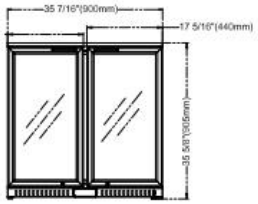
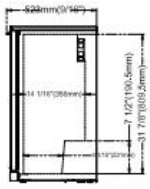
VITLIFE COMMERCIAL

Back Bar cooler
Swing door series
TROUBLE SHOOTING MANUAL





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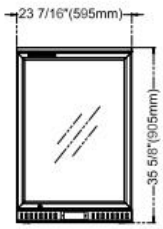

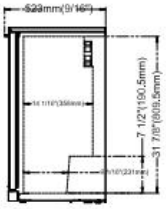

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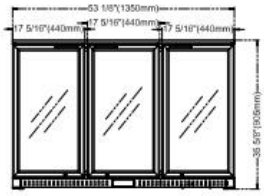
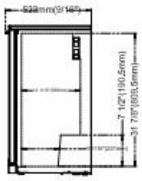




VBBT338H

Please read the instructions carefully and keep for future reference. Information may be updated from time to time so please refer to the manual online for the latest version of the manual.

Please always follow the safety precautions listed below:

- Do not put acid or flammable or volatile materials inside the appliance.
- Do not puncture or damage refrigerant tubing.
- Unplug the unit immediately if you find any abnormal smell or smoke, and contact Customer Service.
- This appliance is not intended for use by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- Use a dedicated power outlet and a three prong power socket, that is properly grounded.
- Secure the cord behind the unit to prevent a tripping hazard.
- Do not use extension cords or ungrounded two prong adapters.
- Do not use the power cord or plug if it is damaged.
- When removing the power plug, do not pull on the cord. Grasp the plug firmly and pull it out from the socket.
- Do not connect or disconnect plug with wet hands.
- Unplug the unit first when doing maintenance or repair.
- Keep ventilation openings free of obstructions.
- Repairs must be done only by a qualified technician.

Standard(s):

Electrical Equipment for Measurement, Control, and Laboratory Use; Part 1: General Requirements [UL 61010-1:2012 Ed.3+R:19Jul2019]

Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use Part 1: General Requirements [CSA C22.2#61010-1-12:2012 Ed.3+U1;U2;A1]

Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 2-011: Particular Requirements for Refrigerating Equipment [UL 61010-2-011:2021 Ed.2]

Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 2-011: Particular Requirements for Refrigerating Equipment [CSA C22.2#61010-2-011:2019 Ed.2]

OPERATING MANUAL

1. GENERAL WARNINGS

1.1 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.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.
- Emerson Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

