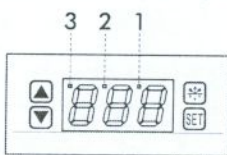


1.00 FRONT - PANEL FUNCTIONS

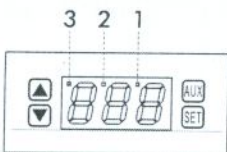
1.10 FRONT PANEL LAYOUT

• Panel mounting,

Mod. RC131, RC132/1A, RC132/1, RC132, RC133, RC133/A, RC134 and RC134/P

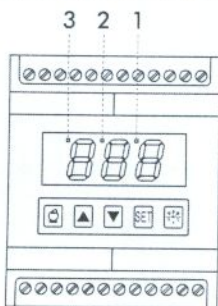


Mod. RC132/1B and, RC134/B



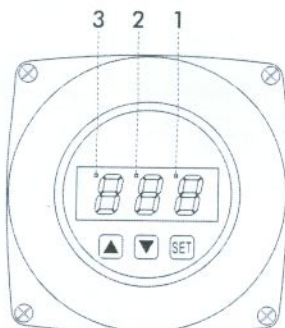
• DIN - rail mounting

Mod. RC111, RC112/1A, RC114, RC114/P and RC113



• Wall mounting, case 95x95mm - 60mm depth

Mod. RC191



1.20 KEYS MAIN-FUNCTION



To increase the value of displayed parameter

Note: in all models equipped with "AUXILIARY OUTPUT" (see Mod. RC132/1B and RC134/B) this key can be used also to activate manually a defrost cycle.



To decrease the value of displayed parameter



To display the operating set point and to confirm the new selected value



To activate manually a defrost - cycle



Energy saving manual control



To switch ON/OFF the auxiliary output

1.30 DISPLAY FUNCTIONS

- 3 - digits green-leds display
- During normal operation the display shows the cold - room temperature
- During setting parameters, it can display the codes of operating parameters
- During alarm conditions, it displays alternatively and in sequence the cold-room temperature and the "flashing alarm message"

1.40 LED's INDICATION

1.41 Common indications on all models

- LED#1 ON: compressor output is ON
- LED#2 ON: defrost - cycle is ON

- LED#3 ON: fan is ON
- LED#1 "Flashing": deep - freezing timed cycle is ON
- LED#3 "Flashing": "stand - by bias" operating mode is activated
- LED#1 and #2 "Flashing": programming - phase

1.42 Indications available on models with "Fan Control Output"

Mod. RC133, RC134, RC134/B, RC134/P, RC114 and RC114/B

- LED#3 ON: fan output is ON

1.50 DISPLAYING

1.51 How to display the operating set point

- Push the SET key for 1s at least; the main set point value will be displayed for 15s.

1.52 How to display the evaporator temperature (only for models

equipped with 2-analog inputs, see Evaporator °T. sensor)

- Push the DOWN key for 1s. at least; the evaporator-temperature detected by probe #2 is displayed until the key will be released.

1.53 How to display the actual "time missing" to the next defrosting cycle

- Push the UP key for 1s at least; the actual-time missing (in hours) to the next defrosting cycle is displayed until the key will be released.

1.60 SETTING

1.61 How to display and set the main operating set point

- Push the SET key for 1s at least; the main set point is displayed for 15-seconds
- To modify the displayed value push the UP or DOWN key. When the required value is reached, push the SET key to confirm and store the new set point.
- If no key pushed within 15-seconds, the controller leaves from the programming phase and it will return automatically to normal operation based on previous set point value (the new one has not - accepted due to EXIT by time - out)

1.62 How to enter in the "Main Menu" and set the operating parameters

- Push the SET + UP key for 10-seconds to enter in the menu;
- On the display will appear for 2-seconds the code of the first parameter (see list of parameter, Ref. 4.00); afterwards the actual selected value will appear;
- NOTE:** If the displayed parameter is not required, to modify a next one parameter push the SET key to scroll in the menu (until the parameter required will be displayed).
- Within 15-seconds modify the displayed value by pushing the UP or DOWN key;
- Within 15-seconds confirm the new selected value by pushing the SET key;
- The new value will blink for 2-seconds to indicate its confirmation and storage;
- On the display will appear for 2-seconds the code of the next parameter; afterwards the actual value will appear, to modify the value follows some procedures as above mentioned.

NOTE: If no key is pushed within 15s (time - out of 15s.) the controller leaves from the programming phase and it will return automatically to normal operations.

