USER GUIDE

Upright Cabinets and Prep Tables

WELCOME TO U-LINE

Congratulations on your U-Line purchase. This product is part of our U-Line by Desmon Collection. Made by our sister company, Desmon in Italy, one of Europe's leading producers of commercial refrigeration products. It is designed and certified for commercial applications in North America.

U-Line offers products focused on functionality, style, and inspired innovations — paying close attention to even the smallest details. Applications include residential, outdoor, ADA height compliant, marine, and commercial. Complete product categories include Beverage Centers, Wine Refrigerators, Ice Machines, Refrigerators, Freezers, and Dispensers.

Our advanced refrigeration systems, large and flexible capacities, and Built-In to Stand Out® clean integrated look allow you to preserve the right product, in the right place, at the right temperature. Since 2014, U-Line has been part of the Middleby family of brands. Most products are designed, engineered, and assembled in Milwaukee, Wisconsin, USA, and select products are available worldwide.

PRODUCT INFORMATION

Looking for additional information on your product? User Guides, Spec Sheets, CAD Drawings, Compliance Documentation, and Product Warranty information are all available for reference and download at u-line.com.

PROPERTY DAMAGE / INJURY CONCERNS

In the unlikely event property damage or personal injury is suspected related to a U-Line product, please take the following steps:

1. U-Line Customer Care must be contacted immediately at +1.414.354.0300.
2. Service or repairs performed on the unit without prior written approval from U-Line is not permitted. If the unit has been altered or repaired in the field without prior written approval from U-Line, claims will not be eligible.

GENERAL INQUIRIES

U-Line Corporation
8900 N. 55th Street
Milwaukee, Wisconsin 53223 USA
Monday - Friday 8:00 am to 4:30 pm CST
T: +1.414.354.0300
Email: sales@u-line.com
u-line.com

SERVICE & PARTS ASSISTANCE

Monday - Friday 8:00 am to 4:30 pm CST
T: +1.414.354.0300
Service Email: onlineservice@u-line.com
Parts Email: onlineparts@u-line.com

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U-Line Corporation (U-Line) Commercial Limited Warranty

Three Year Limited Warranty

For three years from the date of original purchase, this warranty covers all parts and labor to repair or replace any part of the product that proves to be defective in materials or workmanship. Service provided by U-Line under the above warranty must be performed by a U-Line factory authorized servicer, unless otherwise specified by U-Line. Service provided during normal business hours.

Five Year Sealed System Limited Warranty

For five years from the date of original purchase, U-Line will repair or replace the following parts, labor not included, that prove to be defective in materials or workmanship: compressor, condenser, evaporator, drier, and all connecting tubing. All service provided by U-Line under the above warranty must be performed by a U-Line factory authorized servicer, unless otherwise specified by U-Line. Service provided during normal business hours.

Terms

These warranties apply only to products installed in any one of the fifty states of the United States, the District of Columbia, or the ten provinces of Canada. The warranties do not cover any parts or labor to correct any defect caused by negligence, accident or improper use, maintenance, installation, service, repair, acts of God, fire, flood or other natural disasters. The product must be installed, operated, and maintained in accordance with your product's User Guide.

The remedies described above for each warranty are the only ones that U-Line will provide, either under these warranties or under any warranty arising by operation of law. U-Line will not be responsible for any consequential or incidental damages arising from the breach of these warranties or any other warranty, whether express, implied, or statutory. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. These warranties give you specific legal rights, and you may also have other rights which vary from state to state.

Any warranty that may be implied in connection with your purchase or use of the product, including any warranty of *merchantability* or any warranty *fit for a particular purpose* is limited to the duration of these warranties, and only extends to five years in duration for the parts described in the section related to the three-year limited warranty above. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

- Service must be dispatched by the factory to be eligible for warranty coverage.
- The warranties only apply to the original purchaser and are non-transferable.
- Replacement water filters, light bulbs, and other consumable parts are not covered by these warranties.
- The start of U-Line's obligation begins on the shipment date from the factory.
- Food, beverage, and medicine loss are not covered by these warranties.
- If the product is located in an area where U-Line factory authorized service is not available, you may be responsible for a trip charge or you may be required to bring the product to a U-Line factory authorized service location at your own cost and expense.
- Any product purchased as a floor display is covered by a 90-day warranty only.
- Signal issues related to Wi-Fi connectivity are not covered by these warranties.

For parts and service assistance, or to find U-Line factory authorized service near you, contact U-Line:
8900 N. 55th Street, Milwaukee, WI 53223 • u-line.com • onlineservice@u-line.com • +1.414.354.0300

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1. STANDARDS AND GENERAL WARNINGS

PRODUCTS APPLICABLE TO THIS MANUAL

The present manual is valid and applicable to the following products range:

R290 food service freezers

Adjustable temperature control range: lowest T = -25°C (-13°F), highest T = -10 °C (14°F)

Operating temperature: -22°C to -20°C (-7,6°F to -4°F)

Factory pre-set to: -22°C (-4°F)

R290 food service chillers

Adjustable temperature control range: lowest T = -2 °C (-28°F), highest T = 8 °C (46°F)

Operating temperature: 0°C to 2°C (32°F to 36°F)

Factory pre-set to: 2°C (36°F)

Environmental Operating Conditions

-Nominal environmental operating condition: ***Climatic class 5*** (43°C, HR%=40%);

- Ambient temperature operating range: **10°C~40°C**;

- Humidity: **60% maximum, non-condensing**;

-Electrical supply: **110~127V/60Hz; 220~230V/50Hz; 220V/60Hz;**

-Altitude: **2000 meters MSL** (Mean Sea Level);

- Usage: **This product is intended for use indoors only**.

1.1 TESTING AND INTENDED USE

This equipment is tested in compliance with established regulations and then shipped ready for use.

"If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired."

1.2 INTRODUCTION

This manual provides all instructions required for the correct use of the equipment and to keep it in optimal condition. It also contains important user safety information. The following professional roles are explained in order to define individual responsibilities:

Installer: a qualified technician who installs the equipment in accordance with these instructions.

User: the person who, after having read this manual carefully, uses the equipment in accordance with the intended specification of use described in this manual. User's responsibilities: ensure that the product is kept at suitable temperatures in an ambient environment less than +40°C (104°F); be aware of the regulations governing the conservation of products to refrigerate and to observe any whatsoever hygiene indications that may be applicable. The user is obliged to carefully read the manual and refer to its information at all times. Particular attention must be paid to safety warnings (refer to Section 1.5).

Routine maintenance technician: qualified operator able to perform routine maintenance of the equipment by following the instructions in this manual.

Service engineer: qualified technician, authorized by the manufacturer to perform extraordinary maintenance of the equipment.

The symbol ⚠ appears at certain points in the manual to draw the reader's attention to important safety information.

The manufacturer declines any responsibility in case of improper use of the equipment deviating from the reasonably construed intended use, and for all operations carried out that are not in compliance with the instructions reported in the manual.

This manual must be stored in an accessible and known place for all operators (installer, user, routine maintenance technician, service engineer).