1.2 SAFETY PRECAUTIONS

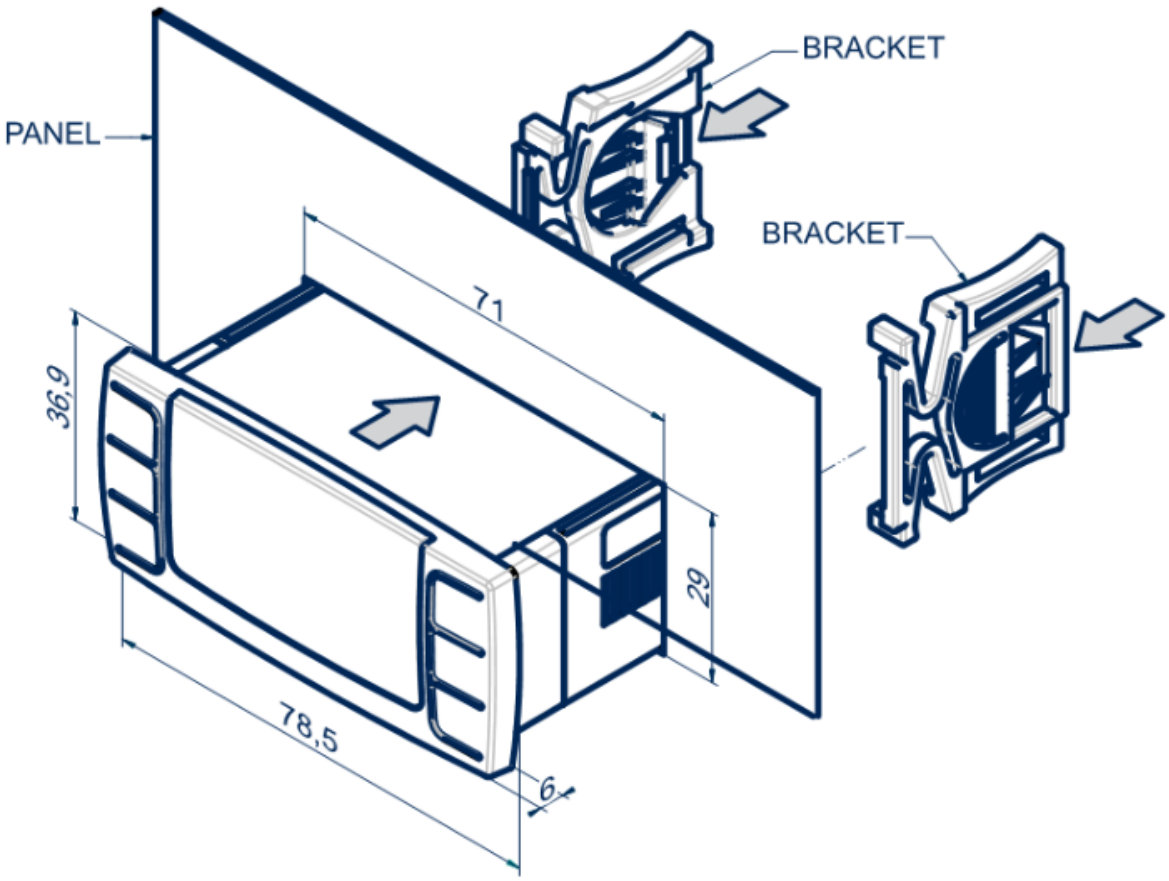
- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation.
- Warning: disconnect all electrical connections before any kind of maintenance.
- Fit the probe where it is not accessible by the End User. The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell S.r.l." (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

1.3 DISPOSAL OF THE PRODUCT

The appliance (or the product) must be disposed of separately in accordance with the local waste disposal legislation in force.