1.70 KEYBOARD MANUAL OPERATION

1.71 How to activate manually a defrosting cycle

- **Common procedure for any model, except Mod. RC132/1B, RC134/B and RC191**
Push the DEFROST key for 5-seconds

- **Common procedure for Mod. RC132/1B, RC134/B and RC191 only**
Push the UP key for 5-seconds

1.72 How to reset the acoustic alarm (only for models equipped with a built-in buzzer, see "option 94Y")

- Push the DOWN key for 3-seconds

1.73 How to activate the "DEEP - FREEZING" timed cycle

- Push the DOWN + SET keys simultaneously for 3-seconds

1.74 How to activate/de-activate manually the "stand - by" BIAS operating mode (energy saving / night set back)

- **Common procedure for any models, except the Mod. RC132/1B, RC134/B and RC191**
Push the SET + DEFROST keys simultaneously for 3-seconds
- **Mod. RC132/1B and RC134/B**
Push the SET + AUX keys simultaneously for 3-seconds.

WARNING: the stand-by BIAS operation is not present in the Mod. RC191.

1.75 How to switch ON/OFF the auxiliary output (only for Mod. RC132/1B and RC134/B)

- Push the AUX key for 3-seconds

1.76 How to activate the "Self -Test routine"

- Push the UP + DOWN keys simultaneously for 5-seconds.

1.80 KEYBOARD LOCKING

1.81 How to lock/unlock the access to the operating parameters

- Push the UP + DOWN + SET keys simultaneously for 5-seconds to lock / unlock the access to the operating parameters through frontal keyboard. A flashing OFF or ON message will be displayed for 2-seconds, when the access to the operating parameters will be respectively locked or unlocked. The keyboard locking is most useful to avoid accidental tampering by no-authorised personnel.
- WARNING:** after setting parameter, we recommend to lock the keyboard of Your controller in order to avoid possible accidental tampering by no - authorised / qualified personnel.

2.00 OPERATING PARAMETER

2.10 LIST OF PARAMETERS

LIST OF PARAMETERS				DEFAULT VALUES					
ITEM	CODE	DESCRIPTION	SETTING	RC131	RC132/1B	RC132 RC133/A	RC113	RC134/B	RC134/P
				RC132/1A			RC133		RC114/P
				RC111			RC134		RC114/P
				RC112/1A			RC114		
				RC191					
CONTROL									
1	A0	Differential (hysteresis)	1 to 20 °C/°F	2	2	2	2	2	2
2	A1	Min. time between switching OFF and ON	0 to 99 mins.	1	1	1	1	1	1
3	A2	Time duration of deep freezing operation	0 to 99 mins.	Not-present		0	0	0	0
4	A3	Lower set point limit	-55°C / -67°F to upper limit (A4)	0	0	-30	-30	-30	-30
5	A4	Upper set point limit	50 °C / 99 °F to lower limit (A3)	30	30	30	30	30	30
6	A5	Temperature increasing during "stand-by BIAS" operation (energy saving)	From 0 to 20 °C / °F	3	3	3	3	3	3
7	A6	Compressor control mode	0 = "Thermostat" based compressor control 1 = "Pump down" based compressor control						0
ALARM									
8	b0	Alarm set point configuration	0 = relative to set point 1 = in absolute value	0	0	0	0	0	0
9	b1	Max. alarm	If b0=0 : 0 to 50 °C / °F above the set point If b0=1 : 50°C / 99°F to b2	10	10	10	10	10	10
10	b2	Min. alarm	If b0=0 : 0 to 50 °C / °F below the set point If b0=1 : -55 °C / -67 °F to b1	10	10	10	10	10	10
11	b3	Alarm delay	0 to 99 mins.	30	30	30	30	30	30
DEFROST									
12	C0	Interval time between two defrost cycles	1 to 99 hours	12	12	6	6	6	6
13	C1	Max. duration of defrosting cycles	0 to 99 mins.	40	40	40	40	40	40
14	C2	Max. time allowed of compressor running continuously (defrost start-up authorisation)	0 to 99 mins. (0 = excluded)	0	0	0	0	0	0
15	C3	Defrost-end temperature	0 to 20°C / 32 to 68°F	Not-present		7	7	7	7
16	C4	Dripping time	0 to 99 mins.	Not-present		3	3	3	3
17	C5	Defrost mode	0 = by electrical heaters (compressor forced OFF) 1 = hot-gas (compressor forced ON)	Not-present		0	0	0	0
18	C6	Defrost-end mode	0 = by time 1 = by cold-room temperature 2 = by evaporator temperature	0	0	2	2	2	2
19	C7	First defrost after power-ON	0 to 99 mins. (0=1st defrost start-up after "C0")	Not-present		0	0	0	0
FAN CONTROL									
20	d0	Fan operating mode during normal operation (fan always forced OFF during defrost)	0 = in parallel to compressor 1 = always ON 2 = ON/OFF control according to evaporator °T	Not-present			0	0	0
21	d1	Max. delay of fan start-up after defrosting-end / power ON	0 to 99 mins.	Not-present			5	5	5
22	d2	Differential temperature between operating set point and evaporator °T (fan start-up °T threshold)	5 to 40 °C / °F	Not-present			5	5	5
READ - OUT									
23	E0	Offset on cold-room temperature (input #1)	From 0 to ±20 °C / °F	0	0	0	0	0	0
24	E1	Offset on cold-room temperature (input #2)	From 0 to ±20 °C / °F	Not-present		0	0	0	0
25	E2	Temperature displayed-unit	0 = Celsius degrees 1 = Fahrenheit degrees	0	0	0	0	0	0
26	E3	Temperature displaying mode during defrost	0 = last value detected before defrost start-up 1 = operating set point	0	0	0	0	0	0
27	E4	Max. delay of actual temperature read-out after defrost-end	0 to 99 mins.	20	20	20	20	20	20
28	E5	Display up-dating time when temperature "increasing"	1 to 99 seconds	1	1	1	1	1	1
29	E6	Display up-dating time when temperature "decreasing"	1 to 99 seconds	1	1	1	1	1	1

