



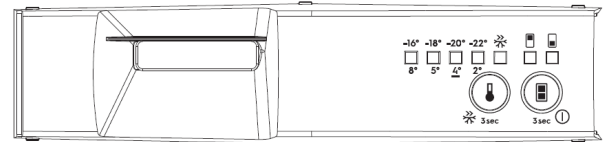
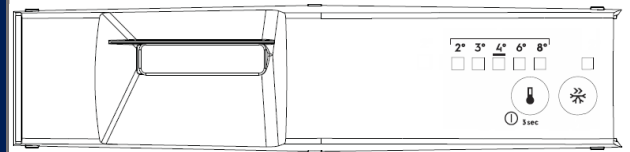
Electrolux

SERVICE MANUAL

Food preservation

COLD APPLIANCES WITH ELECTRONIC
CONTROL SYSTEM

ERF501x



EN

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FOR INTERNAL AND PARTNERS USE ONLY

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Consumer Service - EMEA
Quality & Continuous Improvement - Technical Support

PURPOSE OF THIS MANUAL

The purpose of this Service Manual is to provide Service Engineers who are already familiar with repair procedures with information regarding the PCB.

The manual deals with the following topics:

- PCB general characteristics
- Disassembly

Document Revisions

Rev.	Date	Description	Author
00	06/2020	Document creation	Anna Grimlund

SAFETY



- All the work to be performed inside the appliance requires specific skills and knowledge and may only be carried out by qualified and authorised Service Engineers
- Before you access internal components, take the plug out of the socket to disconnect the power supply.
- Some of the components in the mechanical part could cause injuries, so wear suitable protection and proceed with caution.

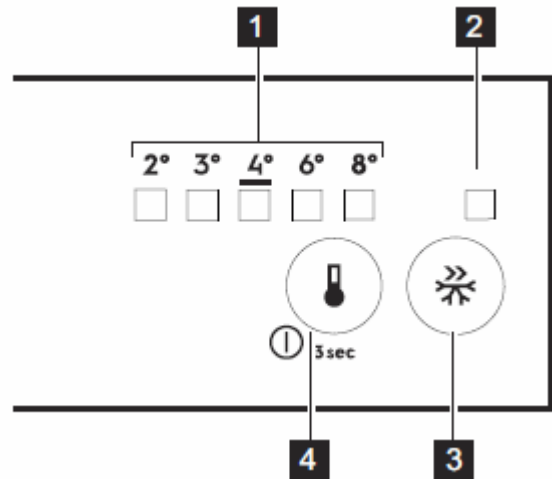
ERF501X GENERAL CHARACTERISTICS

ERF501X has two ACS power boards with an integrated UI.

Technical specification	
Operating voltage input:	230 Vac
Frequency range:	

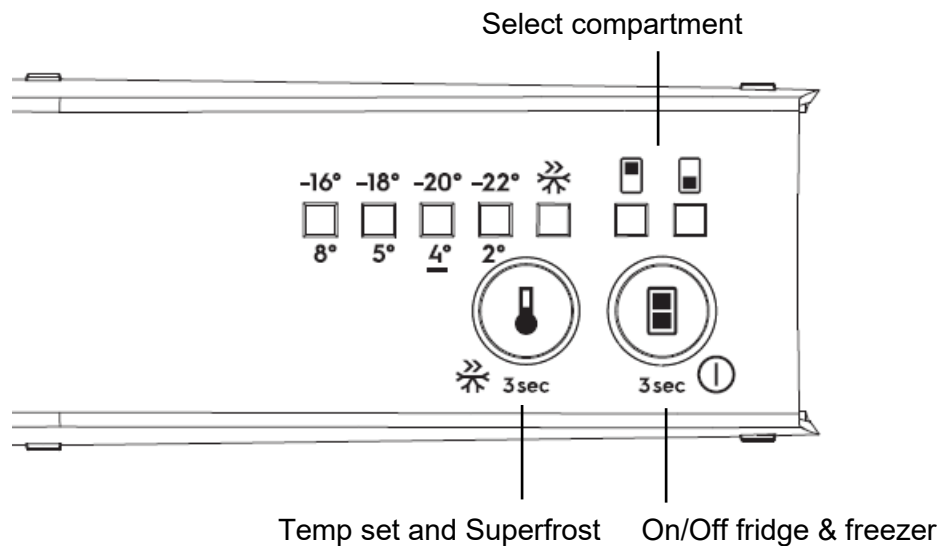
- 1: Temperature LED
- 2: Frostmatic (Superfrost) LED
- 3: Frostmatic (Superfrost) button
- 4: Temperature regulator and On/Off

