EVJ536N2 — Temperature and Humidity controller for Seasoning, 2.8" display with touch keys

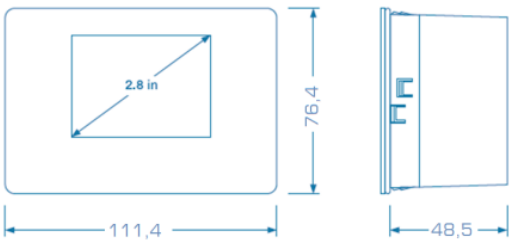
PLEASE READ CAREFULLY and save this document
CONSIDER THE ENVIRONMENT

1. ENGLISH

- Temperature and humidity controller for Seasoning with 6 cycles (programs) made by three processes with configurable parameters.
- Humidity probe EVCO EVHTP500 only; Cabinet and auxiliary probes.
- 12Vac/dc power supply
- Real time clock RTC and memory for data logging and BLE for communication with APP EVconnect (Android).
- Door switch or configurable
- 6 relay configurable outputs, 30 A res. @ 250 VAC compressor relay
- Alarm Buzzer
- TTL communication port for optional RS485/RTC external interface alternative to BLE/LOG (Cap. First Handling).

2. DIMENSION AND INSTALLING

Dimensions in 11,4x76,4x48,5mm (in); Front Panel mounting,



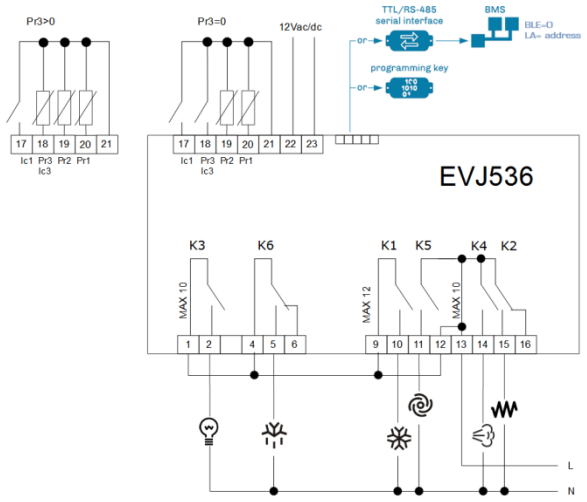
INSTALLATION PRECAUTIONS

- The thickness of the panel must be between 0.8 and 2.0 mm (1/32 and 1/16 in)
- Ensure that the working conditions are within the limits stated in the *TECHNICAL SPECIFICATIONS* section.
- Do not install the device close to heat sources, equipment with a strong magnetic field, in places subject to direct sunlight, rain, damp, excessive dust, mechanical vibrations or shocks.
- In compliance with safety regulations, the device must be installed properly to ensure adequate protection from contact with electrical parts. All protective parts must be fixed in such a way as to need the aid of a tool to remove them.

3. ELECTRICAL CONNECTION

BE AWARE OF

- Use cables of an adequate section for the current running through them.
- To reduce any electromagnetic interference connect the power cables as far away as possible from the signal cables.
- The unit does no support 4..20mA o 0.10V humidity probes.



Default values

K1 = 30A= compressor		Pr1=	Cabinet probe
k2 = 8A= Heating		Pr2=	Humidity EVCO probe EVHTP500
K3 = 16A= Light		Pr3 / ic3 =	Evaporator / Configurable / Digital input
K4 = 8A= Humidify		ic1=	Door switch or configurable
K5 = 5A= Evaporator Fan			
K6 = 8A= Defrost			

PRECAUTIONS FOR ELECTRICAL CONNECTION

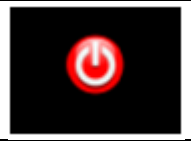
- If using an electrical or pneumatic screwdriver, adjust the tightening torque.
- Moving the device from cold to warm places, there may be internal condensing. Wait about an hour before switching on the power.
- Make sure that the supply voltage, electrical frequency and power are within the set limits. See the section *TECHNICAL SPECIFICATIONS*.
- Disconnect the power supply before doing any type of maintenance.
- Do not use the device as safety device.
- For repairs and for further information, contact the EVCO sales network.

4. FIRST HANDLING

1. Install following the instructions given in the section *DIMENSION AND INSTALLING*.
2. Power up the device as shown in the section *ELECTRICAL CONNECTION*.
3. Configure the device with configuration parameters: relay uc1..uc6, inputs Pr2 Pr3 e ic1 and uc3;
4. Then check that the remaining settings are appropriate;
5. Disconnect the device from the mains.
6. Make the electrical connection as shown in the section ELECTRICAL CONNECTION without powering up the device.
7. To connect the unit to an RS-485 network connect the interface **EVIF22TSX** or **EVIF23TSX** (With RTC). A network communication is alternative to local transmission and data recording, necessary set BLE=0.
8. Power up the device.

Device ON / OFF

Touch the ON-OFF key for 2", the device alternatively turns on or Off.



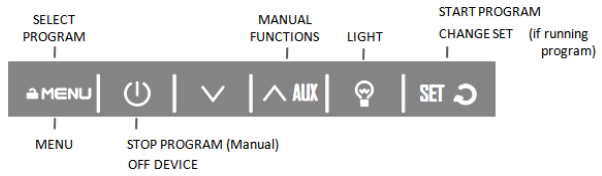
When the device is off, the display shows the off icon for some seconds and then turn to black for energy saving.
BE AWARE: after turning on the unit the regulation re-starts automatically if a cycle was running before the black-out.

5. USER INTERFACE AND MAIN KEY FUNCTIONS

LED	ON	OFF	BLINKING
	Cooling request De-humidify request	compressor Off	- Protection delay time
	defrost	-	- Defrost delay time - Dripping
	Evaporator fans on	Evaporator fan off	Evaporator fan delay time De-humidify, Humidify cycles.
	Humidify request Humidify relay		
	De-Humidify request de-Humidify relay		Delay when de-humidify with compressor.
	Heating request Heating relay		
HACCP	HACCP Alarm loggged	-	New alarm logged
	Energy saving	-	-
	Maintenance	-	Collegamento remoto
C/F/ %	Unit of measurement	-	
AUX	Auxiliary function Auxiliary relay	Auxiliary not active	
	Light on by key	Light off	Light on by door open
			Active alarm
	Over the sepoint Under the sepoint		
	keyboard status		
	open Door	Door closed	
	Running Cycle	No cycle running	Cycle in stand-by, another function is running.

6. KEY COMMANDS

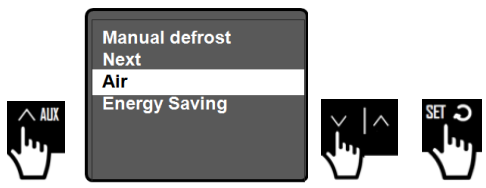
Key commands can be direct (upper functions) or by 2 seconds time based (lower functions MENU-STOP/OFF):



BACK or EXIT FROM A SUBMENU OR THE SETPOINT : touch the key.

7. AUX KEY FUNCTIONS

User commands are available touching the **AUX** key :



CONFIRM: Select an item with up and down keys, press **SET** to confirm or to abort:

Some functions can be disabled by repeating the same procedure (Energy Saving). Other functions will proceed following their process until the end (Defrost, Air Change).
Some functions may not be visible if the unit status is not running or the model does not support the function itself.