1.3 PRODUCT DESCRIPTION

The equipment comprises a single body with paneling in various materials and insulation with expanded polyurethane foam. The equipment instruments are located on the front panel where the electrical wiring is housed. The motor unit and the evaporator unit are housed on the top of body. The interior parts are fitted with suitable supports for shelves. The doors are fitted with an automatic return device and magnetic seal elements. During the design and construction stage all measures have been adopted to implement total safety including radius interior corners, funnel-shaped base panel to convey condensate to exterior, no rough surfaces, fixed guards protecting moving or potentially dangerous parts.

1.4 CERTIFICATION

The appliances listed in this manual are manufactured in accordance with the following regulations:

- **UL 60335-1: SAFETY OF HOUSEHOLD AND SIMILAR APPLIANCES- Part1: General Requirements.**
- **UL 60335-2-89: HOUSEHOLD AND SIMILAR APPLIANCES - SAFETY - Part 2-89: Particular Requirements for Commercial Refrigerating Appliances with an Incorporated or Remote Refrigerant Unit or Compressor.**
- **CSA C22.2 NO. 120-13 REFRIGERATION EQUIPMENT- Edition 4 - Issue Date 2013/03/01.**
- **NSF 7 COMMERCIAL REFRIGERATORS AND FREEZERS - Issue Date 2016/05/04**

1.5 GENERAL SAFETY REGULATIONS

Read this manual carefully and follow the instructions contained herein.

The user assumes full responsibility in case of operations carried out without observing the instructions in the manual.

Do not use this product with flammable gases or flammable solvents.

Do not store flammable gases, flammable liquids or flammable solids in these units.

Primary general safety regulations:

- Do not touch the unit with wet hands and/or feet. Do not use the equipment with bare feet;
- Do not insert screwdrivers or other pointed objects between guards or moving parts of the equipment;
- Do not pull the power cord to disconnect the equipment from the electrical mains Make sure that the equipment is not used by unsuitably qualified persons;
- Before performing any cleaning or maintenance on the equipment disconnect it from the electrical mains by switching off the main switch and extracting the plug;
- **Never** use any metallic scouring pads, brushes, abrasive cleaners or strong alkaline solution on any surface.
- The relocation of the unit must be performed by qualified personnel. Do not shift the refrigerator from side to side as this may create leakage point across the cooling unit piping.
- In case of faults or malfunctions, switch off the equipment and do not attempt to repair it by yourself as doing so may void the warranty. All service and repair operations must be performed exclusively by a manufacture's authorized engineer. (Authorized service technician, trained service personnel, authorized service personnel)
- Propane fridge/freezer, like any other appliance, must have access to fresh air/oxygen;
- Keep clear of obstruction all ventilation openings in the appliance enclosure or in the structure for building-in.

- Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

- **WARNING: Do not damage the refrigerant circuit.**

 **Do not use FLAME to check for gas leak.**

 **Do not under any circumstances** try to modify or repair valves, regulator, connectors, controls or any other appliance. Doing so creates the risk of a gas leak.

1.6 CUSTOMER'S RESPONSIBILITIES

The customer is required to:

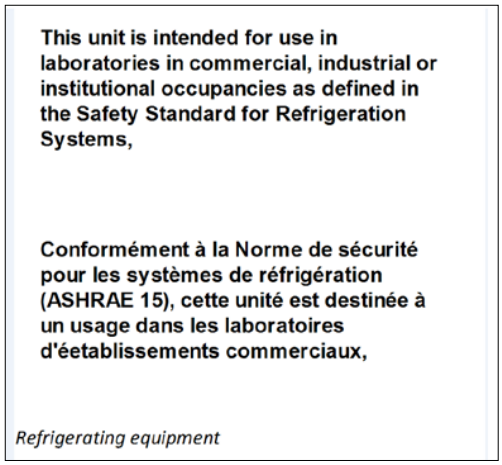
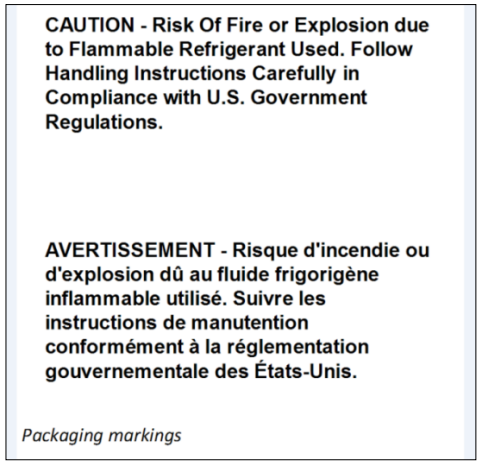
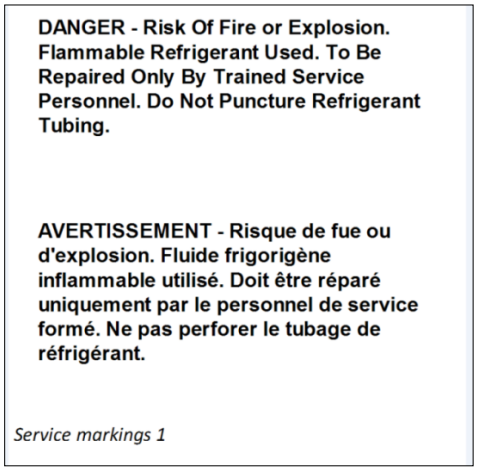
- Execute the electrical connection of the equipment Prepare the place of installation;
- Provide consumable materials for cleaning Perform routine maintenance;
- In the case of power failures or malfunctions do not open the doors, in order to maintain the internal temperature for as long as possible. If the problem persists for more than a few hours, move the contents to a more suitable place.

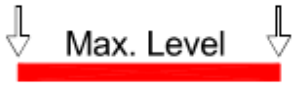
1.10 MATERIALS AND REFRIGERANTS

- Materials in contact or potentially in contact with products are in compliance with the relevant directives. The equipments designed and built so that contact parts can be cleaned before each use. The refrigerants utilized comply with established regulations.

1.11 WARNING LABELS

Electrical Shock	LABEL A
	Use of this equipment involves power supplies which convert line voltage to low voltage power. Do not modify or use power supplies other than OEM equipment. Connection of the power supply may require a properly grounded receptacle. Potential for electrical shock or equipment damage exists if precautions are not followed.
Hot Surface	LABEL B
	Avoid contact with the hot surfaces potential for skin's burns.
Cold Surface	LABEL C
	Avoid contact with cold freezer surfaces potential for cold burns or skin sticking to cold surfaces.
Safety Alert	LABEL D
	Important operating instructions. To reduce the risk of injury or poor performance of the unit read the user manual before putting the equipment into operation.
Warning	
	Indicates an immediately hazardous situation, which if not avoided, will result in death or serious injury.
Caution	
	Indicates an immediately hazardous situation, which if not avoided, may result in minor to moderate injury
Battery	LABEL E
	Indicates the location of the back-up battery
Risk of fire	LABEL F
	Risk of fire or explosion. Flammable refrigerant used. Follow handling instruction carefully. To be repaired only by trained service Personnel. Do not puncture Refrigerant Tubing.