Reset temperature alarm by pressing any button

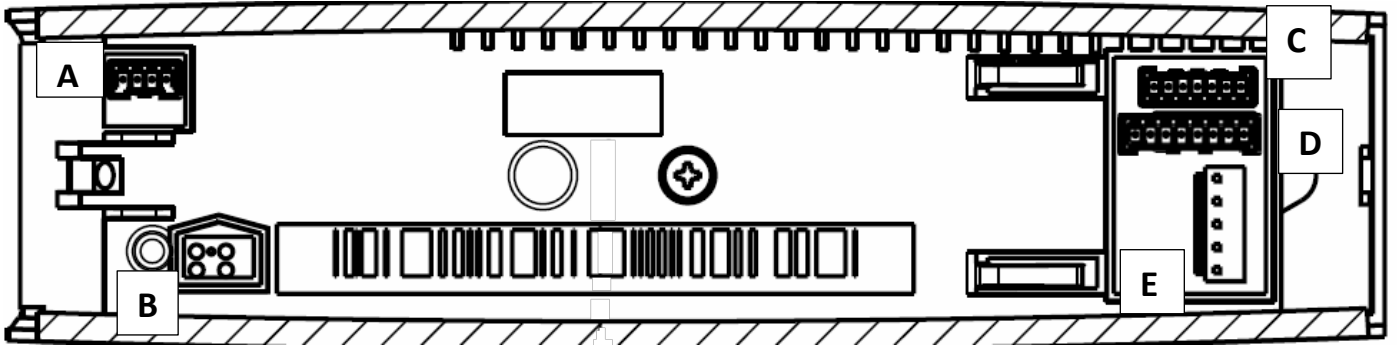


Combi appliances

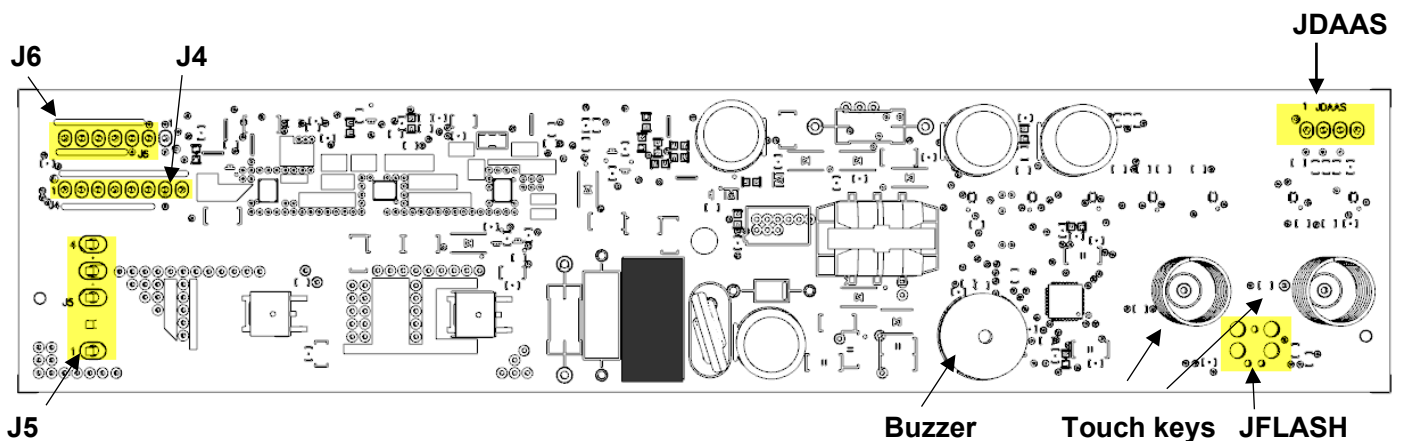
This version can set both the fridge and the freezer.



