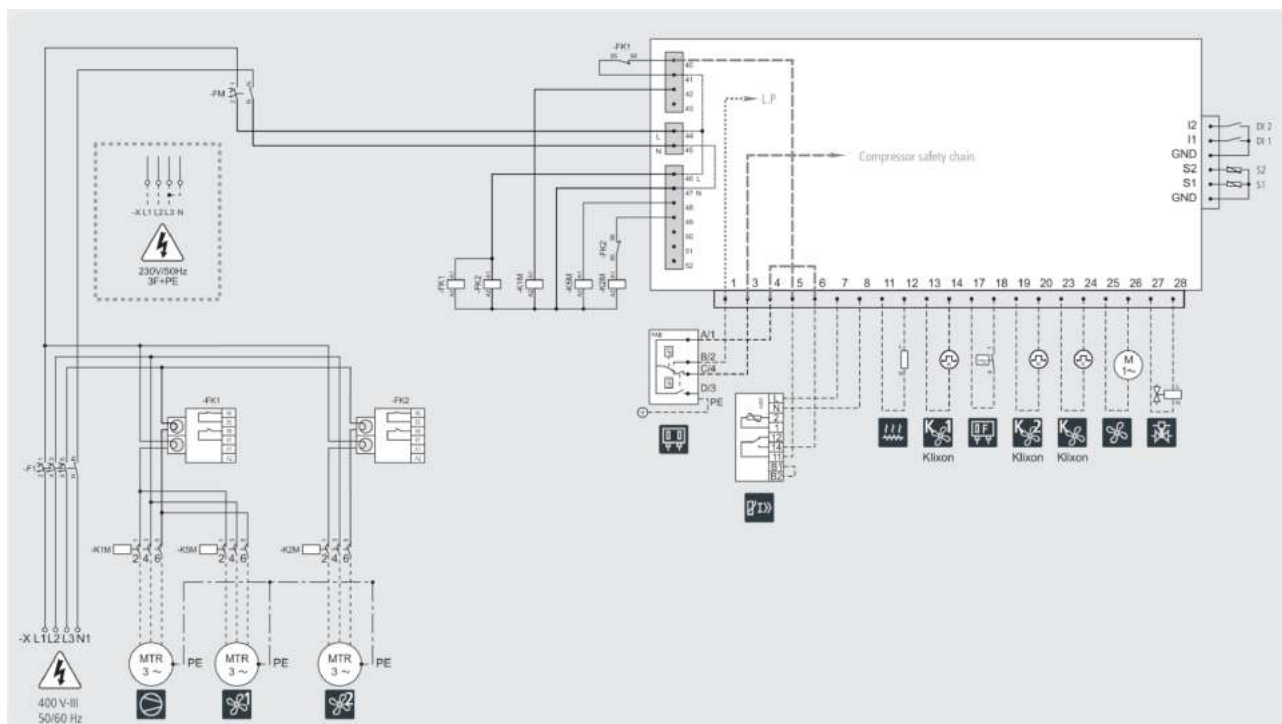


AKO-17631

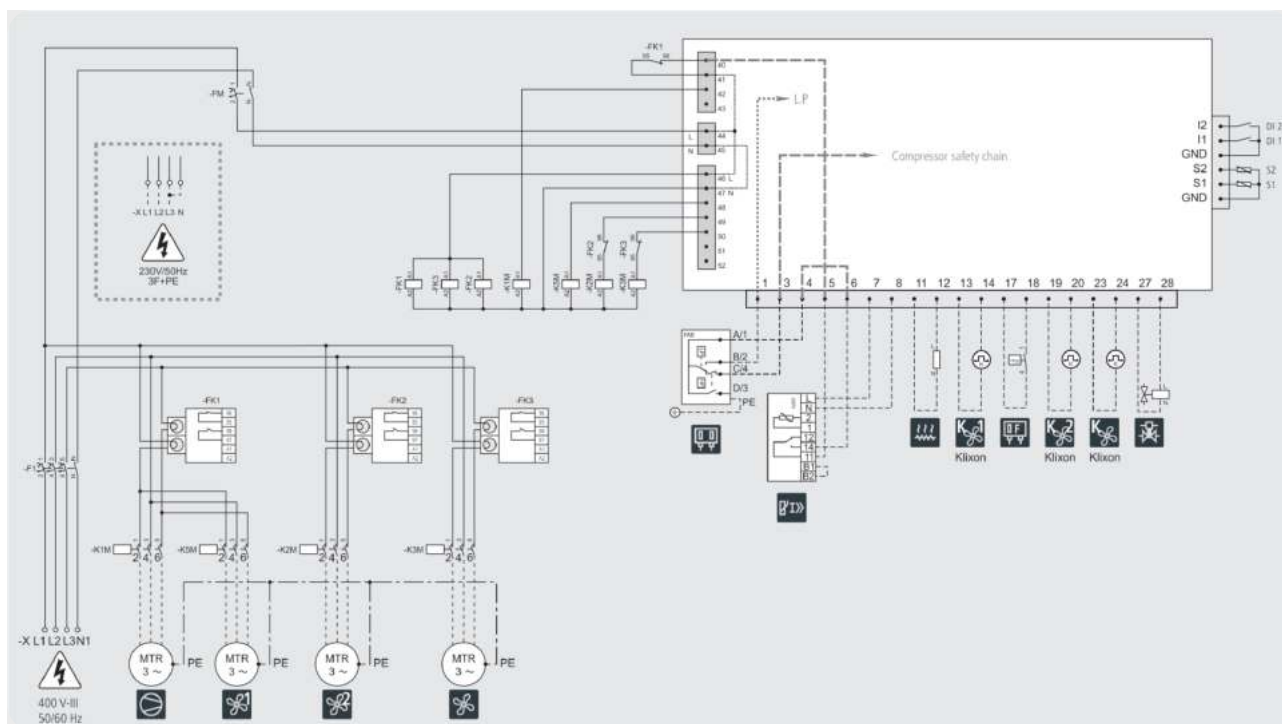


AKO-17632

ELECTRICAL CONNECTIONS

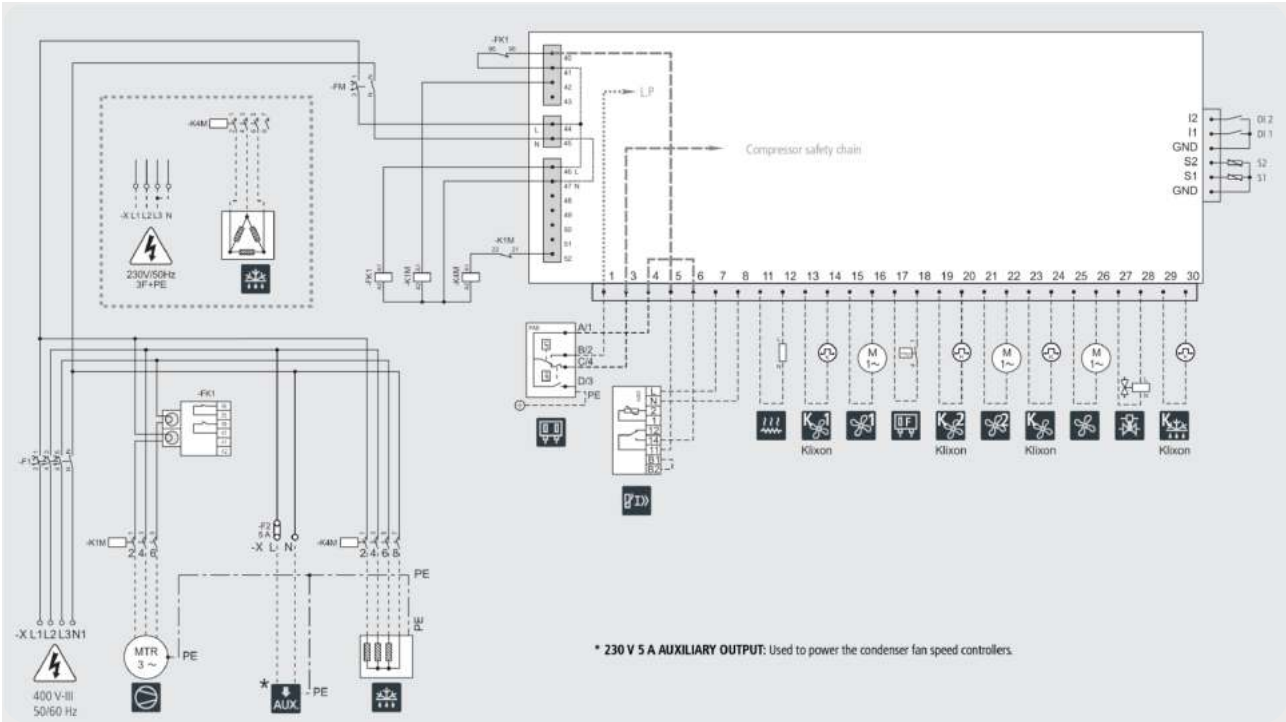


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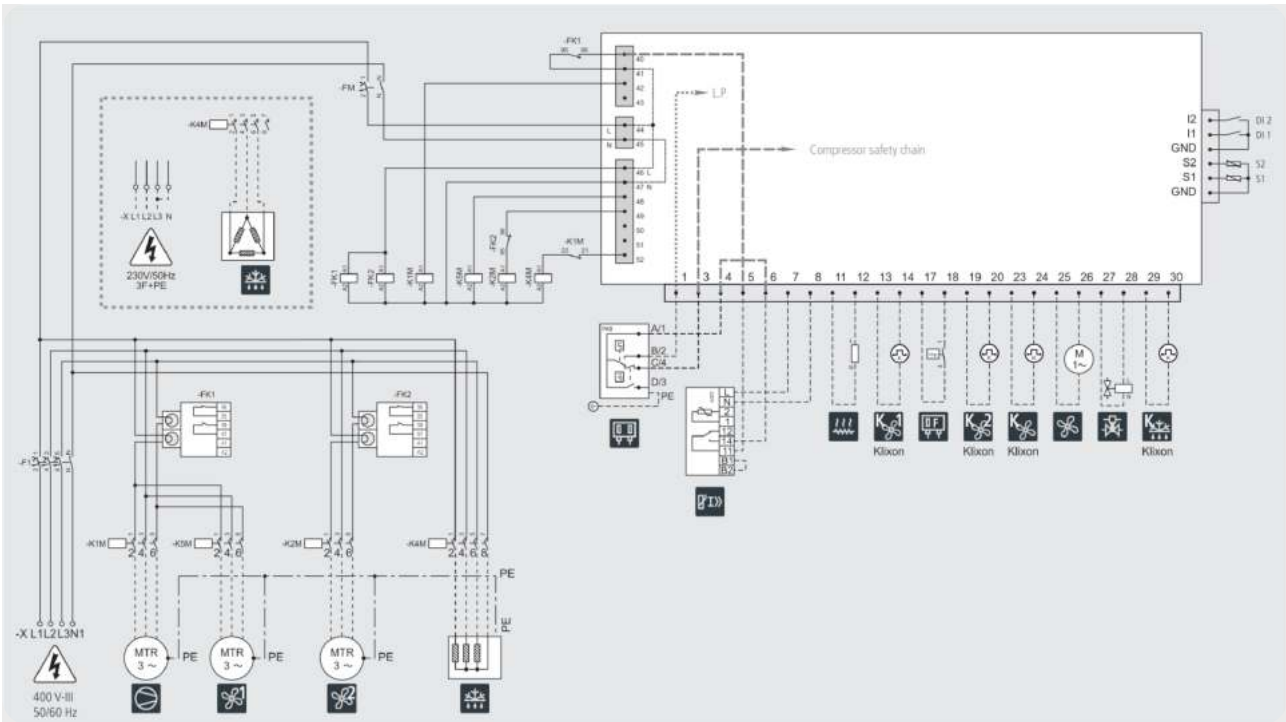


AKO-17634

ELECTRICAL CONNECTIONS

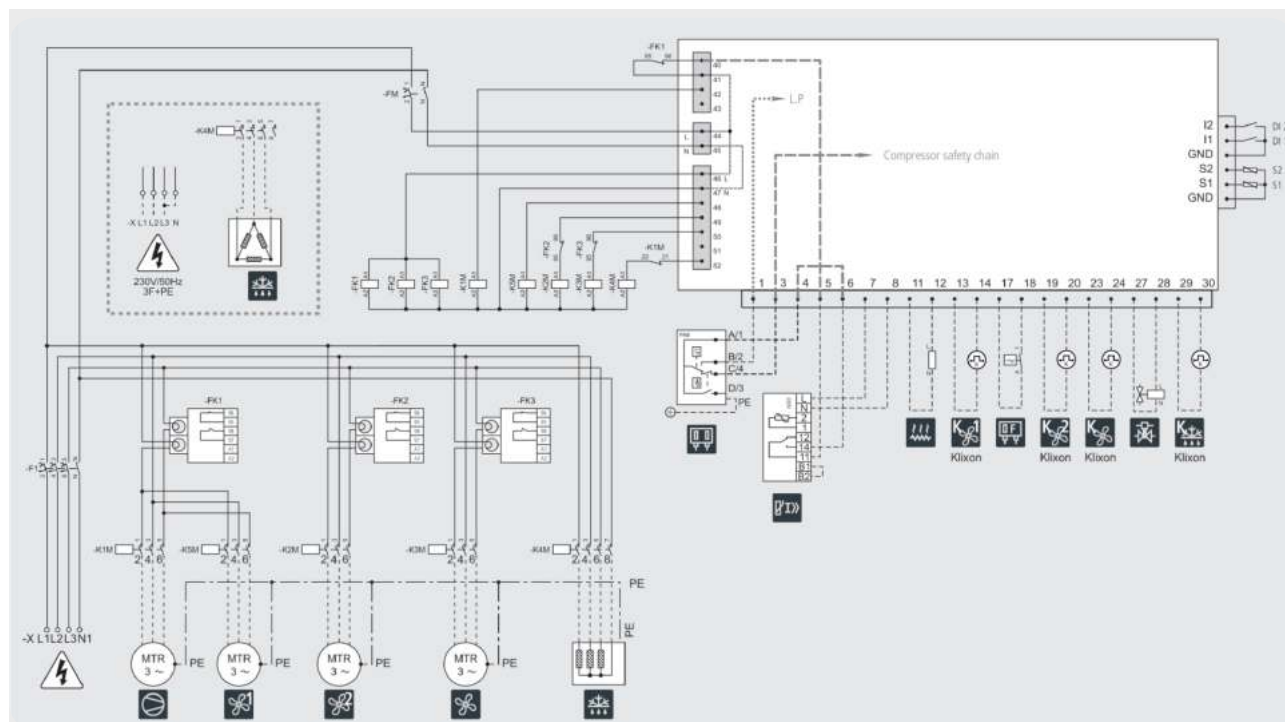


AKO-17635



AKO-17636

ELECTRICAL CONNECTIONS



AKO-17637

TECHNICAL SPECIFICATIONS

Rated voltage Un	400 V~ ±10 % 50 Hz ±5 %
Rated voltage Ue	230 V~ ±10 % 50 Hz ±5 %
Nominal maximum current	32 A input
Short-circuit current at connection point	6 kV
Resolution	0.1 °C
Probe temperature range	-45.0 °C to 99.9 °C
Thermometric accuracy	±1 °C
Ambient operating temperature	0°C to +50°C
Accuracy of the NTC probe at 25 °C	± 0.4 °C
Maximum power absorbed during use	30 VA
Ambient operating temperature	-5 °C to 40 °C
Ambient storage temperature	-30 °C to 70 °C
Protection degree	IP65
Double insulation between power supply, secondary circuit and relay output.	

MODELS

Condensing Unit				Evaporator					
Compressor		Condenser		Fans		Defrost			
230 V-I	400 V-III	230 V-I	400 V-III	230 V-I	400 V-III	230 V-I	400 V-III	Model AKO	Packaging
3 - 25 A	-	3 A	-	4 A	-	-	-	AKO-17520	1 unit
3 - 25 A	-	3 A	-	4 A	-	4,400 W	-	AKO-17521	
-	3 - 25 A	3 A	-	-	-	-	-	AKO-17630	
-	3 - 25 A	-	0.3 - 3 A	-	-	-	-	AKO-17631	
-	3 - 25 A	3 A	-	4 A	-	-	-	AKO-17632	
-	3 - 25 A	-	0.3 - 3 A	4 A	-	-	-	AKO-17633	
-	3 - 25 A	-	0.3 - 3 A	-	0.3 - 6 A	-	-	AKO-17634	
-	3 - 25 A	3 A	-	4 A	-	-	13,500 W	AKO-17635	
-	3 - 25 A	-	0.3 - 3 A	4 A	-	-	13,500 W	AKO-17636	
-	3 - 25 A	-	0.3 - 3 A	-	0.3 - 6 A	-	13,500 W	AKO-17637	



2.

THERMOMETERS, THERMOSTATS AND CONTROLLERS

- 01_ THERMOMETERS, THERMOSTATS AND CONTROLLERS: PANEL MOUNTING
- 02_ THERMOMETERS, THERMOSTATS AND CONTROLLERS: WALL MOUNTING
- 03_ THERMOMETERS, THERMOSTATS AND CONTROLLERS: EXTENDED PANEL
- 04_ THERMOMETERS, THERMOSTATS: REDUCED FORMAT
- 05_ MODULAR CONTROLLERS FOR FOOD SAFETY
- 06_ CONTROLLERS FOR CENTRAL COMPRESSOR AND CONDENSER UNITS
- 07_ ELECTRONIC EXPANSION VALVE CONTROLLER
- 08_ ON/OFF AND 48X48 PID CONTROLLERS
- 09_ CONTROLLERS FOR TEMPERATURE OR HUMIDITY/PRESSURE/FLOW
- 10_ MULTIFUNCTION TEMPERATURE CONTROLLERS
- 11_ SOLAR ENERGY CONTROLLERS
- 12_ ACCESSORIES FOR CONTROLLERS

