

cd001665

	<b>REFRIGERATORS</b>	
<p>© Electrolux Home Products S.p.A. Spares Operations Italy Corso lino Zanussi, 30 I - 33080 Porcia (PN) Fax +39 0434 394096</p> <p>S.O.I.</p> <p>Edition: 10.2006</p>	<p>Publication no.</p> <p><b>599 38 38-50</b></p> <p>EN</p> <p><b>NO FROST TOTAL with electronic ERF2050 ENV06</b></p> <p><b>FACTORY: HUY</b></p>	

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# 1 INTRODUCTION

This manual describes the TOTAL NO FROST refrigerators with ERF2050 ENV06 electronic produced in the Nyíregyháza factory (HUY).

These models feature:

- Total No Frost (no frost freezer, refrigerator no frost)
- free standing
- single-compressor
- electronic control (electronic board ERF2050)
- liquid crystal display (LCD on top styling ENV06)
- air flow regulator (damper)
- LED lighting (optional depending on the model)
- water distributor with Brita filter see Service Manual 599382754 (optional depending on the model)

They are appliances (CBNF 350 e CBNF 390) with the following PNCs:

PNC	MODEL	BRAND
925034008	ENB35400W	Electrolux
925034010	ENB35400X	Electrolux
925034014	ENB35405W	Electrolux
925034016	ENB35405S	Electrolux
925034018	ENB35200W	Electrolux
925034024	ENB35405S	Electrolux
925034025	ENB35405S	Electrolux
925034207	ENB39400W	Electrolux
925034209	ENB39400X	Electrolux
925034215	ENB39405S	Electrolux
925034217	ENB39200W	Electrolux
925034224	ENB39405S	Electrolux
925034225	ENB39405S	Electrolux

The controls of the appliance are inserted into the work top.

The power control board is ERF2050.

The user interface board is of LCD type on top of ENV06 styling.

Since it is a single-compressor, it is not possible to switch off only one of the two compartments.

The temperatures regulation is the following:

- from +8 to +2 °C for the cooler
- from -15 to -24 °C for the freezer

The LCD display enables to show not only the compartment temperatures but also the room temperature.

The appliance has the following functions:

- rapid freezing
- rapid cooling
- freezer temperature alarm
- cooler compartment holiday

- child lock
- eco (energy saving)
- rapid drink cooler (freezer)

The appliance consists of the following compartments:

- freezer;
- cooler.

The evaporating circuit consists of:

- cold module (freezer compartment).

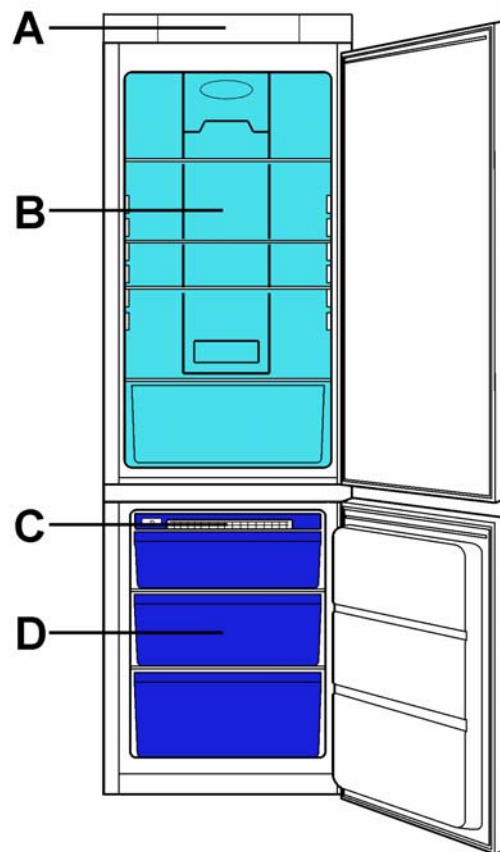
Key:

A = control panel

B = cooler compartment (No Frost)

C = cold module

D = freezer compartment (No Frost)



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## 2 AIR CIRCULATION

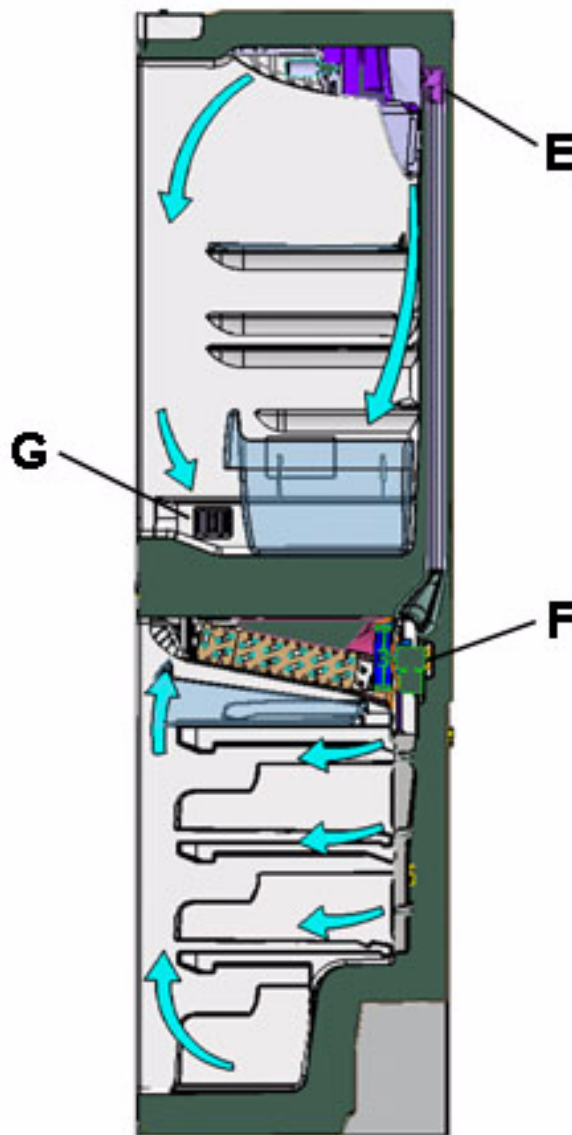
Unlike in the PARTIAL NO FROST refrigerator, in the TOTAL type the cooler and the freezer communicate each other, therefore, the battery evaporator cools both compartments.

The cold produced by the battery evaporator in the freezer compartment, is distributed by the fan F placed behind the cold module.

Cooler compartment air flow: the cold air is pushed by the fan into the foamed duct and exits from the air flow regulator (damper) E located in the rear part of the diffuser-lamp holder.

The air returns in the freezer compartment by means of some foamed ducts entering the air vent grids G.

Freezer compartment air flow: the cold air is pushed into the compartment through the air screen and returns into the cold module through the front air vent grid.

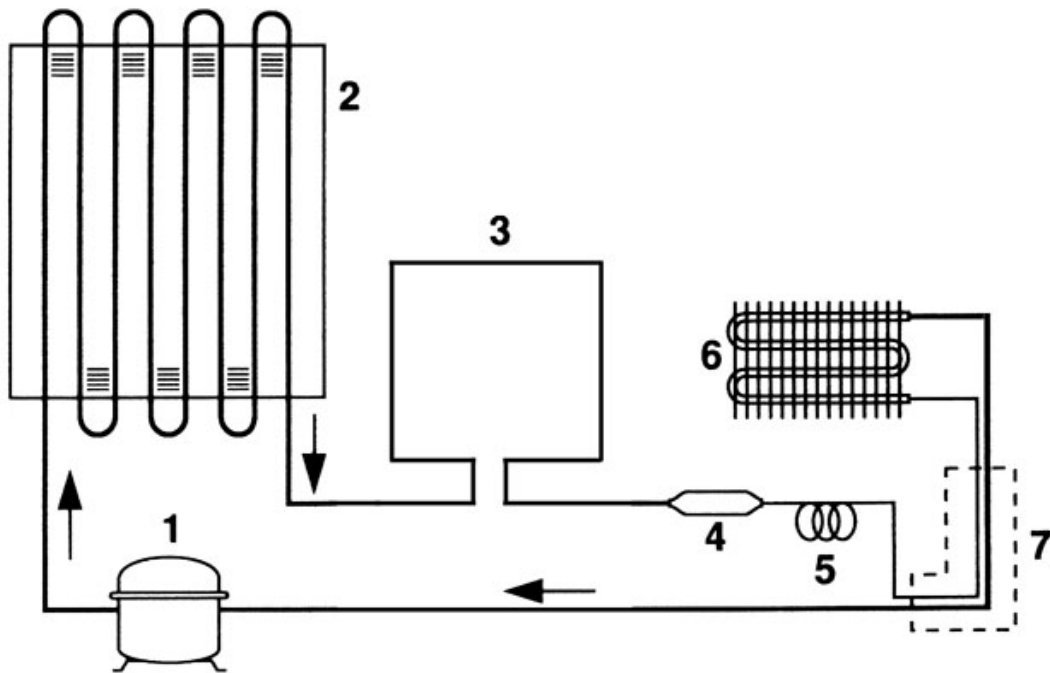


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In case of opening of the freezer or cooler door the fan stops.  
To simulate the door closed use a magnet and put it next to the reed element located in the electronic board or push the freezer door button.

