

RA  **PA**

**TRANSLATED FROM
ORIGINAL USER
MANUAL**

**REFRIGERATED COUNTERS
AND MODULES**

Line E, F

EN

08/2021

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Please read this user manual carefully before using the device and keep it for future reference. Following the manual's recommendations guarantees long-lasting and failure-free exploitation of the device.



IT IS FORBIDDEN

1. Make repairs on your own and fail to comply with the rules contained in this manual regarding the connection and operation of the device;
2. Store substances that may explode in the device, such as aerosols filled with combustible propellants;
3. Place the device in the sun;
4. Covering the inlet and outlet of air from the aggregate;
5. **Switching the device on to the mains without a properly functioning protective circuit system;**
6. Use of extension cords and dividers to connect power.
7. Use devices/objects that could cause an electric spark inside the device and in the aggregate chamber.



WARNING !

1. **Incorrect connecting of the device to the mains may result in an electric shock.**
2. In the event of sparks or breakdowns, immediately disconnect the device from the power supply by pulling the plug from the socket and calling an authorized service technician.
3. It is necessary to protect the wiring system and control system against water and mechanical damage.
4. When servicing and replacing parts, the device must be disconnected from the power supply.
5. The power cord is directly connected to the sockets installed on the device. The aggregate and lighting switches do not disconnect the voltage in the socket.



CAUTION !

1. Before cleaning the condenser – **switch the device off!**
2. When cleaning the condenser, do not use tools/objects that could cause an electric spark.
3. Water condensation on glass panes and sheets at high relative humidity (over 60%) is a natural phenomenon. Long-term and frequent occurrence of dewing indicates inadequate ambient conditions and is not a basis for calling the service!
4. Take care when removing the glass panes. Breaking the glass panes can cause injury!



The device is not intended for household use.
The device is not intended for outdoor use.

1. APPLICATION AND DEVICE CODE MEANING

The device is stationary-type equipment intended for storing and expose food products (previously cooled) at a reduced temperature. Unpacked food should be stored (exposed) in containers or on trays specially designed for this purpose.

DEVICE CODE MEANING

Example of device code:

L-F Max/202/107/2N






L – type of the device: refrigerated counter

E, E Max, E1, E1 Max, F, F Max – device model

2N – housing made of stainless steel

202/107 – device dimensions (see table p.2)

Important information on the rating label of each device:

REFRIGERATED COUNTER		RAPA	
Device type: L-F Max / 202 / 107			
Serial no:	XXXXXXXX	Voltage:	230 V ~ / 50 Hz
Compressor no:	XXXXXX(X)	Rated current (A):	XX
Controller no:	XXXXXXXX	Lighting power (W):	XX
Compressor type:	XXXXXX	Weight (kg):	XXX
Refrigerant:	HC-290	Usable capacity (l):	XXX
Refrigerant amount (kg):	XXX	Climatic class:	3
Equivalent of CO ₂ (t _{CO₂}):	XX	Temperature scope (°C):	+1 ÷ +10
GWP factor:	3	Heater power (W):	XXX
„RAPA“ sp. j 9 Ceramiczna Street 20-148 Lublin POLAND tel. +48 81 718 53 46 50			
Hermetically sealed			
    			
www.rapa.pl			

Name, logo and device type

Device technical parameters

Manufacturer contact details

In the case of contact with the service department, prepare the following data for efficient service:

- > device type,
- > serial no. of device

Climatic class means the maximum ambient temperature at which the device works without disturbances.

Climatic class **3**

- > maximum permissible ambient temperature of **+25°C**,
- > temperature test:
ambient temperature **+25°C ± 1°C**
relative humidity **60% ± 3%**

2. PRODUCT CHARACTERISTICS

- > rated voltage: **230V~ / 50Hz**
- > refrigerant: **HC-290**; ODP = 0, GWP = 3
- > working temperature: **+1°C ÷ +10°C**
- > sound pressure level: **<70dB (A)**