QUICK TABLE OF CONTROLLERS FOR INDUSTRIAL AND COMMERCIAL REFRIGERATION

	Relay outputs				Inputs					Options				Format					
	Compressor res. (induc.)	Defrosting	Fan res. (induc.)	Light/Aux/Alarm	Temperature control	Temp. after defrosting	Ambient temperature	Digital input 1	Digital input 2	Power supply	Buzzer	Real Time Clock	Integrated communication	Reduced panel	Standard panel	Big Display Panel	Long panel	DIN Rail	Wall-mounting
Thermometers																			
AKO-D14012	—	—	—	—	—	—	NTC/PTC	—	—	12/24V	—	—	—	—	•	—	—	—	—
AKO-D14023	—	—	—	—	—	—	NTC/PTC	—	—	230V	—	—	—	—	•	—	—	—	—
AKO-D14023-C	—	—	—	—	—	—	NTC/PTC	—	—	90-240V	—	—	•	—	•	—	—	—	—
AKO-13012	—	—	—	—	—	—	NTC	—	—	12V	—	—	—	•	—	—	—	—	—
AKO-13023	—	—	—	—	—	—	NTC	—	—	230V	—	—	—	•	—	—	—	—	—
AKO-D14602	—	—	—	—	—	—	NTC/PTC	—	—	230V	—	—	—	—	—	—	—	—	•
AKO-14605	—	—	—	—	—	—	NTC	—	—	230V	—	—	—	—	—	—	—	—	•
Single relay thermostat																			
AKO-D14112	12A(9)	—	—	—	NTC/PTC	NTC/PTC*	—	•	•*	12/24V	—	—	—	—	•	—	—	—	—
AKO-D14123	12A(9)	—	—	—	NTC/PTC	—	—	—	—	230V	—	—	—	—	•	—	—	—	—
AKO-D14123-2	16A(10)	—	—	—	NTC/PTC	NTC/PTC*	—	•	•*	230V	—	—	—	—	•	—	—	—	—
AKO-D14123-2-RC	16A(10)	—	—	—	NTC/PTC	NTC/PTC*	—	•	•*	90-240V	—	•	•	—	•	—	—	—	—
AKO-13112	12A(9)	—	—	—	NTC	—	—	—	—	12V	—	—	—	•	—	—	—	—	—
AKO-13123	12A(9)	—	—	—	NTC	—	—	—	—	230V	—	—	—	•	—	—	—	—	—
AKO-10123	12A(9)	—	—	8A(4)	NTC	—	—	•	—	230V	—	—	—	—	—	—	•	—	—
AKO-D10123	12A(9)	—	—	—	NTC/PTC	—	—	—	—	230V	—	—	—	—	—	—	•	—	—
AKO-D14615	12A(9)	—	—	—	NTC	—	—	—	—	230V	—	—	—	—	—	—	—	—	•
AKO-D14622	12A(9)	—	—	5A(4)	NTC/PTC	—	—	—	—	230V	—	—	—	—	—	—	—	—	•
AKO-D14622-C	12A(9)	—	—	5A(4)	NTC/PTC	—	—	—	—	90-240V	—	—	•	—	—	—	—	—	•
AKOTIM-11ARTEB	12A(9)	—	—	5A(4)	NTC	—	NTC	—	NTC	230V	•	•	—	—	•	—	—	—	—
AKOTIM-21ARTEB	12A(9)	—	—	5A(4)	NTC	—	NTC	—	NTC	230V	•	•	—	—	—	—	—	•	—
Dual relay thermostat																			
AKO-D14212	12A(9)	—	—	8A (4)	NTC/PTC	NTC*/PTC	—	•	•*	12V	—	—	—	—	•	—	—	—	—
AKO-D14223	12A(9)	—	—	8A (4)	NTC/PTC	NTC*/PTC	—	•	•*	230V	—	—	—	—	•	—	—	—	—
AKO-10223	12A(9)	8A(4)	—	8A (4)	NTC	NTC	—	•	•	230V	—	—	—	—	—	—	•	—	—
AKO-D10223	12A(9)	—	—	8A(4)	NTC/PTC	NTC*/PTC	—	•	•*	230V	—	—	—	—	—	—	•	—	—
AKOTIM-12ARTEB	12A(9)	8A(4)	—	5A (4)	NTC	NTC	NTC	•	—	230V	•	•	—	—	•	—	—	—	—
3 relays thermostat																			
AKO-D14312	12A(9)	—	5A(4)	8A(4)	NTC/PTC	NTC*/PTC	—	•	•*	12V	—	—	—	—	•	—	—	—	—
AKO-D14323	12A(9)	—	5A(4)	8A(4)	NTC/PTC	NTC*/PTC	—	•	•*	230V	—	—	—	—	•	—	—	—	—
AKO-D14323-C	12A(9)	—	5A(4)	8A(4)	NTC/PTC	NTC*/PTC	—	•	•*	90-240V	—	—	•	—	•	—	—	—	—
AKO-D16323	12A(9)	12A(9)	5A(4)	—	NTC/PTC	NTC/PTC	—	•	—	230V	—	—	—	—	—	•	—	—	—
AKO-10323	12A(9)	8A (4)	8A(4)	8A(4)	NTC	NTC	—	•	•	230V	—	—	—	—	—	—	•	—	—
AKO-D10323	12A(9)	—	5A(4)	8A(4)	NTC/PTC	NTC/PTC	—	•	•	230V	—	—	—	—	—	—	•	—	—
AKO-D14632	12A(9)	8A (4)	12A(9)	—	NTC	NTC	NTC*	•	•*	230V	—	—	—	—	—	—	—	—	•
AKO-D14632-C	12A(9)	8A (4)	12A(9)	—	NTC	NTC	NTC*	•	•*	90-240V	—	—	•	—	—	—	—	—	•
AKOTIM-23TE	12A(9)	8A (4)	5A(4)	—	NTC	NTC	NTC	•	—	230V	—	—	—	—	—	—	—	•	—
4 relays thermostat																			
AKO-D14412	5A(4)	5A(4)	5A(4)	5A(4)	NTC/PTC	NTC*/PTC	NTC*/PTC	•*	•*	12V	—	—	—	—	•	—	—	—	—
AKO-D14412-RC	5A(4)	5A(4)	5A(4)	5A(4)	NTC/PTC	NTC*/PTC	NTC*/PTC	•*	•*	12V	—	•	•	—	•	—	—	—	—
AKO-D14423	5A(4)	5A(4)	5A(4)	5A(4)	NTC/PTC	NTC*/PTC	NTC*/PTC	•*	•*	230V	—	—	—	—	•	—	—	—	—
AKO-D14423-RC	5A(4)	5A(4)	5A(4)	5A(4)	NTC/PTC	NTC*/PTC	NTC*/PTC	•*	•*	90-240V	—	•	•	—	•	—	—	—	—
AKO-D14423P	12A(9)	8A(4)	5A(4)	5A(4)	NTC/PTC	NTC/PTC	NTC/PTC*	•*	•*	90-240V	—	—	—	—	•	—	—	—	—
AKO-D14423P-RC	12A(9)	8A(4)	5A(4)	5A(4)	NTC/PTC	NTC/PTC	NTC/PTC*	•*	•*	90-240V	—	•	•	—	•	—	—	—	—
AKO-D14642	12A(9)	8A(4)	12A(9)	5A(4)	NTC	NTC	NTC*	•	•*	230V	—	—	—	—	—	—	—	—	•
AKO-D14642-C	12A(9)	8A(4)	12A(9)	5A(4)	NTC	NTC	NTC*	•	•*	90-240V	—	—	•	—	—	—	—	—	•
AKOTIM-23ATE	12A(9)	8A(4)	5A(4)	5A(4)	NTC	NTC	NTC	•	—	230V	—	—	—	—	—	—	—	•	—
AKOTIM-23ARTE	12A(9)	8A(4)	5A(4)	5A(4)	NTC	NTC	NTC	•	—	230V	—	•	—	—	—	—	—	•	—
AKOTIM-13ARTEB	12A(9)	8A(4)	5A(4)	5A(4)	NTC	NTC	NTC	•	—	230V	•	•	—	—	•	—	—	—	—

THERMOMETERS, THERMOSTATS AND CONTROLLERS: PANEL MOUNTING

BENEFITS



EASE OF INSTALLATION

- Pre-loaded parameter sets for the most common uses.
- Flexibility in installation systems, with different types of connectors and a wide range of power supplies (12V, 24V, 120V, 230V and universal).



EFFICIENT START-UP AND CONTROL

- Ultra-fast "plug and play" start-up with initial set-up wizard.
- Optimisation of energy usage via the ECO mode.



VERSATILE DESIGN

- IP65 on the front side for the whole range.
- Highly intuitive design, making it easy to diagnose controller status and quick access keys to certain functions.



CONNECTIVITY

- Available with Modbus communication.
- Digital inputs for remote activation, management and control.

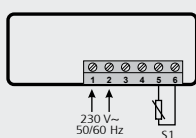


APPLICATIONS

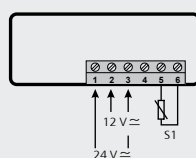
Industrial and commercial refrigeration, refrigeration and freezer units, display cabinets, electrical panels, etc.

ELECTRICAL CONNECTIONS

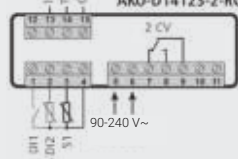
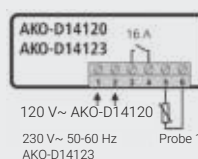
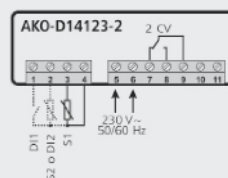
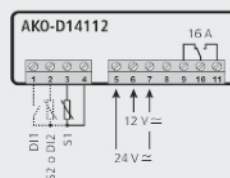
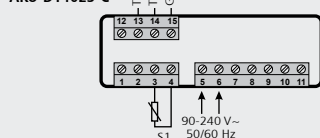
AKO-D14023



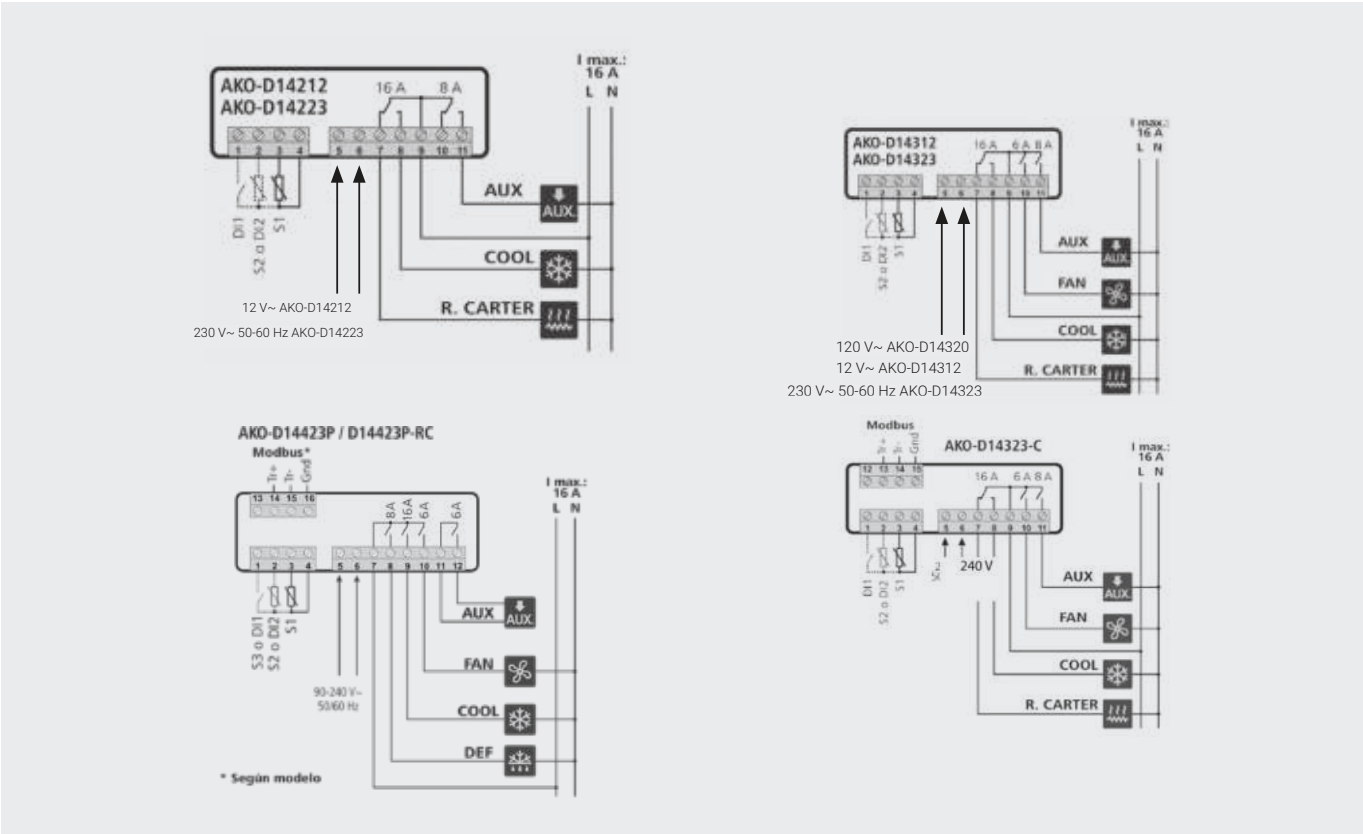
AKO-D14012



AKO-D14023-C



ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply		12V, 24V, 120V, 230V, 90, 240V
N° of relay operations		EN60730-1: 100,000 operations
Measurement range	NTC	-50.0 °C to +99.9 °C
	PTC	-50.0 °C to +150 °C
Resolution		0.1°C
Working environment		-10 to 50 °C, humidity <90 %
Storage environment		-30 to 70 °C, humidity <90 %
Protection degree of front side		IP65
Mounting		Panel assembly using fastenings
Dimensions of panel cut-out		71 x 29 mm
Depth		61 mm
Front dimensions		79 x 38 mm

MODELS

	Relay outputs				Inputs					Options				Format						Packaging
	Compressor res. (induc.)	Defrosting	Fan res. (induc.)	Light/Aux/Alarm	Temperature control	Temp. after defrosting	Ambient temperature	Digital input 1	Digital input 2	Power supply	Buzzer	Real Time Clock	Integrated communication	Reduced panel	Standard panel	Big Display Panel	Long panel	DIN Rail	Wall-mounting	
Thermometers																				
AKO-D14012	—	—	—	—	—	—	NTC/PTC	—	—	12/24V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14023	—	—	—	—	—	—	NTC/PTC	—	—	230V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14023-C	—	—	—	—	—	—	NTC/PTC	—	—	90-240V	—	—	●	—	●	—	—	—	—	12 units
Single relay thermostat																				
AKO-D14112	12A(9)	—	—	—	NTC/PTC	NTC/PTC*	—	●	●*	12/24V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14123	12A(9)	—	—	—	NTC/PTC	—	—	—	—	230V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14123-2	16A(10)	—	—	—	NTC/PTC	NTC/PTC*	—	●	●*	230V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14123-2-RC	16A(10)	—	—	—	NTC/PTC	NTC/PTC*	—	●	●*	90-240V	—	●	●	—	●	—	—	—	—	12 units
2 relays thermostat																				
AKO-D14212	12A(9)	—	—	8A (4)	NTC/PTC	NTC*/PTC	—	●	●*	12V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14223	12A(9)	—	—	8A (4)	NTC/PTC	NTC*/PTC	—	●	●*	230V	—	—	—	—	●	—	—	—	—	12 units
3 relays thermostat																				
AKO-D14312	12A(9)	—	5A(4)	8A(4)	NTC/PTC	NTC*/PTC	—	●	●*	12V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14323	12A(9)	—	5A(4)	8A(4)	NTC/PTC	NTC*/PTC	—	●	●*	230V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14323-C	12A(9)	—	5A(4)	8A(4)	NTC/PTC	NTC*/PTC	—	●	●*	90-240V	—	—	●	—	●	—	—	—	—	12 units
4 relays thermostat																				
AKO-D14412	5A(4)	5A(4)	5A(4)	5A(4)	NTC/PTC	NTC*/PTC	NTC*/PTC	●*	●*	12V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14412-RC	5A(4)	5A(4)	5A(4)	5A(4)	NTC/PTC	NTC*/PTC	NTC*/PTC	●*	●*	12V	—	●	●	—	●	—	—	—	—	12 units
AKO-D14423	5A(4)	5A(4)	5A(4)	5A(4)	NTC/PTC	NTC*/PTC	NTC*/PTC	●*	●*	230V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14423-RC	5A(4)	5A(4)	5A(4)	5A(4)	NTC/PTC	NTC*/PTC	NTC*/PTC	●*	●*	90-240V	—	●	●	—	●	—	—	—	—	12 units
AKO-D14423P	12A(9)	8A(4)	5A(4)	5A(4)	NTC/PTC	NTC/PTC	NTC/PTC*	●*	●*	90-240V	—	—	—	—	●	—	—	—	—	12 units
AKO-D14423P-RC	12A(9)	8A(4)	5A(4)	5A(4)	NTC/PTC	NTC/PTC	NTC/PTC*	●*	●*	90-240V	—	●	●	—	●	—	—	—	—	12 units

* Configurable probe/digital input.

THERMOMETERS, THERMOSTATS AND CONTROLLERS: WALL MOUNTING

BENEFITS



EASE OF INSTALLATION

- Pre-loaded parameter sets for the most common applications.
- Flexibility in installation and a wide range of applications.



EFFICIENT START-UP AND CONTROL

- Ultra-fast "plug and play" start-up with initial set-up wizard.
- Optimisation of energy usage via the ECO mode.



VERSATILE DESIGN

- IP65 across the whole range.
- Highly intuitive design, making it easy to diagnose controller status with quick access keys to certain functions.



CONNECTIVITY

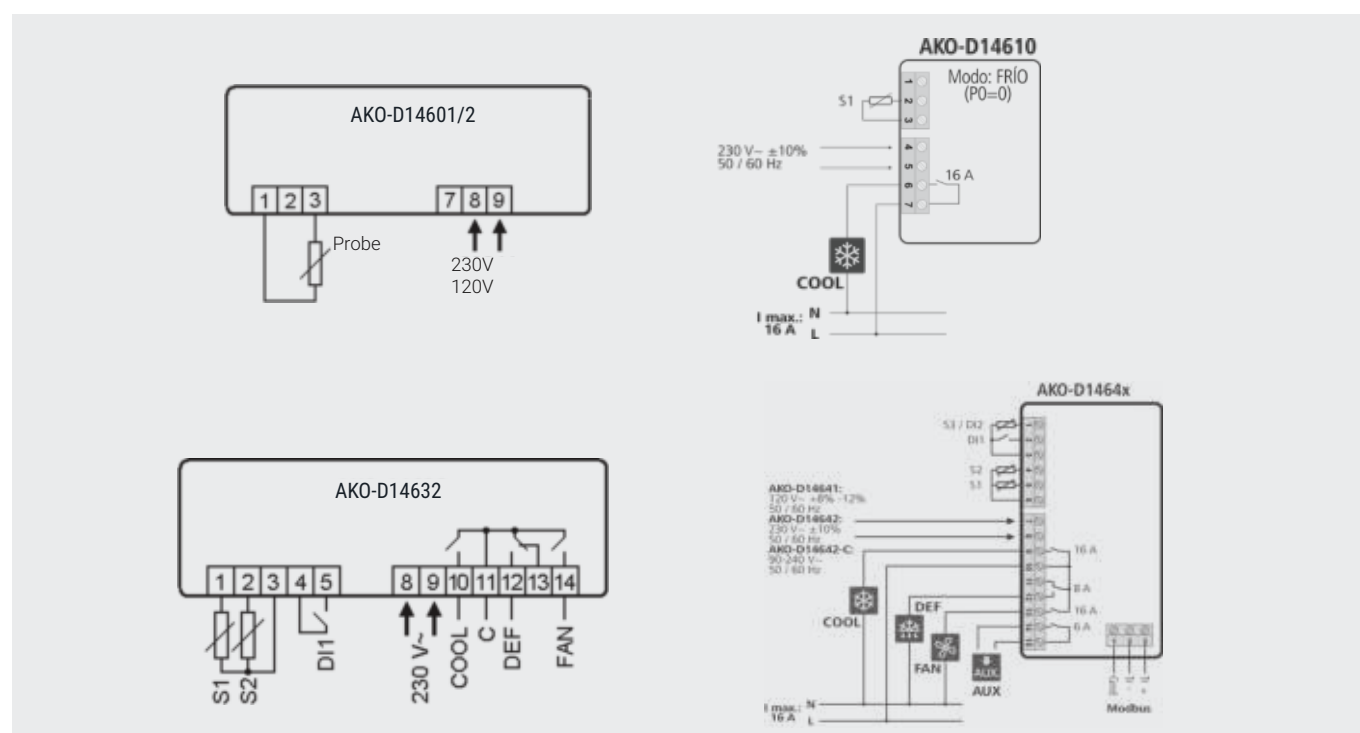
- Available with Modbus communication.
- Digital inputs for remote activation, management and control.



APPLICATIONS

Industrial and commercial refrigeration, cold rooms, refrigeration and freezer units, display cases, etc.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply	120V, 230V, 90-240V, depending on model	
N° of relay operations	EN60730-1: 100,000 operations	
Measurement range	NTC	-50.0 °C to +99.9 °C
	PTC	-50.0 °C to +150 °C
Resolution	-50 to 100 °C	0.1°C
	> 100 °C	1°C
Working environment	-10 to 50 °C, humidity <90 %	
Storage environment	-30 to 70 °C, humidity <90 %	
Degree of protection	IP40	
Mounting	Wall mounting	
Dimensions	171 x 94 x 42 mm	

MODELS

	Relay outputs				Inputs					Options				Format						Packaging
	Compressor res. (induc.)	Defrosting	Fan res. (induc.)	Light/Aux/Alarm	Temperature control	Temp. after defrosting	Ambient temperature	Digital input 1	Digital input 2	Power supply	Buzzer	Real Time Clock	Integrated communication	Reduced panel	Standard panel	Big Display Panel	Long panel	DIN Rail	Wall-mounting	
Thermometers																				
AKO-D14602	—	—	—	—	—	—	NTC/PTC	—	—	230V	—	—	—	—	—	—	—	—	•	10 units
AKO-14605	—	—	—	—	—	—	NTC	—	—	230V	—	—	—	—	—	—	—	—	•	10 units
Single relay thermostat																				
AKO-14615	12A(9)	—	—	—	NTC	—	—	—	—	230V	—	—	—	—	—	—	—	—	•	10 units
AKO-D14610	12A(9)	—	—	—	NTC/PTC	—	—	—	—	230V	—	—	—	—	—	—	—	—	•	10 units
AKO-D14622	12A(9)	—	—	5A(4)	NTC/PTC	—	—	•	•	230V	—	—	—	—	—	—	—	—	•	10 units
AKO-D14622-C	12A(9)	—	—	5A(4)	NTC/PTC	—	—	•	•	90-240V	—	—	•	—	—	—	—	—	•	10 units
3 relays thermostat																				
AKO-D14632	12A(9)	8A(4)	12A(9)	—	NTC	NTC	NTC*	•	•*	230V	—	—	—	—	—	—	—	—	•	10 units
AKO-D14632-C	12A(9)	8A(4)	12A(9)	—	NTC	NTC	NTC*	•	•*	90-240V	—	—	•	—	—	—	—	—	•	10 units
4 relays thermostat																				
AKO-D14642	12A(9)	8A(4)	12A(9)	5A(4)	NTC	NTC	NTC*	•	•*	230V	—	—	—	—	—	—	—	—	•	10 units
AKO-D14642-C	12A(9)	8A(4)	12A(9)	5A(4)	NTC	NTC	NTC*	•	•*	90-240V	—	—	•	—	—	—	—	—	•	10 units

* Configurable probe/digital input

THERMOMETERS, THERMOSTATS AND CONTROLLERS: EXTENDED PANEL

BENEFITS



EASE OF INSTALLATION

- Easy installation and programming in 3 steps thanks to the initial configuration wizard available with the AKO-D10X23 range.
- Front panel designed for quick adjustment using screws.