	Refrigerating Equipment intended for laboratory use.
	Packaging markings *(Label attached upon the cartoon box)*
	Service markings. *(Label located near the cooling unit compartment)*

CAUTION - Risk Of Fire or Explosion. Flammable Refrigerant Used. Consult Repair Manual/Owner's Guide Before Attempting To Install or Service This Product. All Safety Precautions Must be Followed. PRUDENCE - Risque de fue ou d'explosion. Fluide frigorigène inflammable utilisé. Consulter le manuel de réparation/guide du propriétaire avant de tenter d'installer ou de procéder a l'entretiene de ce produit. Toutes les *Service markings 2*	Service markings *(Label located near the cooling unit compartment)*
CAUTION - Risk Of Fire or Explosion. Dispose Of Properly In Accordance With Federal Or Local Regulations. Flammable Refrigerant Used. PRUDENCE - Risque de feu ou d'explosion. Éliminer correctement conformément aux réglements fédéraux ou locaux. Fluide frigorigéne inflammable utilisé. *Disposal*	Disposal *(Marking attached upon the exterior of the cabinet)*
	Max high load

2. INSTALLATION

2.1 TRANSPORTATION AND HANDLING

⚠ **The equipment must be transported and handled exclusively in upright position, in observance of the instructions printed on the packing.**

This precaution is necessary to avoid contamination of the refrigerant circuit with compressor lube oil with resulting valve and heat exchanger coil failure and problems starting the electric motor or the risk of a gas leak. The manufacturer is not responsible for any problems due to transport executed in conditions other than those specified herewith.

The equipment is secured to a wooden pallet base, wrapped in a plastic film and packaged into a three waves carton box..

The equipment must be handled using a fork lift truck or a pallet truck with suitable forks (fork length at least equal to 2/3 length of unit).

2.2 POSITIONING

Incorrect positioning can cause damage to the equipment and generate hazardous conditions for personnel. The installer must therefore observe the following general regulations:

- Make sure you maintain a minimum of 11,8" (30cm). clearance from the walls and 31,5" (80 cm) from the ceiling. The room must be well ventilated.
- Keep well away from sources of heat. Avoid direct sunlight
- Remove packing material.
- Remove accessories from inside the unit.
- Cartoon box or Wood base removal: using a hammer, tilt the cabinet to one side and loosen the two thread-forming screws, drag the cabinet from the back side holding the base still until the four castors have gone out from the containing holes, slightly tilt the cabinet backward and take the base away pulling it from the front side.

⚠ *Use gloves when handling the 3 Waves cartoon box or the wooden base to protect the hands from splinters.*

- Position the equipment with the help of a level. Remove the protective PVC film from the external surfaces of the unit.
- Position the shelf runners in the holes in the uprights. Insert the shelves in the runners.

Note: the shelves included are n.04 of GN2/1 per each door.
The maximum load of each is 48 kg. (30kg for the 12 cu.ft)

2.3 WIRING AND ELECTRICAL HOOK-UP

Receptacle installation and electrical wiring operations must be performed by a qualified electrician. For safety reasons adhere to the following indications:

- Check that the electrical plant is suitably sized for the absorbed power of the unit.
- If the electrical socket and the plug on the equipment power cord are incompatible, call technical service or your local distributor.
- The power cord set included with the appliance meets the requirements for use in the country of purchase. Use the power cord that shipped with the appliance (*Nema 5-15)*. If this appliance is to be used in another country, purchase an AC power cord set that is approved for use in that country

The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.

- Do not use reductions or multi-way adapters (Fig.1)

It is important to connect the equipment correctly to an efficient earth system executed in compliance with the relevant legislation.

- The equipment must be positioned so that plug can be easily reached (Fig. 1)

Fig. 1

If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

2.4 SET UP OPERATIONS

To avoid errors and accidents, perform a series of checks for possible damage sustained during transport, installation and hook-up operations before starting up the unit.

PRELIMINARY CHECKS

- Check the condition of the power cord (no cut or chaffing). Check that the door hinges and shelf support are stable.
- Check the door seals and shelves are not damaged (broken or scratched) and that the door closes and seals properly.
- Make sure all copper tubing, unions are in perfect condition.

FOR OPTIMAL PERFORMANCE

- Do not block the motor compartment air vents. Do not lay objects on the top of the equipment Before storing products wait until they are cold.
- Arrange the products on suitable shelves or in containers. Do not place products directly on the base or against the walls, doors or fixed guards of the unit.
- Make sure doors are kept closed.
- Keep the defrost water drain outlet clear.
- Limit the frequency and duration of opening; each time the door is opened the internal temperature will alter.
- Load products at ambient temperature gradually to allow correct refrigeration. Perform routine maintenance regularly.

2.5 RE- INSTALLATION

Observe the following procedure:

- Disconnect the power cord from the electrical outlet.
- Handle the equipment in accordance with the instructions in Section 2.1.
- Follow the instructions in Section 2.2 for positioning and hook-ups in the new location.

2.6 SCRAPPING AND DISPOSAL

These units may contain materials, which at the end of the working life of the apparatus, must be disposed at one of the recycling centres nominated by your Local National Health Department or as specified by the law in force. Scrapping and disposal of the equipment must be carried out in full observance of established legislation in your country.

In particular, the apparatus may contain the following materials:

- Iron
- Copper
- Aluminium
- Non-biodegradable plastics
- Fibre glass for printed circuits
- Ferrite
- Batteries
- CFC-free refrigeration gas
- Electrical and electronic equipment (WEEE)

The manufacturer shall not be chargeable for any disposal of the apparatus at the end of its working life.

line with EU Directive 2002/96/EC for waste electrical and electronic equipment (WEEE), this electrical product must not be disposed of as unsorted municipal waste. Please dispose of this product by returning it to your local municipal collection point for recycling.

3. OPERATION

Before switching ON the unit, check that the electrical connections have been made correctly and above all, that the ground connection is available and working properly.

Please read before using this manual

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- Digital controller with defrost and fans management shall not be used for purpose different from those described hereunder. It cannot be used as a safely device.
- Check the application limits before proceeding.

Safety precautions

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding the temperature changes with high atmospheric humidity to prevent formation of condensation.

Warning

- Disconnect all the electrical connections before any kind of maintenance.
- In case of failure or faulty operation contact technical service or Dealer.
- Consider the maximum current which can be applied to each relay.
- Ensure that the wired for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.

3.1 CONTROLLER GENERAL DESCRIPTION

The controller is a microprocessor based controller suitable for normal and low temperature air- ventilated application with a membrane keyboard. The controller has dimensions 101 x 67 x 47 mm, while the keyboard has dimensions 200 x 82 millimeters, six electro-mechanical relays.

The controller is also provided with 2 probe inputs either NTC or PTC type: the probe "**Pb1**" defined as "*Control probe"* and used for the compressor activation, the "**Pb2"** defined as "*Evaporator probe"* and used to control the evaporator fan operation and the defrost cycle; The device has also an additional input configurable as analogue input ("*Auxiliary probe"* **Pb3**) or digital input ("*Door switch/multi-function input")*

Technical Data

Heat and fire resistance category: D.

Connections: Removable screw terminal blocks for wires up to 2,5 mm^2 ; Micro-MaTch connectors; Pico-blade connectors.

Maximum length allowed to the connection cables: 10 meters (32,8ft) for power supply cord; 10 meters (32,8ft) for Analogue inputs; 10 meters (32,8ft) for Digital inputs; 10 meters (32,8ft) for Digital outputs.