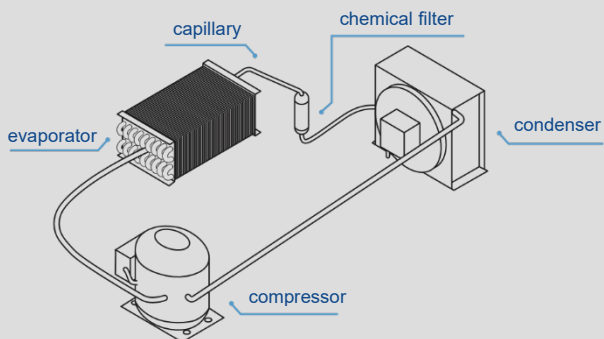
Model	Catalogue length/depth [cm]	Depth with open door [cm]	Length of the exposition total/usable [cm]	Depth of the exposition usable [cm]	Length of the storage total/usable [cm]	Depth of the storage total/usable [cm]	Capacity of the exposition usable [l]	Capacity of the storage usable [l]	Power of LED lamp [W]	Power of LED backlight [W/m]
E/E1/F	202/107	183	194/190	65,5	183/179	91/80	180	270	26	4,8
	180/107	183	171/167	65,5	160,5/156,5	91/80	158	236	26	4,8
	153/107	164	144/140	65,5	133,5/129,5	91/80	133	195	22	4,8
	138/107	164	129/125	65,5	118,5/114,5	91/80	119	173	17	4,8
	123/107	159	114/110	65,5	103,5/99,5	91/80	104	150	17	4,8
	80/107	173	71/67	65,5	61/57	91/80	64	86	11	4,8
E Max E1 Max F Max	202/107	183	194/190	65,5	77/73 ¹⁾ 100/96 ²⁾	91/80 ¹⁾ 69/60 ²⁾	180	110 ¹⁾ 287 ²⁾	26	4,8
F-NW	-/107	169,5	149/145 ⁴⁾	50	164/160 ⁴⁾	69/60 ⁴⁾	72	104	11	4,8
F-NZ	-/107	93,5 ³⁾	193/189 ⁴⁾	53,5	-	-	119	-	17	4,8

Exposition loading limit:
at front glass pane side – 10 cm
at evaporator side – 20 cm

- 1) – applicable to small storage in E Max / E1 Max / F Max
- 2) – applicable to enlarged storage in E Max / E1 Max / F Max
- 3) – no storage (refrigerated counter without door)
- 4) – sloping storage (given dimension is maximum dimension)

Height of the low storage – 20,5 cm, enlarged storage in E Max / E1 Max / F Max – 48 cm
Usable height of the low storage – 18 cm, enlarged storage in E Max / E1 Max / F Max – 42 cm

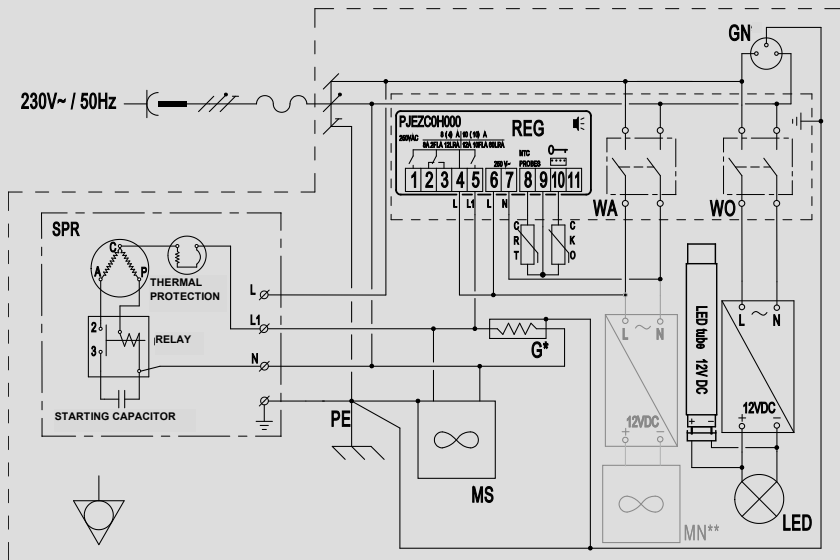
3. COOLING SYSTEM DIAGRAM



4. WIRING SYSTEM

1. The device is equipped with the protective PE cable.
2. Before connecting the device to the power supply, check the compatibility of the mains voltage with the device supplying voltage (data on the plate).
3. Connecting the device to the mains socket should be made so that the plug of the connecting cable is visible and easily accessible for the service.
4. The device should be connected to a separate, properly made electrical circuit protected by a fuse no greater than 10 A with a B-characteristic, ended with a socket with a protective pin.
5. The device may be started only after confirming the effectiveness of the shock protection with the results of measurements carried out in accordance with the applicable regulations.
6. Before carrying out any maintenance or cleaning, turn off the device with the switch and then remove the plug from the mains socket.
7. The device is started after connecting the plug to the mains socket, and then by turning on the switch. The backlight of the switch indicates that the device has been turned on.
8. Any repair of electrical installation and replacement of the connection cable (only into original one available from the manufacturer) may be carried out by an authorized electrician only.