### 3 REFRIGERATION CIRCUIT



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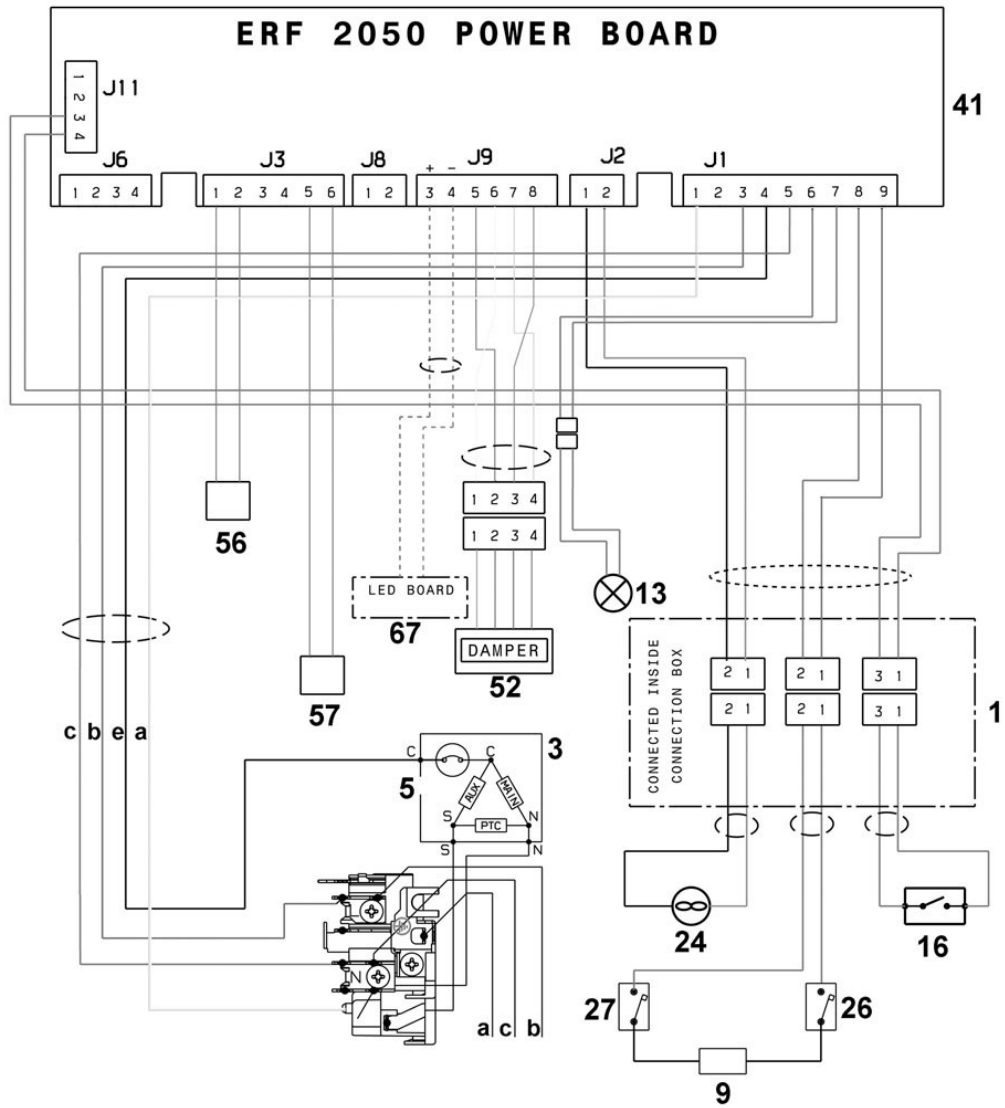
Key:

1. compressor;
2. condenser;
3. anti-condensation coil;
4. dehydrator filter;
5. capillary;
6. battery evaporator (freezer compartment);
7. exchanger.



# 4 ELECTRIC WIRING

(Check the specific diagram for each model!)



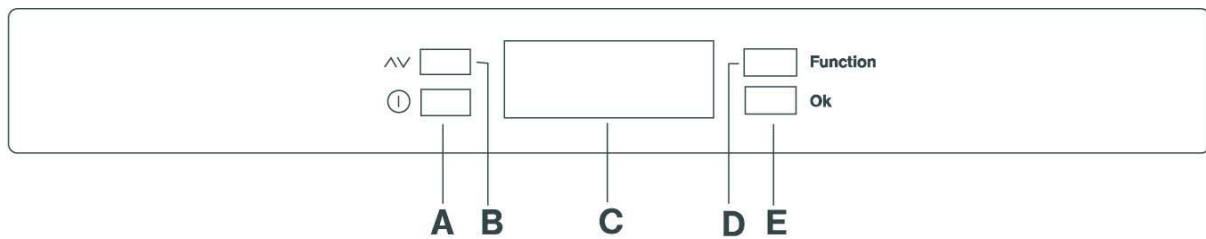
2426631

Key:

1. connection box
  3. compressor
  5. motor protector
  9. defrosting heater
  13. lamp
  16. freezer door switch
  24. fan
  26. safety thermal switch (+40 °C)
  27. defrosting cut-out switch (+8 °C)
  41. electronic board ERF 2050
  52. air flow regulator (damper)
  56. cooler air temperature sensor (cable colour: brown)
  57. freezer air temperature sensor (cable colour: white)
  67. LED electronic board (optional)
- 
- a. yellow-green
  - b. brown
  - c. blue
  - d. white
  - e. black

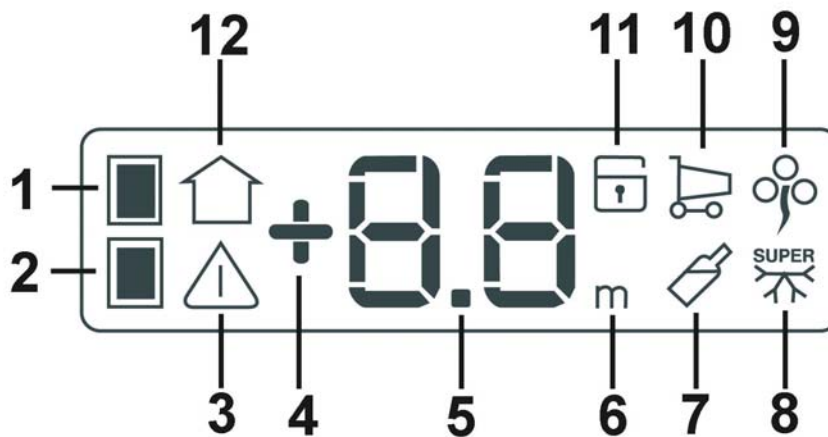
## 5 COMPONENTS

### 5.1 Control panel



Key:

- A. ON/OFF button
- B. Temperature regulation button
- C. Temperature and function displaying
- D. Function selection button
- E. OK button



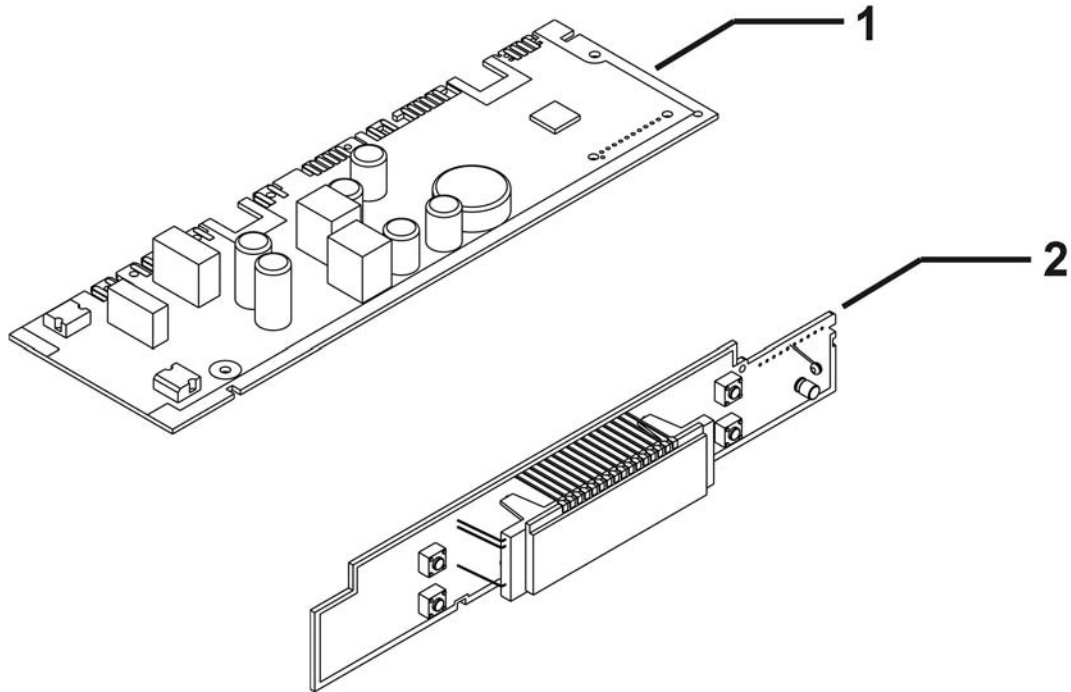
Key:

- 1. Cooler compartment symbol
- 2. Freezer compartment symbol
- 3. Temperature alarm symbol freezer and open door alarm (if featured)
- 4. Temperature - or + symbol
- 5. Temperature indication
- 6. Timer function
- 7. Rapid drink cooler (freezer)
- 8. SUPER function (rapid freezing)
- 9. ECO function (energy saving)
- 10. SHOPPING function (rapid cooling)
- 11. Child lock function
- 12. Room temperature symbol

## 5.2 Electronic boards

The electronic board of the appliance consists of:

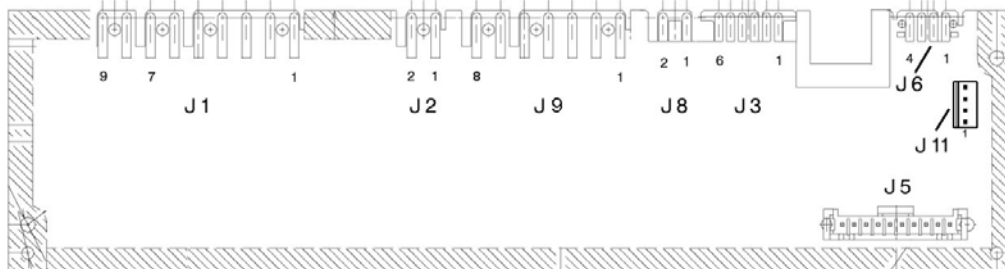
1. power board ERF2050
2. display board LCD type on top of ENV06 styling



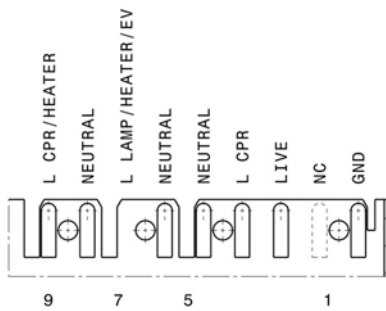
The two electronic boards are connected by means of a flat cable with a connector; therefore, the two boards are available singularly as spare part.