Manual defrost: Execute a defrost, if the evaporator probe is present "Pr3=5" and the evaporator condition allows it. With no evaporator probe configured the defrost is time based.
Air: it executes a stop regulation interval with Air output enabled.
Next: it jumps to next process/phase (dripping, drying, seasoning) of a program skipping the loaded countdown in that moment.
Air Change: Run-Rest and Defrost do no skip, but follow their own regulation.
Energy Saving: Enable the energy saving function changing the "temperature set + r4 differential". Repeat the operation to disable the function.
Aux: if the auxiliary output is configured as manual control.

OFF key to EXIT

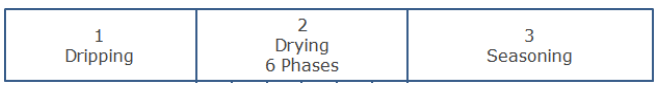
8. LIGHT COMMAND KEY

Touch once the light command to turn ON or OFF the light.

The light output turns on by opening the door if ic1=7/8/9.

9. PROGRAMS

A program is made by 3 sequential processes:

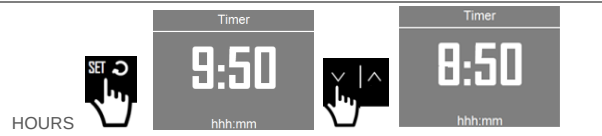


Each process or phase is provided with its own temperature and humidity setpoints and timer. The regulation proceeds until all the processes are completed and after the seasoning (3) it must be manually stopped.

10. START A PROGRAM

SELECT THE PROGRAM

Touch **MENU** to list the programs, select an item with up or down arrows and push SET:

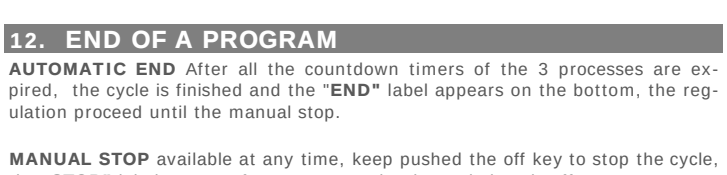


CHANGE THE SETPOINTS AND TIMER BEFORE STARTING

To change temperature and humidity setpoints and/or the time duration of any process push MENU for 2" and enter the selected program (see the program configuration).

START A SELECTED CYCLE

After selecting a program, touch **SET** key and cycle starts: the icon is on.

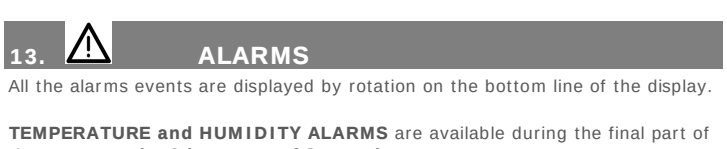


The lower part of the display shows the running program, the process and the phase with the countdown time.

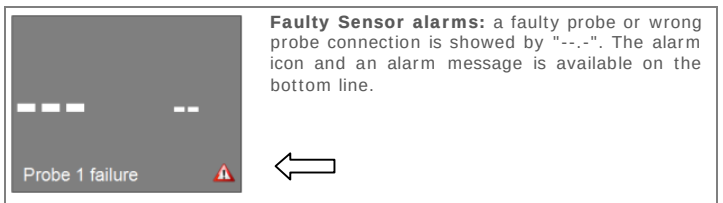
11. CHANGING THE SETTING OF A RUNTIME PROCESS

If enabled in your unit, it is possible to change the setpoints and time duration as follow:

1. Push **SET** key, the temperature setpoint appears with the available range



2. Push up or down arrows to change the value and then **SET** to confirm
3. The humidity SET2 appears
4. Push up or down arrows to change the value and then SET2 to confirm
5. The timer of the process appears,



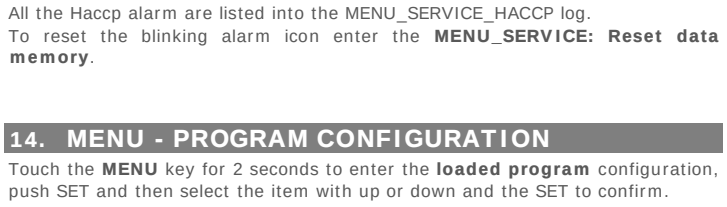
6. Push **SET** and then up or down arrows to change the hours on the left, push SET to confirm
7. Push **SET** and then up or down arrows to change the minutes on the right, push **SET** to confirm.

INTERMEDIATE EXIT: wait 5 seconds or push .

12. END OF A PROGRAM

AUTOMATIC END After all the countdown timers of the 3 processes are expired, the cycle is finished and the "**END"** label appears on the bottom, the regulation proceed until the manual stop.

MANUAL STOP available at any time, keep pushed the off key to stop the cycle, the "**STOP"** label appears for some seconds, the cycle icon is off.



The same cycle or another program can be selected to be restarted.

13. ALARMS

All the alarms events are displayed by rotation on the bottom line of the display.

TEMPERATURE and HUMIDITY ALARMS are available during the final part of the program: **the 3d process of Seasoning**.

SILENCING TE BUZZER Alarm sounding can be reset touching **MENU / SET** keys.

Faulty Sensor alarms: a faulty probe or wrong probe connection is showed by "--.-". The alarm icon and an alarm message is available on the bottom line.

RTC alarm and **Power failure** With rtc and parameter **"**Hr0=1" it is recorded if longer than > A10. The alarm message is showed on the bottom line of the display, push a key to check the clock.
Push a key to check the clock setting then message disappears.

LIST OF THE ACTIVE ALARMS

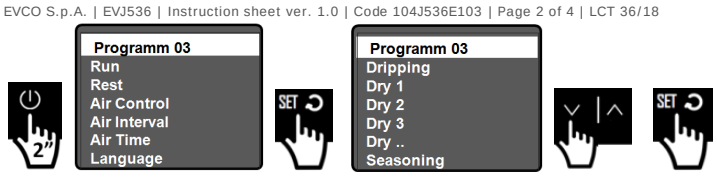
All the active alarms are also listed into MENU_SERVICE_ALARMS.

LIST OF HACCP ALARMS LOG

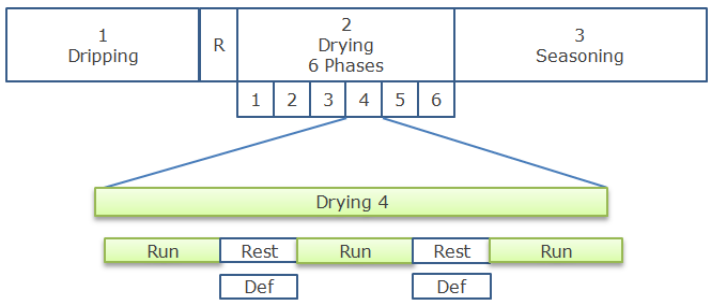
All the Haccp alarm are listed into the MENU_SERVICE_HACCP log.
To reset the blinking alarm icon enter the **MENU_SERVICE: Reset data memory**.

14. MENU - PROGRAM CONFIGURATION

Touch the **MENU** key for 2 seconds to enter the **loaded program** configuration, push SET and then select the item with up or down and the SET to confirm.



Program values can be changed by the user also during a running cycle. The new value will be loaded if the corresponding process/phase hasn't been executed yet or with next program restarts.



At the end of the Dripping process it is possible to activate a Rest period.
The whole Drying process is made by 6 phases where the Run-Rest function is available.
It is also possible to activate a **defrost during the Rest duration**, both will follows their timers.
BY default the **defrost is manual**, to enable the automatic timer set "d0>0".