5. WIRING SYSTEM DIAGRAM



KO – defrost ending sensor

CR – electronic temperature regulator sensor

G – PTC heater

GN – electric socket

MS – condenser fan

REG – electronic temperature regulator

SPR – compressor

WA – aggregate switch

WO – lighting switch

MN** – evaporator fan

* - additional equipment

** - applicable to refrigerated counter and module L-F/NW

6. DRAWINGS

Fig. 1

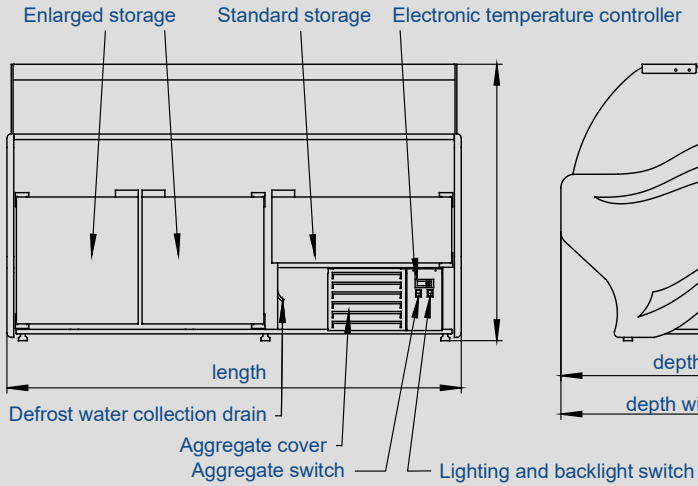


Fig. 2.

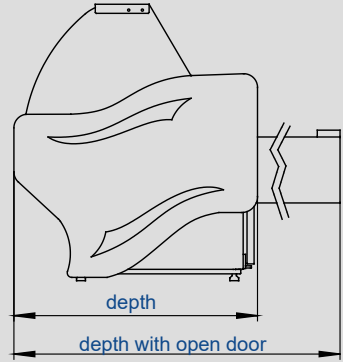


Fig. 3

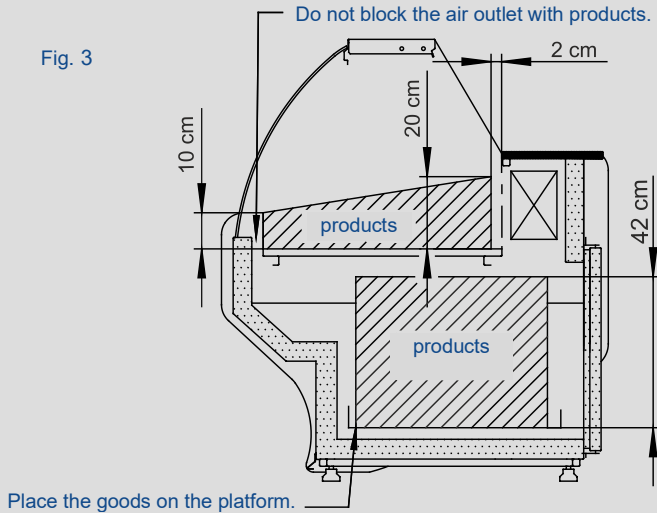


Fig. 1 Back view

Fig. 2 Side view

Fig. 3 Layout of products in enlarged storage of L-E Max, L-E1 Max i L-F Max counters.

Fig. 4.