## 5.2.1 Power board ERF2050

- View of the electronic board (side of components):



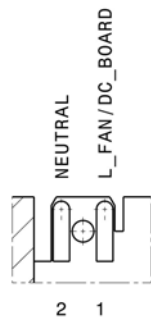
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J1

cd001656

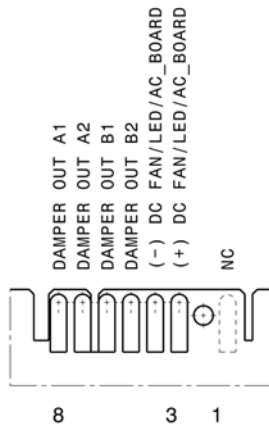
1. earth contact
2. free
3. line
4. compressor
5. neutral
6. lamp neutral
7. lamp
8. defrosting heater neutral
9. defrosting heater



J2

cd001658

1. fan line
2. fan neutral



**J9**

cd001660

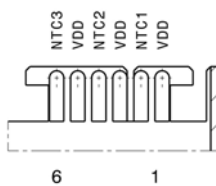
1. free
2. free
3. LED light board (+) (optional)
4. LED light board (-) (optional)
5. damper
6. damper
7. damper
8. damper



**J8**

cd001661

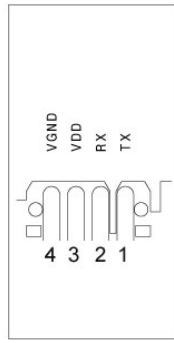
1. free
2. free



**J3**

cd001662

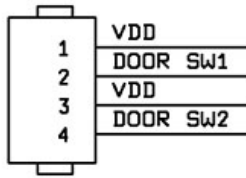
1. cooler air temperature sensor
2. cooler air temperature sensor
3. free
4. free
5. freezer air temperature sensor
6. freezer air temperature sensor



**J6**

cd001176

- 1. free
- 2. free
- 3. free
- 4. free

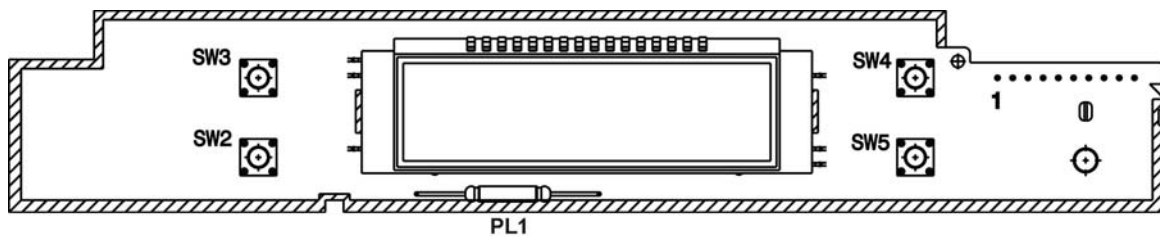


**J11**

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- 1. free
- 2. free
- 3. freezer door switch
- 4. freezer door switch

## 5.2.2 Display board LCD type on top of ENV06 styling

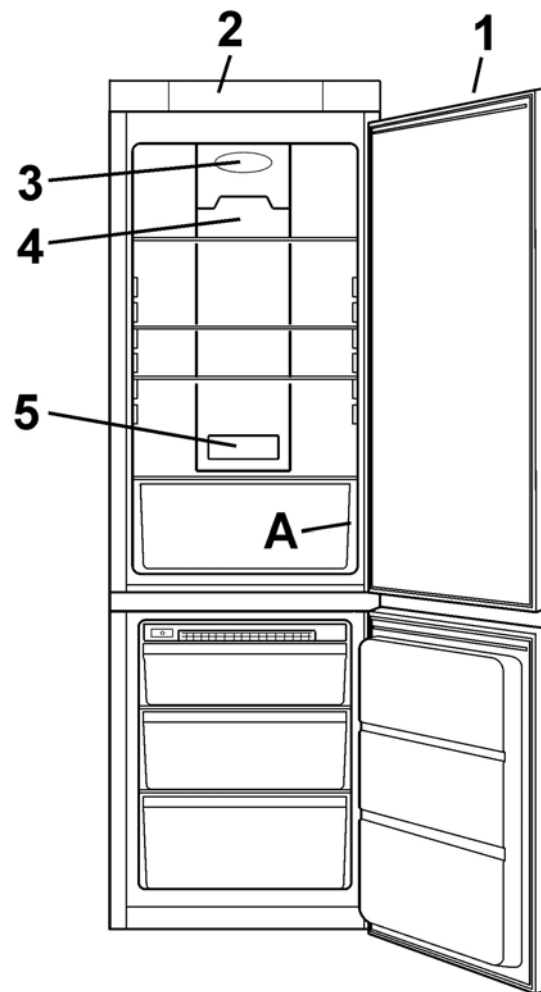


Key:

- PL1 = reed element
- SW2 = ON/OFF button
- SW3 = temperature regulation button
- SW4 = function selection button
- SW5 = OK button



### 5.3 Cooler compartment



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Key:

1. Cooler door magnet
2. Display board reed element
3. Air flow regulator (damper)
4. Carbon air filter
5. LED lighting (optional depending on the model)
- A. Cooler air temperature sensor

### 5.3.1 Temperature sensor

1 NTC sensor detects the temperature of the cooler:

- cooler air temperature sensor (placed inside the right air vent grid)



The cooler air temperature sensor is used both to control the appliance by means of the air flow regulator (damper) and to display the cooler compartment temperature.

The sensor A has the foamed cable inside the cabinet, therefore it is not replaceable (for further information please see Service Bulletin 599374122).

### 5.3.2 Door switch

The battery evaporator defrosting is driven by the electronic board and depends also on the detection of the opening of the doors.

The detection of the opening of the cooler door is carried out by means of:

- magnetic switch for the cooler door control (located on the display board inserted into the work top)

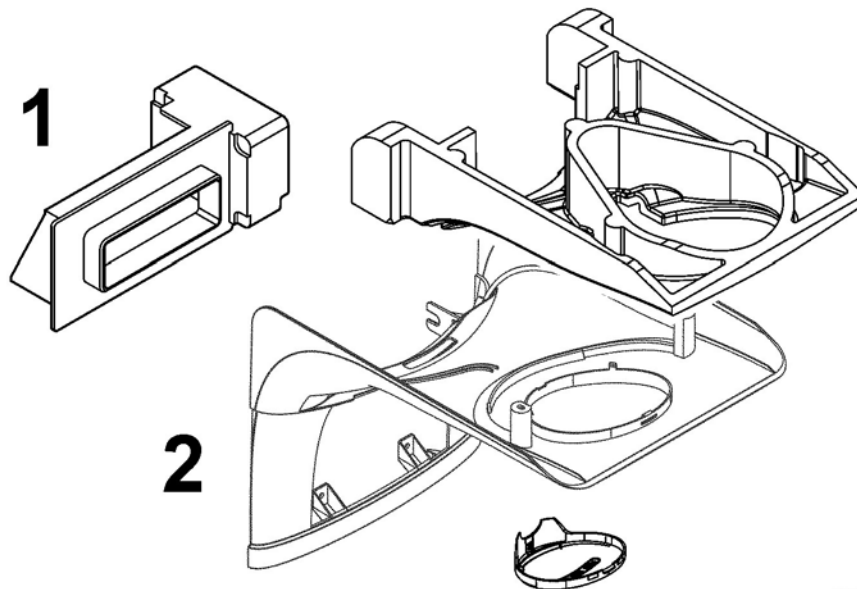
The magnetic switch for the cooler door control is activated by a magnet located inside the cooler door.

The magnetic switch controls also the switching on of the lamp and of the LED lighting if featured (optional depending on the models).

### 5.3.3 Air flow regulator (damper)

The temperature regulation of the cooler compartment occurs by means of the passage or not of cold air from the damper, which can have only 2 fixed positions, opened or closed.

The air flow regulator (damper) 1 is located inside the diffuser lamp holder 2.

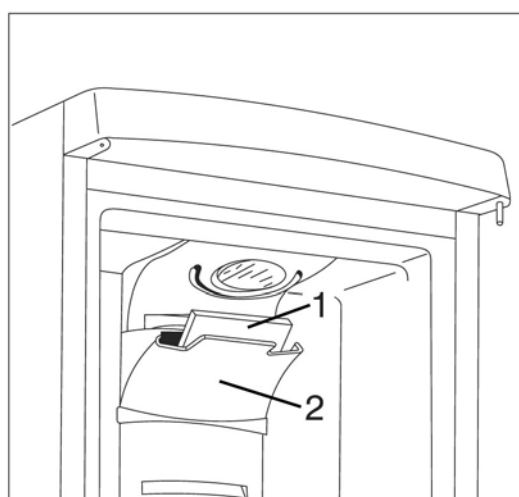


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The damper consists of a door and a stepping motor and it is connected to the electric wiring by means of a 4-pole connector.

### 5.3.4 Carbon air filter

The carbon air filter 1 is located inside the door 2 indicated in the figure.