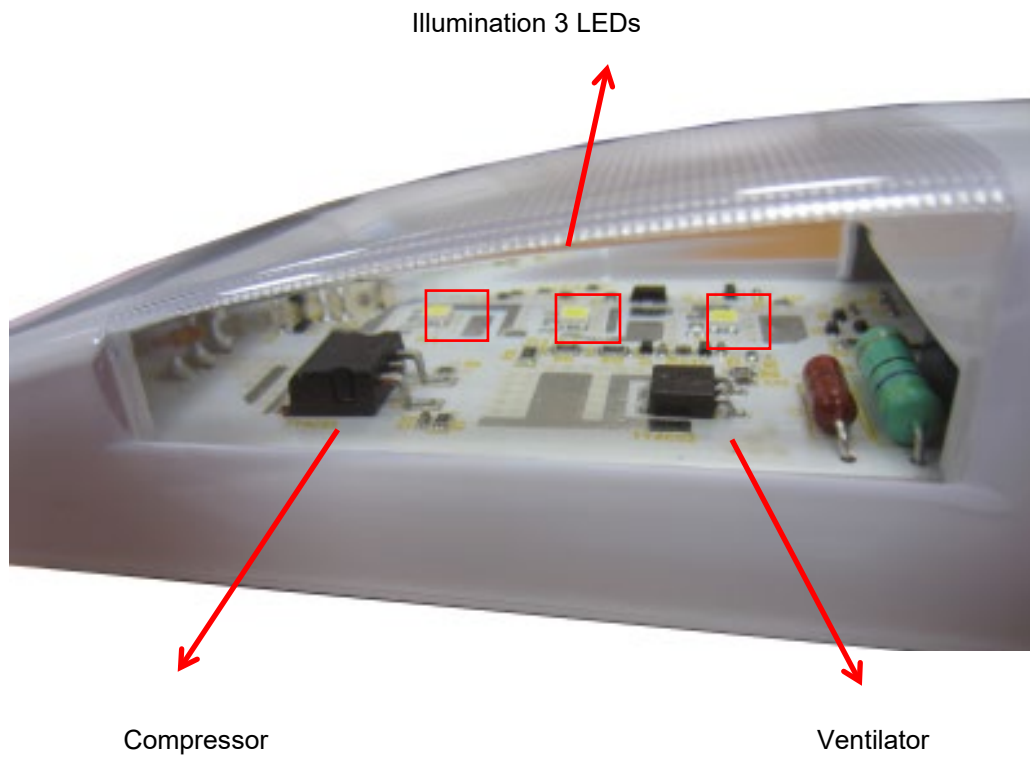
ERF501X CONNECTORS



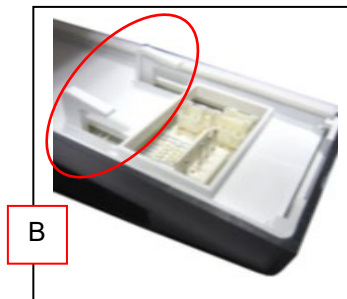
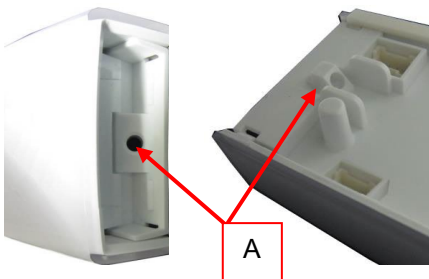
A	Sidekick 4-pol.	
	ASY_OUT	JDAAS(1)
	ASY_IN	JDAAS(2)
	+5V	JDAAS(3)
	GND	JDAAS(4)
B	User interface	
	+5V	JFLASH(1)
	SWDDIO	JFLASH(2)
	RESET	JFLASH(3)
	SWD_CLK	JFLASH(4)
	GND	JFLASH(5)
	-	JFLASH(6)
C	Door switch - DOOR_SNS – 5V DC	J6(2)
	Fan - DC_PWM_LOAD_1 - 12V DC	J6(4)
	Variable speed compressor – VSC - 12V DC	J6(6)
D	Fridge - NTC_1	J4(1-2)
	Evaporator - NTC_2	J4(3-4)
	Freezer - NTC_3	J4(5-6)
	Evaporator NTC_4	J4(7-8)
E	ACS 1 220 N	J5(1)
	ACS 2 220 L	J5(3)
	Compressor - ACS 1 - 5V DC	J5(4)
	Defrost heater - ACS 2	J5(5)