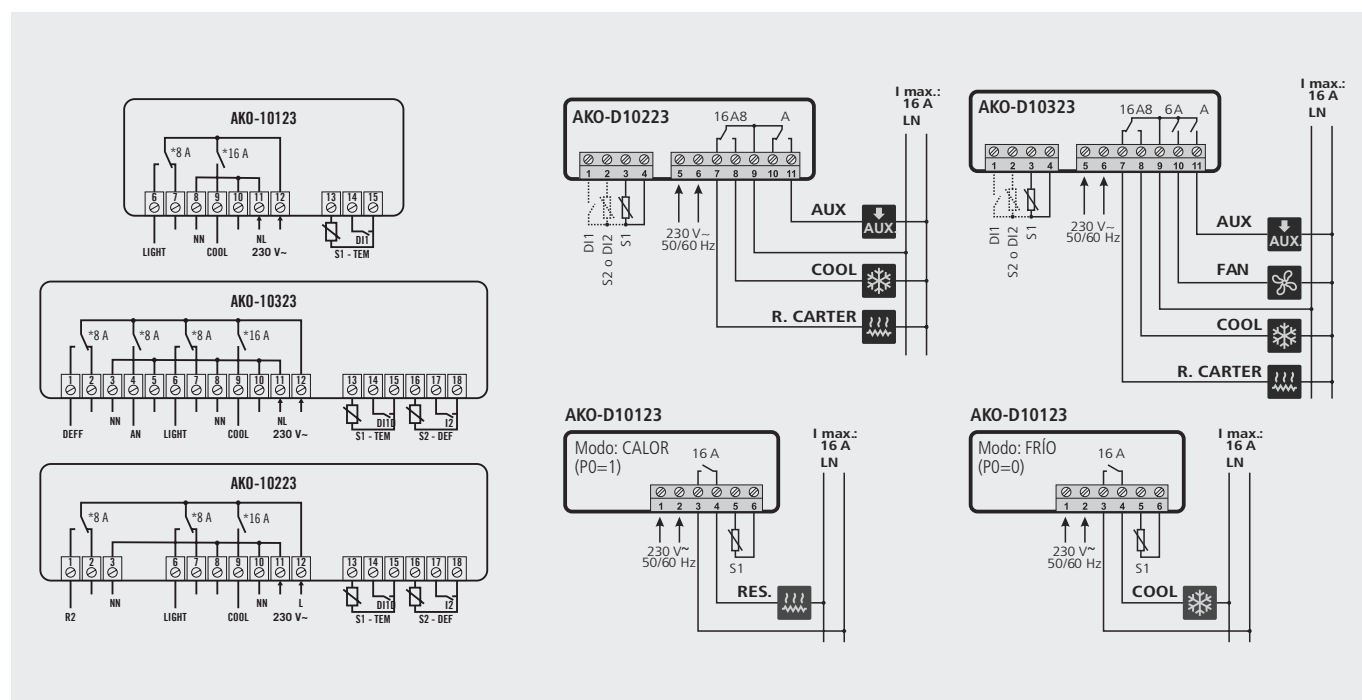
VERSATILE DESIGN

- Highly intuitive design, making it easy to diagnose controller status with quick access keys to certain functions.
- Front panel with switches to control the facility's light settings.

APPLICATIONS

Industrial and commercial refrigeration facilities, display cases, refrigeration and freezer units, electrical panels, etc.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply		230V
Measurement range	NTC	-50.0 °C to +99.9 °C
	PTC(AKO-D10XXX only)	-50.0 °C to +150 °C
Resolution		0.1°C
Working environment	AKO-10XXX	5 to 50 °C
	AKO-D10XXX	-10 to 50 °C, humidity <90 %
Storage environment	All	-30 to 70 °C, humidity <90 %
Protection degree of front side		IP50
Mounting		Panel assembly using fastenings
Dimensions of panel cut-out	AKO-10XXX	150 x 31 mm
	AKO-D10XXX	136 x 29 mm
Front dimensions	AKO-10XXX	176 x 34 mm
	AKO-D10XXX	181 x 38 mm

MODELS

	Relay outputs				Inputs					Options				Format						Packaging
	Compressor res. (induc.)	Defrosting	Fan res. (induc.)	Light/Aux/Alarm	Temperature control	Temp. after defrosting	Ambient temperature	Digital input 1	Digital input 2	Power supply	Buzzer	Real Time Clock	Integrated communication	Reduced panel	Standard panel	Big Display Panel	Long panel	DIN Rail	Wall-mounting	
Single relay thermostat																				
AKO-10123	12A(9)	—	—	8A(4)	NTC	—	—	●	—	230V	—	—	—	—	—	—	●	—	—	10 units
AKO-D10123	12A(9)	—	—	—	NTC/PTC	—	—	—	—	230V	—	—	—	—	—	—	●	—	—	10 units
2 relays thermostat																				
AKO-10223	12A(9)	8A(4)	—	8A(4)	NTC	NTC	—	●	●	230V	—	—	—	—	—	—	●	—	—	10 units
AKO-D10223	12A(9)	—	—	8A(4)	NTC/PTC	NTC*/PTC	—	●	●*	230V	—	—	—	—	—	—	●	—	—	10 units
3 relays thermostat																				
AKO-10323	12A(9)	8A(4)	8A(4)	8A(4)	NTC	NTC	—	●	●	230V	—	—	—	—	—	—	●	—	—	10 units
AKO-D10323	12A(9)	—	5A(4)	8A(4)	NTC/PTC	NTC/PTC	—	●	●	230V	—	—	—	—	—	—	●	—	—	10 units

* Configurable probe/digital input

THERMOMETERS AND THERMOSTATS: REDUCED FORMAT

BENEFITS



EASE OF INSTALLATION

- Equipment for panel mounting in a reduced recess of 58 x 25.4 mm.
- Flexibility in installation systems, with different types of connectors and power supply range, 12 V and 230 V.



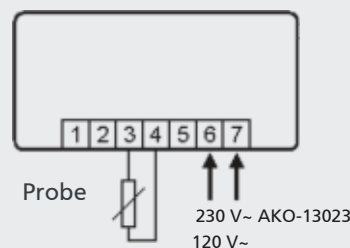
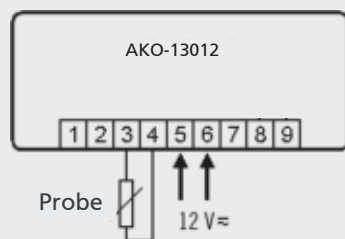
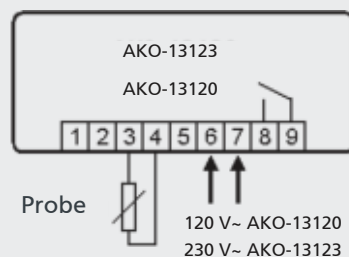
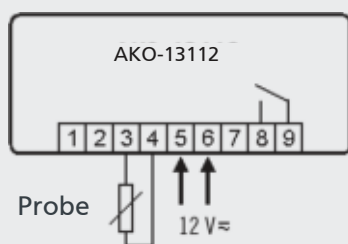
VERSATILE DESIGN

- Intuitive design with 3 keys and simple diagnostics of the controller status, facilitating quick and direct access to more common functions.
- Reduced display with LEDs for quick interpretation of the facility's status.

APPLICATIONS

Industrial and commercial refrigeration, refrigeration and freezer units, display cabinets, electrical panels, etc.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply	12V, 230V Depending on model	
Measurement range	NTC	-50.0 °C to +99.9 °C
Resolution	1°C	
Precision	± 1 °C	
Working environment	5 to 40 °C	
Storage environment	-30 to 70 °C	
Dimensions of panel cut-out	58 x 25.4 mm	
Depth	47.5 mm	
Front dimensions	32 x 66 mm	

MODELS

	Relay outputs				Inputs					Options				Format						Packaging
	Compressor res. (induc.)	Defrosting	Fan res. (induc.)	Light/Aux/Alarm	Temperature control	Temp. after defrosting	Ambient temperature	Digital input 1	Digital input 2	Power supply	Buzzer	Real Time Clock	Integrated communication	Reduced panel	Standard panel	Big Display Panel	Long panel	DIN Rail	Wall-mounting	
Thermometer																				
AKO-13012	—	—	—	—	—	—	NTC	—	—	12V	—	—	—	●	—	—	—	—	—	12 units
AKO-13023	—	—	—	—	—	—	NTC	—	—	230V	—	—	—	●	—	—	—	—	—	12 units
2 relays thermostat																				
AKO-13112	12A(9)	—	—	—	NTC	—	—	—	—	12V	—	—	—	●	—	—	—	—	—	12 units
AKO-13123	12A(9)	—	—	—	NTC	—	—	—	—	230V	—	—	—	●	—	—	—	—	—	12 units

MODULAR CONTROLLERS FOR FOOD SAFETY

BENEFITS



VERSATILE DESIGN AND PRODUCT SAFETY

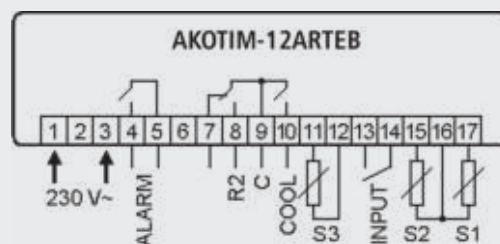
- Highly intuitive design, making it easy to diagnose controller status with quick access keys to certain functions.
- They store information on the maximum and minimum temperatures reached, as well as other useful parameters for HACCP.
- Flexibility in installation systems, with a wide range of connectors depending on the application.



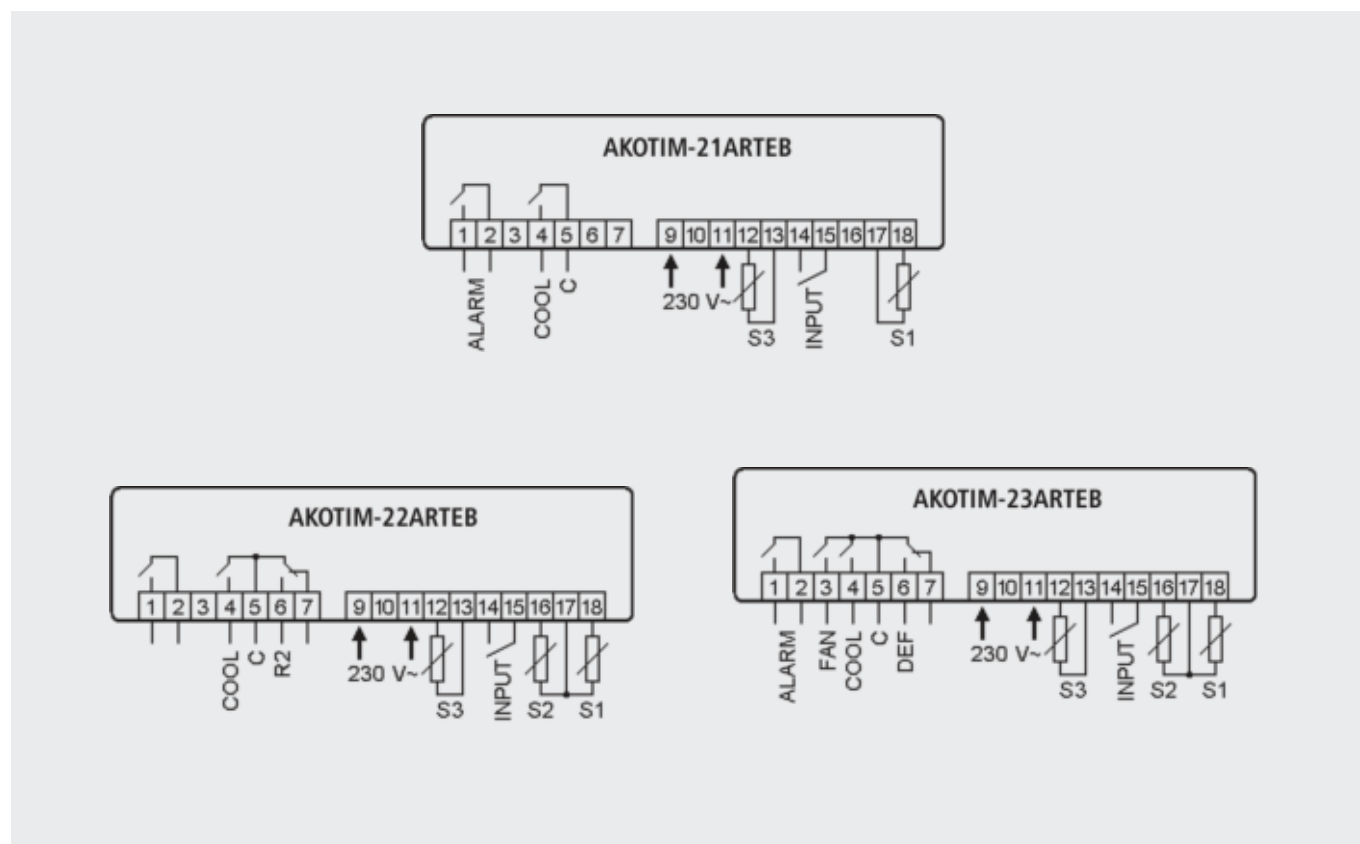
APPLICATIONS

Industrial and commercial refrigeration, display cases, electrical panels, etc.

ELECTRICAL CONNECTIONS



ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply		230V
Measurement range	NTC	-50.0 °C to +99.9 °C
Precision		±1 °C
Relay 1 COOL		16(4)A*, 250V, cosφ=1, SPST
Relay 2 DEF or R2		8A*, 250V, cosφ=1, SPDT
Relay 3 FAN		5A*, 250V, cosφ=1, SPST
Relay 4 ALARM		5A*, 250V, cosφ=1, SPST
Working environment		5 °C to 40 °C
Storage environment		-30 to 70 °C

* The specified current for each relay is its individual maximum, if more than one is connected, the sum current (COOL+DEF+FAN) must not exceed 17.5A (EN61010) or 13A (EN60730).

MODELS

	Relay outputs				Inputs					Options				Format					Packaging	
	Compressor res. (induc.)	Defrosting	Fan res. (induc.)	Light/Aux/Alarm	Temperature control	Temp. after defrosting	Ambient temperature	Digital input 1	Digital input 2	Power supply	Buzzer	Real Time Clock	Integrated communication	Reduced panel	Standard panel	Big Display Panel	Long panel	DIN Rail		Wall-mounting
Single relay thermostat																				
AKOTIM-11ARTEB	12A(9)	—	—	5A(4)	NTC	—	NTC	•	—	230V	•	•	—	—	•	—	—	—	—	12 units
AKOTIM-21TE	12A(9)	—	—	—	NTC	—	NTC	•	—	230V	—	—	—	—	—	—	—	•	—	12 units
AKOTIM-21ARTEB	12A(9)	—	—	5A(4)	NTC	—	NTC	•	—	230V	•	•	—	—	—	—	—	•	—	12 units
2 relays thermostat																				
AKOTIM-12ARTEB	12A(9)	8A(4)	—	5A(4)	NTC	NTC	NTC	•	—	230V	•	•	—	—	•	—	—	—	—	12 units
AKOTIM-22TE	12A(9)	8A (4)	—	—	NTC	NTC	NTC	•	—	230V	—	—	—	—	—	—	—	•	—	12 units
3 relays thermostat																				
AKOTIM-23TE	12A(9)	8A(4)	5A(4)	—	NTC	NTC	NTC	•	—	230V	—	—	—	—	—	—	—	•	—	12 units
4 relays thermostat																				
AKOTIM-13ARTEB	12A(9)	8A(4)	5A(4)	5A(4)	NTC	NTC	NTC	•	—	230V	•	•	—	—	•	—	—	—	—	12 units
AKOTIM-23ATE	12A(9)	8A(4)	5A(4)	5A (4)	NTC	NTC	NTC	•	—	230V	—	—	—	—	—	—	—	•	—	12 units
AKOTIM-23ARTE	12A(9)	8A(4)	5A(4)	5A(4)	NTC	NTC	NTC	•	—	230V	—	•	—	—	—	—	—	•	—	12 units
AKOTIM-23ARTEB	12A(9)	8A(4)	5A(4)	5A(4)	NTC	NTC	NTC	•	—	230V	•	•	—	—	—	—	—	•	—	12 units

The model + **A** means the version with additional **ALARM 4 relays** for alarms.

The model + **R** means the real time clock version.

The model + **T** means the version with input for a third probe.

The model + **E** means the version with digital input.

The model + **B** means the version with internal audible alarm buzzer.

CONTROLLERS FOR COMPRESSOR RACKS AND CONDENSER UNITS

BENEFITS



USABILITY AND EFFICIENCY

- Advanced control algorithms for units with floating condensation and frequency shifters for condenser and compressor fans.
- Auto-setting function avoiding complex parametrisations.
- Up to 5 stages of control, with 2 analogue outputs, 6 digital inputs and 2 analogue inputs.



VERSATILE AND INTUITIVE DESIGN

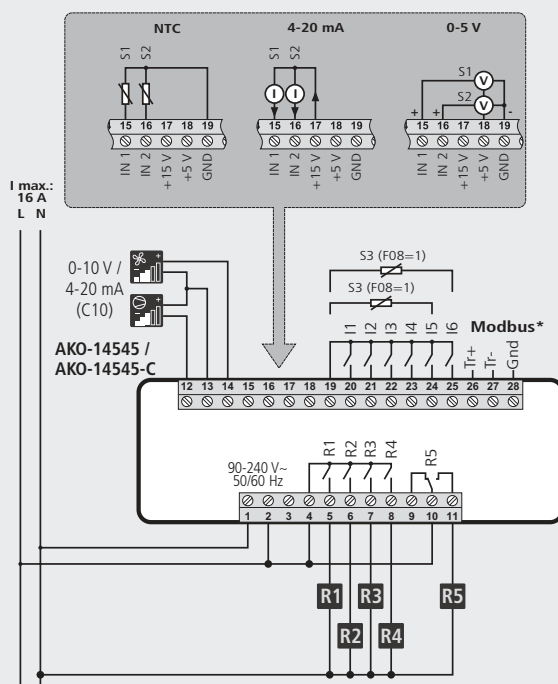
- Display, control and regulation of compressor units in a compact, highly reliable form.
- Graphic display using icons that represent the activated functions to facilitate the control and security of the components at all times.

APPLICATIONS

Industrial and commercial refrigeration facilities.

ELECTRICAL CONNECTIONS

AKO-14545 / AKO-14545-C



TECHNICAL SPECIFICATIONS

Power supply		90-240V, 50/60Hz
Inputs		2 analogue inputs + 6 digital inputs
Relays	R1 to R4	5(4) A 250 V~
	R5	5(4) / 250 V~ with switch
Types of probe		NTC
		4-20 mA
		0-5 V ratiometric
Measurement range	NTC	-50.0 °C to +99.9 °C
	4-20 mA / 0-5 V	-60 to 999
Resolution	NTC	0.1°C
	4-20 mA / 0-5 V	0.1
Working environment		-10 to 50 °C, humidity <90 %
Storage environment		-30 to 70 °C, humidity <90 %
Protection degree of front side		IP65
Mounting		Panel assembly using fastenings
Dimensions of panel cut-out		71 x 29 mm
Front dimensions		79 x 38 mm
Depth		61 mm
Gas compatibility		R404a, R134a, R717a, R22, R410a, R507a, R744, R407a, R407f, R1234y

MODELS

Description	Model	Power supply	Packaging
5-stage central unit	AKO-14545	90-240 V	1 unit
5-stage unit with MODBUS communication	AKO-14545-C		

07_ ELECTRONIC EXPANSION VALVE CONTROLLER

BENEFITS



EASE OF INSTALLATION

- Quick and easy start-up with just 3 parameters.
- Kit provided with all the necessary elements for the regulation of the expansion valve: Controller, temperature probe, pressure probe and power transformer.



VERSATILITY AND USABILITY

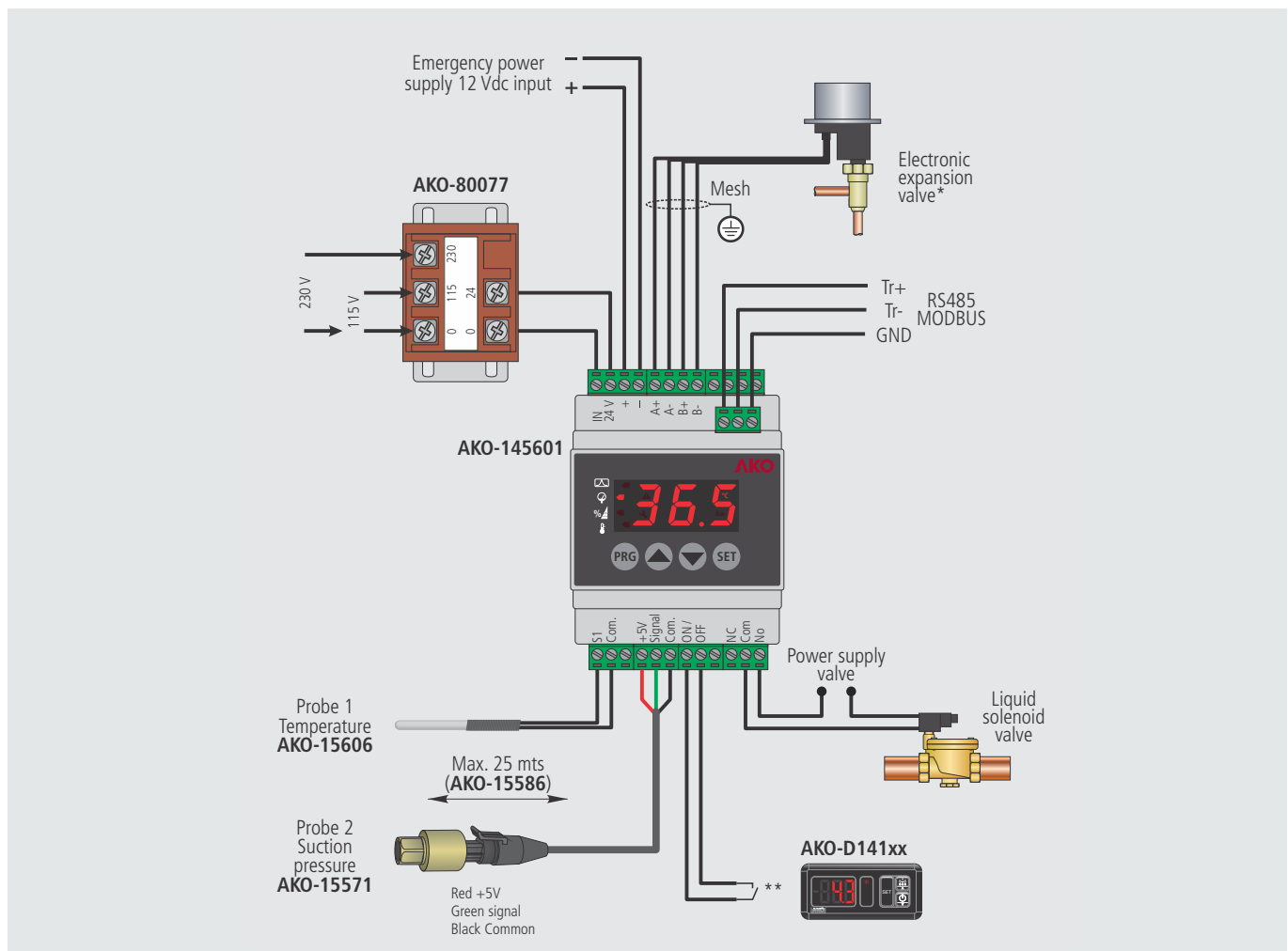
- Efficient management of the positioning of the electronic expansion valve.
- Wide range of use, for a wide variety of expansion valves and refrigerant gases.