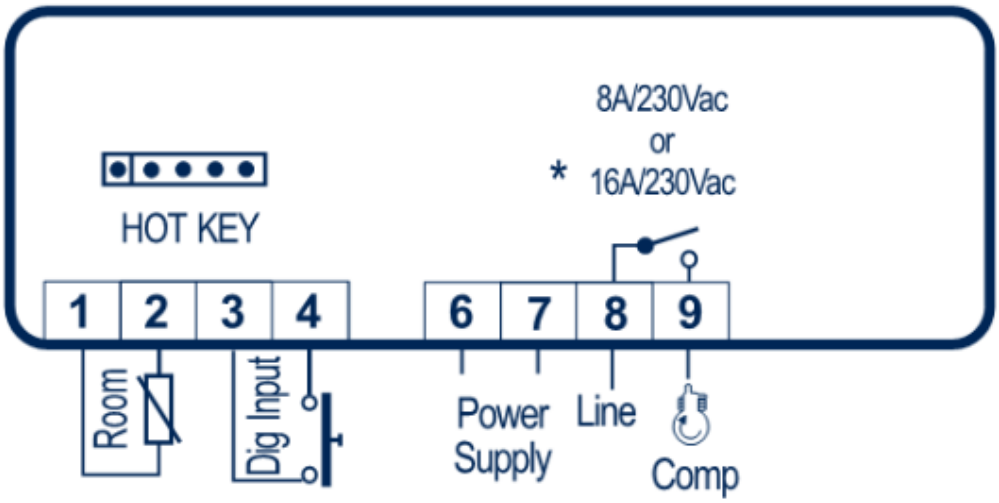
2. FRONT PANEL

3. DIMENSIONS AND CUT OUT

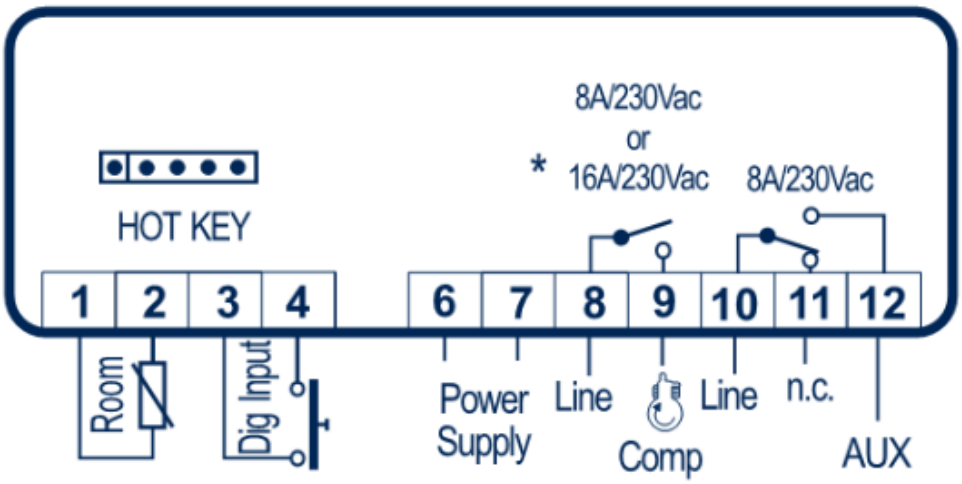


4. CONNECTIONS

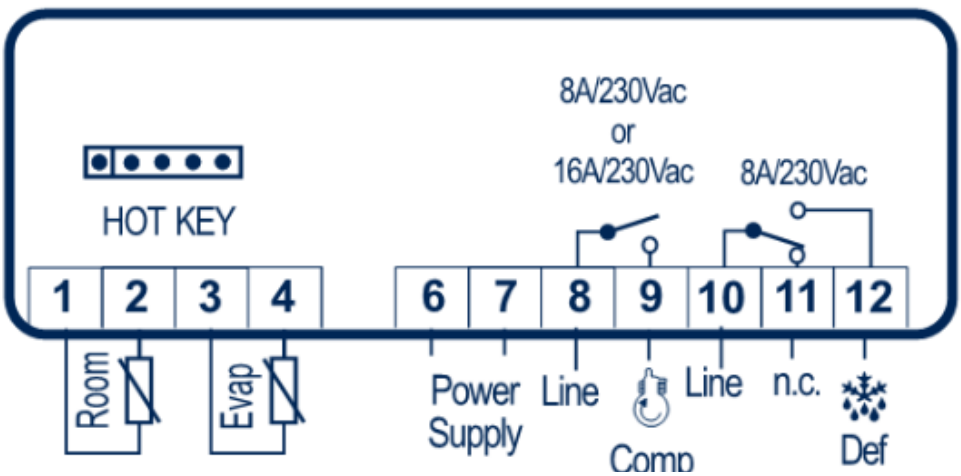
XR01CX - XR02CX 8A or 16A COMP.



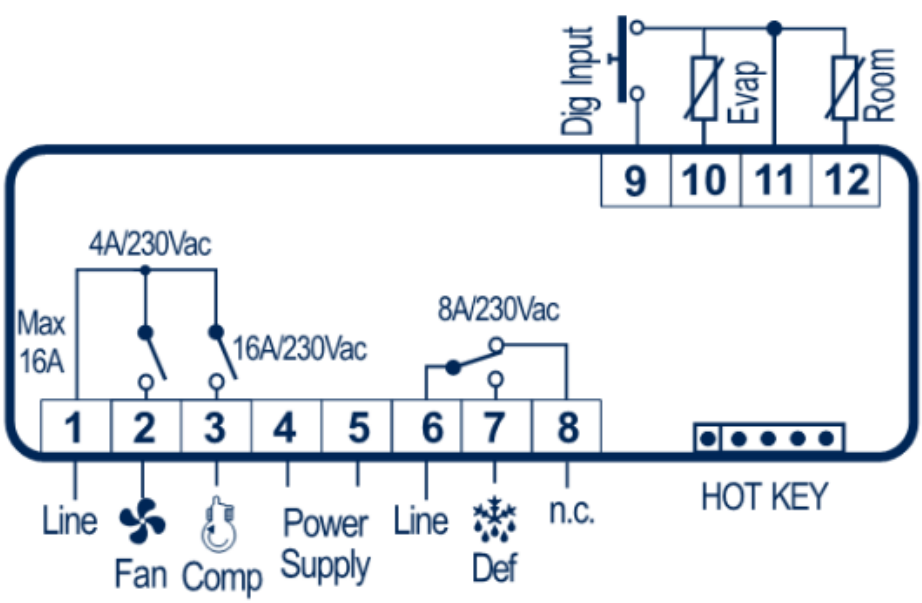
XR03CX 8A or 16A COMP.



