

Manuale d'uso e manutenzione

Use and maintenance manual

EVERLASTING

ARMADIO REFRIGERATO
REFRIGERATED CABINET

PROFESSIONAL - CLASSIC
ROLL-IN / THROUGH
MASTER - PASTRY - ICE

ITA



EN



Thank you for choosing this product.

Please read the warnings contained in this manual carefully, as they provide important information regarding safe operation and maintenance.

Make sure to keep this manual for any future reference by the various operators.

In some parts of the manual, the  symbol appears, indicating an important warning that must be observed for safety purposes.

CHAPTER 1 BOUNDARY CHARACTERISTICS OF OPERATION

The refrigerated cabinet has been designed and built to operate in optimal conditions at temperatures from +10°C to +43°C (+10°C and +32°C models with glass door), with adequate air circulation. In places with characteristics that are different from the requirements, the stated performance cannot be guaranteed.

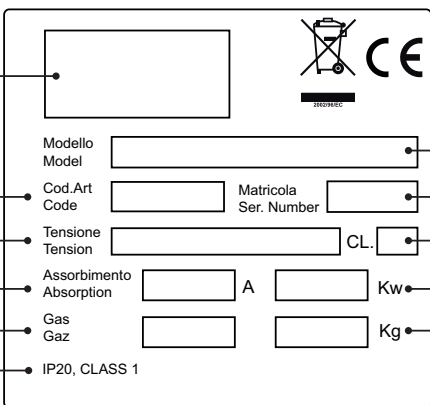
The supply voltage must be 230V +/- 10% 50Hz as standard, or as indicated on the EC label.

The refrigerated cabinet may only be used within the temperature limits specified by the manufacturer; to identify the correct operating range, read the letters after the last digit of the model shown on the EC label and compare it with the table below:

Serie	Temperature
TNV	+2° +10°C
TNBV	-2° +10°C
BTV	-10° -22°C / 10° -25°C (PASTRY ICE)
BTST	- 12° - 25°C

The refrigerated cabinet complies with the European directives as described in detail in the Annex **“EC Declaration of Conformity”**

The technical specifications of the refrigerated cabinet are listed on the CE label inside the motor compartment, on the body wall

Manufacturing Company		
	Modello Model	Model
Code article	Cod.Art Code	Registration Number
Operating voltage	Tensione Tension	Climate class
Power consumption	Assorbimento Absorption	Electrical power
Type of coolant	Gas Gaz	Quantity of coolant
Degree of protection	IP20, CLASS 1	

 **ATTENTION:** any request for intervention, technical support and spare part must refer to the **SERIAL NUMBER** on the CE label, on the manual cover or on the compressor motor. The producer declines any responsibility for any improper or not reasonably foreseen usage of the refrigerated cabinet and for any operation carried out by neglecting the indications listed on the manual.

The main general safety standards are listed below:

- Do not use or place electrical devices inside the refrigerated compartments if they are not of the type recommended by the manufacturer
- Do not touch the refrigerated cabinet with damp or wet hands or feet
- Do not use the refrigerated cabinet barefoot
- Do not insert screwdrivers or other objects between the guards or moving parts
- Do not pull the power cord to unplug the refrigerated cabinet from the electricity network
- The refrigerated cabinet is not intended to be used by persons (including children) with physical or mental problems, or lack of experience and knowledge, unless they are controlled or instructed in using the unit by a person responsible for their safety. Children must be supervised to ensure that they do not play with the appliance.
- Before carrying out any cleaning or maintenance, disconnect the refrigerated cabinet from the mains power supply by turning off the main switch and pulling the plug
- In the event of failure and/or malfunction of the refrigerated cabinet, turn it off and to refrain from any attempt to repair or intervene directly. It is necessary to exclusively contact a qualified technician.

The refrigerated cabinet is composed of a modular single body insulated with expanded polyurethane with 42 kg/m³ density, internally covered in Stainless Steel AISI 304 and externally by different materials. .

In the design and construction, all measures have been adopted to ensure a refrigerated cabinet that complies with safety and hygiene requirements, such as: rounded interior corners, deep drawing with drain on the outside for the condensate liquids, no rough surfaces, fixed guards on moving or dangerous parts.

The products must be stored in observance of the load limits given in the table, in order to ensure an efficient circulation of air inside the refrigerated cabinet.

Load limit expressed in Kg.			
Grille 650x530	20	Sheet Metal Baking Trays 800x600	10
Grille 550x530	20	Sheet Metal Baking Trays 400x600	8
Grille 525x600	25	Stainless Steel Tray GN 1/1	15
Grille 480x580	15	Stainless Steel Tray GN 2/1	20
Grille 480x480	12	Stainless Steel Basin Inox GN 1/1	15
Grille 400x600	20	Stainless Steel Basin Inox GN 2/1	20
Wire basket 640x530	20	Plastic Basin GN 1/1	10
Wire basket 528x530	20	Plastic Basin for Fish	10
Drawers 530x610	25	Stainless Steel Basin for Fish	15



The installation must be performed exclusively by a qualified technician

1.1 It is prohibited to remove the guards and safety devices

It is absolutely forbidden to remove safety guards.

The manufacturer disclaims any liability for accidents due to failure to comply with this obligation.

1.2 Information on emergency operations in the event of fire

- disconnect the refrigerated cabinet from the electrical outlet or cut off the main power supply
- do not use water jets
- use dry chemical or CO2 extinguishers

CHAPTER 2 CLEANING THE REFRIGERATOR

Since the refrigerated cabinet will be used to store food, cleaning is necessary for hygiene and health protection purposes. The cleaning of the refrigerated cabinet has already been carried out at the factory. It is suggested, however, to carry out an additional cleaning of the internal parts before use, making sure that the power cord is unplugged.

2.1 Cleaning the interior and exterior cabinet

For this purpose the following are indicated

- the cleaning products: water and mild, non-abrasive detergents. **DO NOT USE SOLVENTS AND THINNERS**
- methods for cleaning: wash the interior and exterior parts with warm water and mild soap or with a cloth or sponge with suitable products
- disinfection: avoid substances that can alter the organoleptic characteristics of the food
- rinsing: cloth or sponge soaked in warm water. **DO NOT USE WATER JETS**
- frequency: weekly is recommended, the user can set different frequencies depending on the type of food being stored.



REMARK : Clean frequently the door seals.

Some preserved products could release some enzymes that could damage the seals causing its quick deterioration.

For the cleaning, use only specific products for this purposes, available also on request on our sales network.

2.2 Cleaning the condenser

The efficiency of the refrigerated cabinet is compromised by the clogging of the condenser, therefore it is necessary to clean it on a monthly basis. Before carrying out this operation, switch off the refrigerated cabinet, unplug the power cord and proceed as follows:

Motor below - open the front control panel by unscrewing the screws and making it rotate on the hinges located below.

Motor on top - for models with non-folding front panel, climb up on a safe ladder and go directly to the condenser placed on top of the refrigerated cabinet.

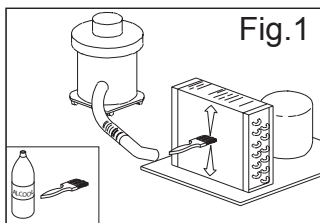


Fig. 1

With the aid of a jet of air or dry brush, eliminate, in a vertical movement (Fig. 1), the dust and lint deposited on the fins. In the case of greasy deposits, we recommend using a brush moistened with special cleaning agents. For models with hinged front, loosen the locking screw and rotate the front panel on the hinges located at the top. At this point, proceed to clean as done with the models with fixed front panel. When the operation is completed, restart the refrigerated cabinet. Evaporators installed above the appliances are cartaphoresis-treated to reduce corrosion problems.



During this operation, use the following personal protective equipment: goggles, respiratory protection mask, chemically resistant gloves (gasoline-alcohol).

CHAPTER 3 PERIODIC CHECKS TO BE CARRIED OUT

The following are the points or units of the refrigerated cabinet that require periodic checks:

- **integrity and efficiency of door seals**
- **integrity of the grilles in contact with food**
- **integrity of the fixing hinges of the doors**
- **integrity of the power cord**

3.1 PRECAUTIONS IN CASE OF LONG PERIODS OF INACTIVITY

A long period of inactivity is defined as a stoppage of more than 15 days.

It is necessary to proceed as follows:

- switch off the refrigerated cabinet and disconnect it from the power supply
- carry out a thorough cleaning of the interior cabinet, shelves, trays, guides and supports, paying special attention to critical points such as the joints and magnetic gaskets, as indicated in Chapter 2.
- leave the door partly open to prevent air stagnation and residual humidity

CHAPTER 4 PREVENTIVE MAINTENANCE**4.1 Restarting after a long period of inactivity**

Restarting after long inactivity is an event that requires preventive maintenance.

It is necessary to perform a thorough cleaning as described in chapter 2.

4.2 Control of the warning and control devices

We recommend that you contact your dealer for a service or maintenance contract that includes:

- cleaning of the condenser
- verification of the coolant load
- verification of the full cycle operation
- electrical safety

**CHAPTER 5 EXTRAORDINARY MAINTENANCE AND REPAIR**

All maintenance activities that have not been described in previous chapters are considered "Extraordinary Maintenance." Extraordinary maintenance and repair are tasks reserved exclusively to the specialist personnel authorized by the manufacturer.

No liability is accepted for actions carried out by the user, by unauthorized personnel, or with the use of non-original replacement parts.

CHAPTER 6 TROUBLESHOOTING

Problems may occur, in the refrigerated cabinet, identified as shown in the table:

TROUBLE DESCRIPTION	POSSIBLE CAUSES	HOW TO REPAIR IT
the refrigerated cabinet does not turn on	no power supply	check the plug, socket, fuses, line
	other	contact technical support
the refrigeration unit does not start	the set temperature has been reached	set new temperature
	defrosting in progress	wait until the end of cycle / turn power off and on again
	command panel failed	contact technical support
	other	contact technical support
the refrigeration unit runs continuously but does not reach the set temperature	location is too hot	aerate more
	condenser is dirty	clean the condenser
	insufficient coolant	contact technical support
	stop the condenser fan	contact technical support
	insufficient sealing of doors	check the seals / provision of goods
	evaporator completely frosted	manual defrosting
	other	contact technical support
the refrigeration unit does not stop at the set temperature	command panel failed	contact technical support
	P1 temperature sensor failed	contact technical support
block of ice on the evaporator	misuse	see chapter 1.
	defrost heater fault	contact technical support
	defrost probe P2 damaged	contact technical support
accumulation of water or ice in the drip tray	drain clogged	clean the pipette and the drain
	refrigerated cabinet is not level	check levelling

CHAPTER 7 INSTRUCTIONS FOR REQUESTING ASSISTANCE

For any technical problem, and any requests for assistance or service, you must exclusively contact your own dealer.

