



PRG/MUTE BUTTON



Pressing the button alone:

- pressed for more than 5" accesses the menu for setting type "F" (see parameters in bold) ;

- silences the audible alarm (buzzer) and disables the alarm relay

Pressing together with other buttons:

- pressed for more than 5":
 - SET: accesses the menu for setting the type "C";
 - UP/AUX: resets any alarm

Default value reset:

- pressed for more than 5" startup:
 - enable the reset procedure.

Automatic address assignment (during supervisory program installation):

- pressed for 1":
 - enters the automatic address assigning procedure.

UP/AUX BUTTON



Pressing the button alone:

- pressed for 1":
 - enables/disables the auxiliary output.

Pressing together with other buttons:

- pressed for more than 5":
 - DOWN/DEF: enables/disables the continuous cycle operation;
 - SET: start the procedure for printing the reports (if the printer interface is connected to the controller);
 - PRG: resets any active alarm with manual reset.

DOWN/DEF BUTTON



Pressing the button alone:

- pressed for 5":
 - enables/disables a manual defrost (only with the right temp. conditions).

Pressing together with other buttons:

- pressed for 5":
 - UP/AUX: enables/disables the continuous cycle operation;
- pressed for 1":
 - SET: displays a submenu with the HACCP alarm parameters (HA, HAn, HF, HFn)

SET BUTTON



Pressing the button alone:

- pressed for 1":
 - displays and/or set the set point.
- Pressing together with other buttons:

- pressed for 5":
 - PRG: accesses the menu for setting the type "C" parameters;
 - UP/AUX: starts the procedure for printing the report (if the printer interface is connected to the controller);
- pressed for 1":
 - DOWN/DEF: displays a submenu with the HACCP alarm parameters (HA, HAn, HF, HFn).

To access the "F" parameters

- Press the PRG button for more than 5": the display shows the code of the first modifiable "St" parameter.

To access the "C" parameters

- Press PRG and SET buttons at the same time for more than 5"; the display will show the number "00";
- Press UP/AUX or DOWN/DEF buttons until display the number "22";
- Confirm by pressing the SET button; The display shows the code of the first modifiable "/2" parameter.

Modifying the parameters

After having displayed the parameter, either type "C" or type "F", proceed as follows:

- Press UP/AUX or DOWN/DEF buttons until reaching the parameter to be modified and press SET to display the associated value;
- Press SET to temporarily save the new value;
- Press PRG button for more than 5" to definitively save the new values of the modified parameters and thus exiting the parameter setting procedure.

Signals

Code	Event	Description
"dnL"	Signal	Download running
"rCt"	Signal	Enabled to the remote control programming
"Add"	Signal	Automatic address assignment procedure running
"Prt"	Signal	Report being printed
"LrH", "HrH"	Signal	Enable procedure of: LOW relative humidity, HIGH relative humidity
"ccb", "cCE"	Signal	Request to: START continuous cycle, END continuous cycle
"dFb", "dFE"	Signal	Request to: START defrost, END defrost
"On", "OFF"	Signal	Passing to: ON status, OFF status
"rES"	Signal	Manual reset alarm reset HACCP alarms reset Temperature monitoring reset

The buzzer is enabled if enabled by the parameter "H4".

The alarm relay is enabled if one of the auxiliary 1 and auxiliary 2 outputs ("H1" and "H5") has been given the function of alarm relay (normally closed or open).

Nota: the buzzer is disabled if the controller is connected to the CAREL supervisory system.