XR04CX 8A or 16A COMP.



XR06CX 16A COMP.



5. GENERAL DESCRIPTION

Model **XR01CX**, in **32x74x50 mm short format**, is a single stage temperature thermostat suitable for applications in the field of refrigeration or heating. It provides a relay output to drive the compressor. It is also provided with 1 NTC probe input and one digital input. The instrument is fully configurable through special parameters that can be easily programmed through the keyboard or by the HOTKEY.

Model **XR02CX**, in **32x74x50 mm short format**, is a digital controller with off cycle defrost designed for refrigeration applications at normal temperature. It provides a relay output to drive the compressor. It is also provided with 1 NTC probe input and one the digital input. The instrument is fully configurable through special parameters that can be easily programmed through the keyboard or by the HOTKEY.

The **XR03CX**, in **32x74x50 mm short format**, is microprocessor based controller suitable for applications on normal temperature refrigerating units. It provides two relay output: one for compressor and the other one for alarm signalling or as auxiliary output. It provides an NTC probe input and a digital input for alarm signalling, for switching the auxiliary output or for start defrost. The instrument is fully configurable through special parameters that can be easily programmed through the keyboard or the by HOTKEY.

The **XR04CX**, in **32x74x50 mm short format**, is microprocessor based controller suitable for applications on normal or low temperature refrigerating units. It provides two relay output: one for compressor and the other one for defrost. It provides two NTC probe inputs, one for room temperature and other one to control defrost termination. The instrument is fully configurable through special parameters that can be easily programmed through the keyboard or by the HOTKEY.

The **XR06CX, format 32x74x60 mm**, is microprocessor based controller, suitable for applications on medium or low temperature ventilated refrigerating units. It has three relay outputs to control compressor, fan, and defrost, which can be either electrical or reverse cycle (hot gas). It is also provided with 2 NTC probe inputs, the first one for temperature control, the second one, to be located onto the evaporator, to control the defrost termination temperature and to managed the fan and it's provided with a configurable digital input. With the HOTKEY it's possible to program the instrument in a quick and easy way.

6. REGULATION

6.1 THE REGULATION OUTPUT (Only for XR01CX)

The regulation is performed according to the temperature measured by probe. The instrument is provided with the **CH** programmable parameter wich enables the user to set the regulation both for heating or cooling applications:

- **CH=cL** --> cooling applications;
- **CH=Ht** --> heating applications.

6.2 COOLING APPLICATIONS

The regulation is performed according to the temperature measured by the thermostat probe with a positive differential from the set point: if the temperature increases and reaches set point plus differential the compressor is started and then turned off when the temperature reaches the set point value again.

6.3 HEATING APPLICATIONS (Only XR01CX)

The Hy value is automatically subtracted to the SET POINT. If the temperature decreases and reaches set point minus differential the output is started and then turned off when the temperature reaches set point value again.

7. DEFROST

XR02CX - XR03CX: Defrost is performed through a simple stop of the compressor. Parameter **id** controls the interval between defrost cycles, while its length is controlled by parameter **Md**.

XR04CX - XR06CX: Two defrost modes are available through the **td** parameter:

- **td=EL** defrost through electrical heater (compressor OFF);
- **td=in** hot gas defrost (compressor ON).

Other parameters are used to control the interval between defrost cycles (**id**), its maximum length (**Md**) and two defrost modes: timed or controlled by the evaporator's probe. At the end of defrost dripping time is started, its length is set in the **dt** parameter. With **dt=0** the dripping time is disabled.

8. FANS (Only XR06CX)

With **FC** parameter it can be selected the fans functioning:

- **FC=cn** will switch ON and OFF with the compressor and **not run** during defrost
- **FC=on** fans will run even if the compressor is off, and not run during defrost

After defrost, there is a timed fan delay allowing for drip time, set by means of the **Fd** parameter.

- **FC=cy** fans will switch ON and OFF with the compressor and **run** during defrost
- **FC=oY** fans will run continuously also during defrost.

An additional parameter **FS** provides the setting of temperature, detected by the evaporator probe, above which the fans are always OFF. This is used to make sure circulation of air only if his temperature is lower than set in **FS**.