CHAPTER 8 SAFETY AND ACCIDENT PREVENTION

The refrigerated cabinet has been built with suitable measures to ensure the safety and health of the user.

The following are the measures taken to protect against mechanical risks:

- **stability:** The refrigerated cabinet, even with the grilles removed, has been designed and built in such a way that under the intended operating conditions, its stability is suitable for use without risk of overturning, falling or unexpected movement

- **surfaces, edges, corners:** the accessible parts of the refrigerated cabinet are, within the limits allowed by their functions, free of sharp angles and sharp edges, as well as rough surfaces likely to cause injury

- **moving parts:** were designed, constructed and arranged to avoid risks. Certain parts are equipped with fixed guards so as to prevent risks of contact which may result in injury

The following are the measures taken to protect against other risks:

- **electricity:** The refrigerated cabinet has been designed, built and equipped so as to prevent risks from electricity, in accordance with the specific legislation in force
- **noise:** The refrigerated cabinet has been designed and built in such a way that risks resulting from the emission of airborne noise are reduced to the minimum level

8.1 safety devices adopted

It is absolutely forbidden (Fig. 2) :

- to tamper with or remove the evaporator housing casing that protects the user against the risk of being cut by the evaporator fins and movement of the engine fan.
- remove the labels applied at the inner edge of the engine compartment, showing the technical specifications (1) and the instructions for grounding (2)
- remove the label applied on the evaporator guard and near the electrical wiring inside the engine compartment, which warns the user to turn off the power supply before working on the unit (3)
- to remove the labels applied inside the engine compartment, indicating grounding (4)
- to remove the label applied on the power cord, indicating the type of power supply (5)

The manufacturer declines any responsibility for the safety of the refrigerated cabinet if this were to happen.

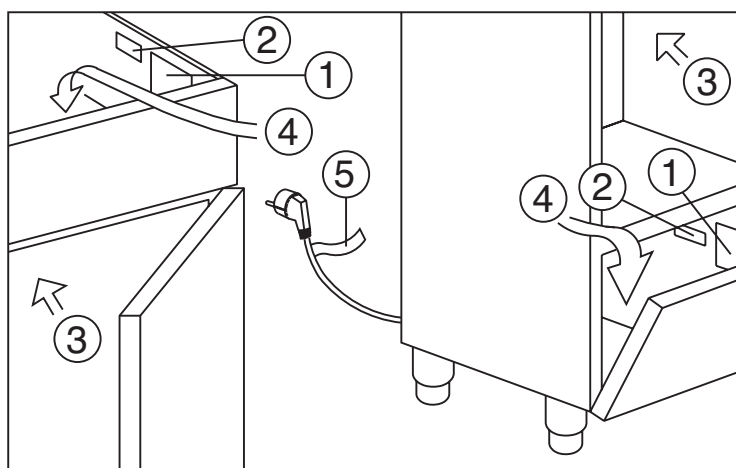


Fig.2

8.2 Indications for optimal operation

do not obstruct the motor-compartment air intakes (place at minimum 50 cm from ceiling)

- do not insert foods or liquids that are still hot
- place the foodstuffs on the appropriate shelves or containers. Do not place them directly on the bottom, or leaning against the walls, doors or fixed guards
- close the doors carefully
- always keep the defrost water drain hole clear of obstructions
- limit, to the extent possible, the frequency and duration of door opening. Each opening causes a change in the internal temperature
- load the goods on the shelves in a phased manner
- perform periodically current maintenance (see chapter 3)

In case of interruption or failure of the power supply circuit, prevent the opening of the doors in order to maintain a uniform temperature inside the refrigerated cabinet.

If the problem persists longer than a few hours it is recommended to move the material to a suitable place.

CHAPTER 9 CONTROLS

9.1 Description of the controls and buttons (Fig. 3)

The control panel has a digital temperature controller for cold and has 6 buttons with specific functions:

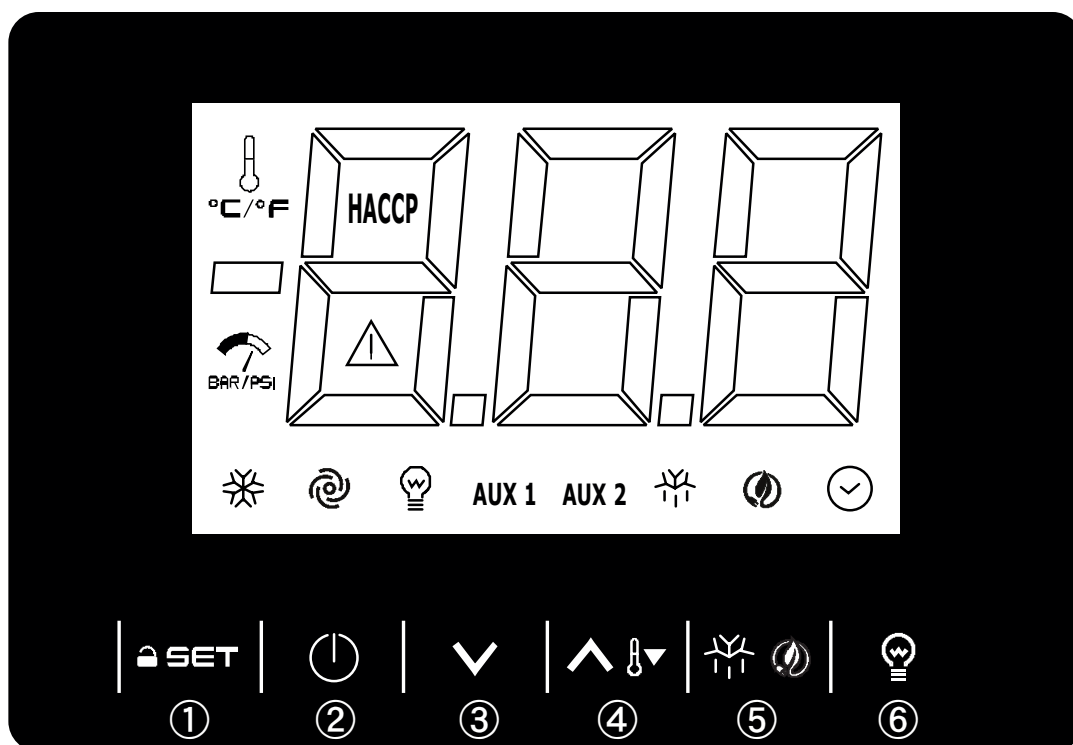


Fig.3

The control buttons with which the refrigerated cabinet is equipped are:

Display	display of temperature and state of the refrigerated cabinet.
Set button ①	when pressed it allows for the adjustment of the working set of the refrigerated cabinet. Push for 5 seconds to access parameter setting
On/off button ②	push for 3 seconds to turn on the refrigerated cabinet
Down button ③	when pressed it allows the decrease of the values (lower temp. or lower values in the programming stage). In addition, if pressed for more than 3 seconds it enters the sub-menu displaying temperature sensors and HACCP alarms and the counter of compressor operating hours, internal clock adjustment, high or low humidity selection
Up button ④	when pressed it allows the increase of the values (higher temp. or higher values in the programming stage). If pressed for 10 seconds the overcooling (super cold) function starts. Push for 2 seconds to activate or deactivate the overcooling function (Chapter 10.6)
Defrost button ⑤	if pressed it activates a Energy Saving function (chapter 10.4) if pressed for 2 seconds it activates a manual defrost
Light button ⑥	if pressed it activates the interior light (Chapter 9.2.7)
If pushed, all keys also unlock the keyboard. If pushed for 3 seconds, UnL will be shown on the display and keys will be activated. After 30 seconds without any operation on any key, the keyboard will automatically lock and LOC will be shown on the display	

Legend for LED signals and indications:

	ON	OFF	FLASHING
	Working compressor	Idle compressor	- compressor protection active, Idle or on-hold compressor - setpoint setting in progress
	Evaporator fan on	evaporator fan turned off	Fan waiting for start
	Cell light on	luce cella spenta	Turned-on chamber light by microswitch digital input
AUX 1	INACTIVE	INACTIVE	INACTIVE
AUX 2	INACTIVE	INACTIVE	INACTIVE
	Ongoing defrosting	-	Active dripping at defrosting end
	Energy Saving activated	-	-
	Time display	-	setting the date, time and day of the current week
	Temperature display	-	Overcooling function activated
HACCP	HACCP alarm in memory	-	new stored or ongoing HACCP alarm
	Active alarm	-	-

9.2 INSTRUCTIONS FOR USE

9.2.1 Start-up

Before starting up the refrigerated cabinet, make sure that the electrical connection and the connection have been made as indicated in Chapter 15.

Check the presence of voltage, icon 20 on and display off.

 **Start-up sequence (fig.3).**

▶ press the on-off button for 3 seconds	the display will turn on and the cabinet will be operative
---	--

The display will show the “internal cabinet temperature”; if the display shows an alarm code, see the ALARMS chapter. After 30 seconds without having operated with the keys, the display will show the label “Loc” and the keyboard will automatically lock.