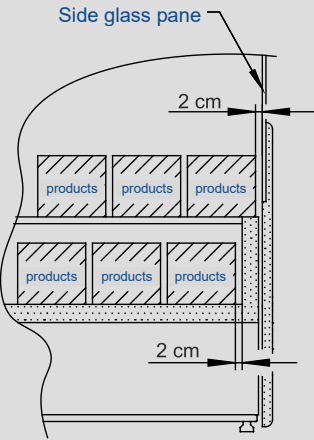


Fig. 5

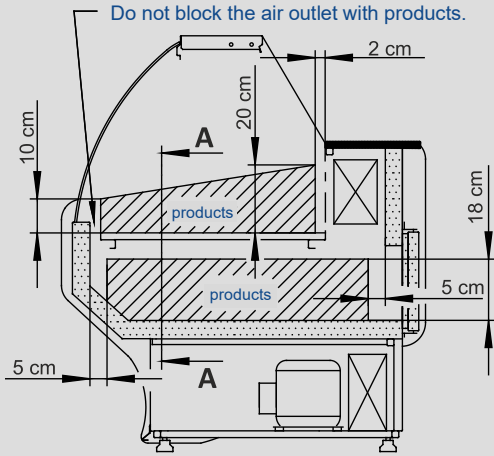


Fig. 4 Layout of products along the length of the exposition and storage.

It is necessary to keep the distance between the front glass pane and side of the storage.

Fig. 5 Layout of products in L-E, L-E1 counters and in small storage of L-E Max, L-E1 Max i L-F Max counters.

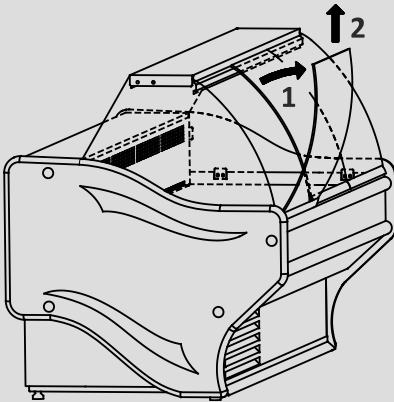


Fig. 6 L-E, L-E Max, L-E1, L-E1 Max – stand in front of the glass pane and slightly open it (ca. 10°), then hold it with both hands and lift carefully up.

Warning! In L-E, L-E Max refrigerated counters it not allowed to leave glass pane in extremely open position (this may damage the hinge).

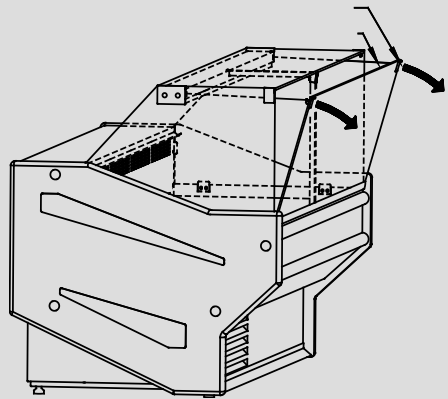


Fig. 7 L-F, L-F Max, L-F/NW, L-F/NZ – in order to wash the front glass pane, it should be gently opened using handle.

7. POSITIONING, START-UP AND OPERATION

To ensure proper operation, the device should be placed in an area with a good air circulation, away from heat sources and sunlight, free from dust (the device is not dustproof), at ambient temperature from +16°C to +25°C. It is prohibited to cover the air inlet and outlet of the aggregate. Place the device horizontally and connect it to the power supply according to the guidelines included in the chapter No. 4 - "Wiring system".

The manufacturer is not responsible for interferences of the device operation in temperature below +16°C (the defrosting cycle is too long) and over +25°C (3rd climatic class).

WARNING:

The device cannot be placed below the floor level (in a hollow).

The room in which the device is located must have a minimum cubature of 4 m³.

The sockets mounted on the device cannot be loaded with a current greater than 1.0 A (230 W) in total - regardless of the number of sockets installed and the number of connected receivers.

Power cord is connected directly with sockets mounted on the device.

The aggregate and lighting switches do not disconnect current voltage into the socket.

When moving the device with a set of wheels, secure the front glass against spontaneous opening. Failure to do so may damage the front glass and may cause a threat to people near the device.

Start-up and exploitation

The aggregate and lighting are switched on and off by means of the switches shown on Figure 1. The temperature inside the device is adjusted by means of the electronic temperature controller, according to the instructions included in the chapter No. 10. After switching the device on, leave it empty until its switching off for the first time. After that it is ready to be filled with products leaving free space as on the Figures 3 and 4. The maximum glass shelf load is 10 kg (to be distributed evenly).

In case of L-E, L-E Max refrigerated counters the maximum load, that may be on the top of front glass panes (or cash shelves of stainless steel) is 10 kg – to be distributed evenly.

In case of L-E1, L-E1 Max refrigerated counters the maximum load, that may be on the stainless steel top is 10 kg – to be distributed evenly.

In case of L-F, L-F Max, L-F/NW, L-F/NZ refrigerated counters the maximum load, that may be on the glass top is 10 kg – to be distributed evenly.