PROGRAM 1..6 STRUCTURE

1 -DRIPPING (*)

DURATION	Hours	0= skip process
CORE SET	°C/°F	only display
SET 1 temperature	°C/°F	cabinet regulation temperature
SET 2 Humidiy	%	0=humidity not regulated
Low speed fan	Y/N	Low speed fan on (Evap fan stopped)
Run-Rest	Y/N	execute a Rest at the end of the drip

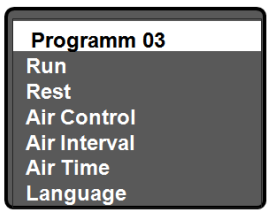
2- DRIYNG (*) PHASE 1..6

DURATION	Hours	
SET 1 temperature	°C/°F	cabinet regulation temperature
SET 2 Humidiy	%	0=humidity not regulated
low speed fan	Y/N	Low speed fan relay
Run-Rest	Y/N	Enable Run-Rest function

3- SEASONING (*)

DURATION	Days	
SET 1 temperature	°C/°F	cabinet regulation temperature
SET 2 Humidiy	%	0=humidity not regulated
Low speed fan	Y/N	Low speed fan relay
Run-Rest	Y/N	Enable Run-Rest function

MENU COMMON PROGRAM FUNCTIONS



Running interval time
Resting duration time
Select Air change in processes 1..3 (*)
Air Interval if >0. if 0 = only manual.
Enable Air Change if >0

Run-Rest
The Run-Rest is a common repetitive function available by selecting it at the end of the **Dripping** (1) and along the whole **Driyng 1..6** phases (2) or in seasoning(3)
The "Rest" function is repeated if the interval time is >0, during the "Rest" time no regulation is executed. It is possible to combine a defrost by enabling the parameter "**d13=1**". Configuration parameters are available under MENU.

(*) Air change
The Air Change is a common repetitive function that activates the Air relay after an interval time, while the regulation is turned off. If no relay is configured the function just stop the regulation control for the time duration.
Configuration parameters are available under the MENU. **By default the function is manual.**

MANUAL FUNCTION (Default) with Air interval=0 and operating with **AUX** key.

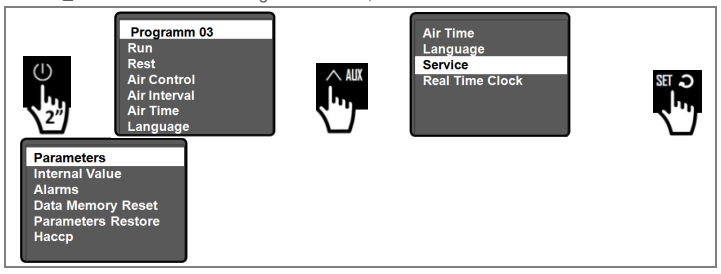
CYCLING FUNCTION
If "Air Interval > 0 hours" the function repeats after each interval with the following Control Process:
0= all the processes 1-2-3 (dripping-driyng-seasoning),
1= only 1 & 2 dripping-driyng processes,
2= only 2 & 3 driyng-seasoning processes,
= only 1 & 3 dripping-seasoning processes.

15. OTHER MENU CONFIGURATION

Language Select language
Service To show configuration Parameters, Alarms, REset alarms and Statistics.
Real time Clock To set the Clock if enabled. Available only if the clock option is availabe.

LANGUAGE To select the operative language. This version fully supports "I" and "E".

MENU_SERVICE to configure the I/O, service and maintenance.



Parameters To access and configure parameters
Internal value To show I/O values of the I/O signals and variables.
Alarms To show the list of active alarms
Reset data memory Alarm Reset (**code 149**)
Parameters Restore Re-load original parameter map. ! BE AWARE (**)
Haccp Show the HACCP Log from last Alarm Reset.

(**) custom configuration may be different from default values. By re-loading the original values the loads can be damaged if not corresponding.

REAL TIME CLOCK

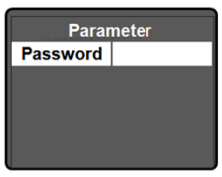
Real time clock functions are available if provided on board or connected with external interfaces EVIF23TSX or EVIF25TBX (Evlink), Enter this menu to set the clock. Function related to Clock:

Enter the Clock menu and:
push SET and change year value YY;
push SET and change month value MM;
push SET and change day value DD;
push SET and change hour value;
push SET and change minutes value;
EXIT the menu with

Regulation functions related to the clock:
- **daily defrost time table**: Hd1..Hd6 if enabled the unit always performs the defrosts at the selected times.
- **daily Air change time table**: F31..F36 if enabled the unit always performs the Air Change at the selected times.
- daily **Energy Saving** H01..H02

16. PARAMETERS AND PASSWORDS

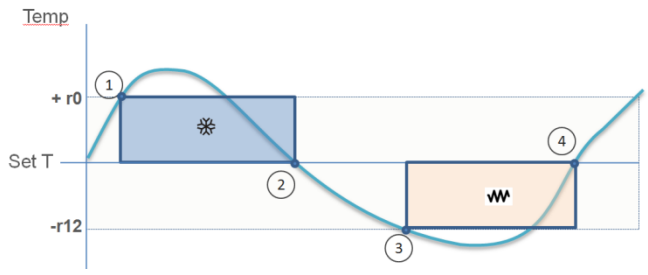
ENTER: Push MENU key for 2 seconds;



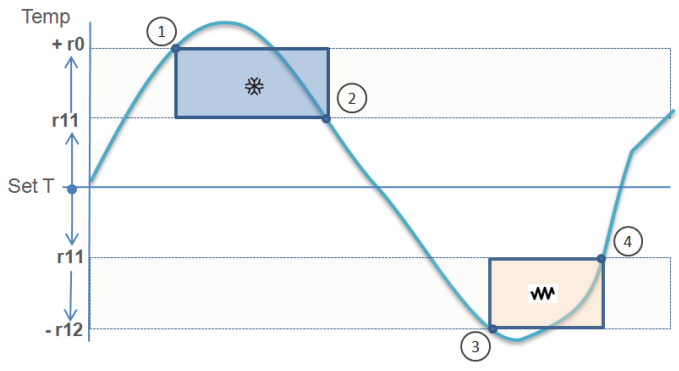
Enter the password using directly the up or down arrows, the pass background color turns to green, push SET to confirm:
password value corresponding to "**PS1=1**" to enter level 1 parameters.
password value corresponding to "**PAS=-19**" to enter all the parameters.

17. REGULATION

Temperature regulation
The temperature setpoint can be set between the limits min "**r1**" and max "**r2**".
The temperature is regulated with the following outputs:
Cooling between "SET+r0= on" (1) and "SET=off" (2).
Heating between "SET-r12= on" (3) and "SET=Off" (4).



TEMPERATURE REGULATION WITH NEUTRAL ZONE
Available by setting "r11<>0" the value is inserted between the SET and the differential:
Cooling regulation "SET+r11+r0= on" (1) and "SET+r11=off" (2).
Heating regulation "SET-r11-r12" = on (3) and "SET-r11" = OFF (2).



if "r11<0" the neutral zone is available only for heating side 3-4.

TEMPERATURE REGULATION and DE-HUMIDIFY WITH COMPRESSOR
By setting "**rd4=1**" the de-humidify function with compressor is enabled, while setting "**rd4=2**" the same function is performed by turning on also the Heating output on with the Compressor.