APPLICATIONS

Industrial and commercial refrigeration facilities.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply	24 V~ +10% / -15%, 50/60 Hz
Expansion valve output	Valves with bipolar stepper motor
Accuracy of the opening control	1/1000 (0.0 to 100.0 %)
Working environment	-10 to 50 °C, humidity <90 %
Storage environment	-20 to 60 °C, humidity <90 %
Solenoid valve relay	2(2) A 250 V~
Degree of protection	IP2X
Mounting	DIN rail
Communications	MODBUS RTU / ASCII (RS485)

Compatible electronic expansion valves				
Manufacturer	Danfoss	Alco	Sporlan	Carel
Models	ETS 12.5 ETS 25B ETS 50B ETS 100B ETS 250 ETS 400	EX4 EX5 EX6 EX7 EX8	SEI 0.5~11 SEI 1.5 ~20 SEI 30 SEI 100 SEI 175	E2V
Compatible refrigerant gases				
R-22 R-507C	R-134A HFO 1234ze	R-404A R-744	R-407C R-407A	R-410A R-407F
				R-717 R-507A
				R-23 R-245F

MODELS

Description	Model	Packaging
Electronic expansion valve control kit composed of: - AKO-145601 controller - AKO-15571 pressure probe - AKO-15606 temperature probe	AKO-14560	1 unit
EEV electronic controller (Spare)	AKO-145601	1 unit
Pressure probe from -1 to 15 bar	AKO-15571	1 unit
Pressure probe from -1 to 25 bar	AKO-15572	1 unit
Pt1000 temperature probe from -100 to 120 °C	AKO-15606	1 unit
Power transformer 110 - 220 V / 24 V	AKO-80077	1 unit

08_

ON/OFF AND 48X48 PID CONTROLLERS

BENEFITS



EFFICIENT START-UP AND CONTROL

- Ultra-fast "plug and play" start-up with initial configuration wizard.
- Optimisation of energy usage via the ECO mode.



VERSATILE DESIGN

- IP65 on the front side for the whole range.
- Highly intuitive design, making it easy to diagnose controller status with quick access keys to certain functions.



CONNECTIVITY

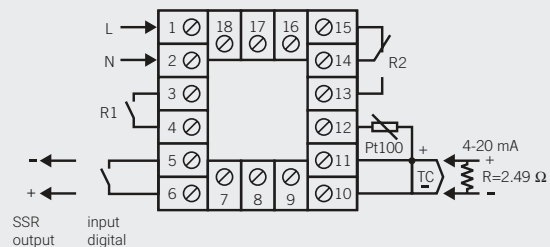
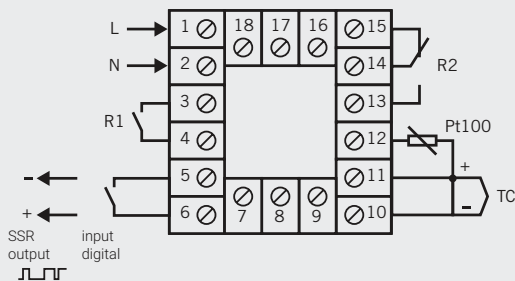
- Available with Modbus communication.
- Digital inputs for remote activation, management and control.



APPLICATIONS

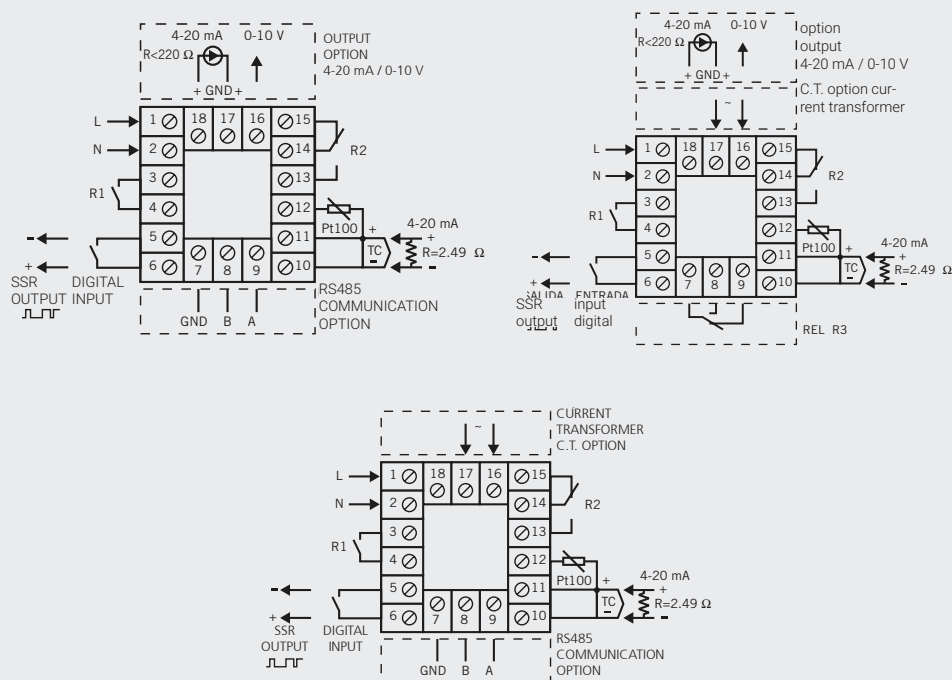
Ovens, electrical panels, industrial facilities, etc.

ELECTRICAL CONNECTIONS



ON/OFF CONTROLLERS

ELECTRICAL CONNECTIONS



PID CONTROLLERS

TECHNICAL SPECIFICATIONS

Power supply		20-48V, 100-240V, depending on model
Controller type	ON/OFF	AKO-15440, AKO-15490
	PID	AKO-15450, AKO-15430, AKO-15480, AKO-15487, AKO-15460, AKO-15463
Configurable probe input	ON/OFF	Pt100, Thermocouple J and K
	PID	Pt100, Thermocouple J and K, 4-20mA
Measurement range	Pt100	-99.9 °C to +850 °C
	TJ	-99.9 °C to +800 °C
	TK	-99.9 °C to +1370 °C
	4-20mA	-999 °C to +2500 °C
Resolution		0.1°C
Working environment		0 °C to 55 °C
Storage environment		-30 °C to 70 °C
Dimensions of panel cut-out		45 x 45 mm
Depth		119 mm
Front dimensions		48 x 48 mm

MODELS

Model	CT Module	Module 4-20mA/0-10V	Module RS485	Module relay 3	Power supply	Packaging
AKO-15402	—	—	•	—	20 to 48 V AC/DC	1 unit
AKO-15430	—	•	—	—	20 to 48 V AC/DC	
AKO-15440	—	—	—	—	20 to 48 V AC/DC	
AKO-15450	—	—	—	—	100 to 240 VAC 50/60Hz	
AKO-15451	•	—	—	—	100 to 240 VAC 50/60Hz	
Ako-15452	—	—	•	—	100 to 240 VAC 50/60Hz	
AKO-15460	—	—	—	•	100 to 240 VAC 50/60Hz	
AKO-15463	—	•	—	•	100 to 240 VAC 50/60Hz	
AKO-15480	—	•	—	—	100 to 240 VAC 50/60Hz	
AKO-15487	—	•	•	—	100 to 240 VAC 50/60Hz	
AKO-15490	—	—	—	—	100 to 240 VAC 50/60Hz	

CONTROLLERS FOR TEMPERATURE OR HUMIDITY/PRESSURE/FLOW

BENEFITS



EFFICIENT START-UP AND CONTROL

- Quick "plug and play" start-up and you only have to choose the type of probe to use: NTC, PTC, Pt100, Thermocouple and 4-20mA (the latter only available for panel controllers).
- One probe and two relay outputs configurable as independent stages, control for neutral zone, related stages or one stage and alarm.



VERSATILE DESIGN

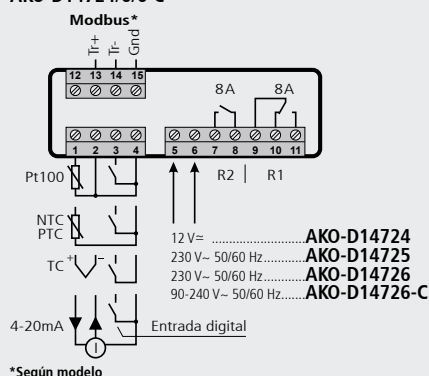
- IP65 frontal protection across the whole range (control panel).
- Highly intuitive design, making it easy to diagnose controller status and quick access keys to certain functions.

APPLICATIONS

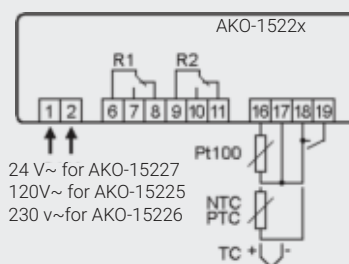
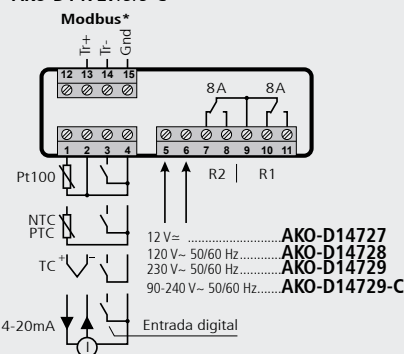
Ovens, electrical panels, industrial facilities, incubators, dryers, etc.

ELECTRICAL CONNECTIONS

AKO-D14724/6/9-C



AKO-D14727/9/9-C



TECHNICAL SPECIFICATIONS

Power supply		12V, 24V, 120V, 230V, 90-240V
Relay 1		8(4) A 250 V~ with switch
Relay 2	AKO-D14724/25/26/26-C	8(4) A 250 V~
	Other	8(4) A 250 V~ with switch
N° of relay operations		EN60730-1: 100,000 operations
Resolution	-100 to 100 °C	0.1°C
	>100 °C	1°C
Measurement range	NTC	-50.0 °C to +99.9 °C
	PTC	-50.0 °C to +150 °C
	Pt100	-100 °C to +440 °C
	Thermocouple J	0 °C to +600 °C
	Thermocouple K	0 °C to +999 °C
	4-20mA	-999 to 999 (configurable)
Working environment		-10 to 50 °C, humidity <90 %
Dimensions of panel cut-out	Panel controllers only	71 x 29 mm

MODELS

Model	Relay outputs		Inputs					Options		Format		Packaging
	Relay 1	Relay 2	NTC	PTC	Pt100	Thermocouple	4-20mA	Power supply	Communication	Panel	DIN rail	
AKO-D14724	8(4)A with switch	8(4)A	•	•	•	•	•	12V	—	•	—	12 units
AKO-D14725			•	•	•	•	•	120V	—	•	—	
AKO-D14726			•	•	•	•	•	230V	—	•	—	
AKO-D14726-C			•	•	•	•	•	90-240V	•	•	—	
AKO-D14727		8(4)A with switch	•	•	•	•	•	12V	—	•	—	
AKO-D14728			•	•	•	•	•	120V	—	•	—	
AKO-D14729			•	•	•	•	•	230V	—	•	—	
AKO-D14729-C			•	•	•	•	•	90-240V	•	•	—	
AKO-15227			•	•	•	•	—	24V	—	—	•	6 units
AKO-15226			•	•	•	•	—	230V	—	—	•	

10_ MULTIFUNCTION TEMPERATURE CONTROLLERS

BENEFITS



EFFICIENT START-UP AND CONTROL

- Fast start-up without the need for complex configurations.
- Two probes and two relay outputs that can be assigned independently to each probe or to their differential.



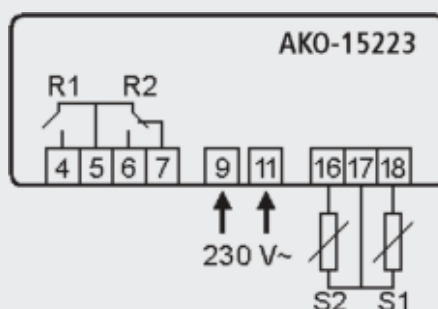
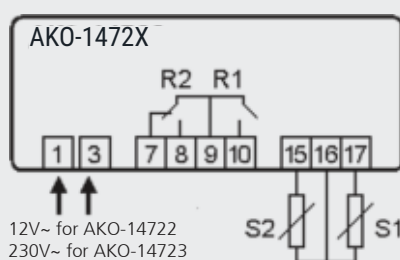
VERSATILE DESIGN

- IP65 frontal protection across the whole range (control panel).
- Intuitive design, making it easy to diagnose the controller status with quick access keys to certain functions.

APPLICATIONS

Solar energy, electrical panels, industrial facilities, etc.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply	12V, 230V depending on model
Inputs for NTC probe	AKO-149xx
Resolution	0.1°C
Probe tolerance at 25°C	± 0.4 °C
Relay 1	16 (4) A*, 250 V, cos j=1, SPST
Relay 2	8 A*, 250 V, cos j=1, SPDT
N° of relay operations	EN60730-1: 100,000 operations
Precision	±1°C
Working environment	5 to 40 °C
Storage environment	-30 to 70 °C

* The specified current for each relay is its individual maximum, if more than one is connected, the sum current must not exceed 17.5A (EN61010) or 13A (EN60730).

MODELS

Model	Relay outputs		Options	Format		Packaging
	Relay 1	Relay 2	Power supply	Panel	DIN rail	
AKO-14722	12(9)A	8(4)A with switch	12V	•	—	12 units
AKO-14723			230V	•	—	
AKO-15223			230V	—	•	6 units

ACCESSORIES FOR THERMOSTATS AND CONTROLLERS



AKO-14910



AKO-80004A



AKO-15586



AKO-155908

Description	Model	Packaging
Transparent cover - front protection (not compatible with Darwin)	AKO-14910*	120 units (B)
Probe extension cable, 3 x 0.5 mm2 screened	AKO-15586	100m (A)
Probe extension cable H, 2 x 0.5 mm2 screened	AKO-15586H	100m (A)
Stainless Steel Sheath, 1/2" thread Gas	AKO-155908	10 units
Pt-100 to 4-20 mA converter	AKO-80004A	1 unit

(A) Packing lengths are as usual, however we reserve the right to deliver in lengths other than those indicated.

(B) Minimum and indivisible packaging units.

* Not compatible with Darwin units.



PARAMETER SERVERS



AKO-D14918

Tools for copying parameters

The equipment must be set up with the same configuration.
The portable servers allow the installer to quickly load a pre-programmed configuration to the equipment, without having to program it.

Description	Model	Power supply	Packaging
CMOS/RS485 converter module	AKO-14917	-	6 units
Darwin unit programming key	AKO-D14918	-	10 units
USB/RS485 Converter	AKO-80039	-	1 unit



PROBES AND ACCESSORIES

NTC temperature probes				
Description	Model	Temperature range	Packaging	
NTC probe, 1.5m cable	AKO-14901 (A)	range -50 °C to 105 °C	48 units	
NTC probe, 2m cable	AKO-14902 (A)	range -50 °C to 105 °C	48 units	
NTC probe, 3m cable	AKO-14903 (A)	range -50 °C to 105 °C	48 units	
NTC probe, 6m cable	AKO-14906 (A)	range -50 °C to 105 °C	24 units	
Waterproof NTC probe, 1.5m cable, IP68 protection	AKO-15561 (B)	range -50 °C to 105 °C	10 units	
Stainless steel NTC probe With conical prong and 3m cable	AKO-14915 (C)	range -50 °C to 110 °C	1 unit	
NTC Probe Accuracy Kit AKOCORE Advance + Evaporator Clips	AKO-14950	range -50 °C to 100 °C	1 unit	
PTC temperature probes				
Description	Model	Temperature range	Packaging	
PTC probe, 1.5m cable	AKO-155801	range -50 °C to 105 °C	10 units	
PTC probe, 2m cable	AKO-155802	range -50 °C to 150 °C	10 units	
PTC probe, 3m cable	AKO-155803	range -50 °C to 150 °C	1 unit	
PTC probe, 7m cable	AKO-155807	range -50 °C to 150 °C	10 units	
Pt100 temperature probes				
Description	Model	Temperature range	Packaging	
Pt-100 probe up to 180°C, 2.0m unbraided cable	AKO-15585A	range -40 °C to 180 °C	1 unit	
Pt-100 probe up to 350°C, 2M braided cable	AKO-15587	range -60 °C to 350 °C	1 unit	
Humidity probes 4-20mA				
Description	Model	Temperature range	Packaging	
Housed humidity probe + 4-20 mA converter	AKO-80040 (A)	range -10 °C to 70 °C	1 unit	
Tubular humidity probe with 4-20 mA output	AKO-80013 (B)	range -5 °C to 50 °C	1 unit	
Wall-mounted Humidity Probe 0-100% and -20°C to +50°C, 4-20mA	AKO-14980 (C)	Range -20° to 50° C	1 unit	
Controller accessories				
Description	Model	Temperature range	Packaging	
Transparent cover - front protection (not compatible with Darwin)	AKO-14910 (A)	—	120 units	
Extension cable for temperature probes	AKO-15586 (B)	—	100m	
Stainless Steel Sheath, 1/2" thread Gas	AKO-155908 (C)	—	10 units	
Transformers and power supply				
Description	Model	Temperature range	Packaging	
Voltage converter 14V to 30V/12V, 5VA	AKO-15589 (A)	—	10 units	
Transformer 120-230/12V, 3VA	AKO-15590 (B)	—	12 units	
Power source, 115-230VAC/24VDC, 1,0A	AKO-80014 (C)	—	1 unit	

3.

TEMPERATURE AND HUMIDITY DATALOGGERS

01_ RECORDING AND MONITORING OF TEMPERATURE AND HUMIDITY 24/7/365

02_ TEMPERATURE AND HUMIDITY DATA LOGGERS
IN ACCORDANCE WITH EUROPEAN STANDARD EN 12830

03_ 2-CHANNEL TEMPERATURE, HUMIDITY AND EVENT DATALOGGERS:
WALL MOUNTING

01_ RECORDING AND MONITORING OF TEMPERATURE AND HUMIDITY 24/7/365

AKODATA IOT



THE MOST EFFICIENT SOLUTION IN 24/7/365 MONITORING

AKODATA IOT

BENEFITS



MAKE THE MOST OF YOUR INSTALLATION AND MAINTENANCE TIME

- Monitor all your refrigeration facilities from anywhere, any time using your smartphone.
- Plan your maintenance operations in advance thanks to the information provided by the AKONET.CLOUD platform.
- Simplify the installation of the equipment as much as possible thanks to its direct connection to the internet, its self-sufficient power supply with internal batteries and its IP68 rated protection.



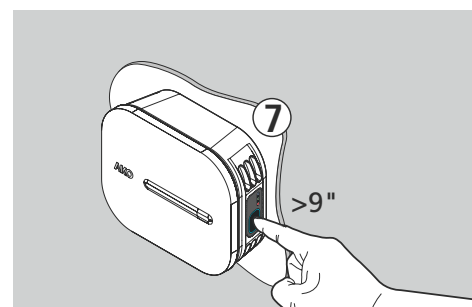
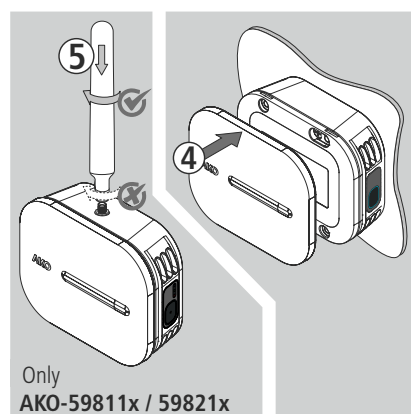
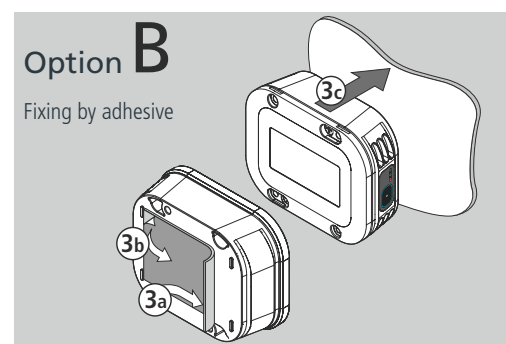
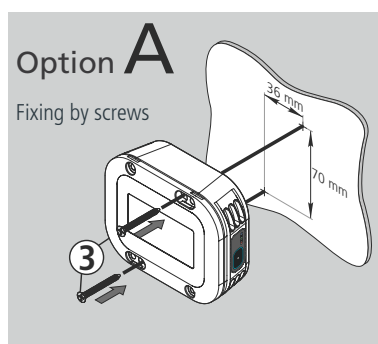
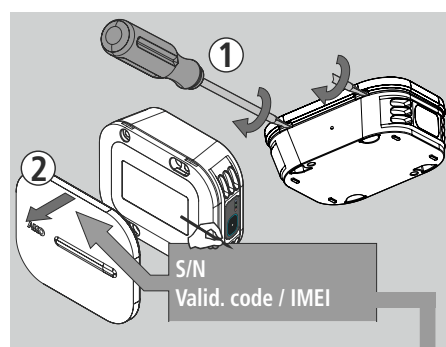
GROW AND RETAIN YOUR CUSTOMER BASE WITH THE BENEFITS OF AKODATA

- Detection of possible health risks due to inadequate refrigeration conditions.
- HACCP Indicators for Food Security.
- Automation of temperature records and quality reports.
- Information for the reduction of waste and product losses.
- Energy savings, optimising temperature set points thanks to the information provided.