Illumination and loads



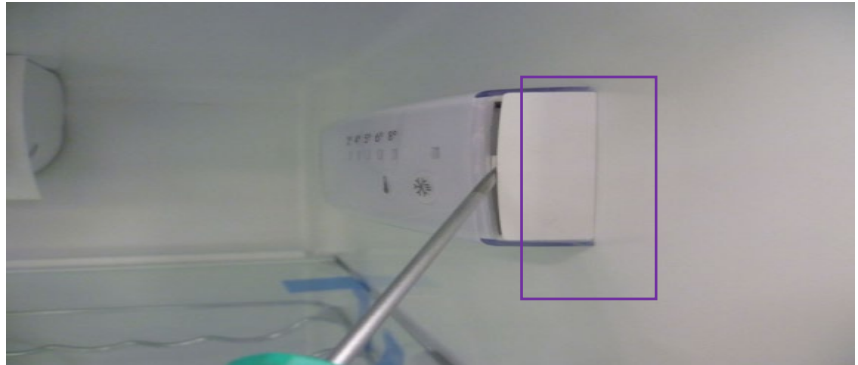
ERF501L MONTAGE



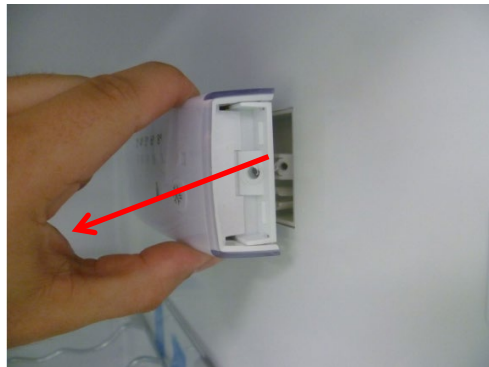
A: Additional Fixation
B: Fixation in compartment

REPLACE THE CONTROL BOX

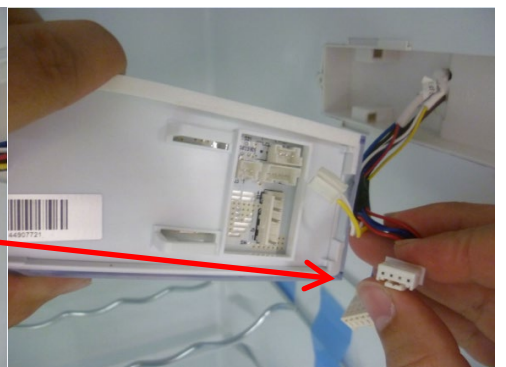
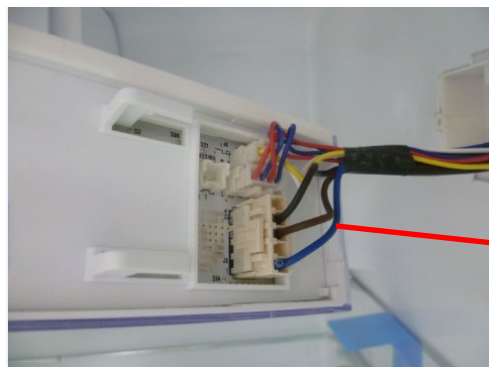
Remove the cover of the control box



Remove the screw and take out the control unit



Unplug the connecting wire and replace the control box



SERVICE MODE ERF501X

Activation of service mode depends on type of appliance and the UI. Service mode can be started with a cold or warm appliance. The only exception is when testing the digital input heater switch that requires a cold appliance.

There are two ways of activating service mode depending on if the appliance is built-in or freestanding:

Activate service mode on built-in appliances

Command	Button	Press	Action	Indicator
Activate service mode	Temp and Feature (Superfrost)	Hold for 5 seconds.	Activate service mode	LEDs lit
Next	Temp	Short press	Moves service mode to next component	LEDs off
Action	Feature (Superfrost)	Short press	Activate and deactivate components	LED ON component ON LED OFF component OFF
Exit service mode	Temp and Feature (Superfrost)	Hold for 5 seconds.	Exit service mode	None

When exiting service mode, a beep will sound, continue to hold the buttons until the light is back on.

Activate service mode on freestanding appliances

1. Switch on the appliance
2. Unplug the appliance
3. Wait 10 seconds
4. Plug in the appliance
5. Wait 5 seconds.
6. Press any button for 5 seconds
 - the button must be pressed within 5 to 16 seconds after power-on
7. **Next:** Use the same button as enter service mode.
8. **Action:** Use any other button.
9. **Exit service mode:** Use the same button as enter service mode. Hold for 5 seconds, wait until temperature settings are displayed.

(Activate service mode on freestanding appliances can also be used for built-in appliances).

ERF501X service mode LED indicators

The **Feature** (Superfrost) LED acts as hardware item state indicator.

SERVICE MODE LED COMBINATIONS

Each step of service mode is identified by a unique index coded by LEDs. Each LED can assume three states, on, off or blinking. It is not possible to move service mode backwards, complete the sequence to go back to a required phase/component.

These tables contain all possible loads and will not be available on all appliances.

