

PARAMETER DESCRIPTION:

In order to program the Set Point, see
ADJUSTING THE SET POINT TEMPERATURE

The values in the DEF column are factory-set, and will return to these values if a reset is performed by means of the P3 programming parameter. In such a case, the parameters will automatically take on the values listed in the DEF column.

The parameters are divided into five groups in accordance with how they mainly affect:

- Cooling control (compressor).
- Defrost control (electric heat / hot gas bypass).
- Evaporator fan control.
- Temperature alarm control.
- General equipment status.

The probes corresponding to:

Probe 1: For the room temperature to be controlled

Probe 2: For the evaporator temperature

COOLING CONTROL PARAMETERS (COMPRESSOR, ...)

PARAMETER	DESCRIPTION	RANGE		VALUE DEF.
		MIN.	MAX.	
C0	Probe 1 calibration (Offset) Temperature increase / decrease that is added to the temperature detected by the thermostat in order to adjust the probe to the true value.	-20°C	+20°C	0°C
C1	Probe 1 differential (hysteresis) Temperature increase above that indicated by the SET POINT so that the relay energizes.	1°C	20°C	2°C
C2	Maximum SET POINT limiter It is not possible to fix a SET POINT above this value.	xx°C	99°C	99°C
C3	Minimum SET POINT limiter It is not possible to fix a SET POINT below this value.	-50°C	xx°C	-50°C
C4	Type of delay for compressor protection 0=(OFF/ON): Delay to relay energizing since its last deenergizing. 1=(ON): Delay to relay energizing since the temperature order energize it.	0	1	0
C5	Protection delay time Numerical value for the option selected at parameter C4.	0 min.	99 min.	0 min.
C6	COOL relay status with probe 1 failure. 0=OFF 1=ON 2=OFF/ON operating sequence in accordance with that programmed at C7 and C8.	0	2	1
C7	Time that COOL relay is ON in case of probe 1 failure. The period during which the controller remains with the COOL relay energized (ON), (example, compressor functioning). Programming C7=0 and C8=0, the relay is always de-energized (OFF).	0 min.	99 min.	10 min.
C8	Time that COOL relay is OFF in case of probe 1 failure. The period during which the controller remains with the COOL relay de-energized (OFF), (example, compressor stopped). Programming C8=0 and C7=0, the relay is always energized (ON).	0 min.	99 min.	5 min.

DEFROST CONTROL PARAMETERS (ELECTRIC HEAT OR HOT GAS BYPASS)				
d0	Defrost frequency Time between 2 defrost starts.	0 h	99 h	6 h
d1	Defrost duration During this time, LED 5, defrost indicator, will be lit. If the defrost operation by temperature has not been completed when this time period elapses, it will be terminated by time, and LED 1, "DT" will be permanently lit.	0 min.	99 min.	30 min.
d2	Type of message during defrost 0=The controller will display the true temperature 1=The controller will display the initial defrost temperature 2=The controller will display the "def" message	0	2	2
d3	Maximum added message time after defrost At the end of this delay the controller will return to the situation of displaying the temperature.	0 min	99 min	5 min.
d4	Final defrost temperature by probe 2	-50°C	99°C	8°C
d5	Defrost on equipment switch-on? 0=no, the first defrost will performed in accordance with d0 1=yes, the first defrost will performed in accordance with d6	0	1	0
d6	Defrost start-up delay on equipment switch-on If d5 is set to 1=yes, the first defrost will be carried out at the end of the minutes set by parameter d6.	0 min.	99 min.	0 min.

d7	Defrost type 0=Electric heat (DEF Relay = on, COOL Relay = off). 1=Hot Gas bypass (DEF Relay = on, COOL Relay = on).	0	1	0
d8	Calculation of time between defrost periods 0=Real-time total 1=Sum of compressor operating time.	0	1	0
d9	Drip time Time during which the compressor and fans remain off at the end of defrost.	0 min.	99 min.	1 min.