Push any key for 3 seconds to unlock

 **9.2.2 Stopping methods (fig.3)**

▶ press the on-off button (1) for 3 seconds	the display and the cabinet will turn off
---	---

 **9.2.3 adjustment of the internal clock to the current time (fig. 3)**

With unlocked keyboard (chapter 9.2.6), the first operation is the setting of the internal clock on the current time, as follows:

▶ Push the DOWN ③ key for 3 seconds
▶ Scroll with the UP ④ or DOWN ③ keys within 15 seconds and select “rtc” label.
▶ Push the SET ① key: label “y” will be displayed, followed by the last two digits of the year
▶ Scroll with the UP ④ or DOWN ③ keys within 15 seconds to set the year.
▶ Push the SET ① key: label “m” will be displayed, followed by the two digits of the month.
▶ Scroll with the ④ or DOWN ③ keys within 15 seconds to set the month.
▶ Push the SET ① key: label “d” will be displayed, followed by the digits of the day.
▶ Scroll with the UP ④ or DOWN ③ keys within 15 seconds to set the day.
▶ Push the SET ① key: label “h” will be displayed, followed by the digits of the hours.
▶ Scroll with the UP ④ or DOWN ③ keys within 15 seconds to set the hours.
▶ Push the SET ① key: label “n” will be displayed, followed by the digits of the minutes.
▶ Scroll with the UP ④ or DOWN ③ keys within 15 seconds to set the minutes.
▶ Push the SET ① key: the weekday label will be displayed.
▶ Scroll with the UP ④ or DOWN ③ keys within 15 seconds to set the weekday: Mon Monday - tuE Tuesday - UEd Wednesday- thu Thursday - Fri Friday - Sat Saturday - Sun Sunday
▶ Push the SET ① key: the device will exit the procedure.
Once the adjustment is over, touch the ON/STAND-BY ② key.

9.2.4 Setting the temperature (Fig. 3)

With unlocked keyboard (chapter 9.2.6) to set the desired set temperature within the parameters of reference, proceed as follows:

- | |
|--|
| ► Push and release the SET ① key |
| ► Scroll with the UP ④ or DOWN ③ keys within 15 seconds to set the value |
| ► Push the SET ① key (or do not operate for 15 seconds) |

9.2.5 Automatic and manual defrost (Fig. 3)

The refrigerated cabinet is factory-set to be able to defrost automatically at predetermined intervals as follows:

- **TNBV/TNV Range** (low normal temperature, ventilated) a defrost type “by means of activating the electric heaters” lasting up to 30 minutes every 8 hours of operation.
- **BTV Range** (low temperature, ventilated) a defrost type “by means of activating the electric heaters” lasting up to 30 minutes every 6 hours of operation of the compressor.

It is possible to set other defrost modes, such as: (with compressor running time, with evaporator temperature, with pre-set times). To change the defrost mode see the parameters in the service section. The user can perform a manual defrost, according to their needs, acting as follows

- | |
|--|
| Make sure that the keyboard is not locked and that overcooling is not active. |
| ► Push the DEFROSTING ⑤ key for 2 seconds; the device will carry out a defrosting only if the evaporator temperature will be lower than the defrosting end temperature |

N.B.: during the automatic and manual defrost cycle the DEF LED will remain on, at the end of the defrost cycle, the indicator turns off and the refrigerated cabinet automatically resumes the normal cycle of operation.

Operation with HIGH or LOW humidity percentage

the controller is set to operate at HIGH RhH humidity

- | |
|---|
| ► Push the DOWN ③ key for 3 second |
| ► Scroll with the UP ④ key or DOWN ③ keys within 15 seconds to select “rH” label. |
| ► Push the SET ① key to visualize the operation type. Keep the SET key pushed to pass from High humidity to Low humidity operation. |
| <p>rhL: operation for low humidity</p> <p>rhH: high humidity operation</p> |
| ► Push the ON/STAND-BY ② key (or do not operate for 60 seconds) to exit the procedure. |

9.2.6 Keypad lock (fig.3)

- Push any key for 1 second: label “UnL” will be displayed. Repeat the operation or do not operate for 30 seconds to lock.

9.2.7 Turning the light on / off (fig. 3)

- Light is turned on and off automatically when the door is opened and closed. Touch the LIGHT key  to keep the light on.

10 HACCP function

To meet the minimum requirements of the HACCP regulations, the temperature controller is capable of storing up to 3 HACCP alarms. The instrument provides the following information:

- critical temperature value.
- the actual date and time of alarm registration.
- duration of the alarm (from 1min to 99h and 59min, partial if the alarm is in progress).

The critical values set by parameters A1/A4 (in relation to the set-up SET) can be modified for different usages and can be found on the thermoregulator programming menu (service)

To change these values see viewing and editing parameters in the service section.

Parameter	Description	TNSV	TNBV	BTV
A1	Minimum HACCP temperature	-10	-10	-10
A4	Maximum HACCP temperature	10	10	10
A6	Time of delay at start-up	120	120	120
A7	Time out of temperature range	60	60	60

10.1 HACCP storage operation

When the temperature value measured by the probe of the refrigerated compartment is outside the minimum (A1) or the maximum (A4) limit, for a time greater than (A7), an alarm is signalled and an LS folder is automatically generated in the “machine status” menu of the temperature controller. The generated folder contains the value of the maximum or minimum temperature reached and the alarm time in progress or registered. A6 time value is the delay in alarm warning after the appliance is turned on, while A7 is the time during which the probe can remain out of range before signalling an alarm.

10.2 10.2 Viewing the HACCP alarms

With unlocked keyboard (chapter 9.2.6), the alarms stored by the thermoregulator are visible as follows:

- Push the DOWN  key for 3 seconds: RTC will be displayed
- scroll with the UP  or DOWN  keys within 15 seconds and select:
LS: display of information regarding HACCP alarms
- Push the SET  key
- Scroll with the UP  or DOWN  keys to select an alarm code

For example:

AL	low temperature alarm
AH	high temperature alarm
id	door open alarm
PF	power failure alarm
▶ Push the key SET ①	
▶ The display will sequentially show	

Example of information relating to high temperature alarm:

Data sequence chart

8.0	the critical value (cell temp. / calculated product temp.) was 8.0 ° C / ° F
y20	the alarm occurred in 2020
n03	the alarm occurred in March
d26	the alarm occurred on March 26, 2020
h16	the alarm occurred at 4pm
n30	the alarm occurred at 16:30
h01	the alarm lasted 1 h
n15	the alarm lasted 1 h and 15 min

Touch the ON/STAND-BY ② (or do not operate for 60 seconds) to exit the procedure.

10.3 Deleting the list of HACCP alarms

With unlocked keyboard (chapter 9.2.6) to delete the alarms folder, proceed as follows:

▶ Push the DOWN ③ key for 3 seconds: RTC will be displayed	
▶ Scroll with the UP ④ or DOWN ③ keys within 15 seconds and select:	
rLS: cancellation of information regarding HACCP alarms	
▶ Push the SET ① key	
▶ Scroll with the UP ④ or DOWN ③ keys and set "149"	
▶ Push the SET ① key	

If there is no alarm in memory the label rLS will not be displayed. If the alarms folder is not cleared, a new, after 9 events HACCP alarm will overwrite the oldest one.

Touch the ON / STAND-BY ② key (or do not operate for 60 s) to exit the procedure.

10.4 Energy Saving function

It is possible to activate low energy consumption operation by pushing key ⑤;  icon will activate. The new set point will automatically be SET +2°C (R4 parameter); therefore, if the configured set is 2°C, the energy-saving set will be 4°C. This function will last 6 hours (HE2 parameter), after which the configured set point will be resumed. To return to normal operation push again on key ⑤: icon  will turn off.

10.5 Remote management and remote control (Opt.)

A TTL Modbus port for connection to the module and a link to use EVconnect, EPoCA or BMS apps are available on the thermoregulator (see remote management and remote control manual)

10.6 Overcooling

It is possible to activate the overcooling function by pushing the UP key.

The new set point will be the configured set minus 3°C (R6 parameter), i.e. the cabinet cooling will stop when internal temperature will reach -1°C. This function lasts 60 minutes (R7 parameter), after which the configured setpoint will be resumed. This function is useful to quickly cool products whose temperature is above the storage temperature.

11 Alarms and signals (fig.3)

All alarms generate, on the temperature controller, as well as the turning on of the alarm buzzer and LED 7, messages to indicate the type of alarm. The display will show:

Pr1	refrigerated compartment probe fault	AH	maximum temperature exceeded alarm
Pr2	evaporator probe fault	id	alarm open door
Pr3	condenser probe fault	PF	power failure alarm
rtc	internal clock error	COH	condenser overheated
AL	minimum temperature exceeded alarm	dFd	defrost timeout alarm
CSd	high condensation alarm		

CHAPTER 12 NOISE LEVEL

The refrigerated cabinet is designed and constructed so that risks resulting from the emission of airborne noise are reduced to the minimum level (see technical information).

CHAPTER 13 MATERIALS AND FLUID USED

The materials in contact or which may come into contact with foodstuffs comply with the relevant directives. The refrigerated cabinet has been designed and built in such a way that these materials can be cleaned before each use.

GAS R290: We hereby inform our clients that this product employs an HC (Hydrocarbon) refrigerating gas classified as A3, i.e. flammable. Devices with flammable refrigerating gases are identified with the following label on the device:



IMPORTANT SAFETY INSTRUCTIONS AND CAUTIONS: Although the gas quantity contained in the device complies with the norms on the subject, more precautions in the management of the device are requested, most of all when works on the refrigerating system have to be carried out:

- The refrigerating circuit must not be damaged to avoid leaks, because the contact between air and gas entails the risk of fires in case of presence of a suitable primer, such as open flame or sparks coming from electrical appliances. If any replacement of components is necessary, demand only original and homologated parts for specific use.
- In case of technical works due to malfunctions, please only contact qualified personnel who can carry them out according to the compulsory safety norms for this kind of gas. The tools used for working on the device must comply to the same rules concerning the refrigerating system components: no electrical appliances nor flames must be used in the presence of flammable gases.
- Specific works regarding vacuum and system charge will have to be carried out with the suitable tools for the type of gas, avoiding the presence of flammables and the contact with flames or sparks.

GAS R452A: The refrigerant fluids used R452A conform with the new EU regulation 517/2014 F-Gas R452A is a fluorinated gas, it has a GWP potential of 2141



The symbol indicates that this product must not be treated as household waste. To prevent potential negative consequences for the environment and human health, make sure that this product is properly disposed of and recycled. For more information regarding the disposal and recycling of this product, please contact your distributor, after sale Service, or waste treatment Service.

CHAPTER 14 TRANSPORT AND HANDLING



The transport and handling of the refrigerated cabinet must only be done while maintaining the vertical position, observing the markings on the packaging.

The manufacturer disclaims any liability for problems resulting from transport performed under conditions other than those specified above.

The accessories of the refrigerated cabinet (guides, grilles, trays) are packaged separately and placed inside the unit.