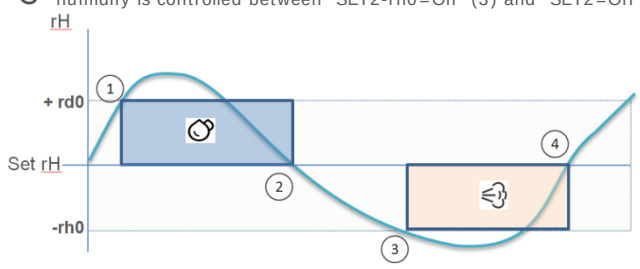
TEMPERATURE PRIORITY OVER DE-HUMIDIFY with compressor if "rd4>0".
The "**r14**" parameter can be configured as the following priority:
0 = Temperature and humidity are independent and follow their requests.
1 = Heat: if the temperature drifts up, the de-humidify is suspended.
2 = Heat-Cool: if the temperature drifts up or down, the de-humidify is suspended.
3 = Cool: if the temperature drifts-down, the de-humidify is suspended.

HEATING MODULATION
The heating output can be modulated with "**r13**" by setting a duty cycle interval between 10 and 60". The "r13=60" value (default) means that the heating relay is always on when the request of heating is active.
Be aware that **increasing the switching frequency** of the relay may introduce long term contact duration concerning.
For **safety reasons** the fan stop temperature "F1" must be set very high to avoid stopping the fan during the heating.

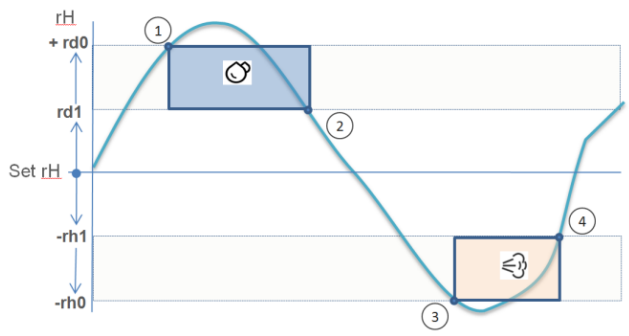
OPEN DOOR

The regulation can be suspended depending on "**ic1**" digital input function.
Regulation can be restarted by forcing the timer setting "**i3**".

Humidity regulation SEt2
The Humidity is basically controlled by the following algorithms:
de-humidify is controlled between "SET2+rd0=On" (1) and "SET2=Off" (2).
humidify is controlled between "SET2-rh0=On" (3) and "SET2=Off" (4).



A **NEUTRAL ZONE** is available by setting "**rh1**" for the humidify process and "**rd1**" for the de-humidify process.



OPEN DOOR regulation is suspended depending on "ic1" digital input function. Cooling regulation can be restarted by forcing the time parameter "i3".

DE-HUMIDFY WITH COMPRESSOR
set **rd4=1** to use the compressor de-humidify function.
set **rd4=2** to use the compressor de-humidify function together with heating relay.

18. EVAPORATING FAN

Evaporating fan follows the "F0" parameter

FAN STATUS
Parameter "**F0**" allows the following fan behaviour:
0= Fans on with regulation on (***)
1= Always ON, (default)
2= ON with compressor ON,
3= Temperature threshold F1, if the evaporator probe is enabled "**Pr3=5**".
4= ON with compressor ON, if the evaporator probe is enabled "**Pr3=5**"

For safety reason the fan stop temperature "F1" must be set very high to avoid stopping the fan during the heating.

OTHER SETTINGS

FAN TEMPERATURE THRESOLD "F1" to lock for high temperature if "Pr3=5" Working with heating elements F1 must be set at high values to avoid turning it off.
DEFROST with "F2" to determine the fan status.
DRIPPING with "F3" to determine the fan stop time after the defrost.

By setting uc()=14 as "evaporator fan 2": if the "low speed fan selection" is enabled, the "evaporator fan 2" runs while the main Evaporator fan is stopped.

FAN CYCLES F0=0
(***) By using "F0=0" the evaporators fans can follow on-off cycle:
1) when there are **no temperature or humidity request**: F11, F12
2) when there is a **de-humidity request** with compressor: rd2-rd3
3) when there is a **humidity request** and there is no humidity relay: rh2-rh3

DEFAULT VALUES: these values allows to operate normal function,
Fan_on values F11, rd2 and rh2 =60" 0 while the Fan_Off values F12, rd3 and rh3 are equal to 0": When there is a request the fans turns on.
TO ACTIVATE A CYCLE: By setting F12, rd3 and rh3>0 the fan cycling function is activated when requested.

TO STOP THE FUN DURING A FUNCTION: setting F11 & F12=0, rd2 or rd3=0 or rh2 & rh3=0 the fan output is disabled even the functions request is to turn it on.

19. OTHER REGULATION

COMPRESSOR PROTECTION (default value: C2= 3 minutes)
Power on: the first compressor start can be delayed with "**C0**" minutes.
PROTECTION: during normal regulation "**C2**" keeps the compressor off for the time set in minutes, while "**C3**" keeps the compressor on for a minimum value in seconds.
PROBE SAFETY: if a faulty or wrong probe connection events happen, the display shows "--.-". The compressor follows the "**C4**" (off) & "**C5**" (on) time in minutes.

CONDENSING and CONDENSING FAN (default: to configured)
Condensing fan follow the compressor on cycles if no condensing probe is configured. By enabling the condensing probe Pr3=1 the following controls are available:
"**Fc1+Fc2**" Temperature threshold to turn on the fan
"**Fc1**" condenser fan off Off temperature threshold ".
"**Fc3"** fan off time after compressor off.
"**C6**" threshold for high condensing dangerous for the compressor.
"**C7**" threshold for high condensing alarm that stop the compressor after "**C8**" time delay in minutes. A manual reset is requested to restart the controls.

DEFROST
BY default the **defrost is manual**, to enable the automatic timer set "d0>0".

The defrost control is performed after the "**d0**" interval if>0 and can be selected among the following mode "**d1**": 0=electric heater, 1= hot gas, 2=stop compressor.

TEMPERATURE THRESOLD is determined by "**d2**" and is available only if the evaporator probe is enabled "**Pr3=5**".
MAXIMUM DURATION determined by the time interval "**d3**" in minutes.
DEFROST AT POWER ON determined by the parameter "**d4**": 0 = no , 1 = post overcooling(*), 2=power-on & post-overcooling(*). (*) if available.
DEFROST DELAY: "**d5**" in minutes following the "**d4**" selection.
DISPLAY LOCKED in DERFOST using the "**d11**": 0=not locked, 1= locked to SET+2, 3= label.
COMPRESSOR STATUS PRE DEFROST time to keep the compressor on before hot gas defrost: 0=no enabled, **d15**>0 enabled.
DEFROST SYNCHRONISED with REST using the parameter "**d13**"=1 if a Rest function is performed also the defrost is activated.

RTC DEFROST When the clock function is available, the user can set 6 daily defrosts that starts at "**hd1..hd6** > 0" parameters. The function is independent from any other timer based functions of the unit.

DEFROST OUTPUT AS HEATER/DE-HUMIDIFIER
Setting "**rd5**=1" it is possible to use the defrost output also as heating element.

AUXILIARY RELAY (default value: to configured)
When configured with "uc ()=15" the auxiliary relay works as:

- on-off relay based on the **cabinet probe reading** if no auxiliary probe configured;
- on-off relay based on the the **auxiliary probe reading** if Pr3=4;
- Manual On-Off via AUX key.

After setting the device output relay, configure the regulation as follow:
"u6" Heating regulation (0), cooling regulation (1), manual via AUX key (2).
"u7" Setpoint temperature to turn off the output.
"u8" Temperature differential of "u7" to turn on the output .

For probe error the relay is open.