Operating temperature: from -5°C to 55°C (from 23 to 131°F)

Operating humidity: Relative humidity without condensate from 10 to 90%.

Pollution status of the device: 2.

Power supply: 12 VAC (+10% -15%) 50/60Hz (±3Hz) max 4VA insulated - 12VDC max 3,5W

Over voltage category: III.

Analogue input: 2 for NTC/PTC nodes (Cabinet probe and Evaporator probe)

Sensor range:
-PTC: from -50°C to 150°C (from -58 to 302°F)
-NTC: from -40°C to 105°C (from -40 to 221°F)

Sensitivity: 0,1°C (1°F)

Digital inputs: 1 (microport) for NO/NC contac (dry contact: 5VDC, 2mA)

Digital outputs: 6 electro-mechanical relays

Relay K1: SPST, 16A res. @250VCA
Relay K2: SPDT, 8A res @250VCA
Relay K3: SPST, 16A res @250VCA
Relay K4: SPST, 8A res @250VCA
Relay K5: SPST, 5A res @250VCA
Relay K6: SPDT, 8A res @250VCA

Alarm buzzer: Incorporated.

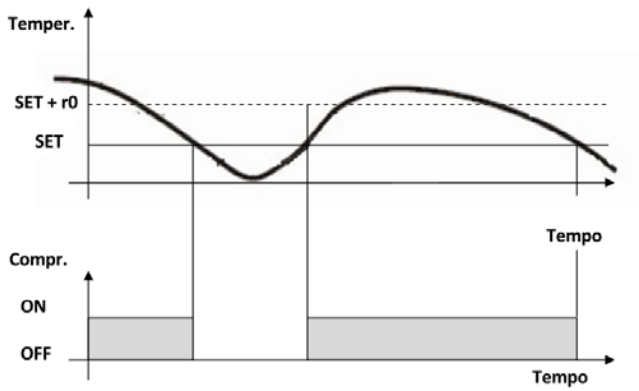
The maximum current applicable to the loads is 24A.

Communication port: 1 TTL MODBUS slave port for EVconnect APP or BMS (by request)

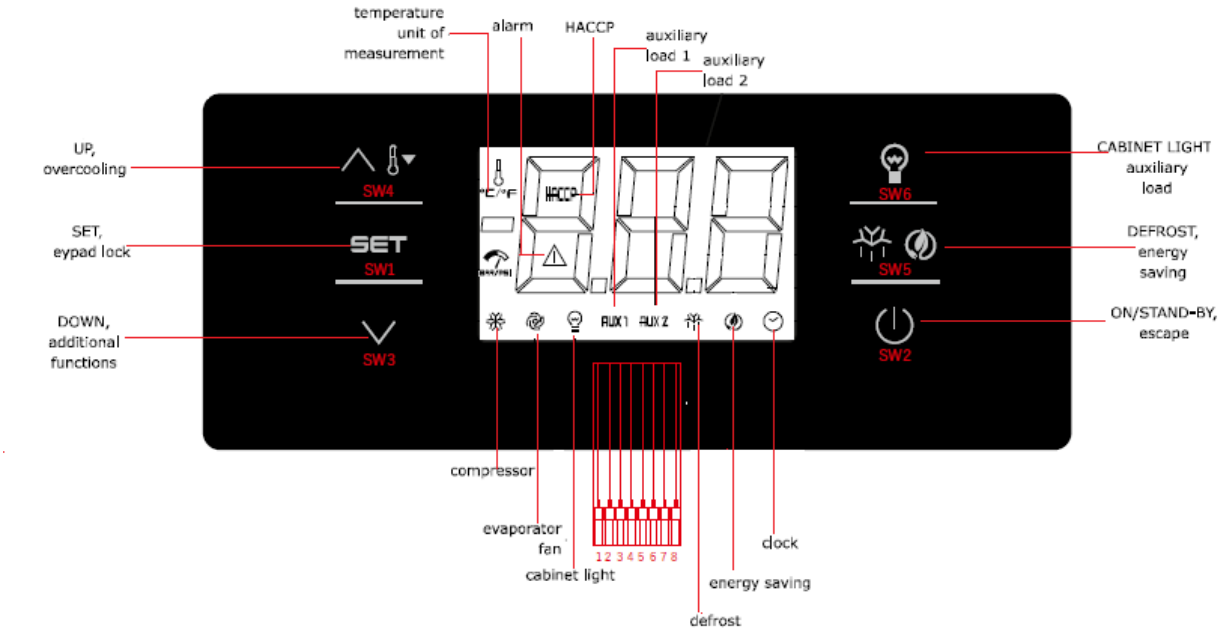
3.2 REGULATION

Once set a desired temperature required for the products storage within the operational range of each models, the regulation of the cooling system is controlled by the temperature measured by the control probe with a positive differential from the set point: when the temperature rises up to the set point plus differential the compressor starts to pull down the temperature and it turns off when the desired set point is reached again.

*In case of faulty probe the compressor activation is timed through the parameter "**C4**" and "**C5**"*



3.3 CONTROLLER KEYBOARD AND MAIN FUNCTION



3.3.1 Switching the device ON/OFF

If the parameter POF=1,touch the ON/STAND-BY key | ⏻ | and hold it for 2 sec. Once the device is switched on the display will show temperature value according with the parameter **P5.**

3.3.2 Use of LEDs

LED	MODE	MEANING
❄	-ON -OFF -Flashing	-Compressor ON -Compressor OFF -Compressor protection activated/set point temperature menu
	-ON -OFF -Flashing	- Active Defrost/ pre-dripping cycle -No action. -Defrost delay time/ dripping cycle active
	-ON -OFF -Flashing	-Evaporator fan ON -Evaporator fan OFF -Evaporator fan stop
AUX 1	-ON -OFF -Flashing	-Auxiliary function 1 ON -Auxiliary function 1 OFF -Auxiliary function 1ON by digital input/ Auxiliary function 1 delay active
AUX 2	-ON -OFF -Flashing	-Auxiliary function 2 ON -Auxiliary function 2 OFF -Auxiliary function 2 ON by digital input/ Auxiliary function 2 delay active
	-ON -OFF -Flashing	-Active Energy saving mode -no action -no action

°C/°F	-ON -OFF -Flashing	-Normal temperature view -no action -Active overheating/overcooling cycle
	-ON -OFF -Flashing	-Cabinet light ON -Cabinet light OFF -Cabinet light ON by digital input
	-ON -OFF -Flashing	-view time -no action -set date, time and day of the current week
HACCP	-ON -OFF -Flashing	-Saved HACCP alarm -no action -new HACCP alarm saved
	-ON -OFF -Flashing	-Alarm active -no action -no action
	-ON -OFF -Flashing	-Device OFF -Device ON -Device ON/OFF mode

3.3.3 Keypad unlocking
If the parameter **Loc=1** (default) after 30 sec without any keys of the display has been pressed, the display will show the label "**Loc**" and the keypad will lock automatically.
To unlock the keypad, touch a key for 1 sec: the display will show the label "**UnL**".

3.3.4 Operational temperature settings
If the keypad is locked, firstly unlock it.

Touch the SET key | SET | then set the desired temperature by pressing the 
Up or DOWN key within 15s according with the limits range of the set point (parameters **r1** and **r2**).
Press | SET | to confirm or do not operate for 15 sec.