The refrigerated cabinet is mounted on a wooden base with screws and packaged with polyethylene, carton, crate or boxes.

Regarding the disposal of the packaging it is necessary to refer to current regulations in your country.



The movement of the refrigerated cabinet shall be performed using a fork lift or pallet trucks equipped with suitable forks (length of at least 2/3 of the unit).

The limits of stackability and the centre of gravity are indicated on the label of the package.

14.1 Positioning operations

Since the incorrect positioning of the refrigerated cabinet can cause damage to the same, jeopardizing its proper functioning and cause risks to the personnel, the installer must comply with the following general rules:

- place the refrigerated cabinet at a minimum distance of 3 cm from any wall and of 50 cm from the ceiling
- the environment must be sufficiently ventilated
- position the refrigerated cabinet away from heat sources
- avoid exposure to direct sunlight
- remove the polyethylene, cardboard or wood packaging



Polyethylene is dangerous for children

- remove any accessories with external connections

Removing the wooden base (fig. 4): tilt the refrigerated cabinet sideways and unscrew the two self-tapping screws, lift the refrigerated cabinet and remove the base.

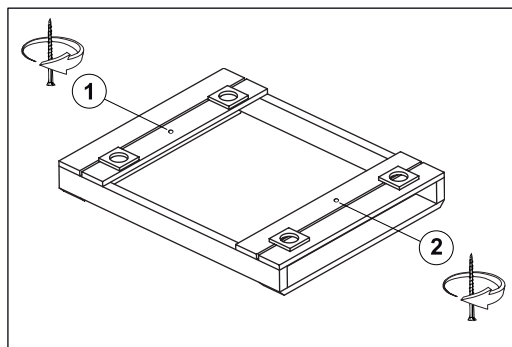


Fig.4



use protective gloves when handling the wooden packaging and the wooden base.

The presence of splinters may cause damage to your hands

- remove the PVC film applied as a protection to the outer surfaces of the refrigerated cabinet
- position the refrigerated cabinet using a level with possible adjustment of the feet of the metal base (Fig. 5)

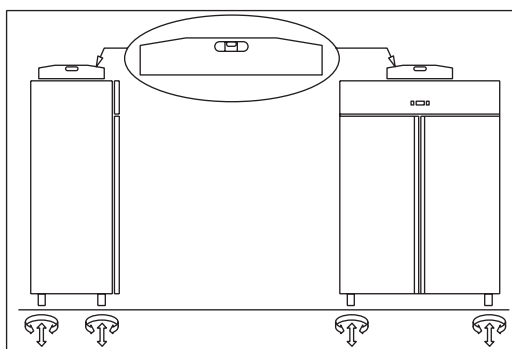


Fig.5

- position the grille holding guide rails in the holes of the racks (Fig. 6)

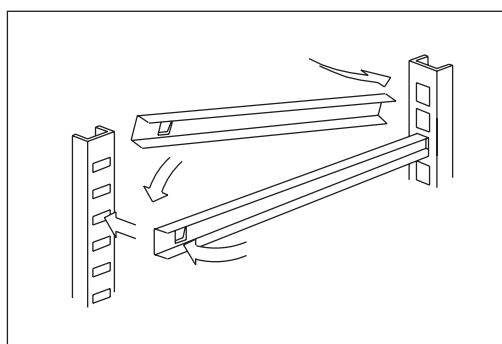
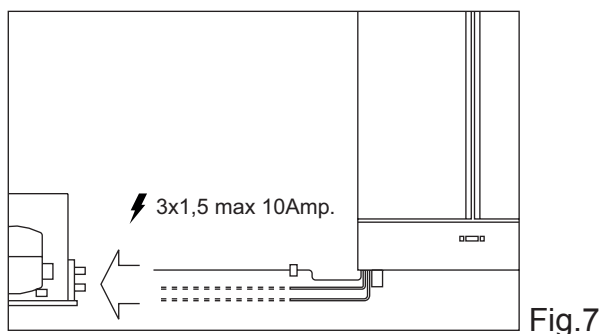


Fig.6

- insert the grilles for food in the special guides
- insert the condensate water drain pan into the special guide rails already fixed under the refrigerated cabinet if provided.

14.2 REM cabinets (Fig. 7)



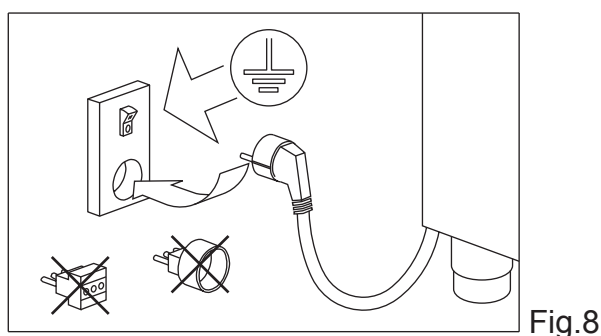
- position the refrigerated cabinet as described above (Fig. 5)
- prepare the two tubes that come out of the refrigerated cabinet (ø 6 mm outlet, ø 10 mm TNBV - ø 12 mm BTV) for the connection to the respective pipes
- connect the pipes of the condensing unit to the pipes of the refrigerated cabinet
- create a vacuum and then carry out the loading of the coolant
- make the electrical connection of the refrigerated cabinet to the condensing unit (Picture 7)
- perform a functional test to verify the correct gas charge.

CHAPTER 15 ELECTRICAL WIRING AND CONNECTIONS

The electrical system and connection must be carried out by qualified personnel. Before installation, measure the impedance of the network, the impedance value for the connection to the network must not exceed 0.075 ohm.

For safety reasons you must follow these guidelines:

- verify that the sizing of the electrical system is suitable for the power consumption of the refrigerated cabinet and that it provides for a differential switch (circuit breaker)
- in case of incompatibility between the outlet and the plug of the refrigerated cabinet, replace the outlet with another of a suitable type provided that it is in accordance with regulations
- do not insert adapters and/or reductions (Fig. 8)



 The power cord has the connection type “Y” and it can be replaced exclusively by the manufacturer or authorized technical service.

 It is essential to correctly connect the refrigerated cabinet to an efficient earthing system carried out as specified by the applicable provisions of law.

CHAPTER 16 INSTALLATION OPERATIONS

It is important, in order to prevent errors and accidents, to perform a series of checks before starting up the refrigerated cabinet in order to identify any damage incurred during transport, handling and connection.

Checks to be performed:

- check the integrity of the power cord (it must not have suffered abrasions or cuts)
- check the solidity of the legs, door hinges, shelf supports
- check the integrity of the internal and external parts (pipes, heating elements, fans, electrical components, etc.) and their fixing
- check that the seals of the doors and drawers have not been damaged (cuts or abrasions) and close with an airtight seal
- check the integrity of the pipes and fittings (REM)

CHAPTER 17 REINSTALLATION

It is necessary to comply with the following procedure:

- disconnect the power cord from the power outlet
- the handling should be carried out as described in chapter 14
- for a new placement and connection, please refer to par. 14.1
- proceed to the possible recovery of the coolant gas in accordance with the regulations in force in your country (REM)



ATTENZIONE!

ISTRUZIONI RISERVATE A PERSONALE TECNICO AUTORIZZATO

Si avvisano gli utenti che qualsiasi intervento eseguito da personale non tecnico o non autorizzato produrrà la decadenza delle condizioni di garanzia.

WARNING!

INSTRUCTIONS STRICTLY RESERVED TO AUTHORIZED TECHNICAL PERSONNEL

Every intervention executed by a non authorized technical personnel implies a warranty decay.

PLANNED MAINTENANCE

Compressor working hour tally

The device can store up to 9999 compressor working hours, to schedule maintenance after the hours set by parameter C10. When the scheduled hours expire, the alarm icon on the display will turn on. Proceed as follows to visualize the compressor working hours:

- | |
|---|
| ▶ Push the DOWN ③ key for 1 second |
| ▶ Scroll with the UP ④ or DOWN ③ keys to select label:

CH1: visualization of the compressor working hours (hundreds) |
| ▶ Push the SET ① key to visualize |

Touch the ON/STAND-BY ② key (or do not operate for 60 seconds) to exit the procedure.

Proceed as follows to delete the compressor working hours:

- | |
|--|
| ▶ Push the DOWN ③ key for 1 second |
| ▶ Scroll with the UP ④ or DOWN ③ keys to select label:

rCH: deletion of compressor and compressor 2 working hours |
| ▶ Push the SET key ① |
| ▶ Scroll with the UP ④ or DOWN ③ keys to set "149" |
| ▶ Push the SET key ① |

Touch the ON/STAND-BY ② key (or do not operate for 60 seconds) to exit the procedure.

PARAMETER VISUALIZATION AND MODIFICATION

- | |
|---|
| ▶ Push the SET key ① for 4 seconds: the "PA" label will be shown on the display. |
| ▶ Push the SET key ① |
| ▶ Scroll with the UP ④ or DOWN ③ key within 15 seconds to set the PAS value (default "-19"). |
| ▶ Push the SET key ① key (or do not operate for 15 seconds): the "SP" label will be shown on the display. |
| ▶ Scroll with the UP ④ or DOWN ③ key to select a parameter. |
| ▶ Push the SET key ① |
| ▶ Scroll with the UP ④ or DOWN ③ key within 15 seconds to set the value. |
| ▶ Push the SET key ① key (or do not operate for 15 seconds). |

Push the ON/STAND-BY ② key (or do not operate for 60 seconds) to exit the procedure.