APPLICATIONS

Refrigeration and freezer rooms, chest fridges and freezer, refrigeration and freezer units, display cabinets for refrigerated and frozen products, as well as any application of industrial and commercial refrigeration, process industry, health, etc.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply		LiSOCl ₂ battery, 3.6 Vdc, 6.5 Ah
Estimated battery lifetime		Up to 8 years
Measurement range	Internal probe temperature	-40 to 50 °C
	External probe temperature	-45 to 50 °C
	Humidity probe	0 to 100%
Resolution		± 0.1 °C / ± 0.1%
Precision	Internal probe temperature	30 to 0 °C ± 1 °C
		0 to 50 °C ± 0.5 °C
	External probe temperature	± 0.1 °C / ± 0.1%
	Humidity probe	20 to 80 % RH: ± 2 %
	Other	± 5 %
Band		NB-IoT
Antenna	AKO-59810 / 59820	Internal
	AKO-59811 / 59821	External
Ambient operating temperature		-40 to 50 °C
Ambient storage temperature		0 - 100 % RH
Protection degree		IP68
Dimensions		107 x 85 x 39 mm

MODELS

Description	Model	Packaging
Temperature and humidity monitor, IP68, -40°C to +50°C, 6.5 Ah battery, NB-IoT Band 20 + 2 Years Connectivity	AKO-59810	1 unit
Temperature and humidity monitor, external antenna, IP65, -40°C to +50°C, 6.5 Ah battery, NB-IoT Band 20 + 2 Years Connectivity	AKO-59811	
Temperature and humidity monitor, 3m external NTC probe, IP68, -40°C to +50°C, 6.5 Ah battery, NB-IoT Band 20 + 2 Years Connectivity	AKO-59820	
Temperature and humidity monitor, external antenna and 3m external NTC probe, IP65, -40°C to 50°C, 6.5Ah battery, NB-IoT Band 20 + 2 Years Connectivity	AKO-59821	

* Products based on NB (Narrow Band) technology are available wherever the operator has deployed such a network.

02_

TEMPERATURE AND HUMIDITY DATA LOGGERS IN ACCORDANCE WITH EUROPEAN STANDARD EN 12830



TEMPERATURE AND HUMIDITY DATA LOGGERS, EUROPEAN STANDARD EN 12830

CAMREGIS

BENEFITS



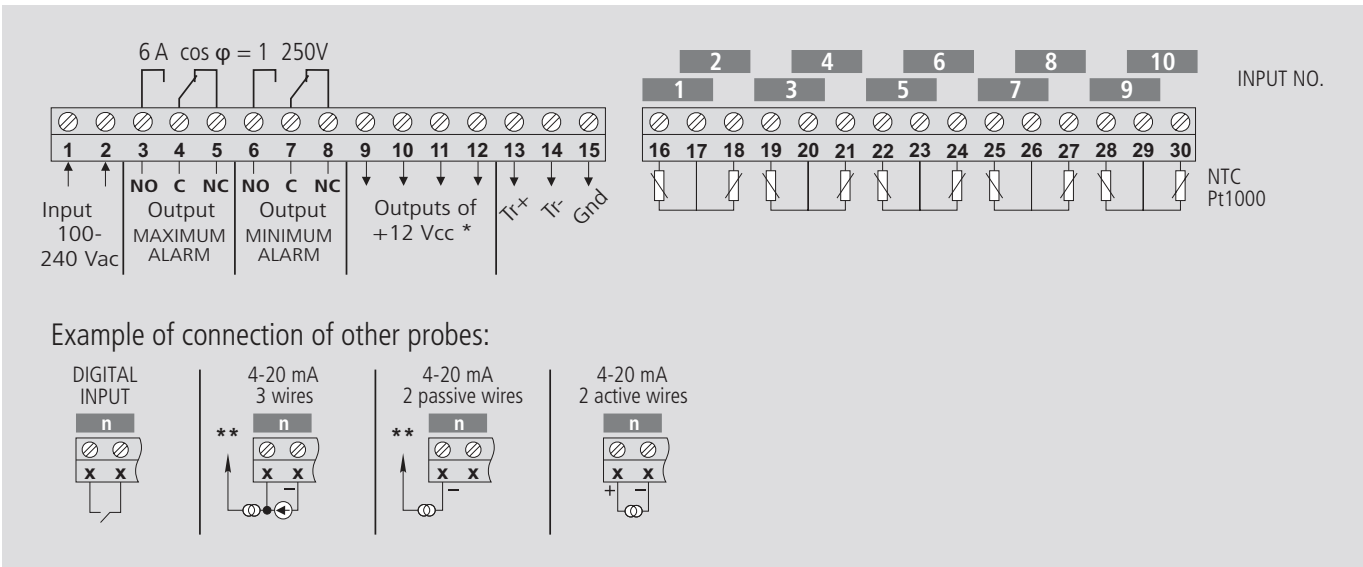
SUITABLE FOR RECORDING TEMPERATURE, HUMIDITY AND EVENTS.

High brightness and large graphic display. Configuration and text menus with on-screen help. Fast print key, which allows you to print the last calendar week. Internal memory of up to 3 years, with a recording frequency of 15 minutes. Built-in RS485 communication. ModBus protocol. Possibility to connect Pt100 probes to 5 inputs. Event logging of digital inputs.

APPLICATIONS

Refrigeration and freezer rooms, chest fridges and freezers, refrigeration and freezer units and display cabinets for refrigerated and frozen products as well as for any installation in which a temperature and/or humidity record is required but that does not require metrological control.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply		100 to 240Vac, 50/60Hz
Temperature alarm relay outputs		1 maximum and 1 minimum
Maximum temperature range	NTC	-50°C to +105°C
	Pt100	-150 °C to 590 °C
	Pt1000	-150°C to +550°C
	4-20mA	-999 to 999
Resolution		0.1 °C
Maximum error margin between -40°C and +40°C		± 1°C
Precision	NTC	±1 °C
	Pt100	±1 °C
	Pt1000	from -100 °C to +100 °C ±2 °C, other scale:±1%
	4-20mA	±1 %
Ambient operating temperature		0°C to +50°C
Record intervals		5, 15, 30 minutes (configurable)
Data stored in memory		1 year, 3 years, 6 years (depending on configuration)
Self-sufficiency (in case of power failure)		> 6 hours of recording
Battery		Li-Polymer
Graph scale		Self-adjusting
Length of each graph		Weekly from Monday to Sunday (15 minute intervals)
Protection degree of the log		IP65
Nominal dimensions		230 x 230 x 90 mm
Internal buzzer		

MODELS

Description	Model	Power supply	Packaging
2-Input temperature and humidity data logger	AKO-15780	100-240V	1 unit
2-Input temperature and humidity data logger with printer	AKO-15782	100-240V	1 unit
5-Input temperature and humidity data logger	AKO-15750	100-240V	1 unit
5-Input temperature and humidity data logger with printer	AKO-15752	100-240V	1 unit
10-Input temperature and humidity data logger	AKO-15740	100-240V	1 unit
10-Input temperature and humidity data logger with printer	AKO-15742	100-240V	1 unit
NTC probe from -50 to +100 °C, 1.5 m cable	AKO-14901	-	48 units
NTC probe from -50 to +100 °C, 3 m cable	AKO-14903	-	48 units
NTC probe from -50 to +100 °C, 6 m cable	AKO-14906	-	48 units
Wall-mounting humidity probe, 10 to 95%, -5/50°C, 4-20 mA output	AKO-80013	-	1 unit
Tubular humidity probe, 5%-95%, -10/70 °C, 4-20 mA output	AKO-80040	-	1 unit
Thermal paper roll as a spare part	AKO-15703	-	10 units
Spare battery	AKO-15704	-	1 unit
USB/RS485 converter, with 2m cable to PC	AKO-80039	-	1 unit
SOFTRegis, software management and monitoring of AKO dataloggers	AKO-5008	-	1 unit
Probe extension cable, 3 x 0.5 mm2 screened	AKO-15586	-	100m

03_

2-CHANNEL TEMPERATURE, HUMIDITY AND EVENT DATALOGGERS: WALL-MOUNTING



2-CHANNEL TEMPERATURE, HUMIDITY AND EVENT DATALOGGERS: WALL-MOUNTING

CAMREGIS BASIC

BENEFITS



SIMPLE INSTALLATION AND GREAT USABILITY

- Wall-mounting datalogger with configurable inputs depending on application.
- Acoustic alarm, alarm relay and SD card for direct data download.



VERSATILE AND INTUITIVE DESIGN

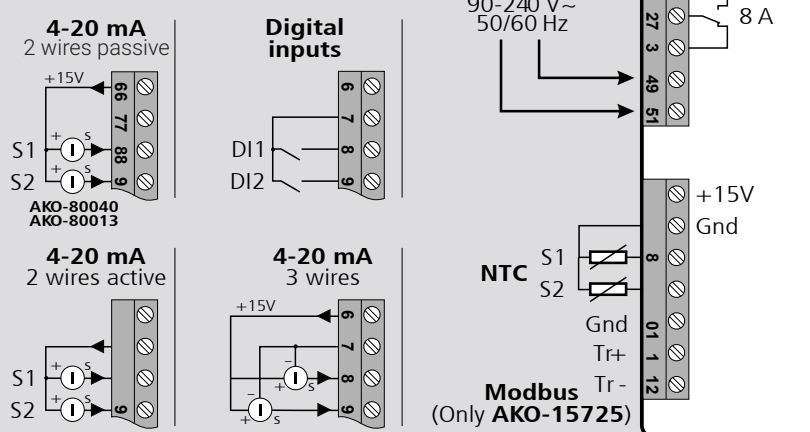
- Two displays for displaying current measurement values, current time and active alarm icons, minimum or maximum values and status of digital inputs.
- Quick access from keypad to data download and display of maximum and minimum values in the last 24h.

APPLICATIONS

Refrigeration and freezer rooms, chest fridges and freezers, refrigeration and freezer units and display cabinets for refrigerated and frozen products as well as for any installation in which a temperature and/or humidity record is required but that does not require metrological control.

ELECTRICAL CONNECTIONS

AKO-15724 / AKO-15725



TECHNICAL SPECIFICATIONS

Power supply	90 - 240 V~
Inputs	2, configurable
Input configuration	NTC / 4-20 mA / Digital input / Disabled
Alarm relay	Yes (SPDT 8A)
Acoustic alarm	Yes (Buzzer)
Protection degree	IP40
SD card port	Yes
Installation	NTC probe, SD card and USB SD card reader
Measurement range	NTC: -50 °C to 99 °C
	4-20 mA: Configurable from -100 to 900

MODELS

Description	Model	Power supply	Packaging
CAMRegis BASIC 2 channels, 1 NTC probe included	AKO-15724	90-240 V	4 units
CAMRegis BASIC 2 channels with Modbus communication, 1 NTC probe included	AKO-15725	90-240 V	4 units

4.

MONITORING AND DETECTION OF GAS LEAKS

01_ **GAS LEAK MONITORS**

02_ **GAS LEAK DETECTORS**

01_ GAS LEAK MONITORS

AKOGAS NDIR



AKOGAS NDIR

BENEFITS



VERSATILE AND ROBUST

- Flexibility of installation. It can be installed for autonomous operation, or connected directly to our AKONet web server, AKONet.Edge or through the AKOGAS central unit.
- IP68 protection and working temperature of -30°C to +40°C. It can be used in freezer rooms thereby covering all possible applications.
- Its user interface facilitates use and diagnostics, minimising after-sales calls.



MAXIMUM PRECISION AND SELECTIVITY

- Specific sensors for each type of gas which are extremely selective, avoiding false alarms for other gases, solvents, cleaning products.
- More than 95% accuracy in detecting gas leaks.
- Two detection levels, adjustable from 20 ppm to 2,000 ppm.
- Equipped with SetHold mode that avoids false alarms during refrigerant gas refill processes.



INCREASED CONNECTIVITY

- Modbus equipped as standard for connection to the web server or AKONet.Edge.
- Optionally you can connect the CAMM Module which provides Bluetooth connectivity for mobile monitoring and control. With the CAMM Module, historical records for the following can also be obtained:
 - Gas leaks in ppm
 - Alarms and events
 - Assessment (changes in equipment configuration)

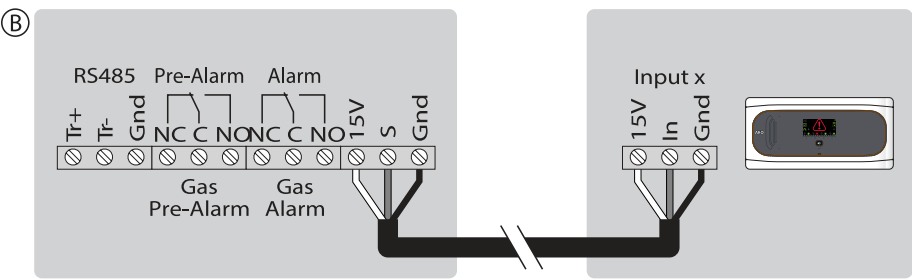
The infrared gas monitors are specially designed to know the volume of any gas in the environment, from 1 PPM, and therefore, help drastically reduce the operating costs of your installation, whilst still having the advantage of being able to install it anywhere in the facility.

APPLICATIONS

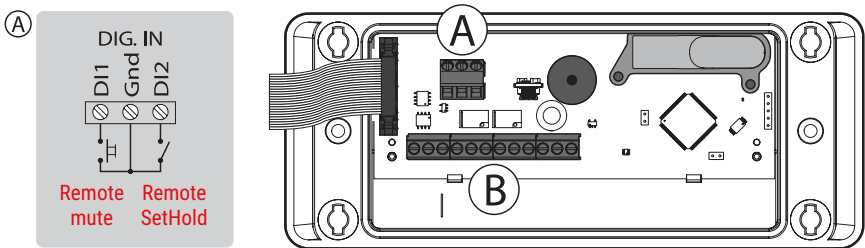
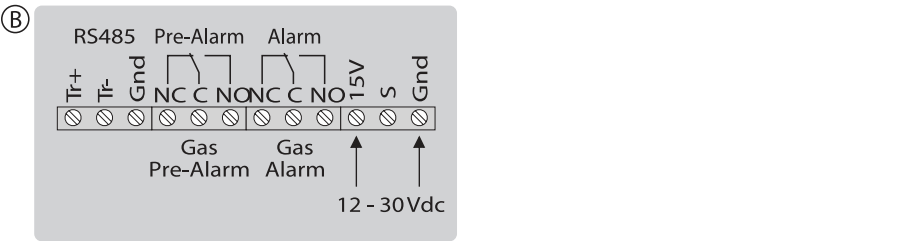
Commercial and industrial refrigeration installations, refrigeration and freezer rooms, machinery rooms, refrigeration and freezer units and commercial refrigerators, etc.

ELECTRICAL CONNECTIONS

Connected to Alarm Station  N / Q  SET



Autonomous operation  N / Q  SET



TECHNICAL SPECIFICATIONS

Power supply		12 - 30 Vdc
Energy usage	Typical	75 mA
	Maximum	100 mA
Ambient operating temperature		-30 °C to 40 °C
Ambient storage temperature		-30 °C to 60 °C
Maximum permissible humidity range		0 - 95 % RH (without condensation)
Protection degree		IP 68
Type of sensor		NDIR (Non-Dispersive Infra-red Technology)
Display range		0 - 2000 x1 ppm
EMC standards		EN61010
Dimensions		202 mm (W) x 82 (H) x 55.5 mm (D)

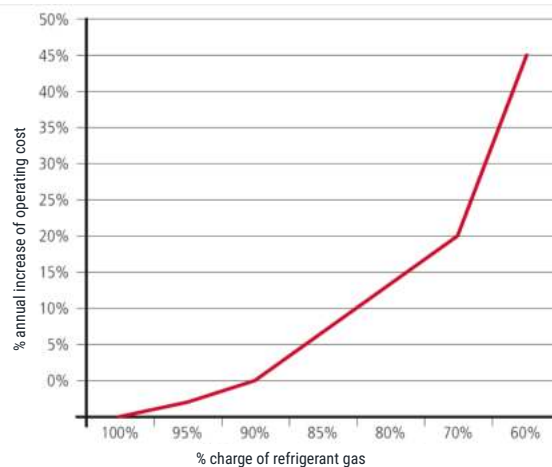


EFFICIENCY IN THE EARLY DETECTION OF GAS LEAKS

With AKOGAS NDIR you can SAVE on:

- Charges of up refrigerants (Direct Saving)
- Energy consumption (Indirect Saving)
- Reduced maintenance costs
- Extend the service life of the facility parts

IN A COOLING INSTALLATION, ELECTRICITY CONSUMPTION INCREASES EXPONENTIALLY WHILE THE GAS CHARGE IS LESS THAN THE NOMINAL CHARGE:



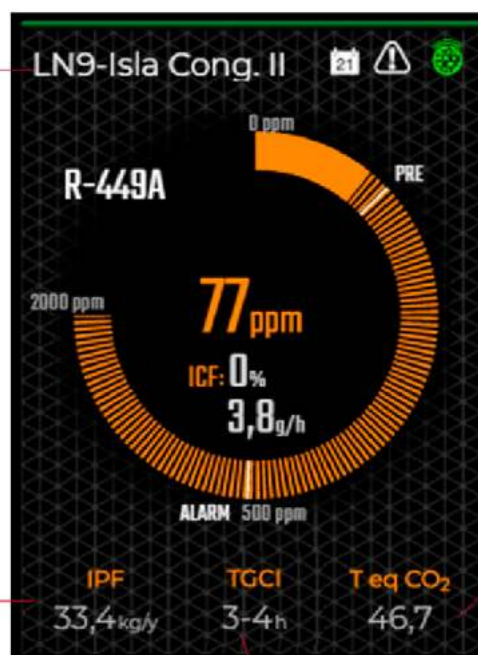
ADVANCE MONITORING OF GAS LEAKS ALLOWS A QUICK RESPONSE, THEREBY REDUCING COSTS, TIME AND INCREASING THE INSTALLATION LIFETIME.

WHERE refrigerant is leaking

HOW MUCH refrigerant will leak during a year

WHICH is the environmental impact of the leak

WHEN the leak is higher



BENEFITS OF GAS LEAK MONITORING

Rapid action in the event of a gas leak means enormous savings in time and unbeatable efficiency.

MONITORING THE CONDITION OF GAS LEAKS IN A FACILITY RESULTS IN HIGHER SUCCESS RATES AND COST REDUCTION:



Facility: Supermarket
Area: 800m²




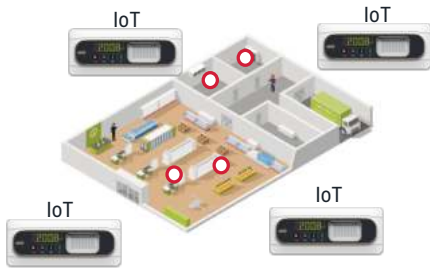
Monitor location	Volume	Average PPM	Estimated leakage (gr/h)	Estimated leakage (kg/year)
Fishmonger's wall unit	3.75 linear metres	110	1.55	13.6
Dairy wall unit	6.25 linear metres	115	2.71	23.7
Oven chamber	24m ³	125	7.62	66.7
Butcher's wall unit	10 linear metres	5	0.188	1.65
Charcuterie wall unit	7.5 linear metres	3	0.085	0.75
				106.4 kg/year

Being able to know and avoid any gas leak in a timely fashion means taking care of the environment, increasing peace of mind and improving the profitability of your business.

MODELS

Description	Model	Detectable gases	Alarm levels		Packaging
			Pre-alarm	Alarm	
R22 Gas Monitor	AKO-575022	R22	Configurable		1 unit
Broadband Monitor for HFC Gases	AKO-575400	R-134a / R-404A / R-407A / R-410A / R-125 / R-448A, R-449A, R-407F			1 unit
IoT Broadband Monitor for HFC gases	AKO-575400N				1 unit
CO2 Gas Monitor	AKO-575744	CO2 (R-744)			1 unit
Single channel gas leak detector	AKO-55624	-	-	-	1 unit
4 channel gas leak detector	AKO-55724	-	-	-	1 unit
Camm Module	AKO-58500	Accessory	-	-	1 unit
Transmitter Protector	AKO-58120	Accessory	-	-	5 units
Calibration tool	AKO-58110	Accessory	-	-	1 unit
Power source, 115-230VAC/24VDC, 1,0A	AKO-80014	Accessory	-	-	1 unit

* Products based on NB (Narrow Band) technology are available wherever the operator has deployed such a network.