In case of L-F/123 refrigerated counters it is not allowed to put the products on the top glass.

Lamp exchange - disconnect socket from LED lamp and unclip it from latches.

In case of defrost process interferences modular refrigerated counters joined in series lines, it is recommended separation of the exposition space (in place of modules joining) by means of partitions.

By L-F/NW module joined in series lines with L-F module sit is forbidden to open front glass panes at the same time – it may damage the glass panes.

It is unacceptable to load the device with a warm/hot products because it causes the temperature increase inside the device for a longer period of time and it might be the reason of a breakdown even.

8. MAINTENANCE

After disconnecting the device from power supply, the general maintenance should be done by the user, as follows:

1. washing with water of the temperature not more than +40°C with addition of natural cleaning agents. **To wash and clean the device it is forbidden to use agents containing of chlorine and sodium of various varieties, which destroy the protective layer and components of the device!** Any residual glue or silicone on the metal parts of the device should be removed only with gasoline (not applicable to plastic components!). Do not use other organic solvents.
2. removing impurities from the condenser by means of vacuum cleaner **(from up to down - along the fins)** at least once a month so that the flow of the cooling air through the condenser fins is not hampered.

Not following the above instructions causes increased energy consumption, decreased refrigeration efficiency of the device and eventually result in aggregate overheating, which consequently may lead to failure.

While cleaning the condenser be careful not to deform the fins.

Do not wash the device with a water jet.

It is not advisable to clean the condenser with a brush as it causes impurities penetration deep into the condenser fins and finally block the air flow completely.

For units with an automatic condensate evaporation system, clean the container every 2 weeks to prevent the formation of unpleasant odours.



CLEAN THE CONDENSER WITH A VECUUM CLEANER HERE

9. TRANSPORT AND EQUIPMENT

While transporting secure the device to prevent its overturning, damage of the paint coat and breaking of the glass elements. When handling the device do not press the glass elements, do not grab the door or aggregate protective crate to lift the device. It is best to use belts and place them under the frame, between the feet (so that the belts do not slide). Do not lift the device directly with a forklift or a pallet truck without a palette, as it may damage the aggregate.

The device has to be transported in the position of its operation!

Equipment: user manual, condensate container

10. TEMPERATURE CONTROLLER MANUAL

DISPLAY DESCRIPTION

The display is three digits with decimal point and 6 symbols (compressor, fan, defrost, AUX, alarm and clock).

1. COMPRESSOR

The symbol is visible when the compressor operates. It flashes when the compressor's start up is delayed because of protective procedure. It flashes in the cycle: two flashes – break when there is continuous operation mode activated.

2. FAN

The symbol is visible when there are evaporator fans switched on. It flashes when the fans start-up is delayed by means of external switching off or when there is other procedure in progress.

3. DEFROST

The symbol is visible when there is defrost function switched on. It flashes when the defrost start-up is delayed by means of external switching off or when there is other procedure in progress.

4. AUX

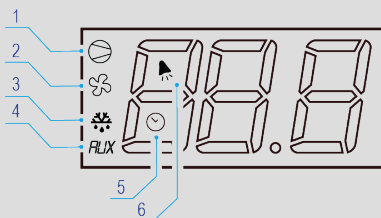
The symbol is visible when there is additional AUX output activated.

5. CLOCK

The symbol is visible when there is clock switched on – switching on by means of „tEn” switch or when there is time limit set. When switching on the symbols appears for few seconds as clock function availability.

6. ALARM

The symbol is visible when there is alarm activated.



SWITCHES DESCRIPTION

Information: Short pressing of any of the switches causes appearance of message related to the currently active function.

7. UP / ON OFF

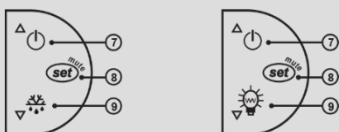
During normal operation of the controller; pressed for longer than 3 sec. will cause change of controller ON/OFF operation state, pressed along with the “DOWN” switch at the same time for longer than 3 sec. will cause activation or deactivation of continuous operation function (after pressing there will be shown on the display “CC” symbol). In the parameters setting mode: enable going to the next parameters settings. During setting parameter values: it causes parameter value increase.