PROFESSIONAL - CLASSIC - ROLL IN

NB only the highlighted parameters can be modified by maintenance service. The other parameters can be modified only after reference/authorization by our technical department,

N.	PAR.	TNBV	BTV	SETPOINT	MIN... MAX
1	SP	0.0	-20	setpoint	r1... r2
N.	PAR.	DEF.	DEF.	ANALOGUE INPUTS	MIN... MAX.
2	CA1	0.0	0.0	cell probe offset	-25 ... 25 ° C / ° F if P4 = 3, input air probe offset
3	CA2	0.0	0.0	evaporator probe offset	-25... 25 °C/°F
4	CA3	0.0	0.0	auxiliary probe offset	-25... 25 °C/°F
5	P0	1	1	type of probe	0 = PTC 1 = NTC
6	P1	1	1	enable decimal point ° C	0 = no 1 = si
7	P2	0	0	unit of measurement for temperature	0 = °C 1 = °F
8	P3	1	1	evaporator probe function	0 = disabled 1 = defrost + fans 2 = fans
9	P4	1	1	configurable input function	0 = digital input 1 = condenser probe 2 = critical temperature probe 3 = outlet air probe 4 = evaporator probe 2 if P4 = 3, regulation temperature = product temperature (CPT)
10	P5	0	0	size on display	0 = regulation temperature 1 = setpoint 2 = evaporator temperature 3 = auxiliary temperature 4 = inlet air temperature
11	P7	50	50	inlet air weight for product temperature calculation (CPT)	0 ... 100% CPT = $\{[(P7 \times (\text{incoming air})) + [(100 - P7) \times (\text{outgoing air})]: 100\}$
12	P8	5	5	display refresh time	0... 250 s : 10
N.	PAR.	DEF.	DEF.	MAIN REGULATOR	MIN... MAX.
13	r0	2.0	2.0	differential setpoint	1 ... 15 ° C / ° F if u1c ... u5c 1, proportional band
14	r1	-2	-22	minimum setpoint	-99 °C/°F... r2
15	r2	+10.0	-10	maximum setpoint	r1... 199 °C/°F
16	r3	0	0	enable setpoint block	0 = no 1 = yes
17	r4	2	2	offset setpoint in energy saving	0 ... 99 ° C / ° F
18	r5	0	0	adjustment for hot or cold	0 = for cold 1 = for hot
19	r6	3	3	setpoint offset in overcooling	0 ... 99 ° C / ° F
20	r7	60	60	overcooling duration	0 ... 240 min
21	r12	0	0	differential position r0	0 = asymmetrical 1 = symmetrical
N.	PAR.	DEF.	DEF.	COMPRESSOR	MIN... MAX.
22	C0	0	0	compressor delay on from power-on	0... 240 min
23	C1	0	0	delay between two compressor starts	0... 240 min
24	C2	5	5	minimum compressor time off	0... 240 min
25	C3	0	0	minimum compressor time on	0... 240 s
26	C4	10	10	compressor time off in cabinet probe alarm	0... 240 min
27	C5	10	10	compressor on time in cold room probe alarm	0... 240 min
28	C6	60.0	60.0	high condensation signaling threshold	0 ... 199 ° C / ° F differential = 2 ° C / 4 ° F
29	C7	65.0	65.0	high condensation alarm threshold	0 ... 199 ° C / ° F
30	C8	1	1	high condensation alarm delay	0 ... 15 min
31	C10	0	0	compressor hours for maintenance	0 ... 999 h x 100 0 = disabled
32	C11	10	10	compressor delay 2	on 0 ... 240 s
33	C12	2	2	compressor hours weight for hours and start balancing (BHC) - (available only in EVJ224, EVJ225, EVJ234 and EVJ235)	0 ... 10 BHC = $\{[C12 \times (\text{compressor hours})] + [C13 \times (\text{compressor starts})]\}$
34	C13	1	1	compressor switch-on weight for balancing hours and switch-ons (BHC) - (available only in EVJ224, EVJ225, EVJ234 and EVJ235)	0 ... 10 BHC = $\{[C12 \times (\text{compressor hours})] + [C13 \times (\text{compressor starts})]\}$
35	C14	1	1	constraint between compressors (available only in EVJ224, EVJ225, EVJ234 and EVJ235)	0 = function of C11, 1 = function of r0
N.	PAR.	DEF.	DEF.	DEFROST	MIN ... MAX.
36	d0	8	6	automatic defrost interval 0 ... 99 h	maximum interval
37	d1	0	0	type of defrost	0 = electric 1 = hot gas 2 = to stop the compressor
38	d2	8.0	8.0	end of defrost threshold	-99 ... 99 ° C / ° F
39	d3	30	30	defrost duration	minutes maximum duration
40	d4	0	0	enable defrost at power-on	0 = no 1 = yes
41	d5	0	0	defrost delay from power-on	0 ... 99 min
42	d6	1	1	size on display in defrost	0 = regulation temperature 1 = display locked 2 = dEF label
43	d7	2	2	dripping time	0 ... 15 min
44	d8	0	0	defrost interval counting mode	0 = device hours on 1 = compressor hours on 2 = evaporator temperature hours <d9 3 = adaptive (if P4 = 4, device hours on) 4 = in real time
45	d9	0.0	0.0	evaporation threshold for automatic defrost interval count	-99... 99 °C/°F

46	d11	0	0	enable defrost timeout alarm	0 = no 1 = yes
47	d15	0	0	consecutive compressor on time for hot gas defrost	-20 ... 99 min if negative values, dripping resistance duration on
48	d16	0	0	pre-dripping time for hot gas defrosting	0 ... 99 min
49	d18	40	40	adaptive defrost interval	0 ... 999 min if compressor on + evaporator temperature < d22 0 = manual only
50	d19	3.0	3.0	adaptive defrost threshold (relative to optimal evaporation temperature)	0 ... 40 ° C / ° F optimal evaporation temperature - d19
51	d20	180	180	consecutive compressor on time for defrost	0 ... 999 min 0 = disabled
52	d21	200	200	consecutive compressor on time for defrosting from power-on and overcooling	0 ... 500 min if (regulation temperature - setpoint) > 10 ° C / 20 ° F 0 = disabled
53	d22	-2.0	-2.0	evaporation threshold for adaptive defrost interval count (relative to optimal evaporation temperature)	-10 ... 10 ° C / ° F optimum evaporation temperature + d22
54	d25	0	0	enable outlet air probe for defrosting in evaporator probe alarm	0 = no 1 = yes
55	d26	0	0	defrost interval in evaporator probe alarm	0 ... 99 h 0 = manual only if d25 = 1
N.	PAR.	DEF.	DEF.	TEMPERATURE ALARMS	MIN... MAX.
56	A0	0	0	size selection for high / low temperature alarms	0 = regulation temperature 1 = evaporator temperature
57	A1	-10	-10	low temperature alarm threshold	-99 ... 99 ° C / ° F
58	A2	1	1	type of low temperature alarm	0 = disabled 1 = relative to setpoint 2 = absolute
59	A4	10	10	high temperature alarm threshold	-99 ... 99 ° C / ° F
60	A5	1	1	type of high temperature alarm	0 = disabled 1 = relative to setpoint 2 = absolute
61	A6	120	120	high temperature alarm delay from power-on	0... 240 min
62	A7	60	60	high / low temperature alarm delay	0... 240 min
63	A8	60	60	post-defrost high temperature alarm delay	0... 240 min
64	A9	60	60	high temperature alarm delay from door closing	0... 240 min
65	A10	60	60	power failure duration for alarm storage	0... 240 min
66	A11	2.0	2.0	high / low temperature alarm reset differential	1... 15 °C/°F
67	A12	2	2	type of power failure alarm signaling	0 = HACCP LED 1 = HACCP LED + PF label + buzzer 2 = HACCP LED + PF label + buzzer (if duration > A10)
N.	PAR.	DEF.	DEF.	FANS	MIN ... MAX.
68	F0	5	5	evaporator fan mode in 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 = function of F6, 6 = thermoregulated (with F1), 7 = thermoregulated (with F1) if compressor on
69	F1	40	40	evaporator fan adjustment threshold	-99... 99 °C/°F
70	F2	0	0	evaporator fan mode in defrost and dripping	0 = off 1 = on 2 = funzione di F0
71	F3	2	2	maximum evaporator fan stop time	0... 15 min def. 0
72	F4	30	30	evaporator fan time off in energy saving	0... 240 s x 10 se F0 ≠ 5
73	F5	30	30	evaporator fan time on in energy saving	0... 240 s x 10 se F0 ≠ 5
74	F6	1	1	operation for high / low humidity	0 = for low humidity (with F17 and F18 if compressor off, on if compressor on) 1 = for high humidity (on)
75	F7	5.0	5.0	drip evaporator fans threshold (relative to setpoint)	-99... 99 °C/°F setpoint + F7
76	F8	2.0	2.0	evaporator fan regulation threshold differential	1... 15 °C/°F
77	F9	0	0	evaporator fan delay off from compressor off	0 ... 240 s if F0 = 2 or 5
78	F10	1	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 in defrost, pre-dripping and dripping
79	F11	15.0	15.0	condenser fan threshold on	0 ... 99 ° C / ° F differential = 2 ° C / 4 ° F
80	F12	30	30	condenser fan delay off from compressor off	0 ... 240 s if P4 ≠ 1
81	F17	60	60	evaporator fan time off in low humidity	0... 240 s
82	F18	0	0	evaporator fan time on in low humidity	0... 240 s
N.	PAR.	DEF.	DEF.	DIGITAL INPUTS	MIN... MAX.
83	i0	5	5	door switch input function	0 = disabled 1 = compressor + evaporator fans off 2 = evaporator fans off 3 = cold room light on 4 = compressor + evaporator fans off, cold room light on 5 = evaporator fans off, cold room light on
84	i1	0	0	door switch input activation	0 = with closed contact 1 = with open contact
85	i2	30	30	door open alarm delay	-1 ... 120 min -1 = disabled
86	i3	15	15	maximum regulation inhibition time with door open	-1 ... 120 min -1 = until closing
87	i4	1	1	enable door open alarm storage (not available on models without clock)	0 = no 1 = yes if i2 ≠ -1 and after i2