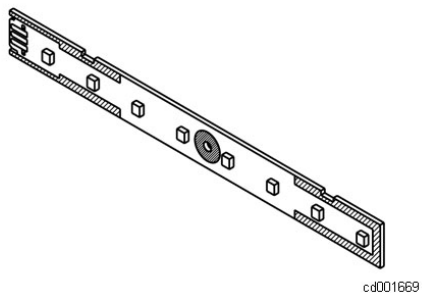


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The door must be always closed during the operation of the appliance.

### 5.3.5 LED lighting (optional depending on the models)

The LED lighting is obtained by means of a electronic board ERFL100.

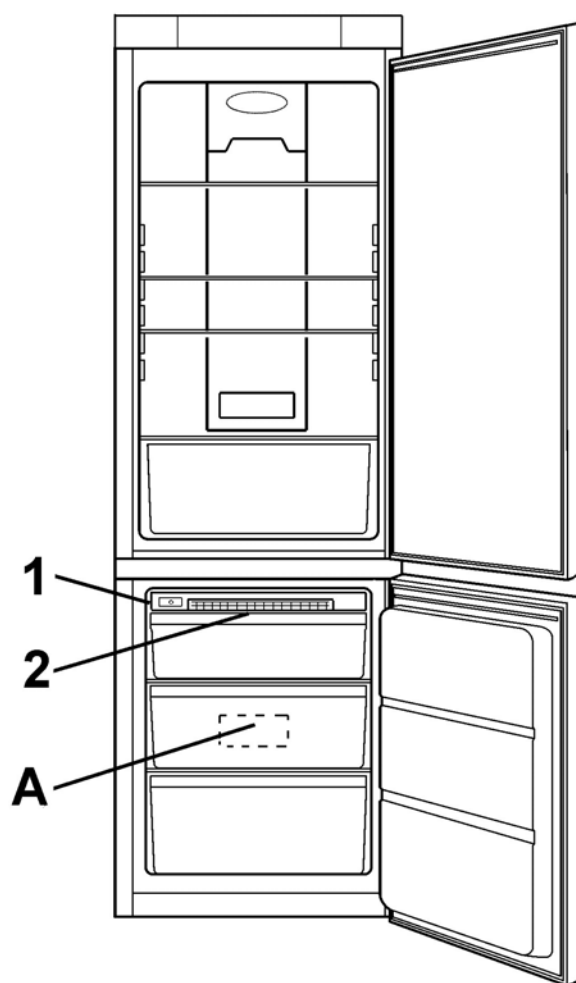


The electronic board is placed inside the air diffuser and is connected to the electric wiring through a 3-pole connector.



The voltage of the electronic board is 18 VDC (direct current).

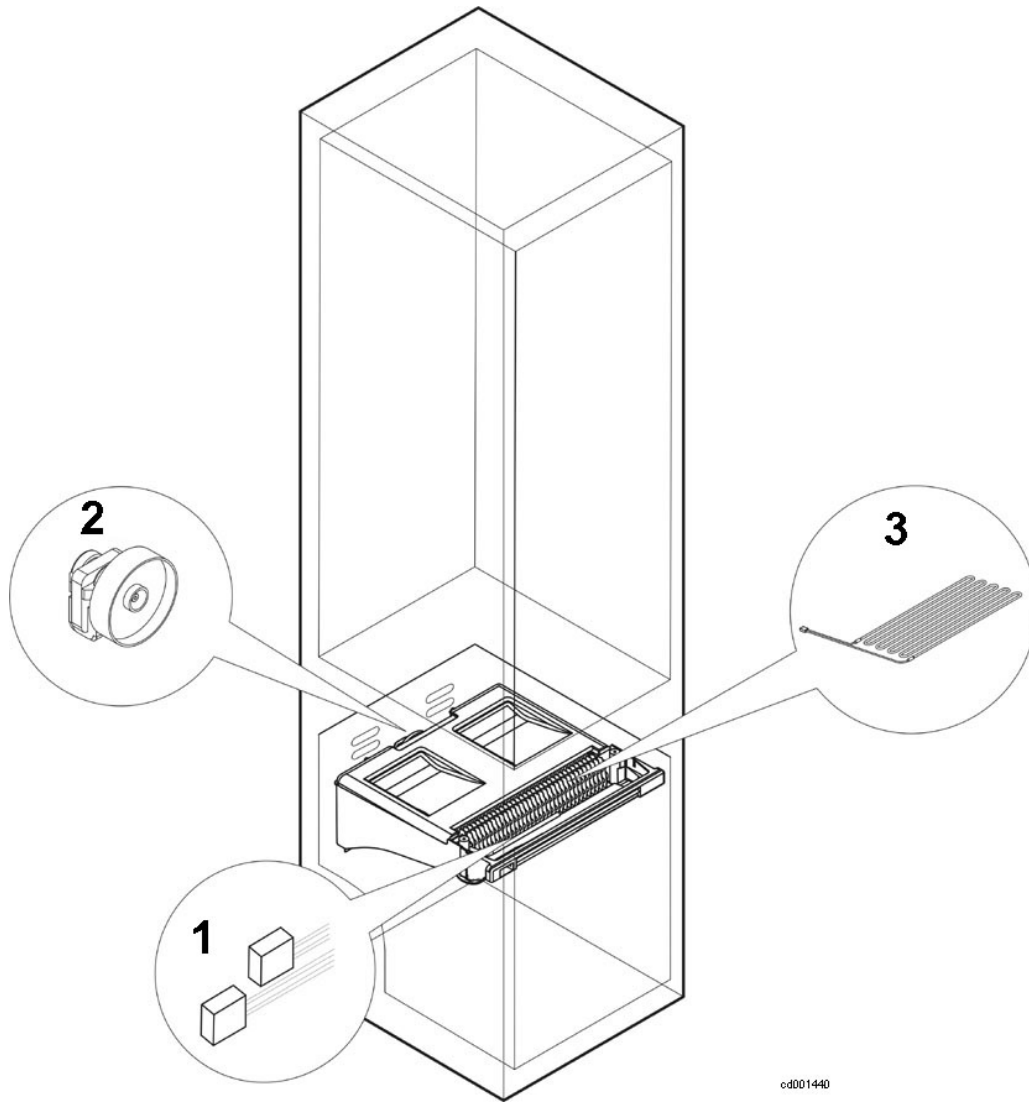
## 5.4 Freezer compartment



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- 1. freezer door button
- 2. cold module
- A. freezer air temperature sensor

### 5.4.1 Cold module



cd001440

1. thermal switches
2. cold module fan
3. cold module defrosting heater

### 5.4.2 Thermal switches

The thermal cut-outs are positioned in direct contact with the battery evaporator.

They switch off the defrosting heater respectively at:

- +8 °C cut-out defrosting switch (wire colour: black - blue)
- +40 °C cut-out safety switch (wire colour: black - white)

TYPE OF THERMAL OVERLOAD CUT-OUT	CUT-IN TEMPERATURE	
	OPENING	CLOSING
DEFROSTING	+ 8 °C	- 5 °C
SAFETY	+ 40 °C	+ 30 °C

### 5.4.3 Cold module fan

The fan is located behind the cold module.

The air is intaken by the fan, therefore, in case of its replacement, ensure that the air is forced towards the cell bottom.

The fan has the following characteristics:

- voltage 240 V
- power 3,1 W
- speed 2000 rpm



The fan stops in case of opening of the freezer door or of the cooler door.  
To simulate the door closed, use a magnet and put it next to the magnetic sensor located on the electronic board or push the freezer door button.

### 5.4.4 Defrosting heater

The defrosting heater is used to defrost the ice that has accumulated on the battery evaporator.

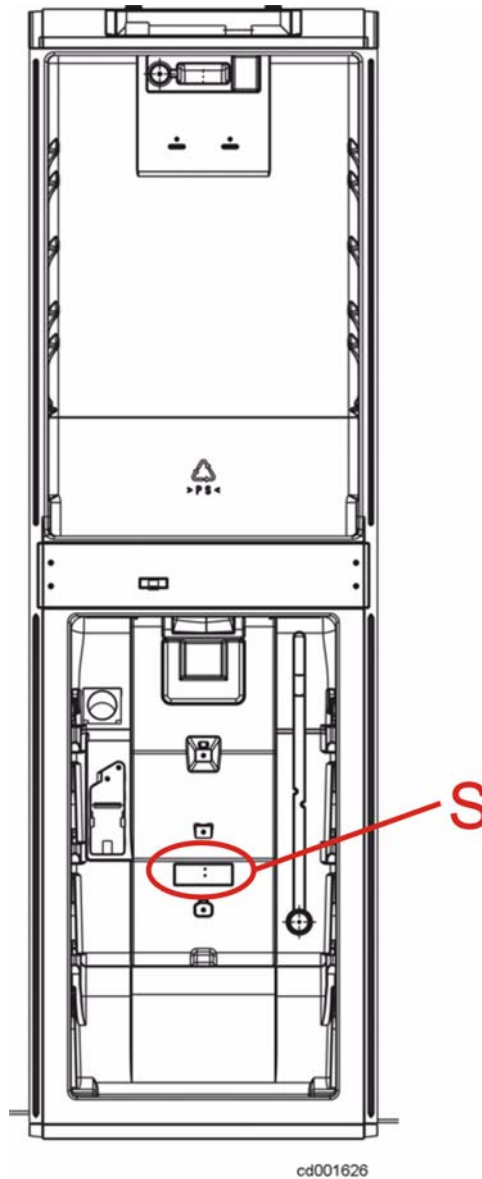
The balancing heater has the following values:

- power 240 W
- voltage 240 V
- resistance 240 Ohm

## 5.4.5 Temperature sensor

1 NTC sensor detects the temperature of the freezer compartment:

- freezer air temperature sensor (located inside the freezer cell)



The freezer air temperature sensor is used both to control the appliance by means of the fan and the compressor and to display the freezer compartment temperature.

The sensor S has the foamed cable inside the cabinet, therefore it is not replaceable (for further information please see Service Bulletin 599374122).