Code	Parameter	U.M.	Type	Def.	Max	Min
Pw	Password	-	C	22	200	0
/2	Measurement stability	-	C	4	15	1
/3	Probe display reaction	-	C	0	15	0
/4	Virtual probe	-	C	0	100	0
/5	Select °C or °F	flag	C	0	1	0
/6	Decimal point	flag	C	0	1	0
/tl	Display on internal terminal	-	C	1	6	1
/tE	Display on external terminal	-	C	0	6	0
/P	Select type of probe	-	C	0	2	0
/A2	Configuration of probe 2 (S models)	-	C	2	4	0
/A3	Configuration of probe 3	-	C	0	4	0
/A4	Configuration of probe 4	-	C	0	14	0
/A5	Configuration of probe 5	-	C	0	14	0
/c1	Calibration of probe 1	°C/°F	C	0.0	20	-20
/c2	Calibration of probe 2	°C/°F	C	0.0	20	-20
/c3	Calibration of probe 3	°C/°F	C	0.0	20	-20
/c4	Calibration of probe 4	°C/°F	C	0.0	20	-20
/c5	Calibration of probe 5	°C/°F	C	0.0	20	-20
St	Temperature set point	°C/°F	F	0.0	r2	r1
rd	Controller differential	°C/°F	F	2.0	20	0.1
rn	Neutral zone	°C/°F	C	4.0	60	0.0
rr	Delta reverse regulator with dead zone	°C/°F	C	2.0	20	0.1
r1	Minimum SET allowed	°C/°F	C	-50	r2	-50
r2	Maximum SET allowed	°C/°F	C	60	200	r1
r3	Operating mode	flag	C	0	2	0
r4	Automatic night-time set point variation	°C/°F	C	3.0	20	-20
r5	Enable temp.monitoring	flag	C	0	1	0
rt	Temp.monitoring interval	hours	F	-	999	0
rH	Max.temperature read	°C/°F	F	-	-	-
rL	Min.temperature read	°C/°F	F	-	-	-
c0	Comp.and fan start delay at start-up	min	C	0	15	0
c1	Min.time between successive starts	min	C	0	15	0
c2	Min.compressor OFF time	min	C	0	15	0
c3	Min.compressor ON time	min	C	0	15	0
c4	Duty setting	min	C	0	100	0
cc	Continuous cycle duration	hours	C	0	15	0
c6	Alarm bypass after continuous cycle	hours	C	2	15	0
c7	Maximum Pump-Down time	s	C	0	900	0
c8	Comp.start delay after open PD valve	sec	C	5	60	0
c9	Enable autostart with PD operation	flag	C	0	1	0
c10	Select Pump-Down by time or pressure	flag	C	0	1	0
c11	Second compressor delay	s	C	4	250	0
d0	Type of defrost	flag	C	0	4	0
dl	Interval between defrosts	hours	F	8	250	0
dt1	End defrost temperature	°C/°F	F	4.0	200	-50
dt2	End defrost evap./aux evap.	°C/°F	F	4.0	200	-50
dP1	Max.defrost duration,evap.	min	F	30	250	1
dP2	Max. defrost duration, aux evaporator	min	F	30	250	1
d3	Defrost start delay	min	C	0	250	0
d4	Enable defrost at startup	flag	C	0	1	0
d5	Defrost delay at startup	min	C	0	250	0
d6	Display off during defrost	-	C	1	2	0
dd	Dripping time after defrost	min	F	2	15	0
d8	Bypass alarms after defrost	hours	F	1	15	0
d9	Defrost priority over compressor protection	flag	C	0	1	0
d/1	Display defrost probe	°C/°F	F	-	-	-
d/2	Display defrost probe	°C/°F	F	-	-	-
dC	Base times for defrost	flag	C	0	1	0
d10	Compressor running time	hours	C	0	250	0
d11	Running time temp. threshold	°C/°F	C	1.0	20	-20
d12	Advanced defrost	-	C	0	3	0
dn	Nominal defrost time	-	C	65	100	1
dH	Proport. factor for variation in "dl"-	C	50	100	0	
A0	Alarm and fan differential	°C/°F	C	2.0	20	0.1
A1	Type of threshold for "AL"and "AH"	flag	C	0	1	0
AL	Low temp. alarm threshold	°C/°F	F	0.0	200	-50
AH	High temp. alarm threshold	°C/°F	F	0.0	200	-50
Ad	Low and high temp. alarm delay	min	F	120	250	0
A4	Configur.of digital input 1	-	C	0	14	0