EVAPORATOR FAN CONTROL PARAMETERS				
F0	Fan stop temperature by probe 2	-50°C	99°C	4°C
F1	Probe 2 differential (and alarms) Temperature decrease below probe 2 stop (F0) so that the FAN relay switches.	1°C	50°C	2°C
F2	Operation with compressor stopped If F2 is set to 0=no, then the fans will remain off when the compressor is stopped. This has no effect during defrost.	0	1	1
F3	Stopped during defrost? If F3 is set to 1=yes, then the fans remain off during defrost.	0	1	1
F4	Delay start-up after defrost Time during which the fans remain off at the end of defrost (if is higher than d9).	0 min.	99 min.	3 min.

TEMPERATURE ALARM CONTROL PARAMETERS				
A1	Probe 1 maximum temperature alarm relative to the Set Point. Alarm temperature, above Set Point, at which the equipment will display message AH (and activate the acoustic alarm in the case of AKO-14312).	0=off	99°C	0=off
A2	Probe 1 minimum temperature alarm relative to the Set Point. Alarm temperature, below Set Point, at which the equipment will display message AL (and activate the acoustic alarm in the case of AKO-14312).	0=off	99°C	0=off
A3	Delay for all the alarms at start-up. If programmed alarms are detected in A1 and A2, the alarms are activated after equipment start-up when the number of minutes set in A3 expire.	0=off	120 min.	0=off
A4	Delay for all the alarms after defrost Time during which the alarms are deactivated at the end of defrost.	0=off	99 min.	0=off
A5	Alarm delay Time during which the alarms are deactivated from when the temperature commands activation until they are actually activated.	0=off	99 min.	30 min.

GENERAL EQUIPMENT STATUS PARAMETERS				
P1	Delay for all functions Delay for all functions when the apparatus receives electric power.	0 min.	99 min.	0 min.
P2	Blocking programmed parameters 1=yes, option that blocks the possibility of modifying the programmed parameters. 0=no, option to cancel the previous one.	0	1	0
P3	Return to initial parameters 1=yes, configures all the equipment parameters with the values held in the DEF column of these instructions and immediately exits programming.		1	
P4	Probe 2 connected? In the situation where evaporator probe operation is not required, program this parameter to 0.	0=no	1=yes	1=yes
EP	Exit programming			

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.

OPERATIONAL MESSAGES:

DISPLAY	STATUS	DESCRIPTION
def	Fixed	Indicates that defrost is being performed. In order for "def" to appear in the display during defrost the d2 parameter should be set to option 2.
AH	Intermittent with temperature	The temperature read by probe 1 exceeds the "probe 1 maximum temperature alarm", which is programmed for parameter A1.
AL	Intermittent with temperature	The temperature read by probe 1 is lower than the "probe 1 minimum temperature alarm", which is programmed for parameter A2.
E1	Fixed	Probe 1 failure (open circuit, shorted, temperature > 110°C or temperature < -55°C). The equipment continues to perform manual and/or programmed defrost cycles. Automatic return after open probes without any need to disconnect the equipment for the mains power.
E2	Fixed or intermittent with E1	Probe 2 failure (open circuit, shorted, temperature > 110°C or temperature < -55°C). Message E2 is not displayed if programming parameter P4 is set to 0. When message E2 is displayed, probe 1 temperature continues to be displayed intermittently. The operation of the equipment under these conditions is the same as if parameter P4 had been programmed with option 0 (probe 2 not connected). Automatic return after open probes without any need to disconnect the equipment for the mains power.
E1/E2	Intermittent	Equipment operation is the same as for section E1.
EE	Fixed	Memory failure.

MAINTENANCE:

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

WARNINGS:

If this equipment is used without respecting the manufacturer's instructions, then the safety requirements might be changed.

The controller belongs to INSTALLATION CATEGORY II, in accordance with the CEI 664 standard.

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