AC output test

Tests AC loads connected to the appliance; only physically mounted components are displayed. Note that every AC load test is coded with the first two left LEDs switched off.

AC Load	1	2	3	4	5
Fridge compressor					on
Freezer compressor					blinking
Freezer Evaporator Heater				on	
Fridge light				on	on
Freezer Evaporator fan				on	blinking
Fridge fan				blinking	
Evaporator electro valve				blinking	on
Zero-degree fan				blinking	blinking
Water faucet			on		
Freezer light			on		on
Auger motor			on		blinking
Ice selector/Solenoid cube			on	on	
Condenser fan			on	on	on
Perfect drawer			on	on	blinking
Fridge balance heater			on	blinking	
Frame heater			on	blinking	on
Condenser electro valve			on	blinking	blinking
Still water valve			blinking		
Ice maker 1 water valve			blinking		on
Fridge Evaporator fan			blinking		blinking
Fridge Evaporator heater			blinking	on	
Ice maker Evaporator heater			blinking	on	on
Mullion heater			blinking	on	blinking
Pipe/Fill tube 1 heater			blinking	blinking	
Ice maker 2 water valve			blinking	blinking	on
Pipe/Fill tube 2 heater			blinking	blinking	blinking

Digital output test

Note that every Digital output test is coded with the first left LED switched off and the second left LED switched on.

Digital output	1	2	3	4	5
Fridge light		on	blinking		on
Zero-degree light		on	blinking		blinking
Fridge Evaporator fan		on	blinking	on	
Fridge fan		on	blinking	on	on
Zero-degree fan		on	blinking	on	blinking
Condenser fan		on	blinking	blinking	
Freezer light		on	blinking	blinking	blinking
Air filter fan		on			
Fridge VCC compressor		on	on	blinking	blinking
Freezer VCC compressor		on	blinking		
UI anti-condense heater		on		on	
Frame/Mullion heater		on		on	on
Ice chute dispenser pocket heater		on	blinking	blinking	on
Ice maker fan		on		blinking	blinking
UI dispenser light		on	on		
Pipe/Fill Tube 1 Heater		on	on		on
Fridge Evaporator fan		on	on		blinking

Damper test

Digital output	1	2	3	4	5
Fridge damper		on			on
Remote damper		on			blinking
Zero-degree damper		on		blinking	on

Ice maker tray

Digital output	1	2	3	4	5
Ice maker tray 1		on		on	blinking
Ice maker tray 2		on		blinking	

Digital input test

Note that every Digital input test is coded with the first two left LED switched on.

Digital input	1	2	3	4	5
Fridge door	on	on		on	
Freezer door	on	on		on	on
Zero-degree door	on	on		on	blinking
Heater switch	on	on		blinking	
Ice maker	on	on		blinking	on
Paddle switch	on	on		blinking	blinking
Rapid drink cooler	on	on	on		
Ice bin switch	on	on			

Bail arm

Digital input	1	2	3	4	5
Ice maker 1 bail arm	on	on	on		on
Ice maker 2 bail arm	on	on	on		blinking

Temperature/Humidity probe test

Note that every Temperature probe test is coded with the first left LED blinking and the second left LED switched on.

Temperature/Humidity	1	2	3	4	5
Fridge air	blinking	on	on		blinking
Freezer air	blinking	on	on	on	
Fridge Evaporator	blinking	on	on	on	on
Zero-degree air	blinking	on	on	on	blinking
PB ambient	blinking	on	on	blinking	
UI ambient	blinking	on	on	blinking	on
Freezer Evaporator	blinking	on	blinking		
Ice maker 1 tray	blinking	on	on	blinking	blinking
Zero-degree Evaporator	blinking	on	blinking		blinking
Ice maker Evaporator	blinking	on	blinking	on	
UI ambient humidity	blinking	on	blinking		on
Ice maker 2 tray	blinking	on	blinking	on	on

Temperature alarm

The LED blinks and an alarm sounds if the temperature moves outside a set threshold.

- The LED continues to blink until the alarm is reset by pushing the Reset button for 3 seconds.
- The LED turns off automatically when the temperature returns to within the temperature threshold.

No other buttons work on the UI until the alarm is reset.

Superfrost mode deactivates the freezer temperature control and no alarm is activated even though the temperature is outside of the threshold.

Door alarm

The door alarm is activated if the door is left open for a certain period. The temperature key and set temperature LED starts to flash LED on for 500 MS then LED off for 500 MS. There is also an alarm that sounds. The door alarm stops when the door is closed.

- Fridge door: 5 minutes
- Freezer door: 80 seconds