SMART system s.r.l. • Via XXV Aprile, 13 • 33070 Maron di Brugnera (PN) - Italy • C.F. e P.IVA 03646160261 • Tel. (+ + 39) 0434 613358 • Fax (+ + 39) 0434 613227 • www.smartsystem.it • E-mail: info@smartsystem.it

7L	• if parameter GO=2 The digital input is open for more than time set by parameter G1 and "alarm" is recognised	• no-influence on the control outputs • alarm output is energized (if present)	Automatic reset when digital input "closing"	• manual keyboard reset by automatic the alarm disappears
8P	• if parameter GO=3 The digital input is open for more than time set by parameter G1 and a "too long-time Door-opening alarm" is recognized	• alarm output is energized (if present) • fan output is forced Off	Automatic reset when digital input closing	• manual keyboard reset by automatic the alarm disappears
9P	The deep-freezing timed cycle is not completed due that a "power failure occurred" before it's time expiration	• no-influence on the control outputs • alarm output is energized (if present)	• automatic reset after time-out of 6-hours manually by switching Off and ON the device	• manual keyboard reset by automatic time-out of 6-Hrs.
PF	Defrost - cycle shut-Off when time set by parameter C1 is expired (Max. time allowed of defrost), due that evaporator doesn't reach the threshold rate of defrost - end as during normal operation.	• no-influence on the control outputs • alarm output is energized (if present)	• automatic reset after 6-hours time-out of manual keyboard reset by automatic reset of the next manually reset by switching Off and ON the unit	• automatic reset after 6-Hrs. time-out of
33	Eeprom memory data losses	• continuous operation based on "DEFAULT" values	Automatic reset when Setting parameter procedure start/when a new value is confirmed	

3.00 DIAGNOSTIC WARNING: If memory-data losses occurs (see message "EE" on the display) start "parameters setting procedure" in order to re-store into the EEPROM memory the required

3.00 DIAGNOSTIC WARNING: If memory-data losses occurs (see message "EE" on the display) start "parameters setting procedure" in order to re-store into the EEPROM memory the required

WARNING:

- 1) After Power-ON, Defrost-end, Deep-freezing-end and after door closing the door, an additional time of 60 Mins. is added to the "alarm delay" set by parameter b3, in order to avoid possible wrong alarm recognition.
- 2) In both model RC134/P and RC114/P with user - selectable compressor control mode, the "factory setting" is always based on operating parameters referred to thermostat based compressor control (see parameter A6=0)
- 3) In both model RC134/P and RC114/P the parameter "GO" is not present and the digital input has dual - functions according to selected "compressor control mode" (see parameter setting "A6").

[illegible]