## 5.4.6 Door switch

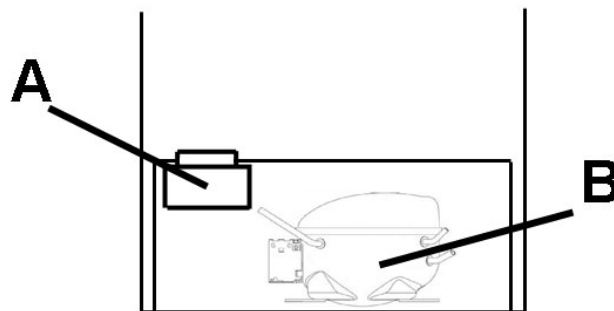
The battery evaporator defrosting is driven by the electronic board and depends also on the detection of the opening of the freezer door by means of:

- a button for the freezer door control (located on the left side of the cold module).



Freezer door button

## 5.5 Compressor compartment



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Key:

- A. connections box
- B. compressor

The connections box is located in the compressor compartment to connect the various electrical components.

## 6 MAIN FUNCTIONS

### 6.1 Normal



Warning: Unplug the appliance before operating.

In case of first switching on with a freezer compartment temperature higher than 10 °C, the appliance operates with a test cycle (for the factory) for a maximum time of about 1,5 hours.

In this period do not check the correct functioning of the appliance, since the loads are activated only for internal check (compressor, fan and defrosting heater).

When the appliance is off then:

- the compressor is off
- the display is off

Pushing the ON/OFF button, the display switches on with the following displaying:

- flashing digits of the freezer
- freezer compartment temperature alarm (buzzer active)

Push the OK button to deactivate the buzzer.

Regulate the temperatures of the compartments so as to set the following values:

- about +5 °C in the cooler
- about -18 °C in the freezer

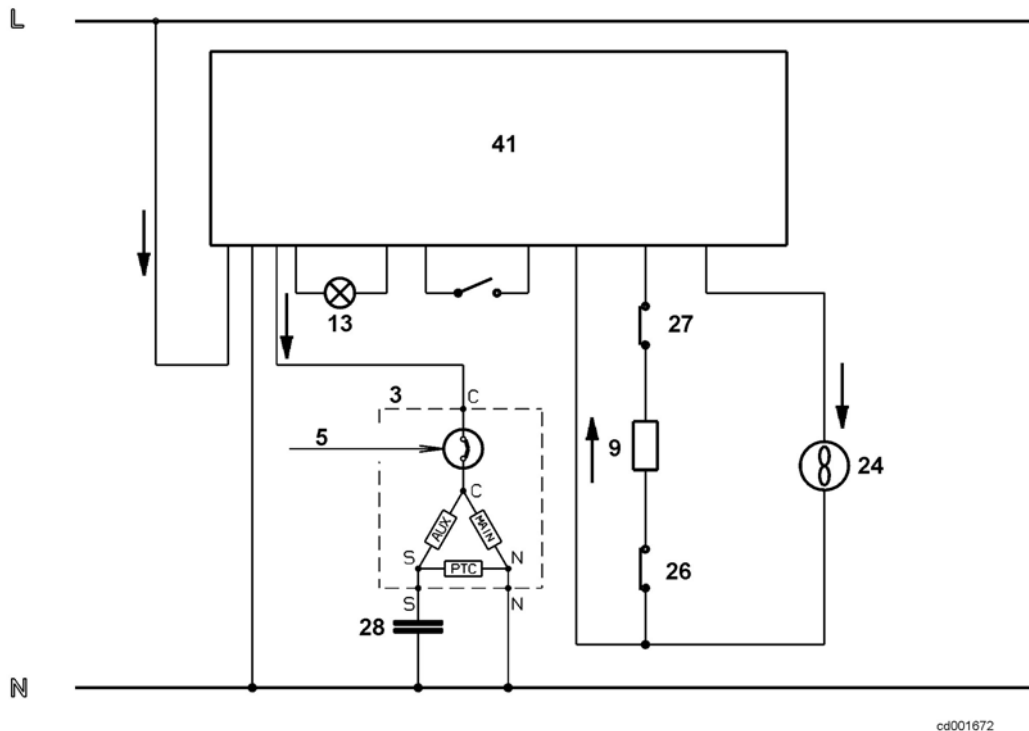
In NOFROST freezers, the humidity inside the freezer compartment accumulates on the evaporator battery thanks to the air circulation, thus preventing the formation of frost on food.

During normal operation time the electronic board powers the compressor (3) and the fan (24) circuits.

The fan is activated or deactivated with a 2 minute delay compared to the compressor.

The operation time which corresponds to the interval between the following defrosting lasts about 14 hours with normal opening of the door (it can last up to 72 hours if the doors are never opened!).

The arrows in the picture indicate the current path.



## 6.2 Normal with first switching on or power failure

In case of fault when the appliance is switched on for the first time or in case of a power failure, one of the two conditions described below occurs:

1. If the internal temperature is higher or the same as the sensor cut-in temperature (CUT-IN), when the power is restored, the electronic board activates the compressor and the fan till the set temperature is reached and after 5 hours the electronic board activates the defrosting procedure (after the compressor cut-out)
2. If the internal temperature is lower than the sensor cut-in temperature (CUT-IN), when the power is restored, the compressor functions in thermostatic conditions and after 5 hours the electronic board activates the defrosting procedure (after the compressor cut-out)

The electronic board activates, in any case, the defrosting procedure 5 hours after the first switching on and after a power failure.

### 6.3 Defrosting

All the humidity in the compartment accumulates on the evaporator, which is the coldest part of the compartment; periodically, about every 14 hours with normal door opening (up to 72 hours if the doors never open!), it is then necessary to defrost the ice on the battery.

The defrosting starts after the compressor cut-out or if the compressor is on after 2,5 hours max.

The electronic board immediately disconnects the circuit which powers the compressor (3) after 2 minutes the fan (24), waits 3 minutes and then it powers the circuit of the defrosting heater (9) for a minimum time of about 20 minutes.

The heat generated by the defrosting heater does not affect the freezer compartment temperature or the food packages temperature, because the thermal energy is consumed in the defrosting process of the evaporator ice.

After 20 minutes, the electronic board checks the state of the thermal switch (27) every minute to detect the cut-out.

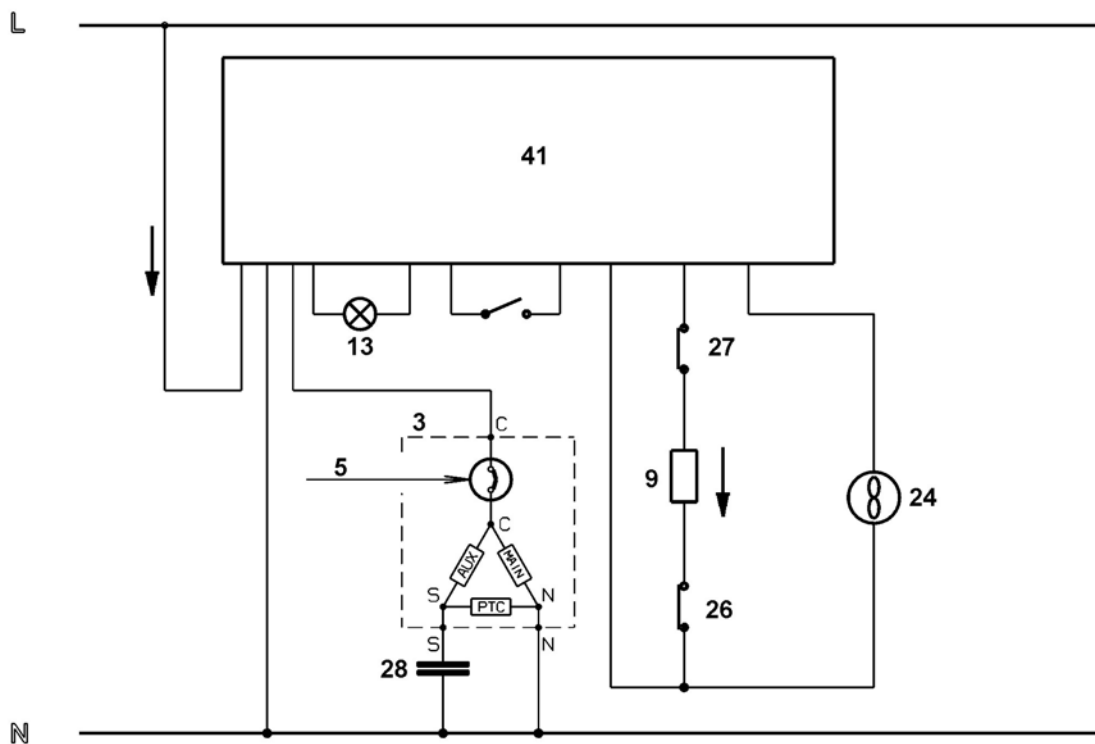
When the defrosting switch cuts-out, and anyway after 20 minutes, the electronic board switches the compressor on (3) with a 5 minute delay.

After 3 minute delay, when the air is already cold, the fan switches on too (24).

If for any reason, the defrosting cut-out switch (27) does not switch on and the battery temperature rises up to 40 °C, the defrosting heater (9) will be switched off by the safety thermal switch (26).