Code	Parameter	U.M.	Type	Def.	Max	Min
A5	Configur.of digital input 2	-	C	0	14	0
A6	Stop compressor from external alarm	min	C	0	100	0
A7	External alarm detection delay	min	C	0	250	0
A8	Enable alarms "Ed1" and "Ed2"	flag	C	0	1	0
A9	Digital input config. 3	-	C	0	12	0
Ado	Door switch light management mode	flag	C	0	1	0
Ac	High condenser temp. alarm	°C/°F	C	70.0	200	0.0
AE	High cond.temperature alarm differential	°C/°F	C	10.0	20	0.1
AcD	High cond.temp.alarm delay	min	C	0	250	0
AF	Off time with light sensor	s	C	0	250	0
ALF	Antifreeze alarm threshold	°C/°F	C	-5.0	200	-50
AdF	Antifreeze alarm delay	min	C	1	15	0
F0	Fan management	flag	C	0	2	0
F1	Fan start temperature	°C/°F	F	5.0	200	-50
F2	Fan OFF with compressor	flag	C	1	1	0
F3	Fans in defrost	flag	C	1	1	0
Fd	Fans off after dripping	min	F	1	15	0
F4	Condenser fan OFF temp.	°C/°F	C	40.0	200	-50
F5	Condenser fan ON differential	°C/°F	C	5.0	20	0.1
H0	Serial address	-	C	1	207	0
H1	Function of relay 4	flag	C	1	13	0
H2	Disable keypad/Infrared	flag	C	1	6	0
H3	Remote control enabling code-	C	0	255	0	
H4	Disable buzzer	flag	C	0	1	0
H5	Relay 5 function	-	C	3	13	0
H6	Lockout buttons	-	C	0	255	0
H7	Select keypad	flag	C	0	1	0
H8	Select output to activate with time band	flag	C	0	1	0
H9	Enable set point variation with the band	flag	C	0	1	0
HPr	Print profile	-	C	0	15	0
Hdn	Available default parameter set number	-	C	0	6	0
Hdh	Offset anti-sweat heater	°C/°F	C	0.0	200	-50
HrL	Enable remoting the light relay state of the master	flag	C	0	1	0
HrA	Enable remoting the auxiliary relay state of the master	flag	C	0	1	0

Code	Parameter	U.M.	Type	Def.	Max	Min
HSA	Enable alarms of other devices of the local network	flag	C	0	1	0
In	Establishes if the unit is normal, master or slave	-	C	0	6	0
HAn	HA event number occurred	-	C	0	15	0
Code	Parameter	U.M.	Type	Def.	Max	Min
HA...	Date/time of most recent HA	-	C	-	-	-
HA2	Year	years	*	0	99	0
y__	Month	month	0	12	1	
M__	Day	day	*	0	7	1
d__	Hour	hours	*	0	23	0
h__	Minute	min	*	0	59	0
n__	Duration	hours	*	0	99	0
t__	Number of events HF occurred	-	C	0	15	0
HFn	Date/time of most recent HF	-	C	-	-	-
HF2	Year	years	*	0	99	0
y__	Month	month	0	12	1	
M__	Day	day	*	0	7	1
d__	Hour	hours	*	0	23	0
h__	Minute	min	*	0	59	0
n__	Duration	hours	*	0	99	0
t__	HACCP alarm delay	min	C	0	250	0
Htd	Defrost time band	-	C	-	-	-
td1...	Day	day	*	0	11	0
td8	Hour	hours	*	0	23	0
d__	Minute	min	*	0	59	0
h__	Light/aux ON time band (ton) OFF (toF) luce/aux	-	C	-	-	-
n__	Day	day	*	0	11	0
ton...	Hour	hours	*	0	23	0
toF	Minute	min	*	0	59	0
d__	RTC date/hour setting	-	C	-	-	-
h__	Year	years	0	00	99	0
n__	Month	month	1	1	12	1
Otc	Month day	days	1	1	31	1
y__	Week day	days	6	6	7	1
M__	Hour	hours	0	0	23	0
d__	Minute	min	0	0	59	0

Tabella allarmi

Code	Icon on the display	Alarm relay	Buzzer	Reset	Description
"rE"		ON	ON	automatic	Automatic control probe fault
"E0", "E1"		OFF	OFF	automatic	Room probe S1, defrosting probe S2: FAULT
"E2", "E3", "E4"		OFF	OFF	automatic	Probe S3, S4, S5: FAULT
"_"	-	-	OFF	automatic	Probe not enabled
"LO", "HI"		ON	ON	automatic	LOW, HIGH temperature alarm
"AFr"		ON	ON	manual	Antifreeze alarm
"IA", "dA"		ON	ON	automatic	IMMEDIATE alarm, DELAYED alarm from external contact
"dEF"		OFF	OFF	automatic	Defrost running
"Ed1", "Ed2"	-	-	OFF	autom./man.	Evaporator 1 defrost, Evaporator 2 defrost ended for TIMEOUT
"Pd"		ON	ON	autom./man.	Maximum time pump-down alarm
"LP"		ON	ON	autom./man.	Low pressure alarm
"AtS"		ON	ON	autom./man.	Autostart in pump down
"cht"	-	-	OFF	autom./man.	Condenser high temperature pre-alarm
"CHT"		ON	ON	manual	Condenser high temperature alarm
"dor"		ON	ON	automatic	Door open for too long alarm
"Etc"		OFF	OFF	autom./man.	Real time clock fault
"EE", "EF"		OFF	OFF	automatic	EEPROM error: UNIT parameters, OPERATING parameters
"HA", "HF"	HACCP	OFF	OFF	automatic	HACCP alarm: "HA" type, "HF" type
"n1" to "n6"		ON	ON	automatic	Alarm signal for the units 1 to 6 present in the network
"d1" to "d6"		OFF	OFF	-	Download signal with errors in the units 1 to 6