	TYPE OF INSTALLATION	BENEFITS
Gas Leak Monitor Network	 <p>AKONET.EDGE</p>	<ul style="list-style-type: none"> Simple creation of a network of gas leakage monitors using AKONET.EDGE. Connectivity to AKONET.Cloud via Ethernet or GPRS as standard. Real time monitoring of the status of gas leaks.
NB-IoT Gas Leak Monitors	 <p>IoT</p>	<ul style="list-style-type: none"> Direct connectivity with AKONET.Cloud for the monitoring of the facility in places where device connection is impossible. Device monitoring without the need for any installation. Option to activate Live mode for displaying the facility's status in real time.

02_ GAS LEAK DETECTORS

AKOGAS



BENEFITS



VERSATILE AND ROBUST

- Flexibility of installation. It can be installed for autonomous operation, connected directly to our AKONet web server or through the AKOGAS unit.
- IP68 protection and working temperature of -20°C to +40°C. It can be used in freezer rooms thereby covering all possible applications.
- Its user interface facilitates use and diagnostics, minimising post-sales calls.



MAXIMUM SAFETY AND COMPATIBILITY

- The HFC version is a single model that can detect more than 20 gases.
- 2 alarm relays linked to the alarm and pre-alarm (adjustable except for NH3), to activate ventilation and stop cold production, in accordance with EN-378.
- It uses a Sethold Mode to avoid false alarms during maintenance tasks.
- Configuration of the equipment using keyboard and screen, without the need to open it or work with bridge circuits and potentiometers.



INCREASED CONNECTIVITY

- Using its two relays, alarm monitoring systems can be activated in the absence of a Modbus network.
- The alarm units provide a poor connection warning between the sensor and the unit, and a dedicated relay to send an alarm about the poor connection.



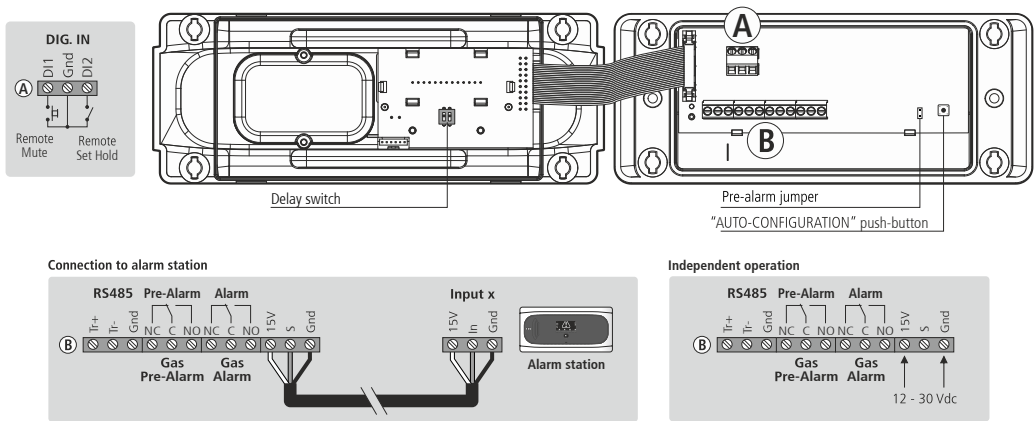
Our gas detection systems offer the following guarantees:

- 2 alarm levels in all models (required by EN-378 for CO2 and NH3).
- Built-in MODBUS for alarm management and remote monitoring.
- Adjustable alarm levels (except NH3).
- Acoustic and visual alarm built into the detector.

APPLICATIONS

Commercial and industrial refrigeration installations, refrigeration and freezer rooms, machinery rooms, etc.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply		12 - 30 Vdc
Energy usage	Typical	75 mA
	Maximum	100 mA
Ambient operating temperature		-20 °C to 40 °C (-40°C to 40°C for CO2)
Ambient storage temperature		-20 °C to 60 °C
Maximum permissible humidity range		0 - 95 % RH (without condensation)
Protection degree		IP68
Type of sensor		SC (Semiconductor) / NDIR for CO2
EMC standards		EN61010
Dimensions		202 mm (W) x 82 (H) x 55.5 mm (D)

MODELS

Description	Model	Detectable gases	Defect levels		Second level set		Packaging
			Pre-alarm	Alarm	Pre-alarm	Alarm	
Alarm unit kit + U Detector (HFC)	AKO-55624U	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	1 unit
Alarm unit kit + C Detector (NH3)	AKO-55624C	R-717 (NH3 / ammonia)	500 ppm	1000 ppm	-	-	1 unit
Alarm unit kit + D Detector (CO2)	AKO-55624D	R-744 (CO2)	4000 ppm	8000 ppm	5000 ppm	10000 ppm	8 units
Ammonia gas detector (R-717)	AKO-57613	R-717 (NH3 / ammonia)	500 ppm	1000 ppm	-	-	8 units
Universal gas detector	AKO-57614	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	8 units
CO2 gas detector (R-744)	AKO-57615	R-744 (CO2)	4000 ppm	8000 ppm	5000 ppm	10000 ppm	1 unit
Single channel gas leak detector	AKO-55624	Depending on the connected detector	-	-	-	-	1 unit
4 channel gas leak detector	AKO-55724	Depending on the connected detectors	-	-	-	-	1 unit
Protector for Detectors and Alarm pushbuttons	AKO-58120	-	-	-	-	-	5 units

5.

TRAPPED PERSON ALARM SYSTEMS

01_ TRAPPED PERSON ALARMS FOR PEOPLE SECURITY IN COLD ROOMS

01_

TRAPPED PERSON ALARMS FOR PEOPLE SECURITY IN COLD ROOMS

AKOALARM



TRAPPED PERSON ALARM

AKOALARM

BENEFITS



MAXIMUM SAFETY

- IP65 protected unit and button to protect against humidity and water projection in the facility.
- Can be installed in rooms as low as -50°C.
- Complies with European standard EN-378-1.
- Powerful visual and audible alarm of 90dB at 1m.
- Equipped with MODBUS Communication to send alerts via mail through AKONet.
- Auxiliary Alarm Relay to send warnings via SMS through GSMAlarm.



VERSATILE AND ROBUST

- IP65 protection in the unit and button to withstand harsh environments and extreme working conditions.
- The button can be used at temperatures as low as -50°C, to ensure correct operation in deep-freeze rooms.
- User interface facilitates use and diagnostics, minimising post-sales calls.



INCREASED CONNECTIVITY

- Alarm relay to send SMS warnings via GSMAlarm in case of emergency.
- MODBUS built in as standard, to send emails through the AKONet system.



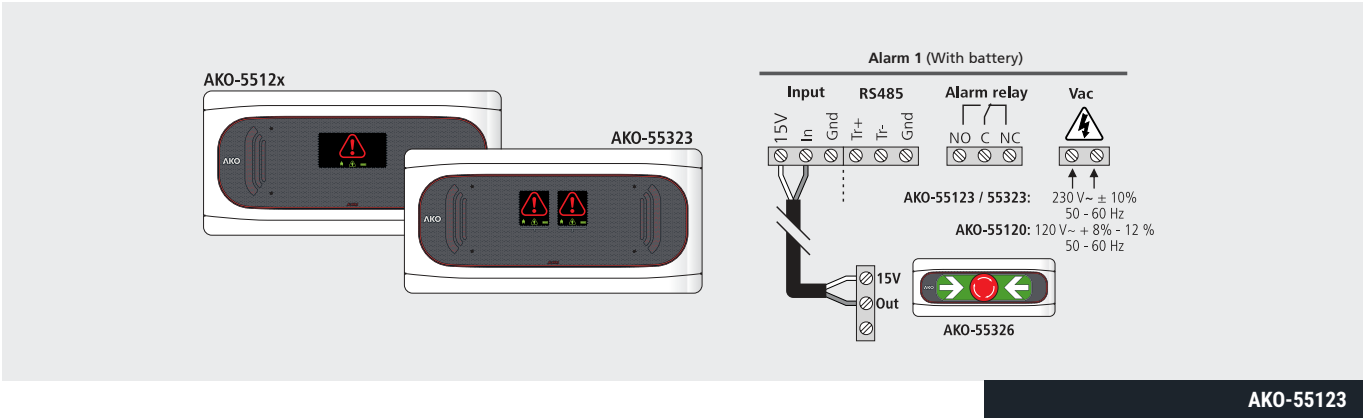
MAXIMUM PRECISION AND SELECTIVITY

- Up to 10 hours of self-sufficiency, with the device in alarm state, as required by EN-378-1.
- On-screen indication of which room is in alarm state.
- Broken Cable Detection, and indication on screen to assure the perfect state of the facility and to guarantee maximum security.

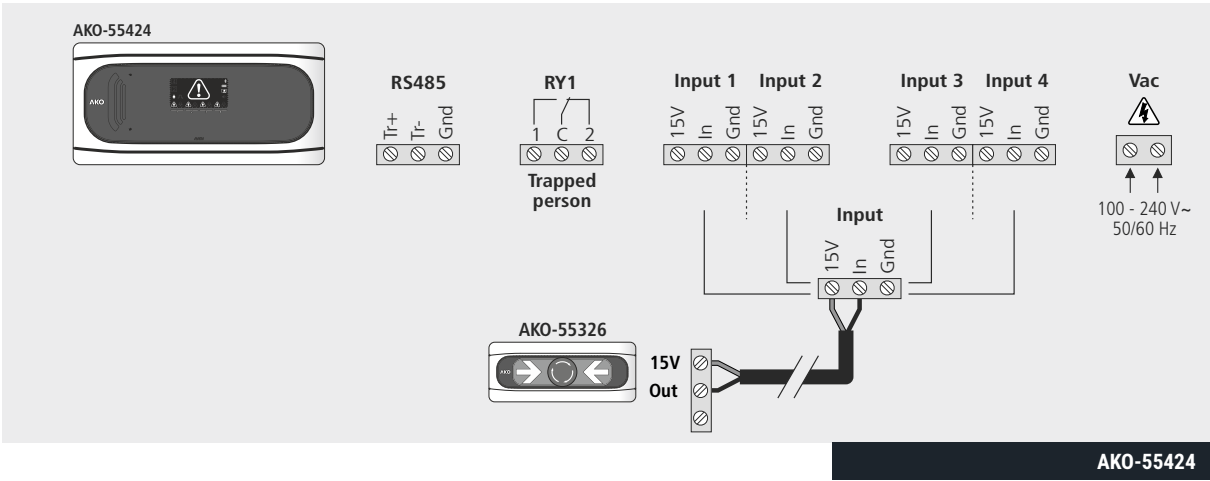
APPLICATIONS

Refrigeration and freezer rooms up to -50°C

ELECTRICAL CONNECTIONS



AKO-55123



AKO-55424

TECHNICAL SPECIFICATIONS

Power supply	AKO-55123	230 V ~ ± 10% - 50/60 Hz
	AKO-55120	120 V ~ + 8% - 12% - 50/60 Hz
Maximum power absorbed during use	AKO-55123	3.1 VA
	AKO-55120	5 VA
Accumulators		Ni-MH 800 mAh
Lighting + alarm autonomy		> 10 hours (*)
Input compatibility		AKO-55326 pushbutton
Alarm relay		SPDT 230 Vac, 3 A, cos j = 1
Ambient operating temperature		-5 °C to 50 °C
Ambient storage temperature		-30 °C to 70 °C
Protection degree		IP 65
Installation category		II s/ EN 61010-1
Pollution level		II s/ EN 61010-1
Double insulation between power supply, secondary circuit and relay output.		
Sound power		90 dB(A) at 1 meter
MODBUS Address		Indicated on the label
Dimensions		290 mm (W) x 141 mm (H) x 84.4 mm (D)
Maximum cable distance from button		300 m

GUARANTEE THE SECURITY OF YOUR FACILITIES AND AVOID COSTLY PENALTIES BY COMPLYING WITH CURRENT REGULATIONS:

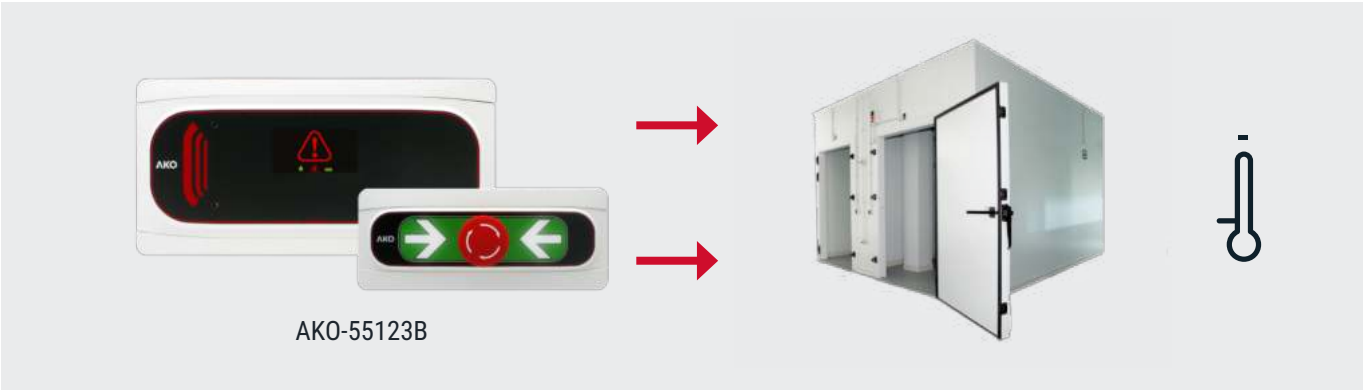
- EN-378-1: Trapped Person alarms must have an autonomy of 10 hours of operation in the event of a power failure in cold rooms operating at temperatures below 0°C.

MODELS

Description	Model	Power supply	Packaging
Trapped Person Alarm Kit 1 Channel + 1 Pushbutton *	AKO-55123B	230 Vac	1 unit
Trapped Person Alarm Kit 1 Channel + 1 Pushbutton *	AKO-55120B	120 Vac	1 unit
Trapped Person Alarm Kit 4 Channel + 2 Pushbuttons *	AKO-55424B	90-240 Vac	1 unit
Trapped Person Pushbutton -50°C	AKO-55326	12 Vdc	8 units
Protector for Trapped Person Pushbutton	AKO-58120	-	5 units

(*) Alarm unit with battery. Includes AKO-55326 pushbutton.

FREEZER ROOMS



6.

COMBINED ALARM SYSTEMS FOR LEAK DETECTION AND TRAPPED PERSON

01_ **COMBINED ALARM SYSTEMS FOR PEOPLE SECURITY**

01_ COMBINED ALARM SYSTEMS FOR PEOPLE SECURITY



COMBINED ALARM SYSTEMS FOR PEOPLE SECURITY

BENEFITS



EASY INSTALLATION OF SOLUTION THAT IS UNIQUE ON THE MARKET

- Simple installation together with a user interface that facilitates use and diagnostics, minimising post-sales assistance.
- Alarm station compatible with any combination of trapped person buttons, gas leak detectors and monitors.



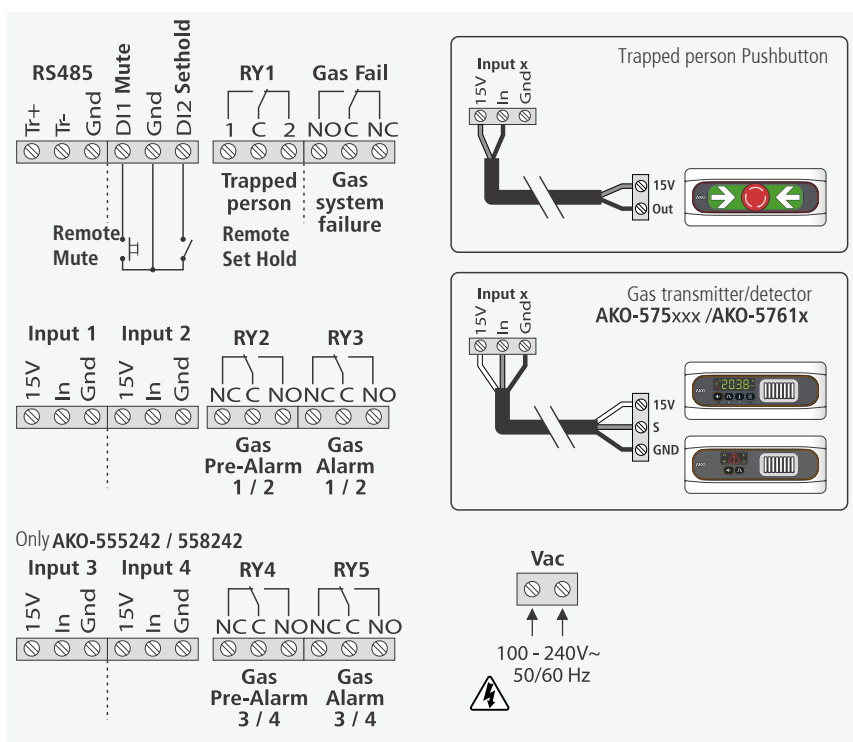
MAXIMUM SAFETY AND RELIABILITY

- 2 and 4 channel models available, with and without a battery, with up to 6 independent output relays.
- Visual and acoustic warnings for trapped person, gas leak pre-alarm and alarm, detector/monitor failure and broken cable.

APPLICATIONS

Cool rooms and freezer rooms

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

- All inputs are compatible with semiconductor sensors, infrared sensors and the new AKO-55326 buttons.
- Complies with EN-378-1 and EN-378-3 standards.
- Sethold and Maintenance modes in all models to avoid false alarms during gas cleaning and/or refilling.
- MODBUS communication as standard for remote monitoring through AKONet web server.

Power supply		100-240 V~ 50/60 Hz
Peak power input		15 W
Accumulators (AKO-555xxx only)		Ni-MH 1.6 Ah
Lighting + alarm autonomy (AKO-555xxx only)		> 10 hours (*)
N° of inputs	AKO-555241 / AKO-558241	2
	AKO-555242 / AKO-558242	4
Input compatibility		AKO-55326 button
		AKO-575xxx transmitter
		AKO-5761x detector
Relays		SPDT 8(2)A 250 V~
Ambient operating temperature		-5 °C to 50 °C
Ambient storage temperature		-30 °C to 60 °C
Degree of protection		IP 65
Installation category		II s/ EN 61010-1
Pollution level		II s/ EN 61010-1
Double insulation between power supply, secondary circuit and relay output		
Sound power		90 dB(A) at 1 meter
MODBUS Address		Indicated on the label
Maximum cable distance from button		300 m
Dimensions		290 mm (W) x 141 mm (H) x 84.4 mm (D)



ALARM SOLUTIONS FOR COLD ROOMS

IN COMPLIANCE WITH REGULATIONS ON REFRIGERATION SYSTEMS

FREEZER ROOMS



AKO-555241X
Alarm system
with battery



Trapped person alarm system with battery
according to EN-378-1 (1) and leak detection
system according to EN-378-3 (2)

GUARANTEES THE SAFETY OF FACILITIES COMPLYING WITH CURRENT REGULATIONS:

- (1) **EN-378-1**: In chambers with a temperature lower than 0°C the Trapped Person alarms must have an autonomy of 10 hours of operation in the event of a power failure.
- (2) **EN-378-3**: A gas detection system with two alarm levels (pre-alarm and alarm), each associated with a relay, shall be installed in cold rooms.

MODELS

2 input combined central alarm kit with battery (includes 1 button + 1 detector)							
Description	Battery	Button	Gas detector	Model	Power supply	Packaging	Application
Combined alarm unit for gas leaks and trapped person 2 inputs	•	Included	HFC	AKO-555241U	100-240V	1 unit	Freezer rooms EN-378-1 EN-378-3
			NH3	AKO-555241C			
			CO2	AKO-555241D			

2 input combined central alarm kits without battery (includes 1 button + 1 detector)							
Description	Battery	Button	Gas detector	Model	Power supply	Packaging	Application
Combined alarm unit for gas leaks and trapped person 2 inputs	—	Included	HFC	AKO-558241U	100-240V	1 unit	Freezer rooms EN-378-1 EN-378-3
			NH3	AKO-558241C			Refrigeration rooms EN-378-3
			CO2	AKO-558241D			

Combined alarm unit						
Description	Battery	Button	Gas detector	Model	Power supply	Packaging
2 input combined alarm unit for gas detection and trapped person	•	Not included	Not included	AKO-555241	100-240V	1 unit
	–			AKO-558241		
4 input combined alarm unit for gas detection and trapped person	•			AKO-555242		
	–			AKO-558242		

Accessories for alarm units		
Description	Model	Packaging
Trapped Person Button -50°C	AKO-55326	8 units
Ammonia detector (NH3 /R-717)	AKO-57613	8 units
HFC gas detector	AKO-57614	
CO2 gas detector (R-744)	AKO-57615	
R-22 Gas Monitor	AKO-575022	1 unit
HFC gas monitor	AKO-575400	
CO2 gas monitor (R-744)	AKO-575744	

7.

REMOTE MANAGEMENT AND MONITORING SYSTEMS

01_ REMOTE FACILITY MONITORING AND MANAGEMENT PLATFORM

02_ REMOTE MANAGEMENT AND MONITORING SYSTEMS

01_

REMOTE FACILITY MONITORING AND MANAGEMENT PLATFORM

AKONET.Cloud



AKONET.Cloud

REMOTE FACILITY MONITORING AND MANAGEMENT SOFTWARE

AKONET.Cloud

BENEFITS



MONITORING

- Device-specific widgets.
- Real-time data and graphical information.
- Multiple device categorisation and grouping options.



DATA ANALYSIS

- Descriptive data analysis by device and application.
- Events and alarm logging.
- Data storage and export.