3.3.5 Manual defrost
Firstly check the keypad is not locked (and in case unlock it) and the overcooling cycle is not activated.

Touch the Defrost key |  | holding it for 2 sec. If the parameter **P3=1** and the evaporator temperature value is lower than the parameter **d2,** the defrost cycle will start.

3.3.6 Cabinet light ON/OFF (if the parameter u1=0)
Touch the Cabinet light key |  |

3.3.7 Buzzer
If the parameters **u1**=3 and **u4**=1 touch any key to shut down the buzzer alarm.

3.3.8 Overcooling/overheating cycle activation and Manual energy saving
Check the keypad is unlock then press DOWN key |  |:

- If the parameter **r5=0** and the defrost cycle is not activated the **Overcooling cycle** will start: the cooling unit runs a cycle with a set point of **r6** parameter for the time **r7.**
- If the parameter **r5=1** the unit will perform an **Overheating cycle** having a operational temperature of "setpoint+**r6**" for a time fo **r7.**

3.3.9 Activate/deactivate energy saving in manual mode (if r5 = 0)

Check that the keyboard is unlock.

Touch the DEFROST key, the setpoint becomes "setpoint+**r4**" for a max duration of **HE2**.

3.3.10 Displaying/reset the compressor operational time

Check the keypad is unlocked then press the DOWN key for 2 sec.

Scroll through the menu's labels by the UP or DOWN key:

- **CH1** label: displaying compressor operating hours.
- **CH2** label: displaying second compressor operating hours
- **rCH** label: compressor operating hours reset.
- **nS1** label: compressor star-up time.

To access the label press SET.

In order to reset the compressor operating hours once selected the **rCH** label, insert the password "**149"**using the UP or DOWN keys then confirm touching the SET key

Touch the ON/STAND-BY key to exit the procedure or do not operate for 60 sec.

3.3.11 Displaying temperature probes

Ensure the keypad is unlocked then touch the DOWN key for 2 sec.

Scroll through the menu's labels by the Up or DOWN key:

- **Pb1:** cabinet temperature probe (if parameter **P4=0,1 or 2);** inlet air temperature probe (if parameter **P4=3**).
- **Pb2:** Evaporator temperature probe (if parameter **P3=1** or **2**)
- **Pb3:** Auxiliary temperature probe (If **P4=1, 2 or 3**).
- **Pb4:** Calculated product temperature (**CPT; P4=3**)

To access the label press SET.

Touch the ON/STAND-BY key to exit the procedure or do not operate for 60 sec.

3.3.12 Setting operational parameters

Touch the SET key for 4 sec, the monitor will display the label "**PA**".

Press SET key and insert the password that <u>will be provided only by the manufacturer or the authorized service agent.</u>

Press SET key to confirm.

Scroll through the parameters list using the UP or DOWN key.

For modifying a parameter value, press SET key at the parameter label then adjust the value by the UP or DOWN key.

Press SET key to confirm the changing.

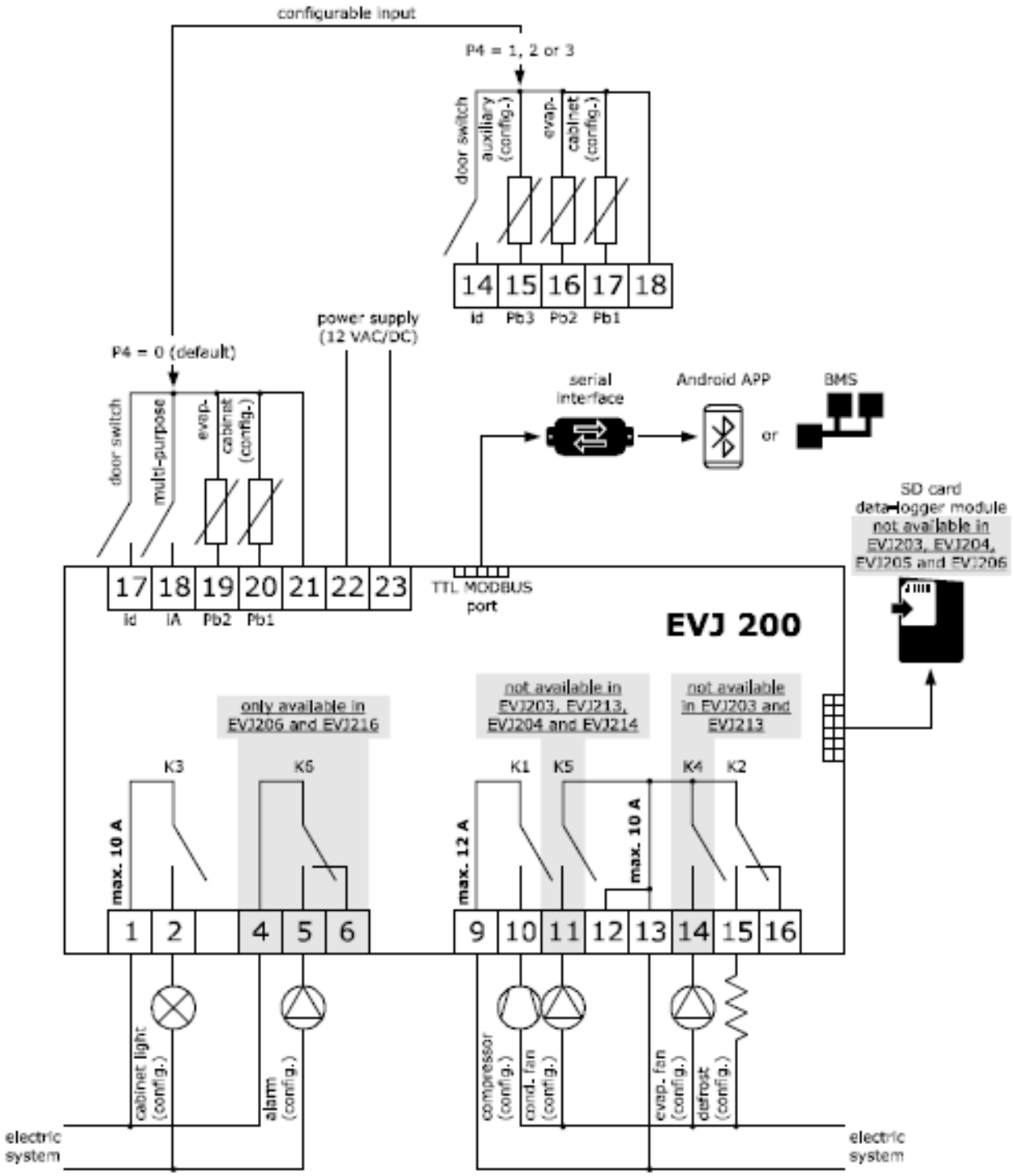
Press SET key | SET |for 4 sec or do not operate for 60 sec to exit the procedure.