Trouble	Causes	Check
The compressor doesn't start	- compressor ON delay - post-defrost dripping running	c0, c1 and c2 dd
Temperature over the fixed limits but no alarm signal	- alarm ON delay	Ad, c6, d8
Alarm signal IA, dA	- multifunction input open	input status
Alarm connected to the multifunction input not detected	- alarm ON delay - parameter program. error	if A4/A5=1/2 check the status of the digital input; check A7
Defrost not enabled	- defrost cycle too short (dP) - interval between defrosts dl=0 - end defrost temperature is low - evaporator temperature is high	dP, dl dT d/ defrosting probe
Manual defrost not enabled (LED def.flashing)	- compressor protection time ON	d9 (select d9=1)
High temperature alarm after defrost	- alarm delay after defrost is short - alarm threshold too low	d8 AH
The display also remains locked after the defrost	- room temp. has not reached the set or time d8 has not passed	Reduce d8
After the modification of a parameter the controller continues working with the old values	- the controller has not reached the value	Repeat the programming, turn off and on
For C models: fans don't start	1. a delay has been selected when starting the compr. and the fans 2. if F0=1 or 2 (fans managed by fan controller) - the evaporator is <hot>; you may read the evaporator temperature selecting the parameter d1;d2; - dripping in progress; - F1 (fans OFF temperature) low - post-dripping delay ON 3. if F0=0 - F2=1 and the compressor is still - dripping ON - post-dripping lock ON	1. C0 2. F0, d1, d2 Fd F1 Dd 3. F0 F2 Fd dd

Configuration

Probe configuration table

/P: Type of Probe

Allows selecting the type of probe.

/P = 0 => NTC standard range -50...90 °C;

/P = 1 => NTC standard range -40...150 °C;

/P = 2 => PTC standard range -50...150 °C.

Note:

PTC/NTC configuration on selected controllers.

Default: /P = 0 => NTC standard range -50...90 °C

/A2.../A4: Probe configuration

Allows configuring the operation mode of probe 2, 3 & 4

/A2 to /A4 = 0 => probe 2 absent;

/A2 to /A4 = 1 => product probe (used for display only);

/A2 to /A4 = 2 => defrost probe;

/A2 to /A4 = 3 => condenser probe

/A2 to /A4 = 4 => antifreeze probe (from version 1.031).

Anyway probe 2 is used for the calculation of the regulation virtual probe.

Default: /A2 = 2 => defrost probe;

/A2=0 on S model;

/A3=0;

/A4=0.

Display configuration table

tI: Display on display

Select the probe to be displayed on the controller display.

/tI = 1 => Virtual Probe;

/tI = 2 => Probe 1;

/tI = 3 => Probe 2;

/tI = 4 => Probe 3;

/tI = 5 => Probe 4;

/tI = 6 => Do not select;

/tI = 7 => Set point (from version 1.031).

Warning:

• Control is always performed on the virtual control probe;

• If the probe to be displayed is not enabled the display shows "—".

Default: /tI = 1

tE: Display on external display

Select the probe to be displayed on the remote display.

/tE = 0 => remote display not present;

/tE = 1 => Virtual Probe;

/tE = 2 => Probe 1

/tE = 3 => Probe 2;

/tE = 4 => Probe 3;

/tE = 5 => Probe 4;

/tE = 6 => Do not select;

Warning:

• Control is always performed on the virtual control probe;

• If the probe to be displayed is not enabled the display shows "—".