MODELLING

- Key refrigeration indicators.
- Business analysis indicators.
- Asset diagnostics tools.



PARAMETRISATION

- Parameter modification using AKONET.Cloud.
- Parameter preset library.
- Configuration wizard for each application.
- Configuration changelog.



PANELS

- Device activity information panel.
- Grouping Information panel.
- Device and cluster rankings.



MOTOR ALARMS AND NOTIFICATIONS

- Alarm threshold, severity, hysteresis and delay.
- Advanced notification criteria.
- Configurable notifications for email, app and mobile.



REPORTS

- PDF report generator.
- App-oriented automatic report library.
- Periodic or on-demand email reports.



PROFILES

- Creation of user profiles.
- Flexible access privileges to certain modes and devices and cluster visibility.
- Secure access.
- Access and change logs.



CLOUD-CONNECTED EQUIPMENT

- Compatible with the following product lines: AKOGAS, AKOCORE, DATALOGGERS, AKOCONTROL.
- Product lines with direct NB-IoT connection: AKODATA, AKOGAS, AKOCORE.



THIRD PARTY INTEGRATION

- Total integration with third party systems and apps via API Rest.
- Other integration methods are available.

APPLICATIONS

Monitoring of industrial, commercial, health and process industry facilities, etc.

REMOTE MONITORING AND MANAGEMENT

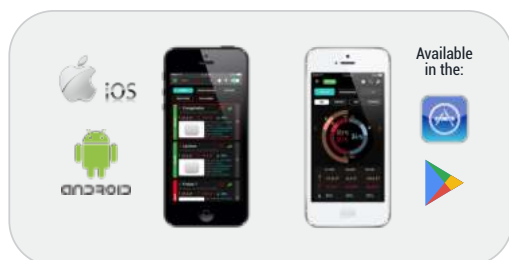


AKONET.Cloud

- Facility monitoring at any time, from any place and on any device.
- Planning of your maintenance operations in advance.
- Automatic report generation.
- Information on the reduction of product losses and energy consumption.
- Analysis of HACCP indicators.
- App available for iOS and Android.



AKONET.APP



02_ REMOTE MANAGEMENT AND MONITORING SYSTEMS

AKONET.Edge



AKONET.Cloud



REMOTE MANAGEMENT AND MONITORING SYSTEMS

AKONET.Edge

The new easy-to-install facility monitoring solution for activation and configuration using AKONET.Cloud.

- Management of up to 25 AKO products.
- Compatible with the following product families: AKOGAS, AKOCORE and AKOCONTROL.



BENEFITS



MAXIMUM EASE OF INSTALLATION

- Connectivity with AKONET.Cloud.
- Connectivity with AKO products with modbus and/or tcp.
- Local configuration panel via WIFI.
- Installation on DIN rail.
- Built-in GPRS antenna.



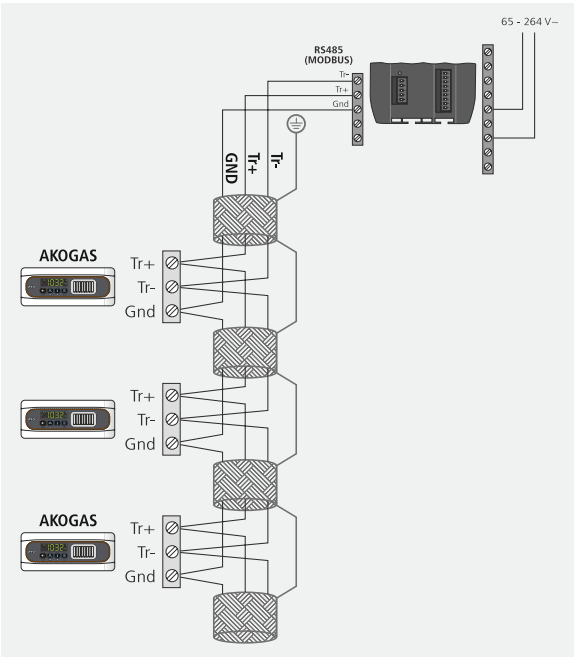
MONITORING

- Device monitoring using AKONET.Cloud and the AKONET app.
- Access any time, anywhere and on any device.
- Event and alarm management.
- Data logging and graph display.
- Detailed views and device geolocation.
- Parameter correction and modification.
- Automatic report configuration.

APPLICATIONS

Monitoring of industrial, commercial, health and process industry facilities, etc.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Power supply	85-264 V / 47-63 Hz
Maximum power usage	10 VA
Communications	WIFI (802.11 b/g/n, 2.4 GHz)
	10/100 Mbs Ethernet port
	RS 232/485
	GSM/GPRS Quadband (850/900/1800/1900 MHz)
Antenna	External
Operating temperature	0 to 40 °C
Permissible humidity range	5 - 95 %
Housing	UL94 V0 self-extinguishing polycarbonate
Protection degree	IP20
Mounting	DIN rail 46277
Connections	Plug-in terminals, max. 1.5 mm ²
Dimensions (with terminals and antenna)	88 mm (W) x 145 mm (H) x 50 mm (D)

MODELS

Description	Model	Packaging
AKONet.Edge gateway for modbus devices to AKONet.Cloud	AKO-5021	1 unit

AKONET

- AKONET is an easy-to-use and intuitive remote management solution for WEB environments. It can be accessed from any browser, whether it be on PC, laptop, tablet or mobile.
- It allows monitoring via temperature/humidity graphs of the entire history of the connected facilities, any change in the facility's parameters and the reception of alarms in the e-mail.



- Local or remote connectivity configurable in AKONET.
- Connection to AKO equipment with ModBus-RTU and/or ModBus-TCP.
- 90-240 Vdc power supply.



- Event and alarm management.
- Data logging and graph display.
- Detailed device views.
- Parameter correction and modification.
- Automatic report configuration.

AKOCONTROL, AKOCORE, AKOGAS,
AKOALARM and AKOPRO.

Monitoring of industrial, commercial, health and process industry facilities, etc.

The diagram illustrates the AKONet AKO-5012 system architecture. It features a central computer (AKO-80039 Local USB) connected via a USB cable to a rack-mounted unit (AKO-80080). The rack unit is connected to a network switch (AKO-80080) which is part of an 'Ethernet Local Area Intranet'. The network switch is also connected to a wireless router (AKO-80039 Local USB) which is part of an 'Ethernet Intranet & Internet Local & Remota'. The system is connected to 'Edificio A' (Building A) via a network cable. The diagram also shows several digital displays (AKO-5012) connected to the network, displaying various data like temperature, humidity, and status.

TECHNICAL SPECIFICATIONS

Power supply	100~240V
CPU	5th generation Intel Core i3
Memory	4 GB DDR3L
LAN	Gigabit LAN (Realtek)
Graphics	HD Intel Graphics
Maximum HDMI resolution	4096 x 2304 @ 24Hz
Maximum DP resolution	3840 x 2160 @ 60Hz
Inputs and outputs	1 x HDMI
	4 x USB 3.0
	1 x Mini Display Port
	1 x RJ45
	1 x Audio jack / SPDIF
	1 x VDC power supply connector
Storage	HD SSD 60 Gb
WIFI card	IEEE802.11ac, Dual Band & BT 4.0
Operating temperature	-0°C ~ +35°C
Operating System	Linux Debian Desktop

MODELS

Description	Model	Packaging
AKONET Web server Hardware & Software	AKO-5012	1 unit
AKOnet Web Server Basic Hardware & Software	AKO-5014	
RS485/USB converter module	AKO-80039	
RS485/TCP converter module	AKO-80080	
RS485 communication system repeater	AKO-80024	

FACILITY SURVEILLANCE AND MONITORING SYSTEMS

SOFTRegis

BENEFITS



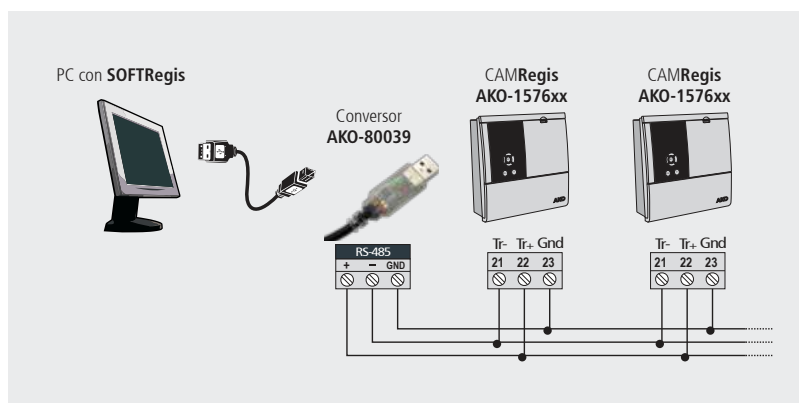
DATA RECORD MANAGEMENT AND SECURITY

- Safety and simplicity in the monitoring of controlled refrigeration facility with CAMRegis and CAMRegis.H dataloggers, with the only necessary installation being that of software on a computer.
- SOFTRegis and SOFTRegis.H have specific solutions for the surveillance of refrigeration systems.
- They allow monitoring via temperature and/or humidity graphs of the entire history of the connected equipment.
- Temperature control and display in accordance with current standards RD244/2016, ITC3701/2006 and EN 13485.

APPLICATIONS

Monitoring of industrial, commercial, health and process industry facilities, etc.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Equipment compatibility	AKO-5008 SoftRegis	AKO-15740, AKO-15742, AKO-15750, AKO-15752, AKO-15780, AKO-15782
Operating system compatibility	Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10, 32 and 64 bits	
Memory space requirements	300 Mb free on disk	
Device communication	Via RS-485 to USB signal converter (AKO-80039)	

MODELS

Description	Model	Packaging
SOFTRegis, management and monitoring software for CAMRegis dataloggers	AKO-5008	1 unit
RS485/USB converter module	AKO-80039	

GSM ALARM MODULE FOR MANAGEMENT AND ALERTS VIA SMS

BENEFITS



EASE OF INSTALLATION

- Module for sending alarms via SMS messages, requiring only a voltage-free contact to activate the alarm and send it.
- Completely configurable by the user through an android configuration app or by SMS.



EFFICIENT ALARM AND EVENT MANAGEMENT

- 4 independent alarm inputs (voltage free contact).
- 2 output relays for remote control of equipment via App/SMS.
- Up to 10 assignable phones.



APPLICATIONS

Monitoring of industrial, commercial, health and process industry facilities, etc.

MODELS

Description	Model	Packaging
GSM Alarm BASIC	AKO-52044	1 unit
2m antenna GSM module extension (AKO-52044)	AKO-520441	

8.

HEATING CABLES FOR FACILITY EFFICIENCY AND PERSONAL SAFETY

01_ HEATING CABLE QUICK GUIDE

02_ CONSTANT POWER PARALLEL CABLE

03_ SELF-REGULATING PARALLEL CABLE

04_ SERIAL CABLE

01_ HEATING CABLE QUICK GUIDE



HEATING CABLE QUICK GUIDE

Installation, checks, power supply connections, and coordination must be performed by qualified personnel. The selection of heating cables for the application is recommended by AKO.

REFRIGERATION APPLICATIONS

TYPE OF CABLE	Constant power parallel cable			Self-regulating parallel cable	Serial cable
Application / Finishing	Fluoropolymer cover	Metallic braid	Silicone / PVC insulation	Polyolefin cover	Silicone insulation
Avoid ice in pipes	-	AKO-52341	AKO-5234, AKO-52342, AKO-52344, AKO-52346, AKO-712545	AKO-71214T, AKO-1221, AKO-71218T, AKO-7121xP	AKO-7137x, AKO-7138x
Door frames for freezer rooms	-	AKO-52341, AKO-5237	AKO-5234, AKO-52342, AKO-52344, AKO-52346	-	-
Chiller cabinet and display case frames	AKO-71214T	AKO-71214T	AKO-71214T	-	AKO-7137x, AKO-7138x
Cold room entrances	-	-	-	AKO-71218T	-
Cold room sub-surfaces	-	-	AKO-5231	-	-

TYPE OF CABLE	Heating resistors
Refrigeration compressors	AKO-718x

CONSTRUCTION APPLICATIONS

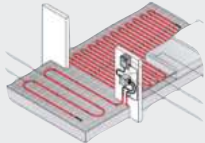
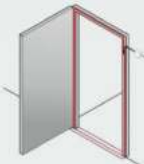
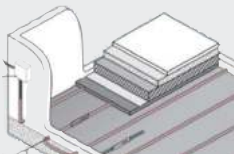
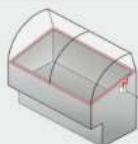

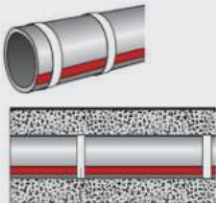
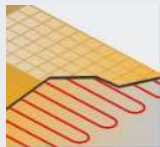

TYPE OF CABLE	Constant power parallel cable	Self-regulating parallel cable
Application / Finishing	Silicone / PVC insulation	Polyolefin cover
Avoid ice in pipes	-	AKO71214T, AKO-1221, AKO7128T, AKO-7121xP.
Radiant floor heating	AKO-1212	-

CONSTRUCTION APPLICATIONS

TYPE OF CABLE		Constant power parallel cable	Serial cable
Application / Finishing		Fluoropolymer coating	Stainless steel cover Insulation: quartz fibre
Maintain process temperatures in pipes, tanks, hoppers and associated equipment		AKO-70130	AKO-7130xA
			AKO-7132x
Maintain temperature in tanks and drums	Temperature	Heaters	
	Up to 185 °C	Heating panels: AKO-71515, AKO-71535	
	< 100 °C	Heating bands with thermostat: AKO-8003xT	
	< 100 °C	Heating mat: AKO-80041	
	< 100 °C	Heating base and rings: AKO-718510, AKO-718520, AKO-718720	



APPLICATIONS

Application	Type of cable		Model
Avoids the formation ice and slippery floors at room entrances to allow safe transit of people and vehicles 	Self-regulating constant power	Fluoropolymer coating	AKO-71218T
Eliminate the risk of door locking and ensures suitable closure for the prevention of ice formation in the door frame 	Self-regulating constant power	Metallic braid	AKO-52341 AKO-5237
		Silicone / PVC insulation	AKO-5234, AKO-52342, AKO-52344, AKO-52346
Avoids formation of ice on the subsurface of cold rooms 	Self-regulating constant power	Silicone / PVC insulation	AKO-5231
Prevents the formation of vapour in refrigeration and freezer units that make product visibility difficult 	Self-regulating parallel cable		AKO-71214T
Avoids damage to the compressor housing while maintaining a right temperature 	Heating resistors		AKO-718x
Prevents pipe blockage caused by the formation of ice 	Self-regulating constant power	Metallic braid	AKO-52341
		Silicone / PVC insulation	AKO-5234, AKO-52342, AKO-52344, AKO-52346, AKO-712545
	Self-regulating parallel cable	Polyolefin cover	AKO-71214T, AKO-1221, AKO-71218T, AKO-7121xP
	Serial cable	Silicone insulation	AKO-7137x, AKO-7138x
Underfloor heating 	Self-regulating constant power	Insulation: PVC	AKO-1212
Maintains a temperature suitable for tanks and drums 	Up to 185 °C	Heating panels: AKO-71515, AKO-71535	
	< 100 °C	Heating bands with thermostat: AKO-8003xT	
	< 100 °C	Heating mat: AKO-80041	
	< 100 °C	Heating base and rings: AKO-718510, AKO-718520, AKO-718720	

02_

CONSTANT POWER PARALLEL CABLE



CONSTANT POWER PARALLEL CABLE

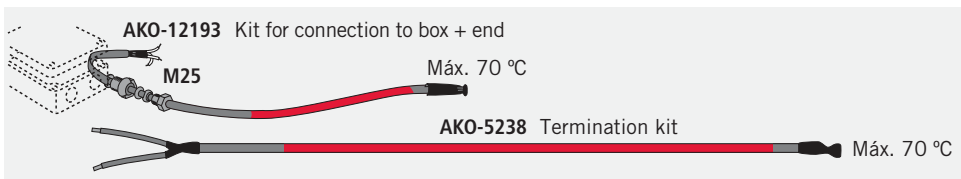
PVC INSULATION (2 X 1.5 MM2 CONDUCTORS)



APPLICATIONS

Refrigeration and construction

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Exposure temperature up to 70 °C with PVC insulation.

Heating cable AKO-5231 designed to prevent cracking of the cold room floor, installed under the thermal insulation. AKO-1212 heating cable for underfloor heating, installed above the thermal insulation.

- 2 x 1.5 mm² copper conductors.
- Ni - Cr heating conductor.
- Nominal external dimensions of 9 x 6 mm.
- Minimum bending radius of 20 mm at -15 °C.
- Maximum exposure temperature (disconnected) 70 °C.
- Distance between contacts 1000 mm.

MODELS

Description	Model	Packaging
Heating cable 10 W/m at 230 V, PVC insulation	AKO-5231	100 m.(A)
Heating cable 20 W/m at 230 V, PVC insulation	AKO-1212	100 m.(A)
M25 box + end connection kit	AKO-12193	1 unit
Termination Kit	AKO-5238	25 units

(A) Packing lengths are as usual, however we reserve the right to deliver in lengths other than those indicated.

CONSTANT POWER PARALLEL CABLE

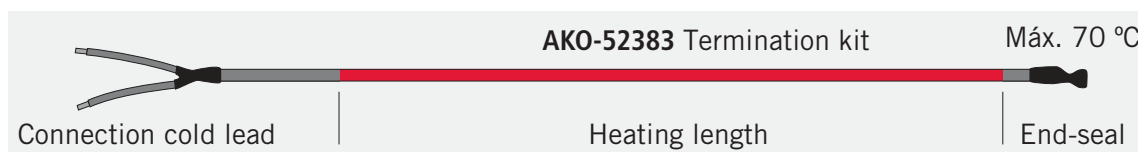
SILICONE INSULATION (2 X 0.75 MM² CONDUCTORS)



APPLICATIONS

Industrial and commercial refrigeration

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Exposure temperature of up to 180 °C with silicone insulation.

Heating cables commonly used in refrigeration systems to prevent ice in drainage pipes and door frames, as well as to prevent condensation on surfaces. They can be cut to size.

- 2 x 0.75 mm² copper conductors.
- Ni - Cr heating conductor.
- Nominal external dimensions of 8 x 6 mm.
- Minimum bending radius of 10 mm at -40 °C.
- Maximum exposure temperature (disconnected) 180 °C.
- Distance between contacts 595 mm.

MODELS

Description	Model	Packaging
Heating cable 30 W/m at 230 V, silicone insulation	AKO-5234	150 m(A)
Heating cable 30 W/m at 120 V, silicone insulation	AKO-52342	150 m(A)
Heating cable 40 W/m at 230 V, silicone insulation	AKO-52344	150 m(A)
Heating cable 65 W/m at 230 V, silicone insulation	AKO-52346	75 m(A)
Connection + End Seal Kit	AKO-52383	25 units

(A) Packing lengths are as usual, however we reserve the right to deliver in lengths other than those indicated.

CONSTANT POWER PARALLEL CABLE

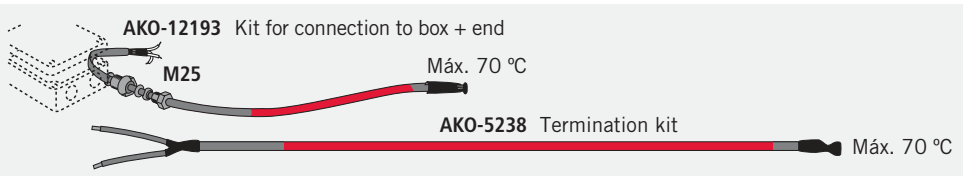
SILICONE INSULATION (2 X 1.5 MM2 CONDUCTORS)



APPLICATIONS

Refrigeration and construction

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Exposure temperature of up to 180 °C with silicone insulation.

Heating cable commonly used in refrigeration installations to prevent ice in drainage pipes, as well as to prevent condensation on surfaces. They can be cut to size.

- 2 x 1.5 mm² copper conductors.
- Ni - Cr heating conductor.
- Nominal external dimensions of 9 x 6 mm.
- Minimum bending radius of 20 mm at -40 °C.
- Maximum exposure temperature (disconnected) 180 °C.
- Distance between contacts 500 mm.

MODELS

Description	Model	Packaging
Heating cable 50 W/m at 230 V, silicone insulation	AKO-712545	100m (A)
M25 box + end connection kit	AKO-12193	1 unit
Termination Kit	AKO-5238	25 units

(A) Packing lengths are as usual, however we reserve the right to deliver in lengths other than those indicated.

CONSTANT POWER PARALLEL CABLE

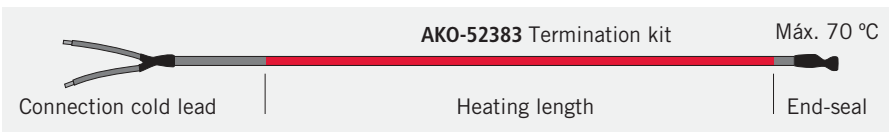
SILICONE INSULATION + METAL BRAID (2 X 0.75 MM2 CONDUCTORS)



APPLICATIONS

Industrial and commercial refrigeration

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Exposure temperature of up to 180 °C with protective metal braid.

Heating cable commonly used in refrigeration systems to prevent ice in drainage pipes and door frames and to prevent condensation on surfaces. They have a metallic braid for grounding. They can be cut to size.