AUX OUTPUT VIA MANUAL FUNCTION
By setting "u6=2" the auxiliary relay can be turned on or off entering the **AUX** menu and selecting **AUX** function.

20. DIGITAL INPUT 1 CONFIGURATION

The digital input 1 can be configured in **"ic1"** parameter, default door switch (7)**:**
0= Disabled,
1= Energy Saving;
2= Alarm Multifunction; Only signaling
3= Reserved;
4= Remote Onoff; Turns Off and on the unit, a running cycle ends.
5= Thermal switch; i8 events , interval i7. i8=0 autoreset
6= Reserved;
7= Door open 1 : Compressor and Fan off, Light on;
8= Door open 2 : Compressor off, Fan and Light on;
9= Door open 3 : Light on;

Input polarity is determined by "iP1":
0= active with closed contact ; 1= active with open contact.

OPEN DOOR (default value: ic1=7)
Regulation is suspended while the compressor can follow "i3" settings:
"i3=-1" the compressor follows its regulation, "i3=0" compressor goes off, "i3>0" the compressor restarts after this delay.

21. CONFIGURATION INPUT 3

By selecting the parameter "Pr3" the following functions are available:
0 = digital input (configuration via ic3)
1 = condenser probe (controls Condenser fan and alarms)
2 = Core probe (only display)
3 = External air probe (only display)
4 = Auxiliary probe (regulation u6,u7,u8.)
5= defrost probe 2 (defrost control)

PRESSURE SWITCH CONFIGURATION
By selecting the parameter "**Pr3**=0" it is possible to configure also the function of the digital input via **iC3**": 0 disabled e 1=pressure switch (see alarms).

22. RELAY OUTPUT CONFIGURATION

Expert users only
Relay functions are configurable through uc1..6 parameters that corresponds to the K1..K6 outputs. The default configuration:
0 = Unused
1 = Umidify (rh) K4
2 = De-Umidify (drh) (the function is performed by the compressor)
3 = Alarm
4 = Compressor K1
5 = Heating K2
6 = Condenser fan
7 = Device status on or off,
8 = Air change
9 = Light K3
10 = Compressor 2
11 = Evaporator fan K5
12 = Defrost K6
13 = Reserved
14 = Evaporator fan 2 (Low speed fan)
15 = AUX (Auxiliary u6,7,8)

Be aware to accurately verify the functions related to the relay outputs, configuration errors may activate unwanted loads. The reloading procedure of a default map is available in "MENU_SERVICE_ Parameters Restore" and it must be done disconnecting the loads.

23. ALARMS

Alarms are displayed on the bottom line of the display

PROBE FAILURE: typical problems: open or short circuited sensor, wrong sensor type or bad connection.
"Probe 1 failure" Regulation probe failure, heating regulation is suspended, cooling regulation follow the on-off cycle C4-C5 in minutes.
"Probe 2 failure" Humidity probe failure, humidity and de-humidity regulations are suspended.
"Probe 3 failure" 3d probe failure. If working as evaporator defrost is performed by time "d3", if working as condenser probe the condenser fan follows the compressor, if working as auxiliary the auxiliary relay turns off.

TEMPERATURE ALARMS
Temperature alarms are enabled during the Seasoning:
"LOW TEMPERATURE" setting the "A1" threshold. To configure the alarm: "A2" 0= disable, 1=relative to SET, 3=absolute value.
"HIGH TEMPERATURE " setting the "A4" threshold. To configure the alarm: "A5" 0= disable, 1=relative to SET, 3=absolute value.

TEMPERATURE ALARM DELAY
After a power-on with "A6" minutes?
During normal regulation with A7 in minutes.
After a defrost with "A8" in minutes.
After closing the door with "A9" in minutes.

HUMIDITY ALARMS
Humidity alarms are enabled during the Seasoning:
"LOW HUMIDITY ALARM" setting the AH1 relative to SET2.
"HIGH HUMIDIY ALARM" setting the AH1 relative to SET2.
Humidity alarm delay "**AH7"** in minutes.

POWER FAILURE - rtc Clock failure
It is signaled after a power failure longer than "A10" in minutes.

DOOR OPEN ALARM
It occurs when the digital input is set as "ic1=7/8/9" is active after the "i2" delay in minutes. With "iP1=0" active when contact closed, "iP1=1" active when contact is open. Setting "i2=-1" the alarm is disabled, and "i2=0" the alarm starts when the door is open.

MULTIFUNCTION ALARM
It occurs when the digital input is set as "iC1=2" is active. With "iP1=0" active when contact closed, "iP1=1" active when contact is open.
Regulation is not modified.

THERMAL SWITCH 1 ALARM
It occurs when the digital input is set as "iC1=5" is active. With "iP1=0" active when contact closed, "iP1=1" active when contact is open. The regulation is suspended and restarts when the alarm disappears. Starting from the very first event, the unit counts the alarm events "i8" during the "i7" interval. When the number of event is reached the alarm must be manually reset. With "i8=0 the alarm is always automatic, with "i8=1" the alarm is always manual.

PRESSURE SWITCH ALARM
It occurs when the digital input is set as "iC3=1" is active. With "iP3=0" active when contact closed, "iP1=3" active when contact is open. The regulation is suspended and restarts when the alarm disappears. Starting from the very first event, the unit counts the alarm events "i8" during the "i6" interval. When the number of event is reached the alarm must be manually reset. With "i8=0 the alarm is always automatic, with "i8=1" the alarm is always manual.

CONDENSER OVERHEATED
Setting the condenser probe "Pr3=1" and the temperature threshold **C6** the unit shows the condenser alarm as soon as the temperature rises above "C6".

COMPRESSOR BLOCKED (for high condensing)
Setting the condenser probe "Pr3=1" and the temperature threshold "**C7"** the unit shows the condenser alarm when the temperature rises above "C7" for the time "C8". Compressor regulation is locked. Manual reset is necessary by turning off and the on the unit. Be aware that by using the Off_key a running cycle is stopped.

24. EVCONNECT EVLINK

Communication functions cannot work tougher: the presence of embedded or remote EVLINK (eg EVIF25TBX) prevents the user to connect a RS485 serial interface EVIF22TSX o EVIF23TSX and vice versa. Parameters involved:
Hr0 enables the rtc 0=no 1=Yes. Connecting an EVLINK "Hr0=1" is automatically enabled and the "rtc" alarm appears if the EVLINK is removed. Inserting EVIF23TSX the Hr0 parameter must be manually set.
BLE= EVLINK presence. The serial interface EVIF22/23TSX modules operates if BLE=0 but the BLE and the data logging are suspended.
rEt = Local or remote transmission. With EVIF25TBX its value is always rEt=0.
PA1= 824 service password access from EVCONNECT APP.
PA2= 642 user password access from EVCONNECT APP.

25. LOCAL PARAMETER PASSWORD

To access the parameters with local password via keyboard:
PAS=-19 service password for all the parameter;
PS1= 1 password to access level 1 parameter.