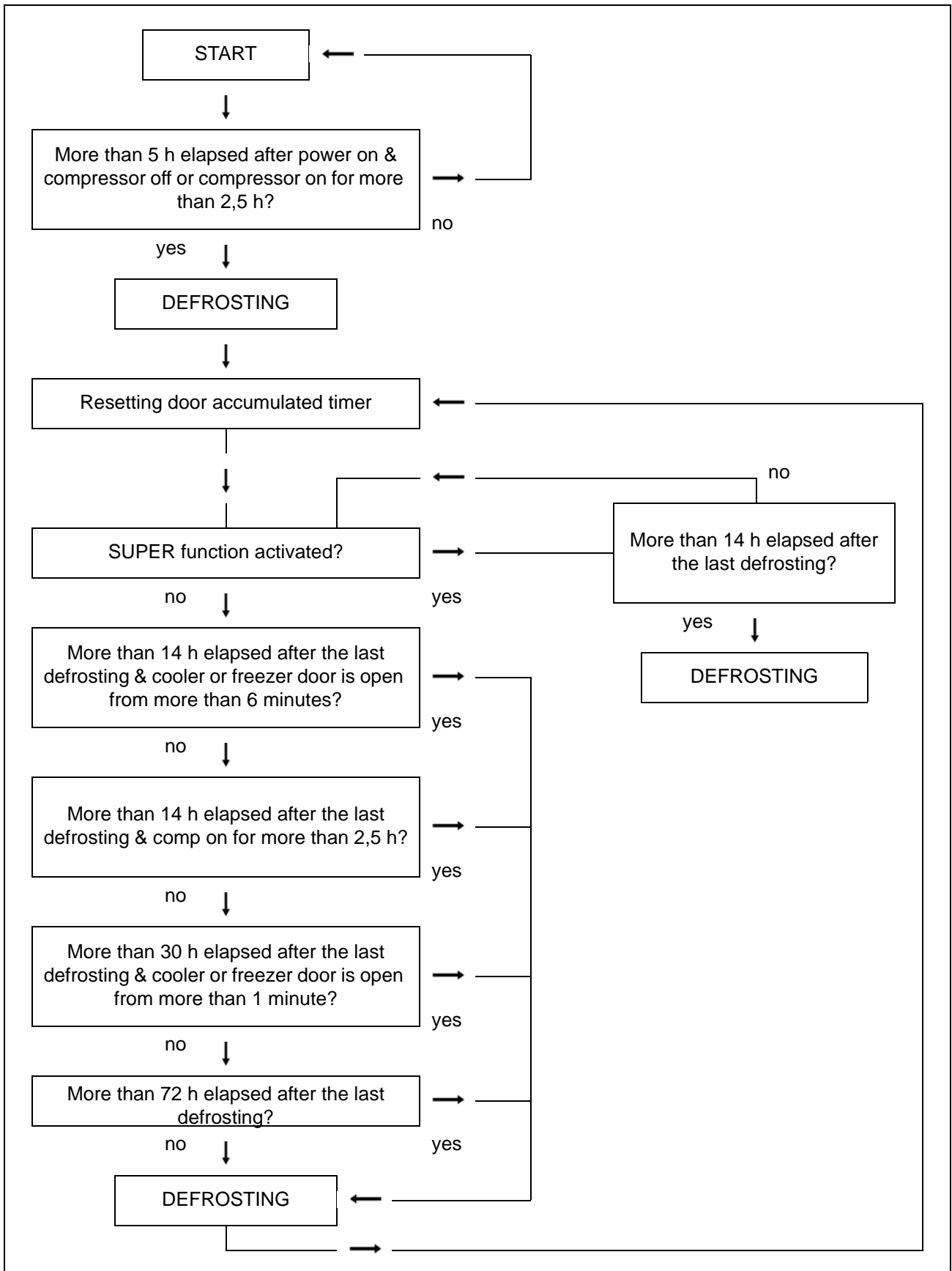
If 1 hour after the starting of the defrosting, the thermal switches did not cut out, the electronic board switches the defrosting heater off and continues its operation.

The arrows in the picture indicate the current path.




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## 6.4 Flow chart for the defrosting management



## 6.5 Room temperature function

The room temperature function is activated pushing the function selection button till the symbol disappears  afterwards push the OK button within a few seconds, therefore:


- the symbol corresponding to the function is displayed;
- the buzzer emits a short signal;
- the room temperature is displayed.

The room temperature function is deactivated pushing the function selection button till the symbol flashes  afterwards push the OK button within a few seconds.

Note:

The room temperature function remains displayed also if the appliance is off.

## 6.6 Child lock function

The child lock function is activated pushing the function selection button till the symbol disappears  afterwards push the OK button within a few seconds, therefore:

- the symbol corresponding to the function is displayed;
- the buzzer emits a short signal;
- the child lock is activated.

The child lock function is deactivated pushing the function selection button till

the symbol flashes  afterwards push the OK button within a few seconds.

## 6.7 HOLIDAY Function (valid only for the cooler)

The HOLIDAY function is activated when the customer does not want to use temporarily the cooler.


In this case it is not necessary to leave the cooler door open because a 15 °C temperature is automatically set to avoid the formation of bad odours inside.

To activate the HOLIDAY function, push the temperature regulation button till letter H is shown in the cooler display, afterwards push the OK button.

Obviously the cooler must be empty because the 15 °C temperature does not allow the preservation of the most common food.

## 6.8 SHOOPING function (rapid cooling)

The SHOPPING function (rapid cooling) is activated pushing the function selection button

till the symbol appears  afterwards push the OK button within a few seconds, therefore:


- the symbol corresponding to the function is displayed;
- the buzzer emits a short signal;
- The compressor operates in thermostatic conditions and not continuously (like the temperature knob was on max. position) for a duration of about 6 hours, and then it deactivates automatically.

The SHOOPING function (rapid cooling) is deactivated pushing the function selection button till

the symbol flashes  afterwards push the OK button within a few seconds.

## 6.9 ECO function (energy saving)

The ECO function (energy saving) is activated pushing the function selection button till

the symbol appears  afterwards push the OK button within a few seconds, therefore:

- the symbol corresponding to the function remains displayed;
- the buzzer emits a short signal;
- the temperatures of the two compartments are set automatically to +5°C and -18°C

The ECO function (energy saving) is deactivated pushing the function selection button till

the symbol flashes  afterwards push the OK button within a few seconds.

Note:

The ECO function is set automatically when the temperatures of +5 and -18 respectively for the cooler and freezer compartment are selected.

Therefore, the symbol relative to ECO function remains displayed even if there are other symbols of functions and does not disappear with the deactivation described above.



## 6.10 Rapid drink cooler function (freezer)

The rapid drink cooler function (freezer) is activated pushing the function

selection button till the symbol appears  afterwards push the OK button within a few seconds, therefore:

- the symbol corresponding to the function remains displayed;
- the buzzer emits a short signal;
- a timer is activated with a 30-minute base value (it is possible to set the time from 1 minute to 90 minutes pushing the temperature selection button).

At the end of the timer count down:

- the symbol flashes 
- the symbol flashes 
- the buzzer emits the signal till the OK button is pushed.



Warning: Remove the drinks contained in the freezer.

The rapid drink cooler function (freezer) is deactivated pushing the function


selection button till the symbol flashes  
within a few seconds.



afterwards push the OK button

## 6.11 SUPER function (rapid freezing)

The SUPER function (rapid freezing) is activated pushing the function selection button till

the symbol appears  afterwards push the OK button within a few seconds, therefore:

- the symbol corresponding to the function remains displayed;
- the buzzer emits a short signal;
- some animated lines are displayed because the freezer temperature is not shown
- the compressor operates in thermostatic conditions and not continuously (like the temperature knob was on max. position) for a duration of about 52 hours, and then it deactivates automatically.

The SUPER function (rapid freezing) is deactivated pushing the function selection button

till the symbol flashes  afterwards push the OK button within a few seconds.

With the SUPER function the fixed defrosting can occur anyway depending on how much time is elapsed after the last defrosting.



## 6.12 Malfunctioning of cooler air temperature sensor

If during the normal operation a failure occurs to the cooler NTC temperature sensor (the signal coming from the sensor is out of range), then:

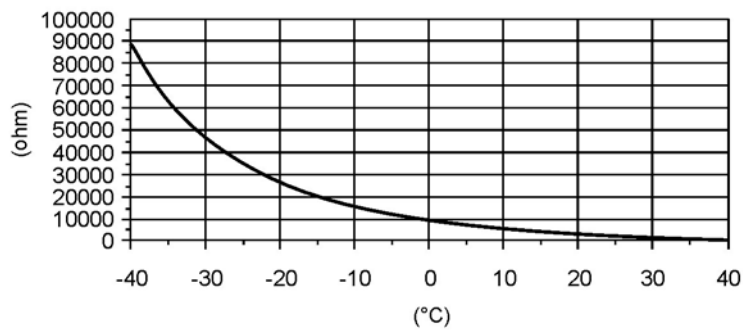
- The display shows cooler temperature sensor faulty.
- The air flow regulator (damper) operates as follows:
  - open when the compressor is on
  - closed when the compressor is off
- The defrosting procedure is activated every about 10 hours.



When the sensor operates again normally, the above described conditions terminate.