8.1 FANS AND DIGITAL INPUT

When the digital input is configured as door switch **iF=do**, fans and compressor status depends on the **dC** parameter value:

dC=no normal regulation;
dC=Fn fans OFF;
dC=cP compressor OFF;
dC=Fc compressor and fans OFF.

When **rd=y**, the regulation restart with door open alarm.

9. VOLTAGE PROTECTION (Option)

The HLVD function provides an alarm if the voltage of the power supply out of the normal range **vU** and **vL**.
Parameters **vc** enable this function. **vU** and **vL** define the limitation threshold of the power, and if the voltage out of the range, the alarm will be triggered. Then the system will go to the dedicate action according to the parameter **vr**.

- **vr=n** the regulation not stop
- **vr=y** the regulation stop

When the power back to the normal range, then alarm disappeared, the system will start to run the normal regulation.

10. FRONT PANEL COMMANDS

SET To display target set point, in programming mode it selects a parameter or confirm an operation

To start a manual defrost

In programming mode it browses the parameter codes or increases the displayed value

aux In programming mode it browses the parameter codes or decreases the displayed value

KEYS COMBINATION

+ To lock or unlock the keyboard

SET+ To enter in programming mode

SET + To return to room temperature display

+ To reset parameters

LED	MODE	SIGNIFICATO
	On	Compressor enabled
	Flashing	- Compressor activation delay active (during -Compressor stop for micro-door
	On	Defrost in progress
	Flashing	- Defrost delay active (during time dd) - Dripping in progress (during time dt)
	On	Fans output enabled
	Flashing	Fans delay after defrost
	On	Alarms happend
	Flashing	------

10.1 HOW TO SEE THE SET POINT

1. Push and immediately release the **SET** key, the set point will be showed;
2. Push and immediately release the **SET** key or wait about 5s to return to normal visualisation.

10.2 HOW TO CHANGE THE SETPOINT

1. Push the **SET** key for more than 2 seconds to change the Set point value;
2. The value of the set point will be displayed and starts blinking;
3. To change the **SET** value push the o or n arrows within 10s;
4. To memorise the new set point value push the **SET** key again or wait 15s.

10.3 HOW TO START A MANUAL DEFROST

Push the **DEF** ❄ key for more than 2 seconds and a manual defrost will start, the pre-condition is evaporator probe temp lower than **dE** .

10.4 HOW TO CHANGE A PARAMETER VALUE

To change the parameter's value operate as follows:

1. Enter the Programming mode by pressing the **SET**+ ^ keys for 3s;
2. Select the required parameter.
3. Press the **SET** key to display its value (set value starts to blink);
4. Use ^ or v to change its value;
5. Press **SET** to store the new value and move to the following parameter.

To exit: Press **SET**+ ^ or wait 15s without pressing a key.

NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire. Please restart the controller after change the parameters

10.5 HOW TO RESET TO THE FACTORY PARAMETER VALUE(Option)

In the first 60s after controller power-on, it allows user to reset to the factory parameter through key combination with steps below:

1. Start pressing DEF ❄ key and ^ for 5s;
2. Then release just ^ but keep DEF ❄ key another 5s. Then parameter reset successfully by controller re-start automatically.

NOTE:

• The Parameters Factory Reset function shall be accessible in the first 60 seconds from the device power-on. The default configuration will initiate the loading, during this time all regulation will be interrupted, relays will be powered off, and the controllers is reset.

•It allows user to reset to a customized parameter map through Hotkey, to download the parameters into the controller firstly, then execute the above 2 steps.

Here is the setps to update to customized paraleter into the controller.

1.Save your own parameter map into a Hotkey

2.Plug-in the hotkey into the controller, power off the controller

3.Then power on the controller, the parameter into Hotkey will be downloaded into the controller automatically with display showing 'En' label.

NOTE: After reset to user parameter, it will be impossible to reset to Emerson parameter anymore.

10.6 HIDDEN MENU

The hidden menu includes all the parameters of the instrument.

HOW TO ENTER THE HIDDEN MENU

1. Enter the Programming mode by pressing the **SET**+▽keys for 3s (Set value starts blinking);
2. Released the keys, then push again the **SET**+▽keys for more than 7s. The L2 label will be displayed immediately followed from the Hy parameter.

NOW YOU ARE IN THE HIDDEN MENU.

3. Select the required parameter;
4. Press the **SET** key to display its value;
5. Use△ or ▽ to change its value;
6. Press **SET** to store the new value and move to the following parameter.

