Installation
The unit must be installed in a place protected from vibrations, water and corrosive gases, and where the ambient temperature does not surpass the values specified in the technical data.
In order to give a correct reading, the probe has to be installed in a place without heat influences other than the temperature that is to be measured or controlled.

Wiring

The probe and its lead should NEVER be installed in ducting along with power, control or power supply wiring.
The power supply circuit should be connected with a minimum 2A, 230V, switch located close to the unit. The cables should be of the type H05VV-F 2x0,5 mm² or H05V-K 0,5 mm².
Section of connecting wires for relays contacts must be between 1 mm² and 2,5 mm².

Adjustment and configuration (AKO-14615 only)
It should only be programmed or modified by personnel who are fully conversant with the equipment operation and possibilities.

Adjusting the set point temperature
The factory SET POINT default value is 0 ºC.
-Press ▼ key for at least 5 seconds to DISPLAY SET POINT. It displays the CURRENT SET POINT value and LED “ON” starts flashing.
-Press ▲ or ▼ keys to CHANGE SET POINT into the required value.

Parameters configuration
LEVEL 1 PARAMETERS:
-Press ▲ + ▼ keys simultaneously to DISPLAY SET POINT. The display returns to the current temperature display status and LED “ON” stops flashing.

LEVEL 2 VALUES:
-To DISPLAY CURRENT VALUE of any parameter, select the required one and press ▲ + ▼ keys simultaneously. Once it is displayed, pressing ▲ or ▼ key can CHANGE VALUE.
-Press ▲ + ▼ keys simultaneously to ACCEPT THE NEW VALUE. The programming returns to LEVEL 1 PARAMETERS.

NOTE: If a key is not pressed for 25 seconds in any of the previous steps, then the equipment will automatically return to the current temperature display situation without modifying any of the values.

NOTE: When the time parameters are modified, the new values are applied once the current cycle is completed. In order for it to have an immediate effect, switch the controller off and then on again.
Operation

AKO-14615

AKO-14605

UP key ▲
- When pressed for at least 5 seconds, a manual defrost is started with programmed duration.
- In programming, it increases the value being displayed.

DOWN key ▼
- When pressed for at least 5 seconds, it displays the SET POINT temperature value.
- In programming, it decreases the value being displayed.

LED DEF
Permanent: Indicates defrost in operation.

LED ON
Permanent: Indicates compressor relay is ON.

Flashing: Set Point or parameter programming phase.

Relay control

Operation for COLD (P0=0)

Operation for HEAT (P0=1)

Maintenance and warnings

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

The use of the unit without observing the manufacturer’s instructions may alter its safety qualification.

To ensure correct operation of the apparatus, only NTC type probes supplied by AKO should be used.

Between -40ºC and +20ºC, when probes is extended with minimum 0,5 mm up to 1000m cable, deviation will be less than 0,25 ºC (Sensor prolongation cable ref. AKO-15586).

The diagrams in this instructions represent concepts, the rating plate of each unit includes its diagram with terminal numbering for correct connection.

Technical data

Display ................................................................. 2 Digits de -50ºC to 99ºC
Sensor ................................................................. NTC 1,5m included
Power supply......................................................... 230 V~ ± 10%, 50/60Hz
Relay ................................................................. Control (compressor) R16(4)A, 250V, cos Φ=1, SPST
Connector for parameter transfer
Thermometric accuracy .................................................. ±1 ºC
Probe tolerance at 25 ºC ................................................ ±0,4 ºC
Maximum input power .................................................. 4VA
Working ambient temperature ........................................... 5ºC to 50ºC
Storage ambient temperature ........................................... -20ºC to 70ºC
Double insulation between the power supply, the secondary circuit and the relay output.
Installation category II under CEI 664 standard.

Accessories

PORTABLE SERVER

AKO-14918 portable server, with no power supply, in which parameters programmed in a powered controller can be copied by transfer. Parameters can be transferred again from the server to other identical powered controllers.

Parameters and messages

The values in the Def. column are factory-set.

Level 2 Control DEFRST (If P0=0 Cool)

Level 3 Description Values Min. Def. Max
C0 Probe calibration (Offset) (ºC/ºF) -20 0.0 20
C1 Probe 1 differential (Hysteresis) (ºC/ºF) 1 2 20
C2 Set point upper limit (It cannot be set above this value) (ºC/ºF) C3 99 99
C3 Set point lower limit (It cannot be set below this value) (ºC/ºF) -50 -50 C2
C4 Compressor protection delay type: 0=OFF/ON (From de last to switch-off) 1=ON (At switch-on)
C5 Protection delay time (Value for the option selected for parameter C4) (min.) 0 0 99
C7 COOL "relay (Compressor) ON in case of sensor 1 failure (if C7=0 and C8=0, the relay will always be OFF de-energised)
C8 "COOL" relay (Compressor) OFF in case of sensor 1 failure (if C8=0 and C7=0, the relay will always be ON energised)

Level 2 Control access and information

Level 3 Description Values Min. Def. Max
L5 Access parameter to parameters and information 0 0 99
L6 Parameters transfer: 0=Disabled; 1=Send; 2=Receive 0 0 2
PU Program version (Information) -

Level 2 General status

Level 3 Description Values Min. Def. Max
P0 Type of operation: 0=Cold; 1=Heat 0 0 1
P1 Delay of all functions on power supply switch on (min.) 0 0 99
P2 Allocation of password to Set Point: 0=Without allocation; 1=With allocation of LS password 0 0 2
P3 Initial parameters: 1=YES, configure to “Def” and exit programming (if P2=0)
P5 Address for units with communication (Not activated) 0 0 99
P7 Temperature display mode: 0=Integers in ºC; 1=Integers in ºF 0 1 3
EP Exit programming

MESSAGES

dF It indicates defrosting is being carried out. In order to display “df” during defrosting, it is essential that parameter d2 is set to option 2.
E1 Probe failure (Open circuit, crossed, temp.> 39ºC/99ºF or temp.< -55ºC/-58ºF)
- Temperature > 99 ºC/ºF
EE Memory failure
PA Password request to enter in programming parameters or SET POINT