Characteristics of the NTC sensor:

T (°C)	ΔT (±°C)	Rn (Ω)
10	±0.6	5337
9	±0.6	5600
8	±0.5	5877
7	±0.5	6171
6	±0.5	6481
5	±0.5	6809
4	±0.5	7156
3	±0.5	7523
2	±0.4	7911
1	±0.4	8322
0	±0.4	8758
-1	±0.4	9218
-2	±0.4	9705
-3	±0.4	10222
-4	±0.5	10770
-5	±0.5	11352
-6	±0.5	11969
-7	±0.5	12624
-8	±0.5	13320
-9	±0.5	14059
-10	±0.5	14845
-11	±0.5	15678
-12	±0.6	16564
-13	±0.6	17506
-14	±0.6	18509
-15	±0.6	19577
-16	±0.6	20715
-17	±0.6	21928
-18	±0.6	23221
-19	±0.6	24600
-20	±0.6	26072
-21	±0.7	27637
-22	±0.7	29307
-23	±0.7	31092
-24	±0.7	32999
-25	±0.7	35039
-26	±0.7	37221
-27	±0.7	39556
-28	±0.7	42056
-29	±0.8	44735
-30	±0.8	47606
-31	±0.8	50668
-32	±0.8	53952
-33	±0.8	57475
-34	±0.8	61258
-35	±0.8	65320
-36	±0.8	69686
-37	±0.8	74381
-38	±0.8	79431
-39	±0.9	84867
-40	±0.9	90721



cd001199

### 6.13 Malfunctioning of freezer temperature sensor

If during the normal operation a failure occurs to the freezer NTC temperature sensor (the signal coming from the sensor is out of range), then:

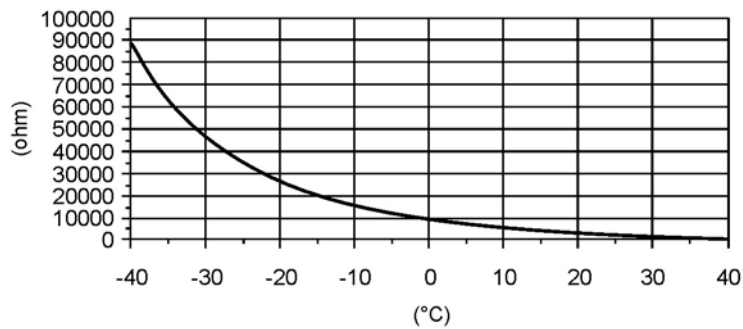
- The display shows freezer temperature sensor faulty.



- The appliance operates with preset cycle when the compressor is powered for 40 minutes and remains off for 40 minutes alternatively.
- The defrosting procedure is activated every about 10 hours.

Characteristics of the NTC sensor:

T (°C)	ΔT (± °C)	Rn (Ω)
10	±0.6	5337
9	±0.6	5600
8	±0.5	5877
7	±0.5	6171
6	±0.5	6481
5	±0.5	6809
4	±0.5	7156
3	±0.5	7523
2	±0.4	7911
1	±0.4	8322
0	±0.4	8758
-1	±0.4	9218
-2	±0.4	9705
-3	±0.4	10222
-4	±0.5	10770
-5	±0.5	11352
-6	±0.5	11969
-7	±0.5	12624
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-10	±0.5	14845
-11	±0.5	15678
-12	±0.6	16564
-13	±0.6	17506
-14	±0.6	18509
-15	±0.6	19577
-16	±0.6	20715
-17	±0.6	21928
-18	±0.6	23221
-19	±0.6	24600
-20	±0.6	26072
-21	±0.7	27637
-22	±0.7	29307
-23	±0.7	31092
-24	±0.7	32999
-25	±0.7	35039
-26	±0.7	37221
-27	±0.7	39556
-28	±0.7	42056
-29	±0.8	44735
-30	±0.8	47606
-31	±0.8	50668
-32	±0.8	53952
-33	±0.8	57475
-34	±0.8	61258
-35	±0.8	65320
-36	±0.8	69686
-37	±0.8	74381
-38	±0.8	79431
-39	±0.9	84867
-40	±0.9	90721




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## 7 ALARMS


### 7.1 Freezer compartment temperature alarm

When the freezer compartment reaches -11 °C, the temperature alarm activates:


- The LCD display background becomes red.
- The symbol is displayed. 
- The buzzer sounds.

Push the alarm deactivation button to deactivate the buzzer.

When normal conditions are reset (after a power failure):

- The acoustic signal deactivates.
- The symbol remains lit. 
- The lighting of the display remains red.

Pushing the OK button:

- The highest temperature reached in the freezer compartment is displayed for 5 minutes.
- The symbol switches off. 
- The red lighting of the display switches off.

## 8 ACCESSIBILITY

### 8.1 Freezer compartment



Warning: Disconnect the appliance from the electric power before operating with the appliance.

#### 8.1.1 Battery evaporator

To access the battery evaporator and its components (fan, defrosting heater, door switch, and thermal switches) perform the following operations in sequence:

- Remove the freezer drawers.
- Detach the fan and defrosting heater connectors located inside the connections box (compressor compartment).
- Cut the wiring fixing tie.



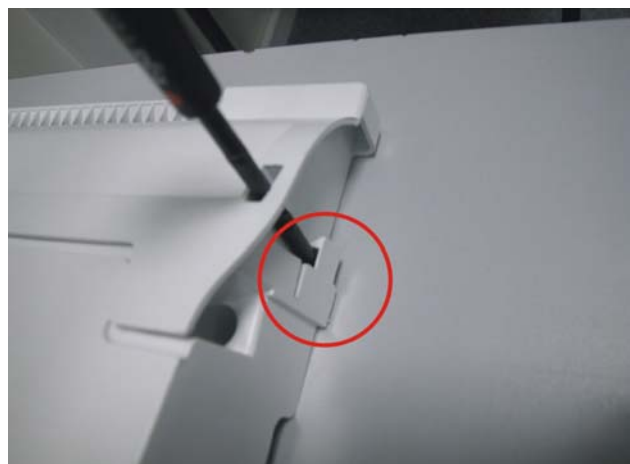
d) Lean the appliance on the rear side (condenser side).



e) Insert a screwdriver into the right hook and release it.



f) Insert a blade inside the F slot and release the internal hook.



g) View of the internal hook.



h) Lift and pull the air vent grid.



i) Unscrew the 2 fixing screws of the air diffuser.



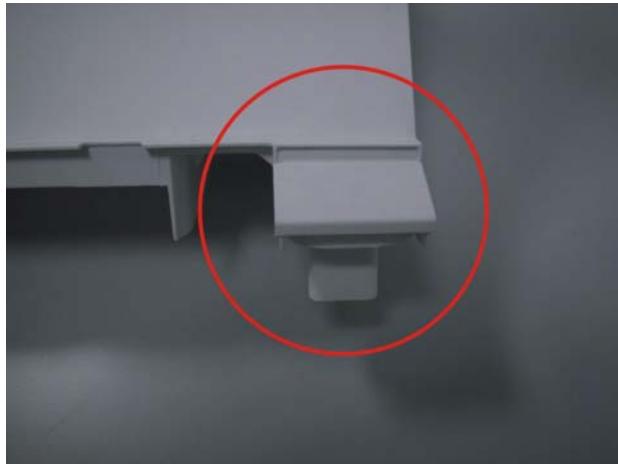
l) Cut the air diffuser pulling and lifting it up.



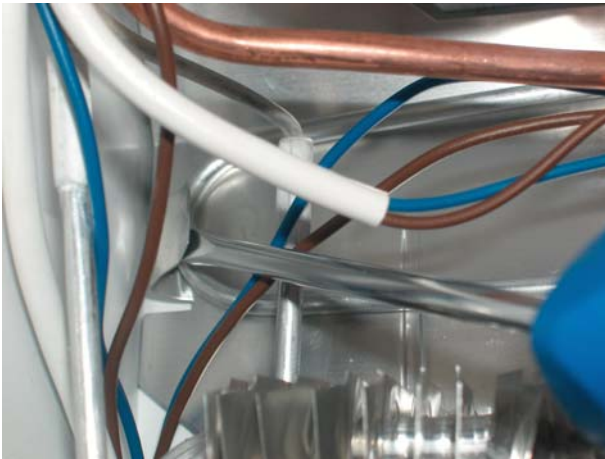
m) Remove the 2 fixing screws of the cold module.



n) Pull backward the cold module support releasing the rear water drain duct.



o) View of the rear water drain duct.



p) Release the left hook of the defrosting heater.



q) Release the right hook of the defrosting heater.



r) Cut the wiring tie of the thermal switches and release them from the evaporator.  
 Note:  
 The defrosting and cut-out thermal switches (+8 / +40°C) are connected together, therefore they are not available as single spare parts.



s) Remove the sealing rubber.



t) Remove the wiring fixing tie.



u) Unplug the connector of the thermal switches.



v) The heater is fitted to the evaporator by means of the aluminium ties.



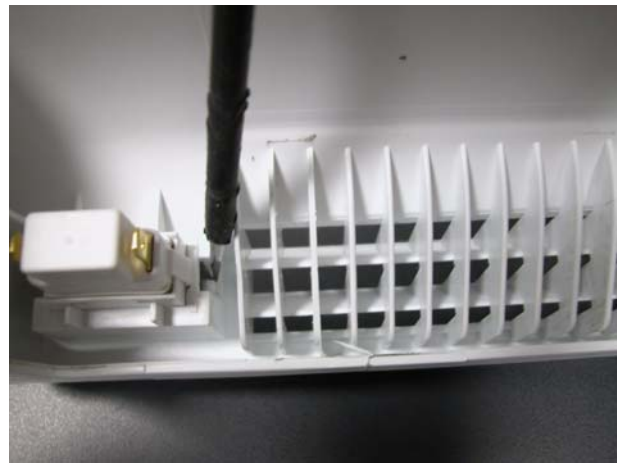
w) Remove the fan extracting it from the evaporator support.



In case of replacement of the fan, it is necessary to ensure that the fan draws in air.



x) To remove the freezer door switch.



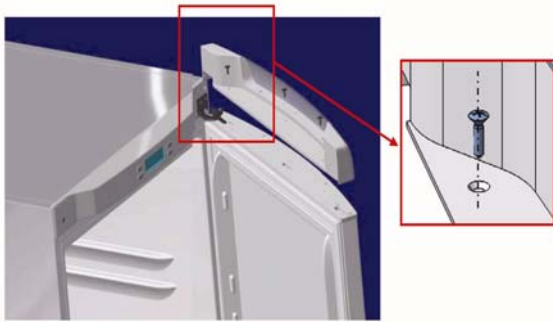
y) Release the door button hook and simultaneously pull it backward.

## 8.2 Control panel

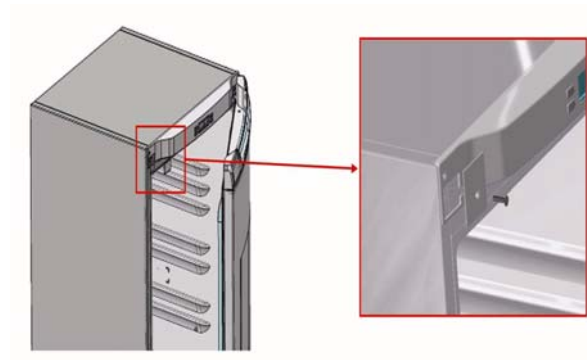


Warning: Disconnect the appliance from the electric power before operating with the appliance.