88	i5	6	6	multifunction input function	0 = disabled 1 = energy saving 2 = alarm iA 3 = alarm iSd 4 = load 1 from key on 5 = load 2 from key on 6 = switch on / off device 7 = alarm LP 8 = alarm C1t 9 = alarm C2t
89	i6	1	1	multifunction input activation	0 = with closed contact 1 = with open contact
90	i7	0	0	multifunction input alarm delay	0 ... 120 min if i5 = 3 or 7, compressor delay on from alarm reset
91	i8	0	0	number of multifunction input activations for high pressure alarm	0 ... 15 0 = disabled if i5 = 3
92	i9	240	240	counter reset time for high pressure alarm	1... 999 min
93	i10	0	0	consecutive time door closed for energy saving	0 ... 999 min after regulation temperature <SP 0 = disabled
94	i13	0	0	number of door openings for defrosting	0 ... 240 0 = disabled
95	i14	0	0	consecutive time door open for defrost	0 ... 240 min 0 = disabled
N.	PAR.	DEF.	DEF.	DIGITAL OUTPUTS	MIN... MAX.
96	u1c	0	0	relay configuration K1	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
97	u2c	4	4	relay configuration K2	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
98	u3c	5	5	relay configuration K3 K2	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
99	u4c	2	2	relay configuration K4 K2	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
100	u5c	12	12	relay configuration K5 K2	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
101	u2	0	0	enable cell light and load from button in stand-by	0 = no 1 = yes in manual mode
102	u4	1	1	enable alarm output silence	0 = no 1 = yes
103	u5	-1.0	-1.0	resistance threshold door on	-99 ... 99 ° C / ° F differential = 2 ° C / 4 ° F
104	u6	5	5	anti-fog duration on	1 ... 120 min
105	u7	-5.0	-5.0	neutral zone threshold for heating (relative to setpoint)	-99 ... 99 ° C / ° F differential = 2 ° C / 4 ° F setpoint + u7
106	u9	1	1	enable alarm buzzer	0 = no 1 = si
N.	PAR.	DEF.	DEF.	CLOCK	MIN... MAX.
107	Hr0	1	1	enable clock	0 = no 1 = si
N.	PAR.	DEF.	DEF.	ENERGY SAVING (if r5 = 0)	MIN... MAX.
108	HE2	360	36	maximum energy saving duration	0... 999 min
N.	PAR.	DEF.	DEF.	REAL-TIME ENERGY SAVING (if r5 = 0)	MIN... MAX.
109	H01	0	0	energy saving time	0... 23 h
110	H02	0	0	maximum energy saving duration	0... 24 h
N.	PAR.	DEF.	DEF.	REAL TIME DEFROST (if d8 = 4)	MIN... MAX.
111	Hd1	h-	h-	1st daily defrost time	h- = disabled
112	Hd2	h-	h-	2nd daily defrost time	h- = disabled
113	Hd3	h-	h-	time 3 ° daily defrost	h- = disabled
114	Hd4	h-	h-	time 4 ° daily defrost	h- = disabled
115	Hd5	h-	h-	time 5 ° daily defrost	h- = disabled
116	Hd6	h-	h-	time 6 ° daily defrost	h- = disabled
N.	PAR.	DEF.	DEF.	DATA-LOGGING (not available in EVJ203, EVJ204, EVJ205, EVJ224 and EVJ225)	MIN... MAX.
117	Sd0	30	30	SD card writing interval in HACCP mode	1... 30 min
118	Sd1	1	1	SD card writing interval in service mode	1... 30 min
119	Sd2	60	60	service mode duration	1... 240 min
120	Sd3	0	0	enable recording of critical temperature	0 = no 1 = yes
121	Sd4	0	0	enable cell temperature recording	0 = no 1 = yes
122	Sd5	1	1	type of decimal separator	0 = comma 1 = point
N.	PAR.	DEF.	DEF.	SAFETY	MIN ... MAX.
123	POF	1	1	enable ON / STAND-BY button	0 = no 1 = yes

124	Loc	1	1	enable keyboard lock (default 0 in models with open-frame user interface)	0 = no 1 = yes
125	Sen	90	90	capacitive keyboard sensitivity (available in models for back panel installation)	60 ... 120 60 = very sensitive
126	PAS	-19	-19	password	-99... 999
127	PA1	426	426	1st level password	-99... 999
128	PA2	824	824	2nd level password	-99... 999
N.	PAR.	DEF.	DEF.	DATA-LOGGING EVLINK	MIN... MAX.
129	rE0	60	60	datalogger sampling interval	0... 240 min
130	rE1	4	4	temperature selection for data logger	0 = none 1 = cell 2 = evaporator 3 = auxiliary 4 = cell and evaporator 5 = all
N.	PAR.	DEF.	DEF.	MODBUS	MIN ... MAX.
131	LA	247	247	MODBUS address	1 ... 247
132	Lb	2	2	MODBUS baud rate	0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud
133	LP	2	2	MODBUS parity	0 = none 1 = odd 2 = even
N.	PAR.	DEF.	DEF.	BLUETOOTH	MIN ... MAX.
134	bLE	1	1	turn on Bluetooth	0 = no 1 = yes

PASTRY - ICE - ICE ST

NB only the highlighted parameters can be modified by maintenance service. The other parameters can be modified only after reference/authorization by our technical department,

N.	PAR.	TNBV	BTV	BT-ST	SETPOINT	MIN... MAX
1	SP	0.0	-20	-20	setpoint	r1... r2
N.	PAR.	DEF.	DEF.	DEF.	ANALOGUE INPUTS	MIN... MAX.
2	CA1	0.0	0.0	0.0	cell probe offset	-25 ... 25 ° C / ° F if P4 = 3, input air probe offset
3	CA2	0.0	0.0	0.0	evaporator probe offset	-25... 25 °C/°F
4	CA3	0.0	0.0	0.0	auxiliary probe offset	-25... 25 °C/°F
5	P0	1	1	1	type of probe	0 = PTC 1 = NTC
6	P1	1	1	1	enable decimal point ° C	0 = no 1 = si
7	P2	0	0	0	unit of measurement for temperature	0 = °C 1 = °F
8	P3	1	1	0	evaporator probe function	0 = disabled 1 = defrost + fans 2 = fans
9	P4	1	1	1	configurable input function	0 = digital input 1 = condenser probe 2 = critical temperature probe 3 = outlet air probe 4 = evaporator probe 2 if P4 = 3, regulation temperature = product temperature (CPT)
10	P5	0	0	0	size on display	0 = regulation temperature 1 = setpoint 2 = evaporator temperature 3 = auxiliary temperature 4 = inlet air temperature
11	P7	50	50	50	inlet air weight for product temperature calculation (CPT)	0 ... 100% CPT = $\{[(P7 \times (\text{incoming air})) + [(100 - P7) \times (\text{outgoing air})]: 100\}$
12	P8	5	5	5	display refresh time	0... 250 s : 10
N.	PAR.	DEF.	DEF.	DEF.	MAIN REGULATOR	MIN... MAX.
13	r0	2.0	2.0	2.0	differential setpoint	1 ... 15 ° C / ° F if u1c ... u5c 1, proportional band
14	r1	-2	-22	-25	minimum setpoint	-99 °C/°F... r2
15	r2	+10.0	-10	-10	maximum setpoint	r1... 199 °C/°F
16	r3	0	0	0	enable setpoint block	0 = no 1 = yes
17	r4	2	2	2	offset setpoint in energy saving	0 ... 99 ° C / ° F
18	r5	0	0	0	adjustment for hot or cold	0 = for cold 1 = for hot
19	r6	3	3	3	setpoint offset in overcooling	0 ... 99 ° C / ° F
20	r7	60	60	60	overcooling duration	0 ... 240 min
21	r12	0	0	0	differential position r0	0 = asymmetrical 1 = symmetrical
N.	PAR.	DEF.	DEF.	DEF.	COMPRESSOR	MIN... MAX.
22	C0	0	0	0	compressor delay on from power-on	0... 240 min
23	C1	0	0	0	delay between two compressor starts	0... 240 min
24	C2	5	5	5	minimum compressor time off	0... 240 min
25	C3	0	0	0	minimum compressor time on	0... 240 s
26	C4	10	10	10	compressor time off in cabinet probe alarm	0... 240 min
27	C5	10	10	10	compressor on time in cold room probe alarm	0... 240 min
28	C6	60.0	60.0	60.0	high condensation signaling threshold	0 ... 199 ° C / ° F differential = 2 ° C / 4 ° F
29	C7	65.0	65.0	65.0	high condensation alarm threshold	0 ... 199 ° C / ° F
30	C8	1	1	1	high condensation alarm delay	0 ... 15 min
31	C10	0	0	0	compressor hours for maintenance	0 ... 999 h x 100 0 = disabled
32	C11	10	10	10	compressor delay 2	on 0 ... 240 s
33	C12	2	2	2	compressor hours weight for hours and start balancing (BHC) - (available only in EVJ224, EVJ225, EVJ234 and EVJ235)	0 ... 10 BHC = $\{[C12 \times (\text{compressor hours})] + [C13 \times (\text{compressor starts})]\}$
34	C13	1	1	1	compressor switch-on weight for balancing hours and switch-ons (BHC) - (available only in EVJ224, EVJ225, EVJ234 and EVJ235)	0 ... 10 BHC = $\{[C12 \times (\text{compressor hours})] + [C13 \times (\text{compressor starts})]\}$
35	C14	1	1	1	constraint between compressors (available only in EVJ224, EVJ225, EVJ234 and EVJ235)	0 = function of C11, 1 = function of r0
N.	PAR.	DEF.	DEF.	DEF.	DEFROST	MIN ... MAX.
36	d0	8	6	0	automatic defrost interval 0 ... 99 h	maximum interval
37	d1	0	0	0	type of defrost	0 = electric 1 = hot gas 2 = to stop the compressor
38	d2	8.0	8.0	8.0	end of defrost threshold	-99 ... 99 ° C / ° F
39	d3	30	30	30	defrost duration	minutes maximum duration
40	d4	0	0	0	enable defrost at power-on	0 = no 1 = yes
41	d5	0	0	0	defrost delay from power-on	0 ... 99 min
42	d6	1	1	1	size on display in defrost	0 = regulation temperature 1 = display locked 2 = dEF label
43	d7	2	2	2	dripping time	0 ... 15 min
44	d8	0	0	0	defrost interval counting mode	0 = device hours on 1 = compressor hours on 2 = evaporator temperature hours <d9 3 = adaptive (if P4 = 4, device hours on) 4 = in real time