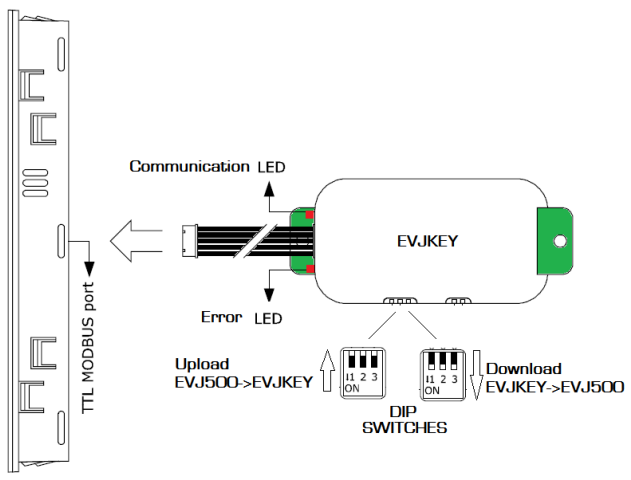
26. TECHNICAL DATA

Purpose of the control device:	function controller.
Construction of the controller device:	buil-in electronic device.
Case:	Plastic Self estinguish or Open frame.
Category of heat and fire resistance:	D.
Dimensions:	
Plasti 111,4 x 76,4 x 48,0 mm (4 3/8 x 3 x 1 15/16in)	open frame 101.0 x 67.0x47mm (4 x 2 5/8 x1 7/8)
Mounting methods:	panel with elastic mounting flaps or backpanel with double stick tape
Front Panel degree of protection:	IP65
Connections:	
screw connector for wires up to 2,5 mm².	Removable terminals by request 2,5 mm²; TTL Picoblade.
Maximum lenght for connection cable:	
power supply: 10 m (32,8 ft)	analog inputs: 10 m (32,8 ft)
digita inputs: 10 m (32,8 ft)	digital outputs: 10 m (32,8 ft).
Operating temperature:	-5 .. 55 °C (da 32 a 131 °F).
Storage temperature:	from -10 to 70 °C (da -13 a 158 °F).
Operating humidity:	from 10 to 90 % not condensing.
Pollution status of the control device:	2.
Conformity:	
RoHS 2011/65/CE	WEEE 2012/19/EU; REACH (CE) n. 1907/2006
EN 60730-1	IEC 60730-1
Power supply:	12vac/dc (±10%), 50/60Hz(±3 Hz), 10 VA max
Earthing methos for the control device	None.
rated impulse-withstand voltage:	4 KV.
Over-voltage category:	III
Sftware class structure:	A.
Real time clock:	Incorporated secondary lithium battery
Clock drift:	≤ 60 s/month a 25 °C (77 °F).
Clock battery autonomy in blackout:	> 6 months 25 °C (77 °F).
Clock battery charging time:	24 h (supplied from the device).
Analogue inputs:	2 for PTC or NTC sensor (cabinet and auxiliary probe*). 1 humidity Evco probe EVHTP500
Digital inputs:	1 configurable
Other inputs:	* configurable auxiliary probe or pressure switch.
Digital output:	6 a relè elettromeccanico configurati per default:
(K1) Compressor:	SPST 30 A res. @ 250 VAC
(K2) Heating:	SPDT 8 A res. @ 250 VAC;
(K3) Light:	SPST 16A res. @ 250 VAC
(K4) Huidify:	SPST 8 A res. @ 250 VAC;
(K5) Evaporator fan	SPST 5 A res. @ 250 VAC;
(K6) defrost	SPDT 8 A res. @ 250 VAC;
Type1 or type 2 action	Type 1.
Additiona fetures for Type1 or type 2 action	C.
Display:	TFT 2,8 inches, 16 colours, 320 x 240 pixel.
Buzzer:	on board.
Communication port:	TTL picoblade for parameter key or RS485 MODBUS converter (alternative to BLE)

27. PARAMETERS KEY

Using the EVJKEY key follow these step:
UPLOAD from **REGULATOR to EVJKEY**: insert the cable to TTL and the EVJKEY dip-switches 1-2-3 set to OFF.
DOWNLOAD from **EVJKEY to REGULATOR**: insert the cable to TTL and the EVJKEY dip-switches 1-2-3 set to ON.

Insert the EEVJKEY into the Picoblade connector, fore some secondes the two leds blink together, the during the data transfer the "communication led" is blinking:
DATA TRANSFER OK "communication led" is on.
DATA TRANSFER OK "error led" is on.



28. SEASONING MAPS

Entering the MENU (2"), all the 6 programs are preloaded with the same parameters as shown in the following table:

		Drying						
	Dripping	**Dry 1**	**Dry 2**	**Dry 3**	**Dry 4**	**Dry 5**	**Dry 6**	**Seasoning**
Duration	10 ore	15 ore	24 ore	24 ore	24 ore	24 ore	24 ore	1 giorno
Set 1	20 C	19 C	19 C	18 C	17 C	16 C	15 C	14 C
Set 2	0 %	75%	68%	65%	68%	72%	76%	82 %
Low speed fan	no	no	no	no	no	no	no	no
Rest	no	yes	yes	yes	yes	yes	yes	no
Defrost	man	man	man	man	man	man	man	man
Air change	man	man	man	man	man	man	man	man

Man= manual by the AUX key.
0%= the humidity is not controlled.

RUN - REST and AIR CHANGE DEFAULT VALURE
Run: 3 hours **Rest**: 30 minuti
Air control: all the processes
Air interval: 0 hours **Air change**: 10 minuti

Funcrion management
To **disable** a phase/process set the duration to 0.
Core temperature SET is only for display.
By default it is **enabled** the setpoint and timer change function during the cycle with P31=1. With P31=0 the SET and the timer can just be viewed.
A setpoint value changed during the active cycle can be saved into the active program phase/process if P32=1. **Default disabled P32=0**.

29. PARAMETERS

AIR CHANGE AND RUN-REST PARAMETERS

Run: 5 Hours Rest: 10 minutes
Air Control: All processes
Air interval: 0 hours Air change: 10 minutes

LEVEL 1 PARAMETERS password PS1

CA1	0.0	Probe 1 calibration
CA2	0.0	Probe 2 calibration
r0	2.0	Heating differential
r12	-2.0	Cooling differential
rd0	3.0	De-humidify differential
rh0	-3.0	Humidify differential
d0	0 hours	defrost interval
d2	8	End defrost temperature
d3	30 min	Defrost duration
PLi	1	Light key configuration in stand-by
Pbu	2	Buzzer enabled for alarm and keys