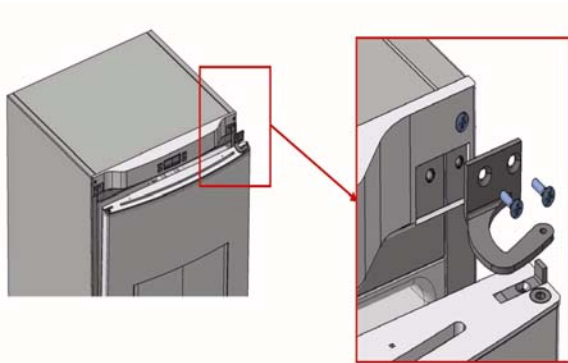
To access the control panel and its components (power/display boards and electric connectors) perform the following operations:



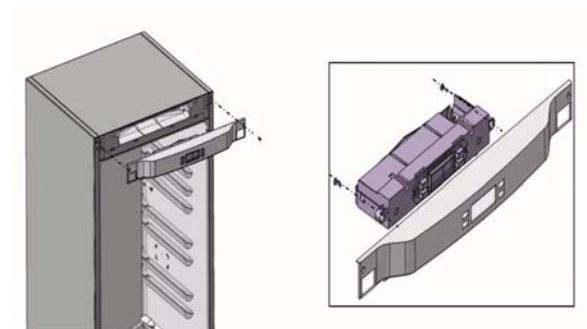
a) Unscrew the 3 fixing screws of the door upper lid.



b) Remove the hinge cover unscrewing the fixing screw.



c) Remove the door unscrewing the upper hinge.



d) Unscrew the 2 fixing screws of the control panel.



## 8.3 Cooler compartment accessibility



Warning: Disconnect the appliance from the electric power before operating with the appliance.

### 8.3.1 Air flow regulator (damper)

To access the air diffuser and its components (air flow regulator damper and lamp holder) perform the following operations in sequence:



a) Open the air carbon filter door, release and remove it.



b) Unscrew the 2 front fixing screws of the lamp holder.



c) Unscrew the 2 upper fixing screws of the lamp holder.



d) View of the lamp holder.



e) The damper is fitted with 2 screws and is connected to the electric wiring by means of a 4-pole connector.

### 8.3.2 LED lighting (optional depending on the models)

To gain access to the LED board, perform the following operations:



a) Remove the LED cover releasing the 2 side hooks.



b) Remove the LED electronic board releasing the upper and lower hooks.



c) View of the 3-pole connector of the LED electronic board.

## 9 TROUBLESHOOTING



Warning: Unplug the appliance before operating.

### 9.1 Excessive ice formation on the battery :

If the rubber valve remains open, the humid air outside the freezer compartment is ducted inside and it accumulates too much ice on the battery.

The valve remains open if there are foreign bodies or if it loses elasticity; therefore, in the first case the foreign bodies must be removed, while in the latter the rubber valve must be replaced.

### 9.2 Failed defrosting:

In case of failed defrosting, the possible causes are:

Sequence no	POSSIBLE CAUSES	HOW TO CONTROL	SOLUTION
1.	The defrosting heater is interrupted.	Unplug the appliance, remove the connector of the heater and verify with the tester the correct resistance value to the connector clamps.	If the resistance value does not correspond to the technical data, replace the heater.
2.	One or both switches of the thermal protectors are open.	Frost the battery, then detach the power plug of the appliance, remove the connector of the thermal switches and verify with the tester the correct resistance value to the connector clamps.	If the resistance value does not correspond to 0 (zero Ohm) replace the thermal switches assembly.

## 10 SPECIAL FUNCTIONS

### 10.1 Service Mode

#### 10.1.1 Starting Service Mode

To start the procedure, perform the following operations:

1. Connect the plug to the socket.
2. Switch on the appliance with the ON/OFF button.
3. Open the doors of the appliance.
4. Disconnect the plug from the socket.
5. Connect the plug to the socket.
6. Wait 3 seconds, afterwards hold down the OK button for 5 seconds (this operation must be executed after the first 3 seconds and within the first 12 seconds after the appliance has been plugged in again).

The confirmation of the procedure start occurs with the acoustic signalling of the buzzer which emits a long beep and with the lighting up of all segments of the display.

#### 10.1.2 Exiting Service Mode

The procedure terminates when one of the following operations is carried out:

- a. The plug is detached from the socket and reconnected.
- b. 40 minutes have elapsed and no button has been pushed.
- c. The last phase of the procedure has been reached.

#### 10.1.3 Functions of the Service Mode

Press the OK button to skip to the following phase of the procedure.

Press the "ON/OFF" button to activate/deactivate the loads (compressor, defrosting heater, lamp, fan and air flow regulator damper).

List of the phases of the SERVICE MODE:

1. All segments of the display are on.
2. All segments of the displays are off.
3. The number 0 is shown on the display and the load controlled by ACS TH1 [compressor] is checked.  
To activate/deactivate the load press the button "ON/OFF" (the load is activated when the rapid freezing SUPER function symbol lights up).
4. The number +1 is shown on the display and the load controlled by ACS TH2 [defrosting heater] is checked.  
To activate/deactivate the load press the button "ON/OFF" (the load is activated when the rapid freezing SUPER function symbol lights up).
5. The number +2 is shown on the display and the load controlled by ACS TH3 [lamp] is checked.  
To activate/deactivate the load press the button "ON/OFF" (the load is activated when the rapid freezing SUPER function symbol lights up).
6. The number +3 is shown on the display and the load controlled by ACS TH4 [fan] is checked.  
To activate/deactivate the load press the button "ON/OFF" (the load is activated when the rapid freezing SUPER function symbol lights up).
7. The number 00 (= damper closed) or 0F (= damper open) is shown on the display and the air flow regulator (damper) is checked.  
To activate/deactivate the load press the button "ON/OFF"

Note:

When the procedure skips to the following phase pressing the button OK, the load keeps its status (for example, if the compressor had been activated, it will remain on also in the subsequent phases); in this way it is possible to check the loads simultaneously.

8. Check of the doors.

The display digits correspond to the doors: the unit digits correspond to the cooler door, while the ten digits correspond to the freezer door.

If the relative door is closed, the displayed digit is 0 otherwise is 1.

9. Check of the counter.

The display shows an increasing number at intervals of 1 second.

This is a counter used by the board for its internal management.

At the same time, the display background colour changes from red to light blue.

10. Check of the temperature sensors.

The display shows one of the following codes:

Code	Description
E0	No error
E1	Evaporator sensor damaged
E2	Room temperature sensor damaged (installed on the display board)
E4	Room temperature sensor damaged (installed on the power board)
E5	0 degree compartment sensor damaged

Note:

The errors regarding the cooler and freezer air sensors are already displayed during the normal operation.

At this point all the phases necessary to check the loads have been displayed, therefore it is advisable to interrupt the procedure of the SERVICE MODE unplugging and replugging the appliance.

Note:

If you do not want to interrupt the SERVICE MODE, the procedure continues with some phases dedicated exclusively to the factory, therefore they have not to be considered.

Also in this case the exit from the SERVICE MODE is carried out unplugging and replugging the appliance.

## 10.2 DEMO MODE

The DEMO MODE function is intended only for the commercial activity and not for the user.

The internal temperature of the appliance, measured by the air sensors, must be higher than +10 °C so as the function can be activated.

### 10.2.1 Start DEMO MODE

To start the procedure, hold down the ON/OFF button and the function selection button for more than 5 seconds.

The display digits flash every about 4 seconds.

### 10.2.2 Exit DEMO MODE

To exit the procedure, hold down the ON/OFF button and the function selection button for more than 5 seconds or unplug the appliance.

### 10.2.3 Functions of the DEMO MODE

The procedure is used only for show purposes in the selling points and allows selecting the temperatures without activating the loads (compressor, fan, defrosting heater and electric valve).

The display shows:

- + 5 °C for the cooler compartment (flashing display);
- -18 °C for the freezer compartment (flashing display).









By pushing the temperature regulation button, the display shows the temperatures that can be set (flashing display).








By pushing the function selection button it is possible to show the various functions without activating them.

The internal light switches on when the cooler door is opened.

By pushing the ON/OFF button it is possible to simulate the switching off of the appliance (the lamp is off).

## 11 DISPLAY SYMBOLS

DISPLAY	DIGITS	DESCRIPTION
	NOT FLASHING	It indicates the room temperature with normal function.
	NOT FLASHING	It indicates the cooler temperature with normal function [from +2 to +8].
	NOT FLASHING	It indicates the freezer temperature with normal function [from -15 to -24].
	NOT FLASHING	It indicates the HOLIDAY function of the cooler compartment [15 °C].
	FLASHING	It indicates the freezer temperature in alarm condition.
	NOT FLASHING	It indicates the timer function
	NOT FLASHING	It indicates the rapid drink cooler function (freezer).
	IN ANIMATION	It indicates the SUPER function (rapid freezing)

	NOT FLASHING	It indicates the ECO function (energy saving).
	NOT FLASHING	It indicates the SHOPPING function (rapid cooling).
	NOT FLASHING	It indicates the child lock function.
	NOT FLASHING	It indicates the malfunctioning of cooler air temperature sensor.
	NOT FLASHING	It indicates the malfunctioning of freezer air temperature sensor.
	NOT FLASHING	It indicates incompatibility between the electronic boards. Remedy: check the spare part nos. of the electronic boards.
	NOT FLASHING	It indicates Eeprom parameter writing/reading error. Remedy: replace both electronic boards (power and display).