Default: tE = 0

Regulation configuration

r3: Operating mode

Select the operating mode of the controller.

r3 = 0 => Direct thermostat with defrost control;

r3 = 1 => Direct thermostat (cooling);

r3 = 2 => Reverse thermostat (heating);

Default: r3 = 0

Defrost configuration table

d0: Type of defrost

Select the type of defrost cycle.

d0 = 0 => Electric defrost by temperature (dT parameter);

d0 = 1 => Hot gas defrost by temperature;

d0 = 2 => Electric defrost only by time (dP parameter);

d0 = 3 => Hot gas defrost only by time;

d0 = 4 => Electric defrost ending both by temperature and time (from vers. 3.1).

Note:

d0 = 0 or 1. The defrost will end by time if defrost termination setpoint (dT) is not reached by the end of defrost duration time (dP). Default: d0 = 0

d4: defrost at start up

Allows performing defrost cycle at the power on of the control

d4 = 0 => disabled;

d4 = 1 => enabled;

dC: defrost time base unit

Allows selecting the time base for dl and dP parameters.

dC = 0 => dl expressed in hours and dP1 and dP2 in minutes;

dC = 1 => dl expressed in minutes and dP1 and dP2 in seconds.

Digital input configuration table

A4...A5: Digital input configuration

Select the running mode of the digital input.

A4 to A5 = 0 => Input disabled;

A4 to A5 = 1 => Immediate external alarm (IA). Open = alarm;
A4 to A5 = 2 => Delayed external alarm (dA). Open = alarm after Ad time;

A4 to A5 = 3 => Defrost enabling. Closed = enabled;

A4 to A5 = 4 => Start-up defrost from external contact.
Closed = defrost starts;

A4 to A5 = 5 => Door switch with light control.

Open = compressor and fan stop, light on;

A4 to A5 = 6 => Remote ON/OFF. Open = Control is OFF;

A4 to A5 = 7 => Curtain/night set-back switch.

Closed = curtain down/night set (param. 4);

A4 to A5 = 8 => LP switch for pump down.

Open = low pressure alarm;

A4 to A5 = 9 => Door switch with fan stop only. Open = fan stops;

A4 to A5 = 10 => Direct/reverse running mode.

Open = direct (parameter r3);

A4 to A5 = 11 => Light sensor;

A4 to A5 = 12 => AUX relay control.

Open = de-energized, Closed = energized;

A4 to A5 = 13 => As A5=5 without light control

A4 to A5 = 14 => As A5=9 without light control

Default: A4...A5 = 0

Fan configuration table

F0: Fan management

Select the running mode of fan.

F0 = 0 => Fan always ON;

F0 = 1 => Fan cycling ON/OFF depending on the temperature

difference between virtual probe and evaporator probe;

F0 = 2 => Fan cycling ON/OFF depending on evaporator probe;
Default: F0 = 0

F2: Fan OFF with compressor OFF

F2 = 0 => Fan always ON

F2 = 1 => Fan OFF when compressor OFF

Default: F2 = 1

F3: Fan in defrost cycle

F3 = 0 => Fan on during defrost

F3 = 1 => Fan off during defrost

Default: F3 = 1

Digital outputs configuration table

H1 & H5 AUX1 and AUX2 digital outputs configuration

Select the operating mode of the aux1 and aux2 (ir33 DIN rail).

H1/H5 = 0 => Alarm output, always energized except when alarm occurs;

H1/H5 = 1 => Alarm output, always de-energized except when alarm occurs;

H1/H5 = 2 => Auxiliary output. ON and OFF by AUX push-button;

H1/H5 = 3 => Light output;

H1/H5 = 4 => Defrost output for aux evaporator;

H1/H5 = 5 => Pump down valve output;

H1/H5 = 6 => Condenser fan output;

H1/H5 = 7 => Delayed 2nd compressor output (parameter C11 to set the delay time);

H1/H5 = 8 => AUX output OFF when control turned OFF by digital input;

H1/H5 = 9 => Light output OFF when control turned OFF by digital input;

H1/H5 = 10 => No configured output;

H1/H5 = 11 => Reverse output for Dead band regulation;

H1/H5 = 12 => 2nd compressor;

H1/H5 = 13 => 2nd compressor with rotation function;

Default: H1 = 1; H5 = 0;

H8: Selection of AUX or light outputs for time band activation

Allows setting the light or aux output to be controlled within a time band (only for controller with RTC)

H8 = 0 => Light output activation by scheduled time;

H8 = 1 => Aux output activation by scheduled time

Default = H8 = 0

H9: Setpoint change within a time band.

Allows enabling the regulation setpoint variation within a time band (only for controller with RTC).

H9 = 0 => disabled;

H9 = 1 => enabled.

Default: H9 = 0