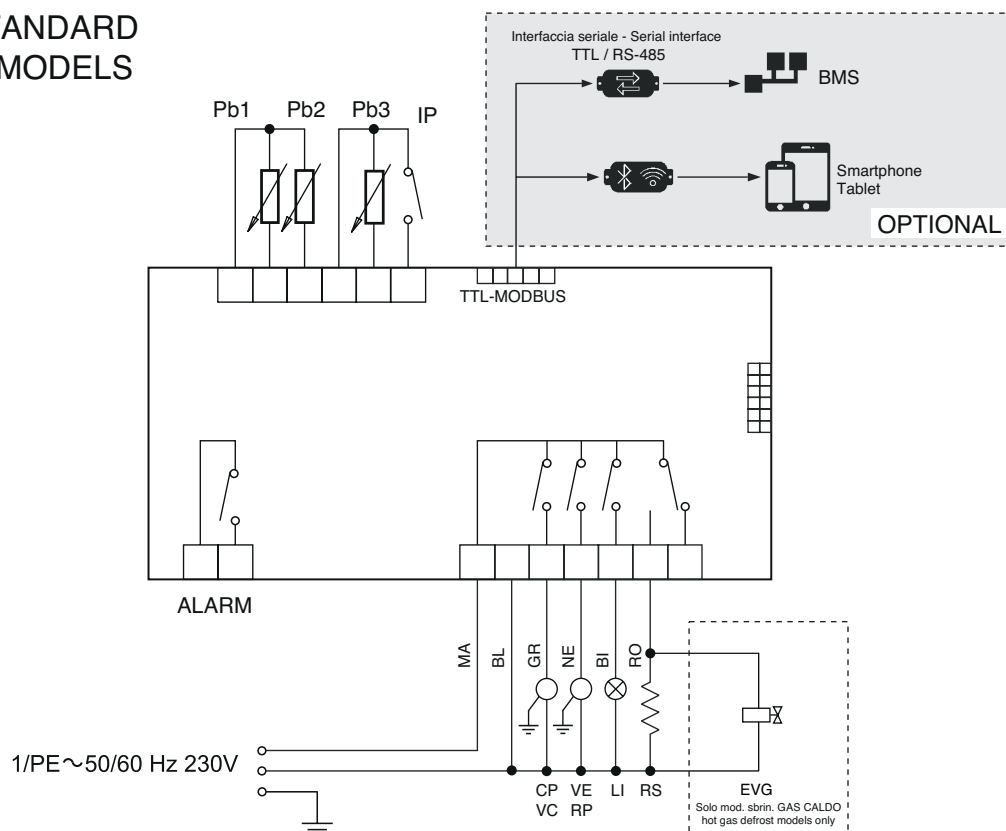
45	d9	0.0	0.0	0.0	evaporation threshold for automatic defrost interval count	-99... 99 °C/°F
46	d11	0	0	0	enable defrost timeout alarm	0 = no 1 = yes
47	d15	0	0	0	consecutive compressor on time for hot gas defrost	-20 ... 99 min if negative values, dripping resistance duration on
48	d16	0	0	0	pre-dripping time for hot gas defrosting	0 ... 99 min
49	d18	40	40	40	adaptive defrost interval	0 ... 999 min if compressor on + evaporator temperature <d22 0 = manual only
50	d19	3.0	3.0	3.0	adaptive defrost threshold (relative to optimal evaporation temperature)	0 ... 40 ° C / ° F optimal evaporation temperature - d19
51	d20	180	180	180	consecutive compressor on time for defrost	0 ... 999 min 0 = disabled
52	d21	200	200	200	consecutive compressor on time for defrosting from power-on and overcooling	0 ... 500 min if (regulation temperature - setpoint)> 10 ° C / 20 ° F 0 = disabled
53	d22	-2.0	-2.0	-2.0	evaporation threshold for adaptive defrost interval count (relative to optimal evaporation temperature)	-10 ... 10 ° C / ° F optimum evaporation temperature + d22
54	d25	0	0	0	enable outlet air probe for defrosting in evaporator probe alarm	0 = no 1 = yes
55	d26	0	0	0	defrost interval in evaporator probe alarm	0 ... 99 h 0 = manual only if d25 = 1
N.	PAR.	DEF.	DEF.	DEF.	TEMPERATURE ALARMS	MIN... MAX.
56	A0	0	0	0	size selection for high / low temperature alarms	0 = regulation temperature 1 = evaporator temperature
57	A1	-10	-10	-10	low temperature alarm threshold	-99 ... 99 ° C / ° F
58	A2	1	1	1	type of low temperature alarm	0 = disabled 1 = relative to setpoint 2 = absolute
59	A4	10	10	10	high temperature alarm threshold	-99 ... 99 ° C / ° F
60	A5	1	1	1	type of high temperature alarm	0 = disabled 1 = relative to setpoint 2 = absolute
61	A6	120	120	120	high temperature alarm delay from power-on	0... 240 min
62	A7	60	60	60	high / low temperature alarm delay	0... 240 min
63	A8	60	60	60	post-defrost high temperature alarm delay	0... 240 min
64	A9	60	60	60	high temperature alarm delay from door closing	0... 240 min
65	A10	60	60	60	power failure duration for alarm storage	0... 240 min
66	A11	2.0	2.0	2.0	high / low temperature alarm reset differential	1... 15 °C/°F
67	A12	2	2	2	type of power failure alarm signaling	0 = HACCP LED 1 = HACCP LED + PF label + buzzer 2 = HACCP LED + PF label + buzzer (if duration> A10)
N.	PAR.	DEF.	DEF.	DEF.	FANS	MIN ... MAX.
68	F0	5	5	5	evaporator fan mode in 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 = function of F6, 6 = thermoregulated (with F1), 7 = thermoregulated (with F1) if compressor on
69	F1	40	40	40	evaporator fan adjustment threshold	-99... 99 °C/°F
70	F2	0	0	0	evaporator fan mode in defrost and dripping	0 = off 1 = on 2 = funzione di F0
71	F3	2	2	2	maximum evaporator fan stop time	0... 15 min def. 0
72	F4	30	30	30	evaporator fan time off in energy saving	0... 240 s x 10 se F0 ≠ 5
73	F5	30	30	30	evaporator fan time on in energy saving	0... 240 s x 10 se F0 ≠ 5
74	F6	1	1	1	operation for high / low humidity	0 = for low humidity (with F17 and F18 if compressor off, on if compressor on) 1 = for high humidity (on)
75	F7	5.0	5.0	5.0	drip evaporator fans threshold (relative to setpoint)	-99... 99 °C/°F setpoint + F7
76	F8	2.0	2.0	2.0	evaporator fan regulation threshold differential	1... 15 °C/°F
77	F9	0	0	0	evaporator fan delay off from compressor off	0 ... 240 s if F0 = 2 or 5
78	F10	1	1	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 in defrost, pre-dripping and dripping
79	F11	15.0	15.0	15.0	condenser fan threshold on	0 ... 99 ° C / ° F differential = 2 ° C / 4 ° F
80	F12	30	30	30	condenser fan delay off from compressor off	0 ... 240 s if P4 ≠ 1
81	F17	60	60	60	evaporator fan time off in low humidity	0... 240 s
82	F18	0	0	0	evaporator fan time on in low humidity	0... 240 s
N.	PAR.	DEF.	DEF.	DEF.	DIGITAL INPUTS	MIN... MAX.
83	i0	5	5	5	door switch input function	0 = disabled 1 = compressor + evaporator fans off 2 = evaporator fans off 3 = cold room light on 4 = compressor + evaporator fans off, cold room light on 5 = evaporator fans off, cold room light on
84	i1	0	0	0	door switch input activation	0 = with closed contact 1 = with open contact
85	i2	30	30	30	door open alarm delay	-1 ... 120 min -1 = disabled
86	i3	15	15	15	maximum regulation inhibition time with door open	-1 ... 120 min -1 = until closing

87	i4	1	1	1	enable door open alarm storage (not available on models without clock)	0 = no 1 = yes if i2 ≠ -1 and after i2
88	i5	6	6	6	multifunction input function	0 = disabled 1 = energy saving 2 = alarm iA 3 = alarm iSd 4 = load 1 from key on 5 = load 2 from key on 6 = switch on / off device 7 = alarm LP 8 = alarm C1t 9 = alarm C2t
89	i6	1	1	1	multifunction input activation	0 = with closed contact 1 = with open contact
90	i7	0	0	0	multifunction input alarm delay	0 ... 120 min if i5 = 3 or 7, compressor delay on from alarm reset
91	i8	0	0	0	number of multifunction input activations for high pressure alarm	0 ... 15 0 = disabled if i5 = 3
92	i9	240	240	240	counter reset time for high pressure alarm	1... 999 min
93	i10	0	0	0	consecutive time door closed for energy saving	0 ... 999 min after regulation temperature <SP 0 = disabled
94	i13	0	0	0	number of door openings for defrosting	0 ... 240 0 = disabled
95	i14	0	0	0	consecutive time door open for defrost	0 ... 240 min 0 = disabled
N.	PAR.	DEF.	DEF.	DEF.	DIGITAL OUTPUTS	MIN... MAX.
96	u1c	0	0	0	relay configuration K1	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
97	u2c	4	4	4	relay configuration K2	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
98	u3c	5	5	5	relay configuration K3 K2	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
99	u4c	2	2	2	relay configuration K4 K2	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
100	u5c	12	12	12	relay configuration K5 K2	0 = compressor 1,1 = compressor 2,2 = evaporator fans 3 = condenser fans 4 = defrost 5 = cold room light 6 = anti-fog 7 = door heaters 8 = heaters for neutral zone 9 = drip heaters 10 = load 1 from button 11 = load 2 by key 12 = alarm 13 = on / stand-by 14 = evaporator fans 2,15 = defrost 2
101	u2	0	0	0	enable cell light and load from button in stand-by	0 = no 1 = yes in manual mode
102	u4	1	1	1	enable alarm output silence	0 = no 1 = yes
103	u5	-1.0	-1.0	-1.0	resistance threshold door on	-99 ... 99 ° C / ° F differential = 2 ° C / 4 ° F
104	u6	5	5	5	anti-fog duration on	1 ... 120 min
105	u7	-5.0	-5.0	-5.0	neutral zone threshold for heating (relative to setpoint)	-99 ... 99 ° C / ° F differential = 2 ° C / 4 ° F setpoint + u7
106	u9	1	1	1	enable alarm buzzer	0 = no 1 = si
N.	PAR.	DEF.	DEF.	DEF.	CLOCK	MIN... MAX.
107	Hr0	1	1	1	enable clock	0 = no 1 = si
N.	PAR.	DEF.	DEF.	DEF.	ENERGY SAVING (if r5 = 0)	MIN... MAX.
108	HE2	360	36	36	maximum energy saving duration	0... 999 min
N.	PAR.	DEF.	DEF.	DEF.	REAL-TIME ENERGY SAVING (if r5 = 0)	MIN... MAX.
109	H01	0	0	0	energy saving time	0... 23 h
110	H02	0	0	0	maximum energy saving duration	0... 24 h
N.	PAR.	DEF.	DEF.	DEF.	REAL TIME DEFROST (if d8 = 4)	MIN... MAX.
111	Hd1	h-	h-	h-	1st daily defrost time	h- = disabled
112	Hd2	h-	h-	h-	2nd daily defrost time	h- = disabled
113	Hd3	h-	h-	h-	time 3 ° daily defrost	h- = disabled
114	Hd4	h-	h-	h-	time 4 ° daily defrost	h- = disabled
115	Hd5	h-	h-	h-	time 5 ° daily defrost	h- = disabled
116	Hd6	h-	h-	h-	time 6 ° daily defrost	h- = disabled
N.	PAR.	DEF.	DEF.	DEF.	DATA-LOGGING (not available in EVJ203, EVJ204, EVJ205, EVJ224 and EVJ225)	MIN... MAX.
117	Sd0	30	30	30	SD card writing interval in HACCP mode	1... 30 min
118	Sd1	1	1	1	SD card writing interval in service mode	1... 30 min
119	Sd2	60	60	60	service mode duration	1... 240 min
120	Sd3	0	0	0	enable recording of critical temperature	0 = no 1 = yes
121	Sd4	0	0	0	enable cell temperature recording	0 = no 1 = yes
122	Sd5	1	1	1	type of decimal separator	0 = comma 1 = point

