

SAFETY STANDARD: In compliance with the European laws.

Installation precautions:

- the connection cables should be suitable for up to 90 °C operation;
- for 12 Vac models use Class II transformers. In order to comply with standards on immunity (surge), the transformer should be chosen among recommended models (see CAREL's Price Lists);
- consider a distance of at least 10mm from the case and the conductive parts nearby;
- the connections of the digital and analogic inputs, which are placed at less than 30m of distance. It is necessary to adopt the right measures of separation of the cables in order to comply with immunity laws.

Warning: Block properly the output connection cables to avoid any contact with parts with very low safety voltage.

DISPLAY

During normal working conditions, the display shows the value measured by the regulation probe or by the second probe (parameter A). In case of active alarm, the temperature flashes alternatively to the code alarm.

ALARMS AND SIGNALS

Alarm code	Description
E0	fault regulation probe
E1	evaporator product/food probe fault digital input alarm
LO	low temperature alarm (AL, Ad and A0 parameters)
HI	high temperature alarm (AH, Ad and A0 parameters)
EE	data acquisition failure (see the manual for the default procedure)
Ed	timeout-ended defrost (dt, dP and r3parameters)
dF	defrost in progress

OPERATING INSTRUCTIONS FOR THE KEYPAD OR DISPLAY

LED Button , or the LED on the display indicates compressor ON;

LED Button , or the LED on the display indicates defrosting ON;

LED Button , or the LED on the display indicates presence of alarms.

When flashing, the LEDs indicate an activation request that cannot be completed until the expiry of the corresponding delay time.

Note: the versions with the signal LEDs on the backlit buttons do not have the status LEDs on the display, and vice-versa.

SET-POINT (desired temperature value)

- Press the SET button for 1 s to display the set point value;
- After few seconds, the set value blinks;

- Press UP or DOWN to increase or decrease the set-point value; press the button once/more to confirm the new value.

MANUAL DEFROST

Besides the automatic defrost; it is possible to activate a manual defrost by pressing the button for more than 5 seconds (it occurs only in the appropriate temperature conditions).

ACCESS AND MODIFICATION OF THE FREQUENT PARAMETERS (F TYPE)

- Press the button for more than 5 s (in case of alarm, first silence the buzzer); the display displays PS;
- Press or to show the parameter whose value has to be changed; press to display the associated value;
- Press or to change the value;
- Press to temporarily confirm the new value and go back to display the parameter code;

Storage of the new values; press at least for 5 seconds to store the new value and exit the "PARAMETERS MODIFICATION" procedure. For timing parameters only; switch off and switch on the controller in order to make them immediately effective without waiting for the following cycle. To exit without modifying any parameter: do not press any button for at least 60 seconds (TIME OUT).

LIST OF PARAMETERS TYPE F

Parameter	Type	Min	Max	U.M.	Def	Value*
PS PASSWORD	F	00	199	-	22	
I PROBE PARAMETERS						
/C ambient probe calibration(x 0,1 °C/°F)	F	-127	127	°C/°F	0.0	
r REGULATOR PARAMETERS						
r Regulator differential (hysteresis 0= 0.5 °C/°F)	F	0	19	°C/°F	2	
d DEFROST PARAMETERS						
dt Time interval between two defrost cycles	F	0	199	hours	8	
dP End defrost temperature	F	-50	127	°C/°F	4	
dP Max defrost duration or effective duration if d0= 2 or 3	F	1	199	min	30	
dd Dripping time after defrost	F	0	15	min	2	
dB Alarm delay after defrost	F	0	15	hours	1	

dB Alarm delay after defrost	F	0	15	hours	
d/ Temperatura defrost probe display	F	-	-	°C/°F	
A ALARM PARAMETERS					
AL Low temperature alarm (max. variation as to the set point). AL=0 excluded Low temperature alarm	F	0	127	°C/°F	
AH High temperature alarm (max. variation as to the set point). AH=0 excluded High temperature alarm	F	0	127	°C/°F	
F FAN PARAMETERS (These parameters are available only for C model)					
F1 Fan power on temperature	F	-50	127	°C/°F	
Fd Stop after dripping ON for each F0 value	F	0	15	min	
H OTHER SELECTIONS					
T External parameter programming	F	-99	199	-	
H5 Identification code for programming key (programmed by supervisor)	F	-99	99	-	

ACCESS AND MODIFICATION OF THE CONFIGURATION PARAMETERS (C TYPE)
Configuration parameters (type C in the table); a PASSWORD is required to enter.

- Press for more than 5 s, after the set point, PS will be displayed;
- Press , the using or select 22 value (PASSWORD); press to confirm;
- Press or up to show the parameter that has to be changed; press to display associated value;
- Press or to change the value;
- Press to temporarily confirm the new value and go back to the parameter code display.

LIST OF PARAMETERS TYPE C

Parameter	Type	Min	Max	U.M.
I PROBE PARAMETERS				
/2 Measurement stability	C	1	15	-
/4 probe display:				
0= regulation probe,	C	0	1	flag
1= product food probe (second probe)	C	0	1	flag
/5 °C/°F (0= °C, 1= °F)	C	0	1	flag
r REGULATOR PARAMETERS				
r1 Minimum allowable set	C	-50	r2	°C/°F
r2 Maximum allowable set	C	r1	127	°C/°F
r3 Enabling Ed alarm: max duration of defrost is reached (0= no, 1= yes)	C	0	1	flag
r4 Automatic variation of the set point with closed curtain-switch (A4= 4)	C	-20	20	°C/°F
e COMPRESSOR PARAMETERS				
e0 Delay in the compressor start-up after switch-on	C	0	15	min
e1 Minimum time between two following compressor start-ups	C	0	15	min
e2 Compressor shutdown minimum time	C	0	15	min
e3 Compressor operation minimum time	C	0	15	min
e4 Safety compressor (0= OFF, 100= ON)	C	0	100	min
cc Continuous cycle duration	C	0	15	hours
e8 Alarm delay after continuous cycle	C	0	15	hours
d DEFROST PARAMETERS				
d0 defrost type (0=heater, 1=hot gas, 2= time resistance, 3= time hot gas)	C	0	3	flag
d4 Defrost after start-up (0=no, 1=yes)	C	0	1	flag
d5 Delay defrost after control Switch-On or from digital input (A4 or A5=4)	C	0	199	min
d6 Block of temperature display during defrost (0= no, 1= yes)	C	0	1	flag
d9 defrost priority over anticogging protections (0= no, 1= yes)	C	0	1	flag
dC Time base (0= hours/min, 1= min/s) Only for dt and dP	C	0	1	flag
A ALARM PARAMETERS				
A0 Alarms and fans differential (0= 0.5 °C/°F)	C	0	19	°C/°F
Ad Temperature alarm delay	C	0	199	min
A7 Measurement delay time for the input "delayed alarm" (A4 or A5= 2)	C	0	199	min
F FAN PARAMETERS (These parameters are available only for C model)				
F0 Management of fans:				
0= fans ON, specific phases excluded (F2, F3 and Fd)				
1= fans ON (dependent on parameter F1)				
specific phases excluded				
F2 Still fans when the compressor is still (0= no, 1= yes)	C	0	1	flag
F3 Fans OFF during defrost (0= no, 1= yes)	C	0	1	flag
H OTHER SELECTIONS				
H0 Serial address	C	0	199	-
H1 Selection of the alarm relay operation:				
0= alarm ON, energized relay,				
1= alarm ON, disenergized relay,				
H2 0= disabled buttons; 1= enabled buttons	C	0	1	flag

* show the set value

NU*: not used parameter, leave the default value