To exit: Press **SET**+△ or wait 15s without pressing a key.

NOTE1: if none parameter is present in L1, after 3s the **nP** message is displayed. Keep the keys pushed till the L2 message is displayed.

NOTE2: the set value is stored even when the procedure is exited by waiting the time-out to expire.

HOW TO MOVE A PARAMETER FROM THE HIDDEN MENU TO THE FIRST LEVEL AND VICEVERSA.

Each parameter present in the HIDDEN MENU can be removed or put into "THE FIRST LEVEL" (user level) by pressing **SET**+▽. In HIDDEN MENU when a parameter is present in First Level the decimal point is on.

10.7 TO LOCK THE KEYBOARD

Keep pressed for more than 3s the▽+△keys.

The **PF** message will be displayed and the keyboard will be locked. If a key is pressed more than 3s the PF message will be displayed.

10.8 TO UNLOCK THE KEYBOARD

Keep pressed together for more than 3s the ▽+△ keys till the **Pn** message will be displayed.

11. DIGITAL INPUTS

The free voltage digital input is programmable in different configurations by the **iF** parameter.

11.1 DOOR SWITCH (iF=do)

It signals the door status and the corresponding relay output status through the **dC** parameter: **no** = normal (any change); **Fn** = Fan OFF; **CP** = Compressor OFF; **FC** = Compressor and fan OFF.

Since the door is opened, after the delay time set through parameter **di**, the door alarm is enabled, the display shows the message **dA** and **the regulation restarts if rd = y.** The alarm stops as soon as the external digital input is disabled again. With the door open, the high and low temperature alarms are disabled.

11.2 EXTERNAL ALARM (iF=EA)

As soon as the digital input is activated the unit will wait for **di** time delay before signalling the **EA** alarm message. The outputs status don't change. The alarm stops just after the digital input is de-activated.

11.3 SERIOUS ALARM (iF=bA)

When the digital input is activated, the unit will wait for **di** delay before signalling the **CA** alarm message. The relay outputs are switched OFF. The alarm will stop as soon as the digital input is de-activated.

11.4 SWITCHING SECOND RELAY ON (iF=Au) (Only XR03CX)

When **o1=Au** it switches on and off the second relay.

11.5 START DEFROST (iF=dF)

It starts a defrost if there are the right conditions. After the defrost is finished, the normal regulation will restart only if the digital input is disabled otherwise the instrument will wait until the **Md** safety time is expired.

11.6 INVERSION OF THE KIND OF ACTION: HEATING - COOLING (iF=Hc)

This function allows to invert the regulation of the controller: from cooling to heating and viceversa.

12. INSTALLATION AND MOUNTING

Instruments shall be mounted on vertical panel, in a 29x71 mm hole, and fixed using the special bracket supplied.

The temperature range allowed for correct operation is 0÷60°C. Avoid places subject to strong vibrations, corrosive gases, excessive dirt or humidity. The same recommendations apply to probes. Let air circulate by the cooling holes.

13. ELECTRICAL CONNECTIONS

The instruments are provided with screw terminal block to connect cables with a cross section up to 2,5 mm^2. Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the probe cables from the power supply cables, from the outputs and the power connections. Do not exceed the maximum current allowed on each relay, in case of heavier loads use a suitable external relay.

13.1 PROBES

The probes shall be mounted with the bulb upwards to prevent damages due to casual liquid infiltration. It is recommended to place the thermostat probe away from air streams to correctly measure the average room temperature. Place the defrost termination probe among the evaporator fins in the coldest place, where most ice is formed, far from heaters or from the warmest place during defrost, to prevent premature defrost termination.

14. HOW TO USE THE HOT KEY

14.1 HOW TO PROGRAM THE HOT KEY FROM THE INSTRUMENT (UPLOAD)

1. Program one controller with the front keypad;
2. When the controller is ON, insert the Hot key and push ^ key; the **uP** message appears followed a by flashing **En**;
3. Push **SET** key and the **En** will stop flashing;
4. Turn OFF the instrument remove the Hot Key, then turn it ON again.

NOTE: the **Er** message is displayed for failed programming. In this case push again ^ key if you want to restart the upload again or remove the Hot key to abort the operation.