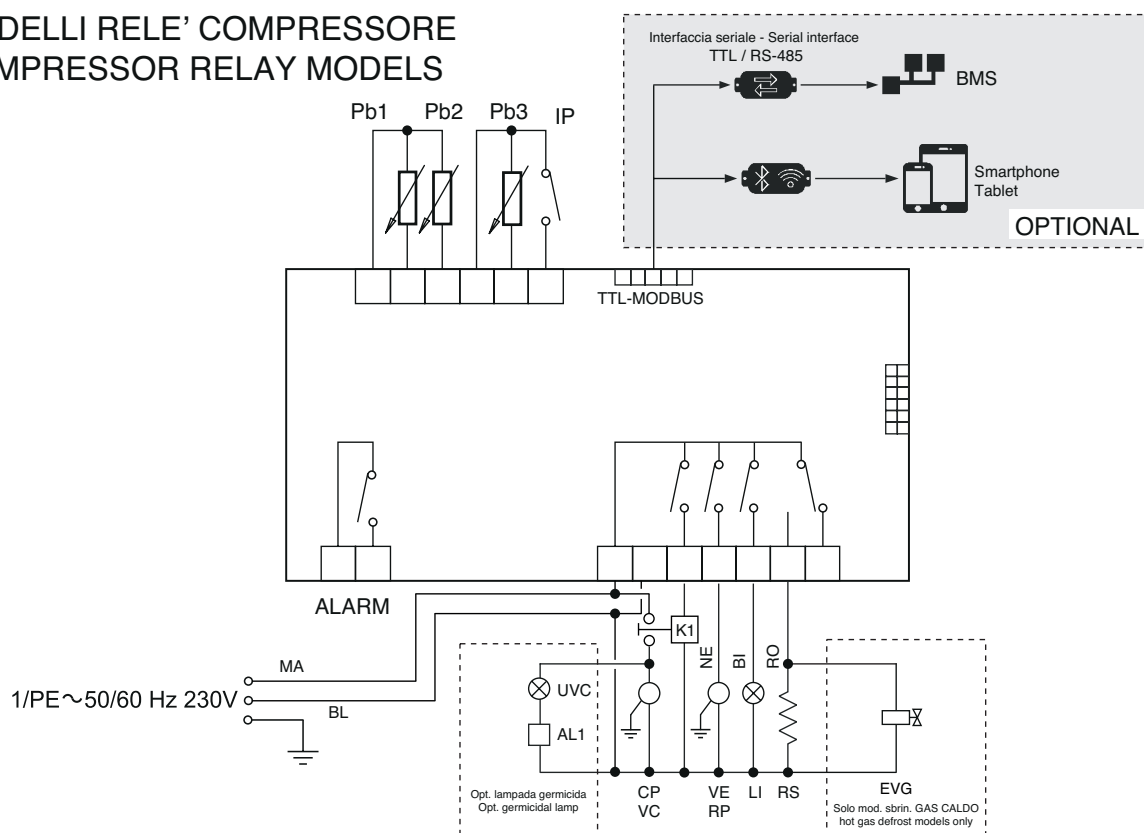
N.	PAR.	DEF.	DEF.	DEF.	SAFETY	MIN ... MAX.
123	POF	1	1	1	enable ON / STAND-BY button	0 = no 1 = yes
124	Loc	1	1	1	enable keyboard lock (default 0 in models with open-frame user interface)	0 = no 1 = yes
125	Sen	90	90	90	capacitive keyboard sensitivity (available in models for back panel installation)	60 ... 120 60 = very sensitive
126	PAS	-19	-19	-19	password	-99... 999
127	PA1	426	426	426	1st level password	-99... 999
128	PA2	824	824	824	2nd level password	-99... 999
N.	PAR.	DEF.	DEF.	DEF.	DATA-LOGGING EVLINK	MIN... MAX.
129	rE0	60	60	60	datalogger sampling interval	0... 240 min
130	rE1	4	4	4	temperature selection for data logger	0 = none 1 = cell 2 = evaporator 3 = auxiliary 4 = cell and evaporator 5 = all
N.	PAR.	DEF.	DEF.	DEF.	MODBUS	MIN ... MAX.
131	LA	247	247	247	MODBUS address	1 ... 247
132	Lb	2	2	2	MODBUS baud rate	0 = 2,400 baud 1 = 4,800 baud 2 = 9,600 baud 3 = 19,200 baud
133	LP	2	2	2	MODBUS parity	0 = none 1 = odd 2 = even
N.	PAR.	DEF.	DEF.	DEF.	BLUETOOTH	MIN ... MAX.
134	bLE	1	1	1	turn on Bluetooth	0 = no 1 = yes

MODELLI STANDARD

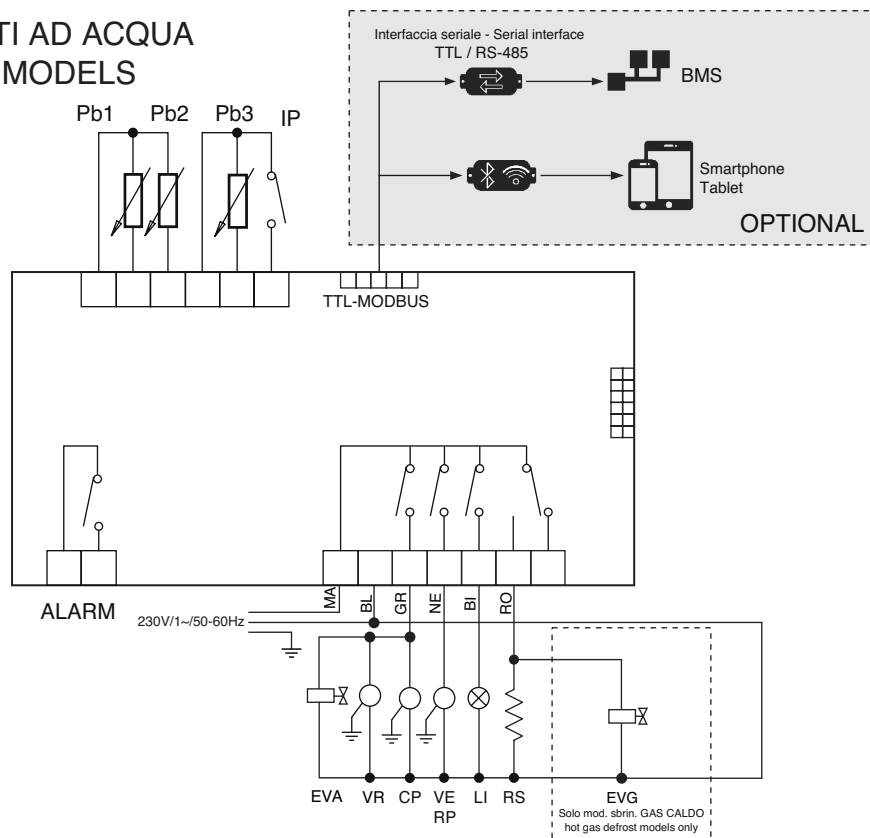
STANDARD MODELS



MODELLI RELE' COMPRESSORE COMPRESSOR RELAY MODELS



MODELLI CONDENSATI AD ACQUA WATER CONDENSED MODELS



Legenda componenti

CP - Moto-compressore
K1 - Relè compressore
LI - Luce interna
RB - Resistenza bacinella
RC - Resistenza scarico
RS - Resistenza sbrinamento
IP - Interruttore porta
RP - Resistenza anticondensa
Pb1 - Sonda termostato
Pb2 - Sonda evaporatore
Pb3 - Sonda condensatore
VC - Ventilatore condensatore
VE - Ventilatore evaporatore
UVC - Lampada germicida
EVA - Elettrovalvola acqua
EVG - Elettrovalvola di sbrinamento
AL1 - Alimentatore lampada UVC
VR - Ventola raffreddamento

Legenda colori

NE - Nero
GR - Grigio
RO - Rosso
MA - Marrone
BL - Blu
BI - Bianco
GV - Giallo Verde

Components key

CP - Moto-compressor
K1 - Compressor relay
LI - Internal light
RB - Basin heater
RC - Drain heater
RS - Defrost heater
IP - Door switch
RP - Anti-condensate heater
Pb1 - Thermostat probe
Pb2 - Evaporator probe
Pb3 - Condenser probe
VC - Condenser fan
VE - Evaporator fan
UVC - Germicidal lamp
EVA Water solenoid
EVG - Defrosting solenoid valve
AL1 - UVC lamp power supply
VR - Cooling fan

Colour Key

NE - Black
GR - Grey
RO - Red
MA - Brown
BL - Blue
BI - White
GV - Yellow Green