⚠ **Do not change any parameters without the authorization of the manufacturer or any authorized service agency indeed this may cause a malfunction of the application and may involve in the lost of warranty.**

3.3.13 Alarms

Alarm code	Code description	Solution
Pr1	Cabinet probe alarm	-Check the parameter P0. -Check the status of the probe. -Check the electrical connection. -Replace the probe.
Pr2	Evaporator probe alarm	
Pr3	Auxiliary probe alarm	
rtc	Date and time alarm	Set date, time and day of the week.
AL	Low Temperature Alarm	Check the parameters **AA**, **A1** and **A2**
AH	High Temperature Alarm	Check the parameter **AA**, **A4** and **A5**
id	Door open alarm	Check the parameter **i0 and i1**
PF	Power failure alarm	-Check electrical connection -Touch any key to shut the buzzer off
COH	High condenser warning	-Check if the condenser probe is installed. -Check the parameter **C6** -Check the condenser coil is clean.
CSd	High condensation alarm	Check if the condenser probe is installed. -Check the parameter **C7.** -Check the condenser coil is clean. -Reboot the device.
iA	Multi-function input alarm	-Check the parameters **i5** and **i6**
iSd	High pressure alarm	-Swich the device off and on -Check the parameters **i5**, **i6**, **i8**, **i9**
LP	Low pressure alarm	-Check the parameter **i5**, **i6**
C1t	Compressor thermal switch alarm	-Check the parameter **i5**, **i6**
C2t	Second compressor thermal switch alarm	-Check the parameter **i5**, **i6**
dFd	Defrost time out alarm	-Check the parameters **d2, d3** and **d11**

3.3.14 Electrical connection



3.3.15 Default parameters value and description

N.	PAR.	DEF.	SETPOINT	MIN... MAX.
1	SP	**0.0**	setpoint	r1... r2
N.	**PAR.**	**DEF.**	**ANALOGUE INPUTS**	**MIN... MAX.**
2	CA1	**0.0**	cabinet probe offset	-25... 25 °C/°F if P4 = 3, air in probe offset
3	CA2	**0.0**	evaporator probe offset	-25... 25 °C/°F
4	CA3	**0.0**	auxiliary probe offset	-25... 25 °C/°F
5	P0	**1**	probe type	0 = PTC 1 = NTC
6	P1	**1**	enable °C decimal point	0 = no 1 = yes
7	P2	**0**	temperature unit of measurement	0 = °C 1 = °F
8	P3	**1**	evaporator probe function	0 = disabled 1 = defrost + fan 2 = fan
9	P4	**0**	configurable input function	0 = digital input 1 = condenser probe 2 = critical temperature probe 3 = air out probe if P4 = 3, regulation temperature = product temperature (CPT)
10	P5	**0**	value displayed	0 = regulation temperature 1 = setpoint 2 = evaporator temperature 3 = auxiliary temperature 4 = air in temperature
11	P7	**50**	inlet air weight for calculated product temperature (CPT)	0... 100 % CPT = {[(P7 x (inlet air T)] + [(100 - P7) x (outlet air T)] : 100}
12	P8	**5**	display refresh time	0... 250 s : 10
N.	**PAR.**	**DEF.**	**REGULATION**	**MIN... MAX.**
13	r0	**2.0**	setpoint differential	1... 15 °C/°F
14	r1	**-40**	minimum setpoint	-99 °C/°F... r2
15	r2	**50.0**	maximum setpoint	r1... 199 °C/°F
16	r3	**0**	enable setpoint block	0 = no 1 = yes
17	r4	**0.0**	setpoint offset in energy saving	0... 99 °C/°F
18	r5	**0**	cooling or heating operation	0 = cooling 1 = heating
19	r6	**0.0**	setpoint offset in overcooling/overheating	0... 99 °C/°F
20	r7	**0**	overcooling/overheating duration	0... 240 min
21	r12	**1**	position of the r0 differential	0 = asymmetric 1 = symmetric
N.	**PAR.**	**DEF.**	**COMPRESSOR**	**MIN... MAX.**
22	C0	**0**	compressor on delay after power-on	0... 240 min
23	C1	**5**	delay between 2 compressor switch-ons	0... 240 min
24	C2	**3**	compressor off minimum time	0... 240 min
25	C3	**0**	compressor on minimum time	0... 240 s
26	C4	**10**	compressor off time during cabinet probe alarm	0... 240 min
27	C5	**10**	compressor on time during cabinet probe alarm	0... 240 min
28	C6	**80.0**	threshold for high condensation warning	0... 199 °C/°F differential = 2 °C/4 °F
29	C7	**90.0**	threshold for high condensation alarm	0... 199 °C/°F

	30	C8	**1**	high condensation alarm delay	0... 15 min
	31	C10	**0**	compressor hours for service	0... 999 h x 100 0 = disabled
	32	C11	**10**	second compressor switch-on delay	0... 240 s
	N.	PAR.	DEF.	DEFROST (if r5 = 0)	MIN... MAX.
	33	d0	**8**	automatic defrost interval	0... 99 h 0 = only manual if d8 = 3, maximum interval
	34	d1	**0**	defrost type	0 = electric 1 = hot gas 2 = compressor stopped
	35	d2	**2.0**	threshold for defrost end	-99... 99 °C/°F
	36	d3	**30**	defrost duration	0... 99 min se P3 = 1, maximum duration
	37	d4	**0**	enable defrost at power-on	0 = no 1 = yes
	38	d5	**0**	defrost dealy after power-on	0... 99 min
	39	d6	**1**	value displayed during defrost	0 = regulation temperature 1 = display locked 2 = dEF label
	40	d7	**2**	dripping time	0... 15 min
	41	d8	**0**	defrost interval counting mode	0 = device on hours 1 = compressor on hours 2 = hours evaporator temperature < d9 3 = adaptive 4 = real time
	42	d9	**0.0**	evaporation threshold for automatic defrost interval counting	-99... 99 °C/°F
	43	d11	**0**	enable defrost timeout alarm	0 = no 1 = yes
	44	d15	**0**	compressor on consecutive time for hot gas defrost	-20... 99 min if negative values, duration dripping heater on
	45	d16	**0**	pre-dripping time for hot gas defrost	0... 99 min
	46	d18	**40**	adaptive defrost interval	0... 999 min if compressor on + evapora-tor temperature < d22 0 = only manual
	47	d19	**3.0**	threshold for adaptive defrost (relative to optimal evaporation temperature)	0... 40 °C/°F optimal evaporation temperature - d19
	48	d20	**180**	compressor on consecutive time for defrost	0... 999 min 0 = disabled
	49	d21	**200**	compressor on consecutive time for defrost after power-on and overcooling	0... 500 min if (regulation temperature - setpoint) > 10°C/20 °F 0 = disabled
	50	d22	**-2.0**	evaporation threshold for adaptive defrost interval counting (relative to optimal evaporation temperature)	-10... 10 °C/°F optimal evaporation temperature + d22
	51	d25	**0**	enable air out probe for defrost during evaporator probe alarm	0 = no 1 = yes
	52	d26	**6**	defrost interval during evaporator probe alarm	0... 99 h 0 = only manual if d25 = 1