8. SET / MUTE

Pressed during normal controller operation switches the alarm sound signal off; pressed for longer than 3 sec. shows setting point; pressed along with the “DOWN” switch at the same time while switching power supply of the controller on will cause return to the parameters fabric settings (there will be shown “CF” symbol on the display). In the parameters setting mode: its pressing changes the information shown on the display: parameter name/parameter value, pressed for longer than 3 sec. will cause saving of the set parameters. During setting parameter values: pressed it will cause saving of the entered parameter value.

9. DOWN / DEFROST

During normal operation of the controller; pressed for longer than 3 sec. will cause switching on/off of the manual defrost mode. In the parameters setting mode: it allows to go to previous parameter setting. During setting parameter values: it decreases setting value.



Set point setting (desired temperature value)

To view and modify the set point:

- > press the “SET” switch for 1 sec. – the set value will start flashing;
- > increase or decrease the value using the “UP” or “DOWN” switches;
- > press the “SET” switch to confirm the new value

If the “SET” switch is not pressed for 60 sec., then the controller returns to previous settings.

Manual defrost

In order to activate the manual defrost press the “DOWN” switch for more than 3 sec. The essential condition is the temperature has to be lower than +6°C.

Temperature checking on the defrost probe

- > press the “SET” switch for longer than 3 sec. (in case there is the alarm is activated it is necessary to switch the sound alarm off first). On the display there will appear “PS” symbol (password);
- > go to the “d” parameter by means of the “UP” and/or “DOWN” switches, then press the “SET” switch - there will appear temperature of defrost probe and the symbol ❄️ or 🔦
- > hold the “SET” switch for longer than 3 sec. (after 60 sec. automatic return) – return to the temperature probe indication.

Access for operator to parameters configuration and its modification

- > press the „SET” switch for longer than 3 sec. (in case there is alarm activated, switch the sound alarm first). On the display will appear the „PS” symbol (service parameter password protected);
- > go to the next parameters by means of the “UP” and/or “DOWN” switches;
- > press the “SET” switch to view the current value of parameter setting;
- > increase or decrease setting value by means of the “UP” and “DOWN” switches;
- > press the “SET” switch to temporarily save the entered new value – it will cause as well return to the parameters list;
- > repeat the above operations – if it is necessary;
- > press and hold the “SET” switch for longer than 3 sec. – it will cause parameters saving and exit from the programming procedure.

Warning:

If no button is pressed for 60 sec., all the changes made to the parameters, temporarily saved in the RAM, will be cancelled and the previous settings restored.

If power is disconnected from the instrument before saving the settings (pressing the “SET” switch for 3 sec.), all the changes made to the parameters and temporarily saved will be lost.

Symbol	Parameter	Unit	Fabric setting	min.	max.
d8	Alarm bypass time after defrost	h	2	0	15
A0	Alarm and fan temperature differential	°C	2	0	20
AL	Absolute or relative temperature for low temperature alarm	°C	2	0	150
AH	Absolute or relative temperature for high temperature alarm	°C	8	0	150
Ad	Temperature alarm delay	min	60	0	199

High temperature alarm activation = setting + AH

High temperature alarm deactivation = setting + AH – A0

Low temperature alarm activation = setting – AL

Low temperature alarm deactivation = setting – AL + A0

Description of the main signals and alarms

LED flashing – The activation of the corresponding function is delayed by a timer
> awaiting an external signal or disabled by another procedure that is already in progress. e.g. if is a continuous cycle in progress and a defrost is called, the latter will remain pending until the end of the continuous cycle, and the corresponding LED (defrost) will flash.

OFF flashing – state of the controller - OFF, to return to working mode (ON) press and hold ON/OFF button for more than 3 sec.

E0 steady – control probe error (1) – active sound signal:

- > probe not working: the probe signal is interrupted or short-circuited;
- > probe not compatible with the instrument.

The E0 alarm signal is constant when it is the only active alarm (the temperature value is not displayed).

E0 flashing – control probe error (1) – the alarm signal E0 is steady if it is the only active alarm (the temperature value is not displayed), while it flashes if other alarms are active or the second probe is displayed.

E1 flashing – evaporator probe error (2):

- > probe not working, the probe signal is interrupted or short-circuited;
- > probe not compatible with the instrument.

Ed flashing – The last defrost ended after exceeding the maximum duration rather than when reaching the end defrost set point. The message disappears when the next defrost ends correctly.

EF displayed during operation or on power-up – operating parameter reading error (controller automatic reset). Alarm reappearance after automatic reset – it is necessary to check the controller as there is no guarantee to keep the original precision of the operation.