- 2 x 0.75 mm² copper conductors.
- Ni - Cr heating conductor.
- External dimensions less than or equal to 9 x 7 mm.
- Minimum bending radius of 10 mm at -40 °C.
- Maximum exposure temperature (disconnected)
70 °C / 180 °C: Uses the AKO-70194 kit.
- Distance between contacts 595 mm.

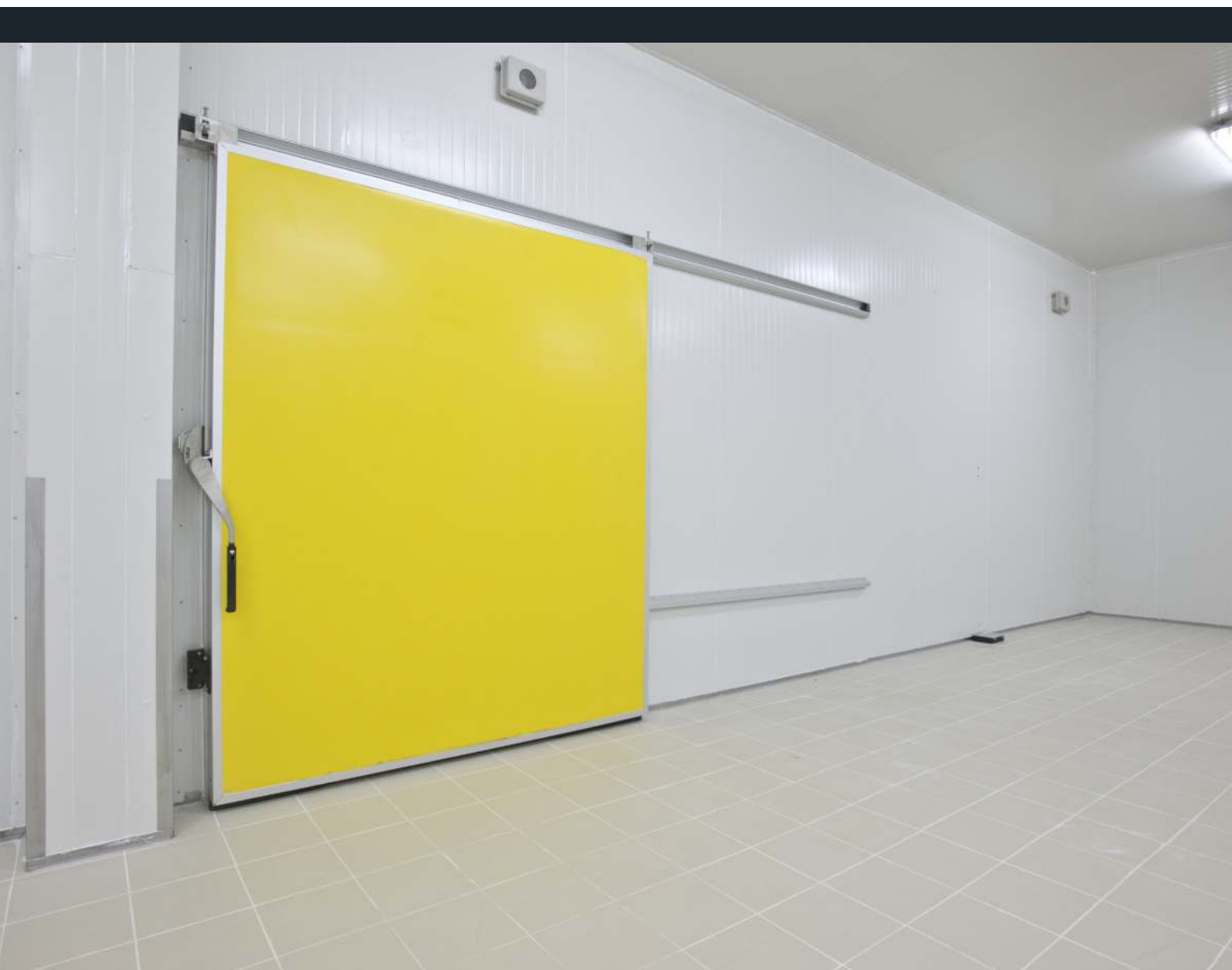
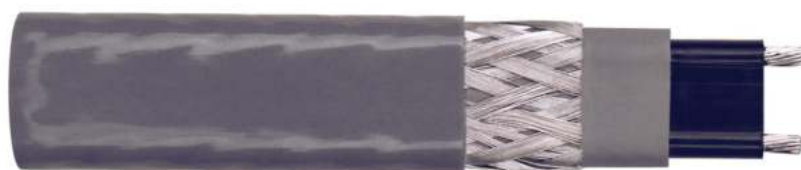
MODELS

Description	Model	Packaging
Heating cable 30 W/m at 230 V, insulation + metal braid	AKO-52341	150m (A)
Connection + End Seal Kit	AKO-52383	25 unit
Kit for m25 box end connection + sealing	AKO-70194	5 unit

(A) Packing lengths are as usual, however we reserve the right to deliver in lengths other than those indicated.

03_

SELF-REGULATING PARALLEL CABLE



SELF-REGULATING PARALLEL CABLE

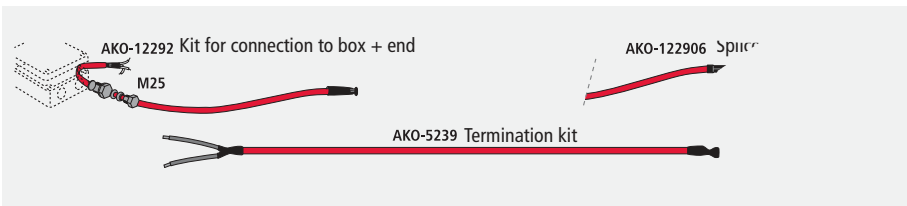
POLYOLEFIN COVER (2 X 1 MM² CONDUCTORS)



APPLICATIONS

Refrigeration and construction

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Exposure temperature of up to 65°C with polyolefin coating

Heating cables that are commonly used in construction to prevent frost in pipes or in refrigeration to prevent the formation of ice. They can be cut to size.

- Minimum bending radius of 25 mm at -30 °C.
- Maximum working temperature (connected) 65°C.
- Maximum exposure temperature (disconnected) 65 °C.
- Maximum exposure temperature (intermittent, max. 1000 h) 85 °C.

MODELS

Description	Model	Packaging
Heating cable 15 W/m at 10 °C, 230 V (9 W/m at 40 °C)	AKO-71214T	100 m (A)
Heating cable 25 W/m at 10 °C, 230 V (14 W/m at 40 °C)	AKO-1221	100 m (A)
Heating cable 30 W/m at 10 °C, 230 V (17 W/m at 40 °C)	AKO-71218T	100 m (A)
Kit for m25 box end connection + sealing	AKO-12292	1 unit
Termination Kit	AKO-5239	25 units

(A) Packing lengths are as usual, however we reserve the right to deliver in lengths other than those indicated.

04_ SERIAL CABLE



SERIAL CABLE

SILICONE INSULATION

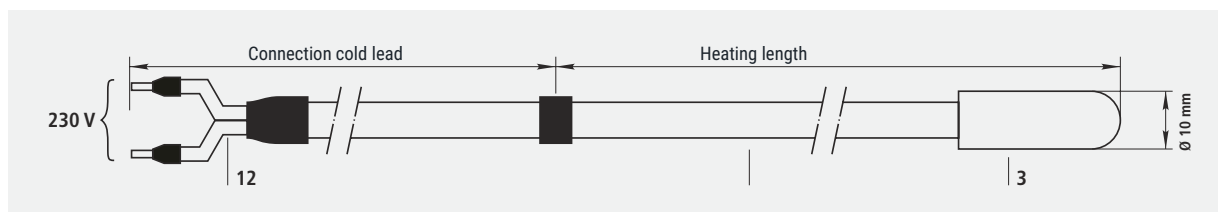
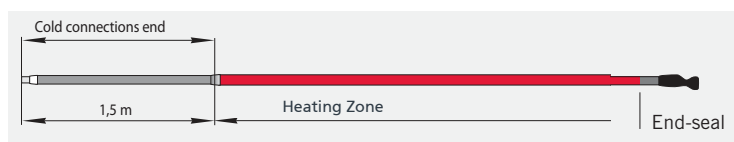


Cold end for 1m connection

APPLICATIONS

Industry and refrigeration

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Silicone insulated heating cable

They are suitable for frost protection and temperature maintenance in the refrigeration industry. Particularly suitable for domestic electricity and frost protection in machines used in the refrigeration industry.

- Minimum bending radius of 10 mm at -40°C
- Maximum exposure temperature (disconnected) 180°C

MODELS

50 W/M FLEXIBLE SILICONE RANGE

Description	Model	Packaging
Heating cable 2 m long, 1 m heating zone, 50 W, 230 V,	AKO-71370	10 units
Heating cable 2.3 m long, 1.3 m heating zone 65 W, 230 V,	AKO-71371	10 units
Heating cable 2.5 m long, 1.5 m heating zone 75 W, 230 V,	AKO-71372	10 units
Heating cable 3 m long, 2 m heating zone 100 W, 230 V,	AKO-71373	10 units
Heating cable 4 m long, 3 m heating zone 150 W, 230 V,	AKO-71374	10 units
Heating cable 5 m long, 4 m heating zone 200 W, 230 V,	AKO-71375	10 units
Heating cable 6 m long, 5 m heating zone 300 W, 230 V,	AKO-71376	10 units
Heating cable 7 m long, 6 m heating zone 300 W, 300 V,	AKO-71377	10 units
Heating cable 9 m long, 8 m heating zone 400 W, 230 V,	AKO-71379	10 units

15 W/M FLEXIBLE SILICONE RANGE

Description	Model	Packaging
Heating cable 2.5 m long, 1.5 m heating zone, 22.5 W, 230 V,	AKO-71382	10 units
Heating cable 3 m long, 2 m heating zone, 30 W, 230 V,	AKO-71383	10 units
Heating cable 4 m long, 3 m heating zone, 45 W, 230 V,	AKO-71384	10 units
Heating cable 5 m long, 4 m heating zone, 60 W, 230 V,	AKO-71385	10 units
Heating cable 6 m long, 5 m heating zone, 75 W, 230 V,	AKO-71386	10 units
Heating cable 7 m long, 6 m heating zone, 90 W, 230 V,	AKO-71387	10 units
Heating cable 8 m long, 7 m heating zone, 105 W, 230 V,	AKO-71388	10 units
Heating cable 9 m long, 8 m heating zone, 120 W, 230 V,	AKO-71389	10 units



9.

LEVEL CONTROLLERS FOR LIQUIDS AND SOLIDS

01_ **LEVEL SWITCH FOR CONDUCTIVE LIQUIDS**

02_ **LEVEL SWITCH FOR CLEAN WATER**

03_ **LEVEL SWITCH FOR CORROSIVE LIQUIDS**

04_ **LEVEL SWITCH FOR SOLIDS**

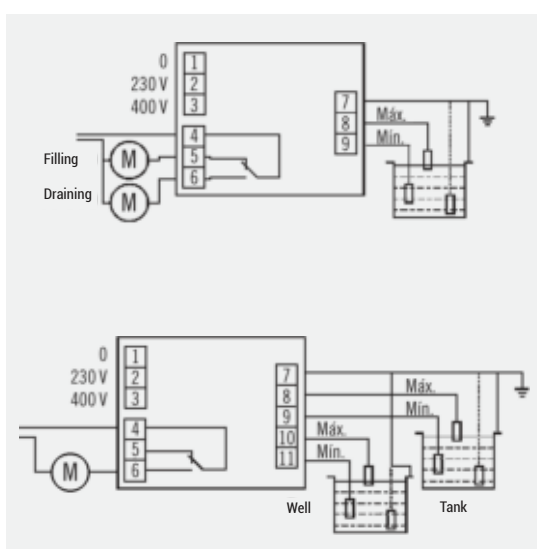
01_ LEVEL SWITCH FOR CONDUCTIVE LIQUIDS

ELECTRONIC RELAYS FOR CONDUCTIVE LIQUIDS, DIN RAIL BOX

APPLICATIONS

Level switch in wells and reservoirs of conductive liquids

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

Protection against storm disturbances using varistors at the power supply and probe inputs.

- Maximum length of 200 metres.
- For DIN rail and plug-in terminals.
- Sensitivity regulation.
- Stainless steel electrode probe with protector.

MODELS

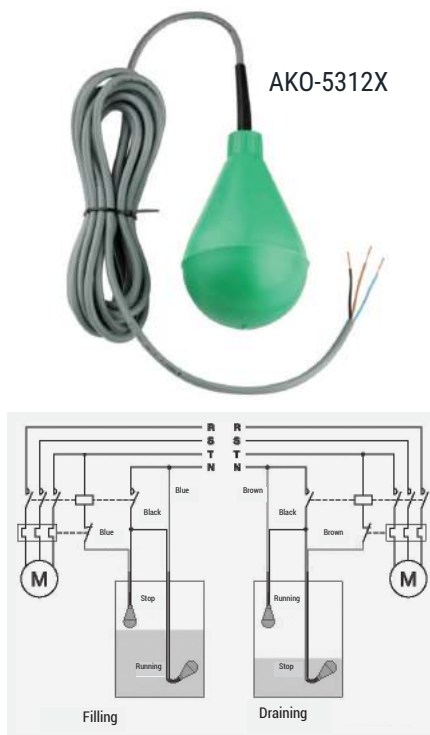
Description	Model	Packaging
230/400 V relay for well or tank	AKO-53171	6 units
230/400 V relay for well + tank	AKO-53172	6 units
Stainless steel electrode probe with protector	AKO-53173	18 units

02_ LEVEL SWITCH FOR CLEAN WATER

APPLICATIONS

Level switch for clean water and general applications.

ELECTRICAL CONNECTIONS



TECHNICAL SPECIFICATIONS

AKO-5312X:

- Usable in densities between 0.95 and 1.10 Kg/dm³.
- Working temperature between 0 °C to 60 °C.
- Maximum working pressure 4 bar at +20 °C.
- 10 A inverter microswitch, 250 V~, (1/2 hp).
- Polypropylene cover.
- PVC cable.

AKO-5311X:

- Working temperature between 0 °C to 60 °C.
- 10(4) A, 250~ inverter microswitch.
- Nominal dimensions 81 x 131x 41.5 mm.
- Polypropylene cover.
- By adjusting the distance from the counterweight, the maximum and minimum levels are controlled.

MODELS

Description	Model	Packaging
Level switch with 10 m cable	AKO-53124	1 unit
Level switch with 15 m cable	AKO-53125	1 unit
Level switch with 20 m cable	AKO-53126	1 unit
Level switch with 30 m cable	AKO-53127	1 unit
Level switch with 2 m cable and counterweight	AKO-53112	25 units
Level switch with 10 m cable and counterweight	AKO-53114	12 units

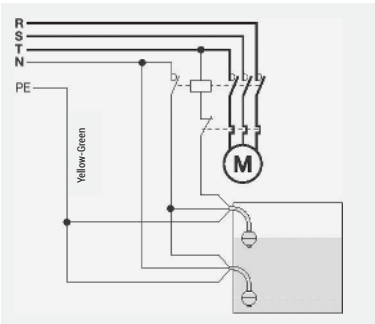
03_ LEVEL SWITCH FOR CORROSIVE LIQUIDS

APPLICATIONS

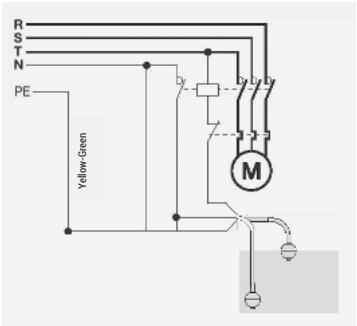
Level switch in wells and tanks of corrosive liquids and temperatures of up to 125°C.

ELECTRICAL CONNECTIONS

For horizontal surfaces:



For vertical surfaces:



TECHNICAL SPECIFICATIONS

Made of stainless steel AISI 316 for high resistance to corrosion.

- Working temperature between -20 °C to +125 °C.
- Includes 1m of 3 x 0.5mm² silicone cable.

MODELS

Description	Model	Packaging
Horizontal surface 60 VA, 250~, 40 bar, Ø 52 mm	AKO-53161	1 unit
Horizontal surface 40 VA, 250~, 15 bar, Ø 30 mm	AKO-53165	1 unit
Vertical surface 60 VA, 250~, 40 bar, Ø 52 mm	AKO-53162	1 unit
Vertical surface 40 VA, 250~, 15 bar, Ø 30 mm	AKO-53166	1 unit

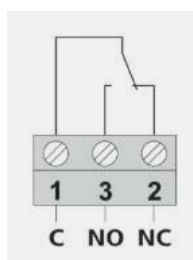
04_ LEVEL SWITCH FOR SOLIDS

APPLICATIONS

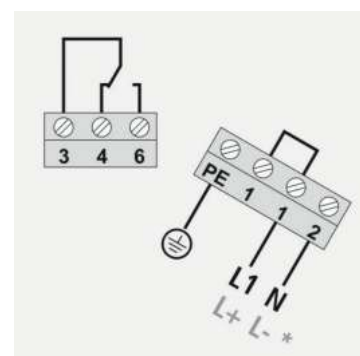
Level switch for solids.

ELECTRICAL CONNECTIONS

Membrane system:



Rotating vane system:



TECHNICAL SPECIFICATIONS

Membrane system:

It is used in the signalling, control and regulation of dry products in the form of grain or powder that have a maximum diameter of 30 mm and a density of between 0.3 and 2.5 g/cm³ and that flow through a silo, hopper or duct.

- Minimum sensitivity 60 grams.
- Working temperature between -20 °C to +80 °C
- Microswitch contact, 15 A, 250 V~
- Membrane made from nitrile material Buna N.
- Polypropylene box reinforced with fibreglass.

Rotating vane system:

It is used in the signalling, control and regulation of dry products in the form of grain or powder that have a maximum diameter of 15 mm and that flow through a silo, hopper or duct.

- 5 r.p.m. rotation speed.
- Working temperature between -20 °C to +60 °C
- Power supply 230 V~ ±10%, 50/60 Hz.
- Microswitch contact, 6 A, 250 V~
- ABS box with fibreglass.

MODELS

Description	Model	Packaging
Membrane system level switch	AKO-5330	1 unit
Level switch with rotating vane, 230 Vac	AKO-5335/230 Vac	1 unit
Level switch with rotating vane, 24 Vdc	AKO-5335/24 Vdc	1 unit
Level switch with rotating vane, 24 Vac	AKO-5335/24 Vac	1 unit
Level switch with rotating vane, 115 Vac	AKO-5335/115 Vac	1 unit

General sales conditions

01_ The prices in euros indicated do not include taxes, apply to materials placed in your our workshops (collect on delivery) including normal packaging but not the carriage charges for the merchandise sent on account and risk of the buyer.

02_ For products that are included in studies or budgets that include custom design, prices are set independently for each one.

03_ The prices and conditions are for materials delivered in pack units. The ones marked with: (A) Packaging lengths in metres are standard, however we reserve the right to deliver in lengths other than those indicated. (B) Minimum and indivisible packaging units.

04_ The minimum order value of 200,00 Euros (net invoice value) must be taken into consideration for each sale. For exports, a fixed cost (40,00 Euros) may be charged on each order.

05_ Our warehouses do not accept returns of goods without the E.M. number pertaining to the prior authorisation of entry. In any case a devaluation will occur for revision and checking.

06_ No returns will be accepted after 48 hours from the confirmation of order acceptance.

07_ We offer our customers the payment methods stipulated in accordance with the law 15/2010. Our sales collections are insured by companies such as "Cesce" or another similar one. The payment of the first order will be made in cash until the credit sale is authorised.

08_ The payment method for credits sales will be agreed on in each case after authorised by the Insurance Company. The sales conditions will depend on the payment term.

09_ The information in this catalogue is for information purposes only. We reserve the right to supply materials that may differ slightly from those in this publication.

Warranty conditions

01_ AKO Electromecànica, S.A.L. guarantees its products for a period of 2 years from the date of sale.

02_ This warranty covers the return or replacement of defective parts, materials or equipment attributable to manufacturing defects. The user bears the cost of sending the defective items to AKO's facilities.

03_ AKO will not accept any returns that have not been previously authorised.

04_ Replacement of defective parts, materials or equipment does not imply an extension of the warranty.

05_ Claims for an error in quantity and/or model will not be valid after 10 days from the delivery date.

06_ Breakdown or deterioration due to the use of the products for purposes other than that intended, or due to their improper installation and use, are excluded from this warranty.

07_ Parts, materials or equipment that have been handled by persons unauthorised by AKO are excluded from this warranty.

08_ Product failures due to catastrophic causes (fire, floods...), atmospheric, blows and falls are excluded from this warranty.

09_ AKO is not liable for direct or indirect damage caused by breakdown or defect of its materials or products, and any other claim that may arise from them, unless the law so requires.

10_ To validate the guarantee, the materials or products must be accompanied by the purchase invoice.

Presence in over 70 countries



AKO ELECTROMECÁNICA, S.A.L.

Avda. Roquetes, 30-38
08812 Sant Pere de Ribes
(Barcelona) Spain
Tel.: +34 938 142 700 | Fax: +34 938 934 054
Customer Service: +34 902 333 145

AKO ELECTROMECÁNICA MÉXICO, S.A. DE C.V.

Pº de la Reforma, 296
Piso 40 - Oficina B134
06600 Colonia Juárez
Ciudad de México
Tel.: +52 5553 635 780

EMEA – EUROPA / ORIENTE MEDIO / AFRICA

emea@ako.com

A&P – ASIA Y PACIFICO

a&p@ako.com

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