N.	PAR.	DEF.	ALARMS	MIN... MAX.
53	A0	**0**	select value for high/low temperature alarms	0 = regulation temperature 1 = evaporator temperature
54	A1	**0.0**	threshold for low temperature alarm	-99... 99 °C/°F
55	A2	**0**	low temperature alarm type	0 = disabled 1 = relative to setpoint 2 = absolute
56	A4	**0.0**	threshold for high temperature alarm	-99... 99 °C/°F
57	A5	**0**	high temperature alarm type	0 = regulation temperature 1 = evaporator temperature 2 = auxiliary temperature
58	A6	**120**	high temperature alarm delay after power-on	0... 240 min
59	A7	**15**	high/low temperature alarms delay	0... 240 min
60	A8	**15**	high temperature alarm delay after defrost	0... 240 min
61	A9	**15**	high temperature alarm delay after door closing	0... 240 min
62	A10	**10**	power failure duration for alarm recording (not available in EVJ203, EVJ204, EVJ205 and EVJ206)	0... 240 min
63	A11	**2.0**	high/low temperature alarms reset differential	1... 15 °C/°F
64	A12	**0**	power failure alarm notification type (not available in EVJ203, EVJ204, EVJ205 and EVJ206)	0 = HACCP LED 1 = HACCP LED + PF label + buzzer 2 = HACCP LED + PF label +

N.	PAR.	DEF.	FANS	MIN... MAX.
65	F0	**1**	evaporator fan mode during normal operation	0 = off 1 = on 2 = on if compressor on 3 = thermoregulated (with regulation temperature + F1) 4 = thermoregulated (with regulation temperature + F1) if compressor on 5 = according to F6 6 = thermoregulated (with F1) 7 = thermoregulated (with F1) if compressor on
66	F1	**-4.0**	threshold for evaporator fan operation	-99... 99 °C/°F
67	F2	**0**	evaporator fan mode during defrost and dripping	0 = off 1 = on 2 = according to F0
68	F3	**2**	evaporator fan off maximum time	0... 15 min def. 0 in EVJ203 ed EVJ213
69	F4	**30**	evaporator fan off time during energy saving	0... 240 s x 10 if F0 ≠ 5
70	F5	**30**	evaporator fan on time during energy saving	0... 240 s x 10 if F0 ≠ 5
71	F6	**0**	high/low humidity operation	0 = low humidity (with F17 and F18 if compressor off, on if compressor on) 1 = high humifity (on)
72	F7	**5.0**	threshold for evaporator fan on after dripping (relative to setpoint)	-99... 99 °C/°F setpoint + F7
73	F8	**2.0**	threshold for evaporator fan operation differential	1... 15 °C/°F
74	F9	**10**	evaporator fan off delay after compressor off	0... 240 s if F0 = 2 or 5

75	F10	**1**	condenser fan mode	0 = thermoregulated (with F11) 1 = thermoregulated (with F11) if compressor off, on if compressor on 2 = thermoregulated (with F11) if compressor off, on if compressor on, off during defrost, pre-dripping and dripping
76	F11	**15.0**	threshold for condenser fan on	0... 99 °C/°F differential = 2 °C/4 °F
77	F12	**30**	condenser fan off delay after compressor off	0... 240 s if P4 ≠ 1
78	F17	**60**	evaporator fan off time with low humidity	0... 240 s
79	F18	**10**	evaporator fan on time with low humidity	0... 240 s
N.	PAR.	DEF.	DIGITAL INPUTS	MIN... MAX.
80	i0	**5**	door switch input function	0 = disabled 1 = compressor + evaporator fan off 2 = evaporator fan off 3 = cabinet light on 4 = compressor + evaporator fan off, cabinet light on 5 = evaporator fan off + cabinet light on
81	i1	**0**	door switch input activation	0 = with contact closed 1 = with contact open
82	i2	**30**	open door alarm delay	-1... 120 min -1 = disabled
83	i3	**15**	regulation inhibition maximum time with door open	-1... 120 min -1 = until the closing
84	i4	**0**	enable open door alarm recording	0 = no 1 = yes if i2 ≠ -1 and after i2
85	i5	**8**	multi-purpose input function	0 = disabled 1 = energy saving 2 = iA alarm 3 = iSd alarm 4 = button-operated load 1 on 5 = button-operated load 2 on 6 = device on/off 7 = LP alarm 8 = C1t alarm 9 = C2t alarm
86	i6	**0**	multi-purpose input activation	0 = with contact closed 1 = with contact open
87	i7	**0**	multi-purpose input alarm delay	0... 120 min if i5 = 3, 8 or 9, compressor on delay after alarm reset
88	i8	**0**	number of multi-purpose input activations for high pressure alarm	0... 15 0 = disabled if i5 = 3
89	i9	**240**	reset counter time for high pressure alarm	1... 999 min
90	i10	**0**	door closed consecutive time for energy saving	0... 999 min after regulation temperature < SP 0 = disabled
91	i13	**180**	number of door openings for defrost	0... 240 0 = disabled
92	i14	**32**	door open consecutive time for defrost	0... 240 min 0 = disabled

	N.	PAR.	DEF.	DIGITAL OUTPUTS	MIN... MAX.
	93	u1c	**0**	relay K1 configuration	0 = first compressor 1 = second compressor 2 = evaporator fan 3 = condenser fan 4 = defrost 5 = cabinet light 6 = demisting 7 = door heaters 8 = heater for neutral zone 9 = dripping heater 10= button-operated load 1 11= button-operated load 2 12= alarm 13= on/stand-by
	94	u2c	**4**	relay K2 configuration	0 = first compressor 1 = second compressor 2 = evaporator fan 3 = condenser fan 4 = defrost 5 = cabinet light 6 = demisting 7 = door heaters 8 = heater for neutral zone 9 = dripping heater 10= button-operated load 1 11= button-operated load 2 12= alarm 13= on/stand-by
	95	u3c	**5**	relay K3 configuration	0 = first compressor 1 = second compressor 2 = evaporator fan 3 = condenser fan 4 = defrost 5 = cabinet light 6 = demisting 7 = door heaters 8 = heater for neutral zone 9 = dripping heater 10= button-operated load 1 11= button-operated load 2 12= alarm 13= on/stand-by
	96	u4c	**2**	relay K4 configuration (not available in EVJ203 and EVJ213)	0 = first compressor 1 = second compressor 2 = evaporator fan 3 = condenser fan 4 = defrost 5 = cabinet light 6 = demisting 7 = door heaters 8 = heater for neutral zone 9 = dripping heater 10= button-operated load 1 11= button-operated load 2 12= alarm 13= on/stand-by