14.2 HOW TO PROGRAM AN INSTRUMENT USING HOT KEY (DOWNLOAD)

1. Turn OFF the instrument;
2. Insert a **programmed Hot Key into the 5 PIN receptacle** and then turn the Controller ON;
3. Automatically the parameter list of the Hot Key is downloaded into the Controller memory, successfully followed by appear **En** label;
4. After 10 seconds the instrument will restart working with the new parameters;
5. Remove the Hot Key.

NOTE: the **Er** message is displayed for failed programming. Check the Hotkey connection, check the data into Hotkey and repeat the actions above..

15. ALARM SIGNALLING

显示字符	报警原因	输出状态
P1	Room probe failure	Compressor output according to "Cy" and "Cn"
P2	Evaporator probe failure	Defrost end is timed
HA	Maximum temperature	Outputs unchanged
LA	Minimum temperature	Outputs unchanged
EA	External alarm	Outputs unchanged
CA	Serious external alarm	All outputs OFF
dA	Door Open	Compressor and fans restarts
Hu	High voltage of power	All outputs off except alarm/light
Lu	Low voltage of power	All outputs off except alarm/light

15.1 ALARM RECOVERY

Probe alarms **P1** and **P2** start some seconds after the fault in the related probe; they automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the probe. Temperature alarms **HA** and **LA** automatically stop as soon as the temperature returns to normal values.

Alarms **EA** and **CA** (with iF=bL) recover as soon as the digital input is disabled.

Cleaning

- Always remove all items and unplug the unit before cleaning.
- Clean inside, behind and around the refrigerator regularly, using water and mild detergent, and a damp cloth (not wet).
- Never use boiling water, harsh cleaning chemicals or abrasive materials.
- Clean the door gasket regularly to ensure that the door closes and seals properly.
- Dry all surfaces thoroughly.
- We will add the following bullet item at the end of the Cleaning section: The Condenser is located at the back or bottom of the unit. It should be cleaned every 3 months using a vacuum hose.

Defrost

The surface of the evaporator will ice up over time when the refrigerator is in use. This is a normal process. The refrigerator must be defrosted and cleaned on a regular basis to avoid unnecessary energy consumption and inefficient operation.

- Remove all items and unplug the appliance.
- After defrosting, clean the appliance and allow it to dry.
- Plug in the refrigerator and wait 4 to 6 hours for the unit to be at the correct temperature before putting your items back.

Extended Absence

- If the unit will be switched off for a long time, remove all items, turn off the appliance and clean the unit throughly.
- Leave the door open and place the unit in a well ventilated area to avoid build up of odor.

The following phenomenon is normal

- The sound like a rivulet is caused by the refrigerant flowing inside of the system pipe.
- While the unit runs, heat is emitted from both sides of the cabinet.
- When the environment is too humid, the edges around door may have a little moisture. Simply wipe it with a dry cloth.

Before calling for service, please check the following issues first

Problems	Possible causes	Remedy
The unit does not operate	Bad connection of plug or burnt out fuse	Unplug the power cord and re-connect the plug to power supply or replace with a new fuse
Abnormal operation of the compressor or there is a buzzing sound	The power voltage is out of rated range	Disconnect the power supply immediately and reconnect with it after normal voltage. It is necessary to have a voltage stabilizer in case of poor power supply.
Compressor operates for a long time and no frost on the surface of the evaporator	Refrigeration system is at fault (leakage or blocked)	Call for service
There is frost or ice on the walls of the inner cabinet and internal temperature is too low, the compressor never stops running.	Thermostat does not work	Call for service
	The temperature setting of the thermostat is too low.	Adjust to a higher temperature
The internal temperature is too high, and the compressor never stops operating.	Bad heat dissipation and ventilation of condenser	Improve ventilation
	Too many warm items were put in at one time	Remove some goods so air can circulate
	Door is being opened too frequently during initial cool down	Permit the unit to cool down adequately, prevent product access during this
Too noisy	The unit is not level	Adjust the adjustable legs
	The fastener of the unit is loose	Tighten the loose fastener
	Pipe near the compressor are touching	Carefully separate the touching pipes
The side of unit is hot	The condenser in the side wall gives out heat as part of normal operation	This is normal. No action needed.
Sometimes a light sound of water flowing will be heard	Refrigerant flowing inside the pipe.	This is normal. No action needed.
There may be condensation on the glass door	High ambient temperature or humid conditions	Dry with a cloth