EE – data errors – In certain operating conditions, the instrument may detect errors in the data saved. These errors may compromise the correct operation of the instrument. If the microprocessor detects a data saving error, the display shows the message “EE”. If the fault persists, the controller needs to be replaced. If, on the other hand, the message disappears, it can continue to be used. When “EE” error occurs frequently and/or remains for some time, the controller should be checked, as the original precision may not be guaranteed.

LO flashing – low temperature alarm. The probe has measured a temperature lower than the set point by a value that exceeds parameter AL:

- > check parameters AL, Ad and A0.

The alarm is automatically reset when the temperature returns within the set limits (see parameter AL).

HI flashing – high temperature alarm. The probe has measured a temperature higher than the set point by a value that exceeds parameter AH.

check parameters AH, Ad and A0.

11. INTERFERENCES

The most often occurring interferences of the device operation:

Reasons	Symptoms	Solution
Contaminated condenser	<ul style="list-style-type: none"> > Visible dust layer on the condenser fins, > hot air coming out of the aggregate chamber, > loud operation of the aggregate, > characteristic "clicking" coming out of the aggregate chamber every few minutes 	Before cleaning of the condenser it is necessary to switch the device off. Impurities on the condenser should be removed by means of vacuum cleaner equipped with brush, gently along fins to not to bend the lamella.
Device loaded with warm products	<ul style="list-style-type: none"> > hot air coming out of the aggregate chamber, > loud operation of the aggregate, > characteristic "clicking" coming out of the aggregate chamber every few minutes 	Goods loaded in the device chamber should be initially cooled up to maximum +4°C above the storage temperature .
Too high ambient temperature	<ul style="list-style-type: none"> > hot air coming out of the aggregate chamber, > loud operation of the aggregate, > characteristic "clicking" coming out of the aggregate chamber every few minutes 	Ambient temperature for proper operation of the device should not exceed respectively: for 3 rd climatic class +25°C.
Improper goods distribution in cooling chamber	<ul style="list-style-type: none"> > temperature on exposition is too high; > temperature in storage area is too low. 	The goods should be placed as described in user manual .
External source of heat causing the abnormal operation of the device	<ul style="list-style-type: none"> > hot air coming out of the aggregate chamber, > loud operation of the aggregate, > characteristic "clicking" coming out of the aggregate chamber every few minutes 	External source of heat might be any other device that emits heat such as gas burner, heater, other device equipped with a refrigerated aggregate etc. It is necessary to pay attention if above mentioned examples may have influence on the deterioration of device operation conditions.

12. NOTES

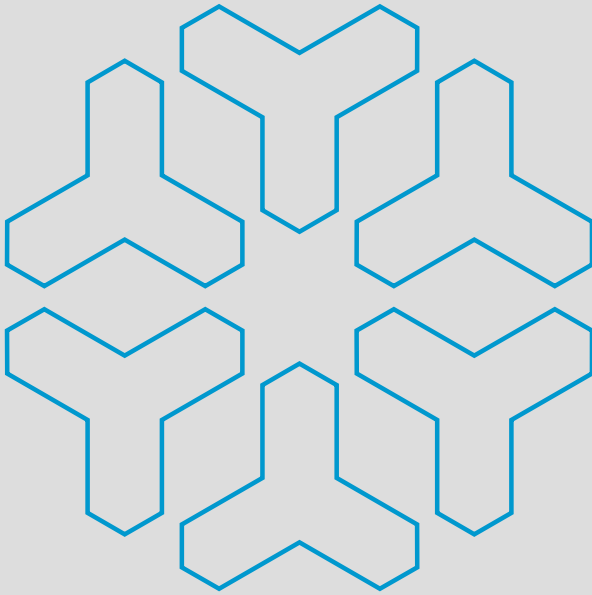
1. Attempts to repair the device on your own and not following the instructions described in the user manual as for equipment connection and use will result in the device malfunction.
2. The device is using natural and ecological refrigerant R-290 (propane).



Warning! In case of damage of the cooling system the refrigerator should be immediately disconnected from the mains, any open sources of fire located close to the unit removed and the area carefully ventilated.

Do not use electrical appliances inside the refrigerator.

3. The manufacturer is not liable for damages resulting from the use of the device in a manner inconsistent with the information contained in hereby user manual.



The warranty card and conditions
are effective only in the area of Poland.

The package should be removed according
to the regulations of environmental protection.



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