	97	u5c	**3**	relay K5 configuration (not available in EVJ203, EVJ213, EVJ204 and EVJ214)	0 = first compressor 1 = second compressor 2 = evaporator fan 3 = condenser fan 4 = defrost 5 = cabinet light 6 = demisting 7 = door heaters 8 = heater for neutral zone 9 = dripping heater 10= button-operated load 1 11= button-operated load 2 12= alarm 13= on/stand-by
	98	u6c	**11**	relay K6 configuration (only available in EVJ206 and EVJ216)	0 = first compressor 1 = second compressor 2 = evaporator fan 3 = condenser fan 4 = defrost 5 = cabinet light 6 = demisting 7 = door heaters 8 = heater for neutral zone 9 = dripping heater 10= button-operated load 1 11= button-operated load 2 12= alarm 13= on/stand-by
	99	u2	**0**	enable cabinet light and button-operated load in stand-by	0 = no 1 = yes manual
	100	u4	**1**	enable alarm output off silencing the buzzer	0 = no 1 = yes
	101	u5	**-1.0**	threshold for door heaters on	-99... 99 °C/°F differential = 2 °C/4 °F
	102	u6	**5**	demisting on duration	1... 120 min
	103	u7	**-5.0**	neutral zone threshold for heating (relative to setpoint)	-99... 99 °C/°F differential = 2 °C/4 °F setpoint + u7
	104	u9	**1**	enable alarm buzzer	0 = no 1 = yes
	N.	PAR.	DEF.	REAL TIME CLOCK	MIN... MAX.
	105	Hr0	**0**	enable clock (default 0 in EVJ203, EVJ204, EVJ205 and EVJ206)	0 = no 1 = yes
	N.	PAR.	DEF.	ENERGY SAVING (if r5 = 0)	MIN... MAX.
	106	HE2	**0**	energy saving maximum duration	0... 999 min
	N.	PAR.	DEF.	REAL TIME ENERGY SAVING (if r5 = 0)	MIN... MAX.
	107	H01	**0**	energy saving time	0... 23 h
	108	H02	**0**	energy saving maximum duration	0... 24 h
	N.	PAR.	DEF.	REAL TIME DEFROST (if d8 = 4)	MIN... MAX.
	109	Hd1	**h-**	1st daily defrost time	h- = disabled
	110	Hd2	**h-**	2nd daily defrost time	h- = disabled
	111	Hd3	**h-**	3rd daily defrost time	h- = disabled
	112	Hd4	**h-**	4th daily defrost time	h- = disabled
	113	Hd5	**h-**	5th daily defrost time	h- = disabled
	114	Hd6	**h-**	6th daily defrost time	h- = disabled

	N.	PAR.	DEF.	DATA-LOGGING (not available in EVJ203, EVJ204, EVJ205 and EVJ206)	MIN... MAX.
	115	Sd0	**30**	SD card writing interval in HACCP mode	1... 30 min
	116	Sd1	**1**	SD card writing interval in service mode	1... 30 min
	117	Sd2	**60**	service mode duration	1... 240 min
	118	Sd3	**0**	enable critical temperature recording	0 = no 1 = yes
	119	Sd4	**0**	enable cabinet temperature recording	0 = no 1 = yes
	120	Sd5	**1**	decimal separator type	0 = comma 1 = point
	N.	PAR.	DEF.	SAFETIES	MIN... MAX.
	121	POF	**1**	enable ON/STAND-BY key	0 = no 1 = yes
	122	Loc	**1**	enable keypad lock (default 0 in the models with open-frame user interface)	0 = no 1 = yes
	123	PAS	**-19**	password	-99... 999
	124	PA1	**426**	level 1 password	-99... 999
	125	PA2	**824**	level 2 password	-99... 999
	N.	PAR.	DEF.	DATA-LOGGING EVLINK	MIN... MAX.
	126	rE0	**60**	data-logger sampling interval	0... 240 min
	127	rE1	**4**	recorded temperature	0 = none 1 = cabinet 2 = evaporator 3 = auxiliary 4 = cabinet and evaporator 5 = all
	N.	PAR.	DEF.	MODBUS	MIN... MAX.
	128	LA	**247**	MODBUS address	1... 247
	129	Lb	**2**	MODBUS baud rate	0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud
	130	LP	**2**	parity	0 = none 1 = odd 2 = even
	N.	PAR.	DEF.	BLUETOOTH	MIN... MAX.
	131	bLE	**1**	enable Bluetooth	0 = no 1 = yes

4. MAINTENANCE AND REPAIR

Maintenance and repair must be carried out by qualified personnel authorized by the manufacturer.

The manufacturer declines any responsibility for jobs carried out by unauthorized personnel or the use of non-original spare parts.

4.1 ROUTINE MAINTENANCE

Prohibited to remove the guards and safety devices: It's strictly forbidden to remove guards or safety devices when performing routine maintenance operation. The manufacturer disclaims all liability that may arise this regulation is not observed.

In case of FIRE:

- Disconnect the unit from the electrical power socket.
- Do not use water to extinguish the fire.
- Use powder or foam extinguishers.

4.1.1 Cleaning the interior and exterior of the appliance

The appliance is designed for the products storage so it is important to keep it clean. The equipment is thoroughly cleaned at the factory before being shipped. We recommend, however, to clean the interior cabinet before the first start up of the appliance. ***Before attempt any cleaning operation make sure the power cord is disconnected.***

-Cleaning product: use soft clean cloth wet with water and neutral detergent only.**Do not use solvent or bleach.**

-Rinsing: use a cloth or sponge soaked with fresh clean water. **Do not use water jet.**

-Frequency: once a week or at different intervals in accordance with the type of product.

4.1.2 Sliding door's rails cleaning.

Keep clean the sliding door housing to avoid the door can't close completely. Use a soft clean cloth or a soft brush in order to remove any residuals can block the door to slide in the full closure position.

4.1.3 Condenser cleaning

The condenser is a heat exchanger. If it is dirty or clogged the air cannot circulate freely through the same, it cannot discharge heat properly so reducing proportionally the performance and the efficiency of the refrigeration system.

FOR THOSE REASONS IT IS IMPORTANT TO KEEP CLEAN THE CONDENSER COIL, TYPICALLY MONTHLY.

Always switch off the unit and disconnect power cord before cleaning, it is dangerous to do it with power ON: fan may start suddenly at any time.

Use a convenient ladder to reach the condenser. Use an air jet or vacuum with a soft dry brush if necessary and remove any dust or fluff from the heat exchanger fins.
After cleaning, start the equipment.

During the cleaning operation wear gloves and safety glasses to protect yourself from any injury

5. TROUBLESHOOTING

The Chart shows the most frequent breakdowns , possible causes and relative remedies:

PROBLEM DESCRIPTION	POSSIBLE CAUSE	SOLUTION
The appliance does not come on	The main switch is "off"	Main switch “on”
	There is no tension	Check plug, socket, electric connection
	Other	Contact technical assistance
The refrigerator unit does not start	Set temperature is reached	Set new temperature
	Defrosting is in operation	Wait for end of cycle, switch off and switch back on
	Control Panel is broken	Contact technical assistance
	Other	Contact technical assistance
The refrigerator is continuously working but does not reach the set temperature	Room is too hot	Air better
	Condenser is dirty	Clean condenser
	Refrigerant fluid is insufficient	Contact technical assistance
	Condenser fan has stopped	Contact technical assistance
	Door not properly closed	Check door seals
	Evaporator is frosted up	Manual defrosting
	Defrost valve is open	Contact technical assistance
Refrigerator does not stop at set temperature	Control Panel is broken	Contact technical assistance
	Temperature probe is broken	Contact technical assistance
	Door is not airtight	Close door
Ice blocks on evaporator	Improper use	Contact technical assistance
	Control Panel is broken	Contact technical assistance
Appliance is noisy	Appliance not levelled	Check that appliance is level.
	Contact with external bodies	Check that no tube or ventilator fan is in contact with external bodies.
	Screws or nuts loose	Tighten
	Other	Contact technical assistance
Safety DC fan does not work	Fan disconnected	Re-wire the fan to the electrical strip contact
	Stuck fan	Replace the fan
	Fan motor damaged	Replace the fan