ALL PARAMETER LIST PAS

N.	PAR.	DEF.	SETPOINT	MIN... MAX. (°c)
	SET	**nv**	depending on process	r1..r2
	SET2	**nv**	depending on process	h1..h2
N.	**PAR.**	**DEF.**	**ANALOG INPUTS**	**MIN... MAX.**
1	**CA1**	**0**	Ambient probe offset	-25..+25 ° C/F
2	**CA2**	**0**	Humidity Probe Offset	-25..+25 %rH
3	**CA3**	**0**	Auxiliary Probe Offset	-25..+25 °C/F
4	**P0**	**1**	Probe Type	0=ptc 1=ntc
5	**P1**	**1**	Enable °C Decimal Point	0=no 1=yes
6	**P2**	**0**	Temperature Unit Of Measurement	0 = Celsius 1 = Fahrenheit
7	**Pr3**	**0**	Probe 3 configuration	0 = Digital input 1 = Condenser Probe 2 = Core Probe 3 = External Air 4 = Auxiliary Probe 5 = Defrost 2 Probe
8	**P5**	**1**	Value Displayed (left side) Setting to 0 the display is off.	0 = None 1 = Input 1 2 = Input 2 3 = Input 3 4 = Setpoint 1 5 = Setpoint 2
9	**P6**	**2**	Value Displayed 2 (right side). Setting to 0 the display is off	
10	**P8**	**5**	Display Refresh Time to increase/decrease a digit.	0..255 s
11	**P9**	**5**	Display 2 Refresh Time to increase/decrease a digit.	0..255 1/10 sec s
12	**P31**	**1**	Enable Runtime Set Change	0=no 1=YES
13	**P32**	**0**	Enable P31 Change Memory. Available only for temperature and humidity setpoints	0=no 1=YES
N.	**PAR.**	**DEF.**	**TEMPERATURE**	**MIN... MAX.**
14	**r0**	**2**	Setpoint cooling Differential. (SET+r0) (SET+r11+r0 if neutral zone)	0,1..15 °C/F
15	**r1**	**0.0**	Minimum Setpoint Temp	-30.. r2 °C/F
16	**r2**	**50.0**	Maximum Setpoint Temp	r1.. +99 °C/F
17	**r4**	**0.0**	Setpoint Offset in Energy Saving	0..99 °C/F
18	**r11**	**0.0**	Neutral Zone Value. With r11>0 the value is active for heating or cooling. With r11<0 the value is active only for heating function.	0..10 ° C/F
19	**r12**	**-2.0**	Setpoint Heating Differential (SET-r12) (SET-r11-r12 if neutral zone).	-25..-0,1 ° C/F
20	**r13**	**60**	Heating Duty Cycle. "r13=60" = always on, 0= Off.	0..60" s
21	**r14**	**2**	Temperature Priority control: if >0 the unit stops dehumidify (with compressor) to adjust temperature first.	0 = Disabled 1 = Heating 2 = Heat/Cool 3 = Cooling
N.	PAR.	DEF.	HUMIDITY	MIN... MAX.
22	**h1**	**10**	Minimum setpoint 2	0..h2 %rH
23	**h2**	**95**	Maximum setpoint 2	h1..100 %rH
N.	**PAR.**	**DEF.**	**HUMIDIFY**	**MIN... MAX.**
24	**rd0**	**3**	De-Humidity differential. (SET2+rd0) (SET2+rd1+rd0 if neutral Zone)	1..25 %rH
25	**rd1**	**0**	De-Humidify Neutral Zone	0..10 %rH
26	**rd2**	**60**	Fan On Time in De_humidify. 0= fan off.	0..240 " s
27	**rd3**	**0**	Fan Off Time In De-Humidify. 0=normal function.	0..240 " s
28	**rd4**	**1**	De-Humidify with Compressor or compressor and heater. 0= temperature and de-humidity outputs are independent.	0 = Disabled 1 = Compressor 1 2 = Compressor and Heat
29	**rd5**	**0**	Heating and de-Humidify functions executed with Defrost output if no heating output is available.	0=no 1=Yes
N.	**PAR.**	**DEF.**	**DE HUMIDIFY**	**MIN... MAX.**
30	**rh0**	**-3**	Humidify Differential (SET2-rh0) (SET2-rh1-rh0 if neutral zone)	-25..-1 %rH
31	**rh1**	**0**	Humidify Neutral Zone	0..10 % %rH
32	**rh2**	**60**	Humidify Output On Time (or Fan if no rH output configured). 0= Humidify output off.	0..240 " s
33	**rh3**	**0**	Humidify Output Off Time (or Fan if no rH output configured). 0= Humidify output normal.	0..240 " s
N.	**PAR.**	**DEF.**	**COMPRESSOR**	**MIN... MAX.**
34	**C0**	**0**	Compressor ON Delay After Power-on	0..240 min
35	**C2**	**3**	Compressor OFF Minimum Time	0..240 min
36	**C3**	**0**	Compressor ON Minimum Time	0..240 " s
37	**C4**	**10**	Compressor OFF Time during Cabinet Probe Alarm	0..240 min
38	**C5**	**10**	Compressor ON Time during Cabinet Probe Alarm	0..240 min
39	**C6**	**80**	Threshold for High Condensation Warning	0..199 ° C/F
40	**C7**	**90**	Threshold for High Condensation Alarm	0..199 ° C/F
41	**C8**	**0**	Compressor Shutdown Alarm Delay for high condensing.	0..15 min
42	**C10**	**0**	Compressor run time for Service	gg
43	**C11**	**10**	Compressor 2 On Delay after Compressor 1	0..240 "
N.	**PAR.**	**DEF.**	**DEFROST**	**MIN... MAX.**
44	**d0**	**0**	Defrost interval time	0..99 min
45	**d1**	**0**	Type of Defrost	0 = Electric 1 = Hot gas 2 = Compressor Stop
46	**d2**	**8**	Threshold for Defrost End	-99..+99 ° C/F
47	**d3**	**15**	Defrost Duration	0..99 min
48	**d4**	**0**	Enable Defrost at Power-on	0=no 1=poweron 2= post overcooling 3= poweron and post overcooling
49	**d5**	**0**	Defrost Delay after Power-on	0..99 min
50	**d6**	**0**	Value Displayed during Defrost	0 = Regulation Value 1 = Display Locked 2 = reserved
51	**d7**	**0**	Dripping Time	0..15 min
52	**d11**	**0**	Enable Defrost Time-Out Alarm	0=NO 1=YES
53	**d13**	**0**	Defrost and Rest Synchronized	0=NO 1=YES
54	**d15**	**0**	Compressor ON Consecutive Time for Hot Gas Defrost	0..99 min
N.	**PAR.**	**DEF.**	**ALARMS**	**MIN... MAX.**
55	**A1**	**0.0**	Threshold for Low Temperature Alarm	-99..+99 ° ° C/F
56	**A2**	**2**	Low Temperature Alarm Type	0 = Disabled 1 = Relative to Setpoint 2 = Absolute
57	**A4**	**50.0**	Threshold for High Temperature Alarm	-99..+99 ° C/F
58	**A5**	**2**	HighTemperature Alarm Type	0 = Disabled 1 = Relative to Setpoint 2 = Absolute
59	**A6**	**120**	High Temperature Alarm Delay after Power-on	0..240 min
60	**A7**	**15**	Temperature alarm delay	0..240 min
61	**A8**	**15**	High Temperature Alarm Delay After Defrost	0..240 min
62	**A9**	**15**	High Temperature Alarm Delay after Door Closing	0..240 min
63	**A10**	**15**	Power Failure Duration for PF Alarm Recording	0..240 min
64	**A11**	**1.0**	High/Low Temperature Alarm Reset Differential	0,1..15 ° C/F
65	**AH1**	**50**	Low Humidity Alarm relative to SET2	0..100 %rH
66	**AH4**	**50**	High Humidity Alarm relative to SET2	0..100 %rH
67	**AH7**	**30**	Humidity Alarm Delay and sensor error.	0..240 min
N.	**PAR.**	**DEF.**	**EVAPORATOR FAN**	**MIN... MAX.**
