1- Installation

- To ensure a correct reading, the probe must be situated in a location without any external heat influences except for the temperature which is being measured or controlled.
- The power supply circuit must be provided with a main switch rated at at least 2 A, 230 V, located close to the equipment. The cables will enter through the back and should be type H05VV-F or H05V-K.
- The gauge will depend on local regulations, but should in no case be less than 1 mm².
- Connecting wires for the relay contacts should be sized 2.5 mm².
- Between -40 °C and +20 °C, if the probe NTC is prolonged till 1,000 m with a minimum of cable 0.5 mm², the maximum deviation will be of 0.25 °C (extension cable for probe ref. AKO-15586).
- AKO accepts no responsibility for the misuse or improper installation of the switches provided.

NOTE: Equipment not compatible with AKO-14917 (external communication module) and AKO-14918 (programming key).

3- Wiring

The probe and its cable should NEVER be installed in the same conduit as power, control or supply cables.

4- Operation

ESC key / (Only models with 4 keys)
Press for 5 seconds to start/stop Fast Freezing mode (rapid cooling).
In the programming menu, exit without saving parameter, return to previous level or exit programming.

SET key
Press for 5 seconds to modify the set point (SP).
Press for 10 seconds to go to the programming menu.
In the programming menu, go to the level displayed or accept the new value while setting a parameter.

Up key ▲ /
Pressing for 5 seconds starts/stops defrosting.
The programming menu, allows you to scroll through the various levels or, during the setting of a parameter, to change the value.

Down key ▼ /
Pressing for 5 seconds activates Standby mode, pressing for 2 seconds returns the equipment to normal mode. In Standby mode, the equipment performs no actions and only the indicator is displayed on the screen.
The programming menu, allows you to scroll through the various levels or, during the setting of a parameter, to change the value.

4.1- Access to set point and programming

5- Start-up

On power-up, the equipment will start up in Wizard mode (In 1 / 1 flashing), press ▲ or ▼ to select the most appropriate application and press SET.

1: Multipurpose
2: Frozen
3: Fruits and vegetables
4: Fresh fish
5: Soft Drinks
6: Bottle racks
7: AC
8: Heat / Incubators

The wizard will configure the parameters of the equipment for the chosen application (see table “Default settings by application”).
Def. column shows factory-set default parameters. Those marked with * are variable parameters depending on the application chosen in the wizard or the P3 parameter (see table "Default parameters by application"). Not indicated otherwise, the temperature values are in °C. (Equivalent values in °F).

### 6 - Table of parameters and messages

**WARNING:** The default parameters by type of application have been defined for the most common applications. Check that these parameters are suitable for your installation.

#### 7 - Technical specifications

**Power supply**  
AKO-D10123  
230V – ±10% 50/60 Hz 3.5VA  
AKO-D10223/D10323  
230V – ±10% 50/60 Hz 3.75VA

Maximum Voltage SELV circuits  
20V

Inputs (According to P4)  
AKO-D10123  
1 input NTC/PTC + 1 digital input  
AKO-D10223/D10323  
2 inputs NTC/PTC + 2 digital inputs

### Relay COOL 16 A  
(EN60730-1: 16(10)A 24V–)

Relay FAN 6A  
(EN60730-1: 3(5)A 24V–)

Relay AUX 8A  
(EN60730-1: 8(6)A 24V–)

Number of fan stages  
(EN60730-1: 100% of operations) Switches  
16A 125Vac, 10A 250Vac 105 °C

Types of probe  
NTO AKO-143xx/ PTC AKO-155xx

Measurement range NTC  
-50.0°C to +99.9°C (-58.0 ºF to 211 ºF) PTC  
-50.0°C to +150.0°C (-58.0 ºF to 302 ºF)

Resolution  
0.1°C

Working environment  
-10 to 50 °C, humidity <90 %

Ambient storage humidity  
-30 to 70 °C, humidity <90 %

Class of protection – front panel  
IP54

Fixed...  
Panel-mounted with anchors

Panel cutout dimensions  
136 x 29 mm

Front panel dimensions  
181 x 38 mm

Depth A  
43 mm

AKO-D10123/D10323  
61 mm

Connections  
Screw terminals for cables up to 2.5 mm²

Rating of control device: built-in, automatic operation feature Type 1B, for use in clean environments, multimedia, software and continuous operation; pollution classification 2; EN-IE 60730-1 Double insulation between supply, secondary circuit and relay output.

Rated pulse voltage  
2500V

Temperature during ball-pressure test  
Accessible parts.  
75 °C

Voltage and current as per EMC tests  
207 V, 17 mA

Current of radio jamming suppression tests  
270 mA