68	**F0**	**1**	Evaporator Fan Mode during Normal Operation. With F0=0 parameters F11-F12, rd2-rd3, rh2-rh3 can enable a fan cycling regulation. For safety reason (use of heating elements and cycles) check the fan control chapter.	0 =ON+Fan Cycling 1 = ON (default) 2 = ON if Compressor ON 3 = Thermoregulated (with F1 relative to Regulation Temperature) 4 = Thermoregulated if Compressor ON (with F1 relative to Regulation Temperature)
69	**F1**	**99.0**	Threshold for Evaporator Fan Operation with F0=3 or 4. The fan starts under F1 and stops at "F1+F8".	-99..+99 °C/F
70	**F2**	**0**	Evaporator Fan Mode during Defrost	0 = OFF 1 = ON 2 = According to F0
71	**F3**	**0**	Evaporator Fan OFF Maximum Time after Dripping	0..15 min
72	**F7**	**99.0**	Threshold for Evaporator Fan ON after Dripping (relative to Setpoint)	-99..+99 ° C/F
73	**F8**	**2.0**	Evaporator Setpoint Differential	0,1..15 ° C/F
74	**F9**	**5**	Evaporator Fan OFF Delay after Compressor OFF	0..240 " s
75	**F11**	**60**	Fan On Time with no regulation. To be used with F0=0.	0..240 " s
76	**F12**	**0**	Fan Off Time with no Regulation. To be used with F0=0.	0..240 " s
N.	**PAR.**	**DEF.**	**AIR CHANGE FAN**	**MIN... MAX.**
77	**F30**	**0**	Evap Fan For Air Change	0=no 1=yes
78	**F31**	**- - -**	Air Change Hour	0..24 h h
79	**F32**	**- - -**	Air Change Hour	0..24 h
80	**F33**	**- - -**	Air Change Hour	0..24 h
81	**F34**	**- - -**	Air Change Hour	0..24 h
82	**F35**	**- - -**	Air Change Hour	0..24 h
83	**F36**	**- - -**	Air Change Hour	0..24 h
N.	**PAR.**	**DEF.**	**CONDENSER FAN**	**MIN... MAX.**
84	**Fc1**	**25**	Threshold for Condenser Fan ON	0..99 ° C/F
85	**Fc2**	**5.0**	Condenser Fan Differential	0,1..15 ° C/F
86	**Fc3**	**5**	Condenser Fan Off delay	0..240 " s
N.	**PAR.**	**DEF.**	**DIGITAL INPUTS FUNC**	**MIN... MAX.**
87	**i1**	**0**	Lock Display with Open Door	0..240 min
88	**i2**	**15**	Open Door Alarm Delay. -1=disabled 0= immediate	-1..120 min
89	**i3**	**15**	Cooling Inhibition Max Time with Open Door -1=disabled 0= immediate without restarting.	-1..120 min
90	**i5**	**0**	Multi-purpose Input Alarm Delay	0..120 min
91	**i6**	**60**	High Pressure Events Counting Interval	0..120 min
92	**i7**	**60**	Multi-purpose Input Alarm Delay	0..120 min
93	**i8**	**1**	Digital Input Event Counting For Pressure or Thermal Alarm. 0= always automatic, 1= always manual.	0..15
N.	**PAR.**	**DEF.**	**UAXILIARY RELAY**	**MIN... MAX.**
94	**u6**	**0**	Auxiliary output configuration. The manual control is operated via AUX key.	0= heating 1= Cooling 2= manual
95	**u7**	**0.0**	Auxiliary Setpoint if "u6=1 or 2".	-99..+99 ° C/F
96	**u8**	**1.0**	Auxiliary differential for "u7" if "u6=1 or 2"	0,1..15 ° C/F
N.	**PAR.**	**DEF.**	**DIG IN CONFIGURATION**	**MIN... MAX.**
97	**iC1**	**7**	Multi-purpose Input Function, Door switch: 7,8 or 9.	0 = Disabled 1= Multifunction alarm 2= reserved 3= = reserved 4 = Stand-by 5 = Thermal Switch 1 5 = Thermal Switch 2 7 = Compressor + Evaporator Fan OFF, Light ON 8 = Evaporator Fan OFF, Light ON 9 = Compressor + Evaporator Fan OFF, Light ON
98	**iP1**	**0**	Multi-purpose Input 1 Activation. 0= function active for contact closed.	0=closed 1=open
99	**iC3**	**0**	Digital Input 3 configuration Pr3=0.	0= disabled 1= high pressure switch
100	**iP3**	**0**	Multi-purpose Input 3 Activation. 0= function active for contact closed.	0=closed 1=open
N.	**PAR.**	**DEF.**	**USCITE DIGITALI**	**MIN... MAX.**
101	**uc1**	**4**	K1 Output Configuration (C)	0 = Disabled 1 = Humidity 2 = de-Humidfy 3 = Alarm 4 = Compressor 1 5 = Heating 6 = Condenser Fans 7 = ON / STAND-BY 8 = Air Change 9 = Light 10 = Compressor 2 11 = Evaporator Fans 12 = Defrost 13 = Reserved 14 = Evaporator Fan 2 15 = Auxiliary Relay
102	**uc2**	**5**	K2 Output Configuration (Ht)	
103	**uc3**	**9**	K3 Output Configuration (L)	
104	**uc4**	**1**	K4 Output Configuration (rH)	
105	**uc5**	**11**	K5 Output Configuration (EF)	
106	**uc6**	**12**	K6 Output Configuration (Def)	
N.	**PAR.**	**DEF.**	**TOUCH KEYS**	**MIN... MAX.**
107	**POF**	**1**	Enable ON/Stand-by Key	0 = no 1 = yes
108	**PLi**	**1**	Light button in stand-by	0 = no 1 = yes
109	**PSr**	**1**	Disable Alarm Output by Silencing the Buzzer	0 = no 1 = yes
110	**Pbu**	**2**	Enable key and Buzzer Function	0 = no 1 = only alarm, no keys 2 = alarm and keys
N.	**PAR.**	**DEF.**	**SICUREZZE**	**MIN... MAX.**
111	**PAS**	**-19**	Password all parameters	-99... 999
112	**PS1**	**1**	Level 1 service	-99... 999
113	**PA1**	**426**	Evlink user password	-99... 999
114	**PS2**	**824**	Evlink service password	-99... 999
N.	**PAR.**	**DEF.**	**OROLOGIO**	**MIN... MAX.**
115	**Hr0**	**0 / 1**	Enable clock function. 1= for models provided with rtc or EVLINK on board.	0 = no 1 = yes
N.	**PAR.**	**DEF.**	**DATALOGGER**	**MIN... MAX.**
116	**BLE**	**1**	"1"= EVLINK presence leaving LA, Lb and LP to default. To enable modbus communication via EVIF22/23TSX modules set to "0".	0 = no 1 = si
117	**rE0**	**15**	Recording interval	0..240 min
118	**rE1**	**4**	Select Probes for Data-logger Recording	0=none 1=probe 1; 2= probe 2 3= probe 3; 4= probe 1 e probe 2; 5= all probes
N.	**PAR.**	**DEF.**	**REAL TIME DEFROST Hr0=1**	**MIN... MAX.**
119	**Hd1**	**- - -**	1st Daily Defrost Time	0..24 h
120	**Hd2**	**- - -**	2nd Daily Defrost Time	0..24 h
121	**Hd3**	**- - -**	3d Daily Defrost Time	0..24 h
122	**Hd4**	**- - -**	4th Daily Defrost Time	0..24 h
123	**Hd5**	**- - -**	5th Daily Defrost Time	0..24 h
124	**Hd6**	**- - -**	6th Daily Defrost Time	0..24 h
N.	**PAR.**	**DEF.**	**MODBUS**	**MIN... MAX.**
129	**LA**	**247**	MODBUS address if BLE=0	1... 247
126	**Lb**	**3**	MODBUS Baud Rate if BLE=0.	0= 2400; 1= 4800 2= 9600; 3= 19200
127	**LP**	**2**	Modbus Parity if BLE=0.	0= None; 1= Odd; 2= Even
N.	**PAR.**	**DEF.**	**ENERGY SAVING**	**MIN... MAX.**
128	**HE2**	**0**	Energy Saving Max Duration in manual mode	0..990 min
129	**H01**	**0**	Energy Saving Start Time with rtc Hr0=1	0..23h
130	**H02**	**0**	Energy Saving Duration	0..24h

ATTENZIONE
Il dispositivo deve essere smaltito secondo le normative locali in merito alla raccolta delle apparecchiature elettriche ed elettroniche.

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