SERVICE DATA SHEET 318047472 (1003) Rev. A

Electric Wall Oven with Electronic Oven Control

NOTICE

This service data sheet is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. **The manufacturer cannot be responsible, nor assume any liability, for injury or damage of any kind arising from the use of this data sheet.**

SAFE SERVICING PRACTICES

To avoid the possibility of personal injury and/or property damage, it is important that safe servicing practices be observed. The following are examples, but without limitation, of such practices.

1. Do not attempt a product repair if you have any doubts as to your ability to complete it in a safe and satisfactory manner.
2. Before servicing or moving an appliance, remove power cord from electric outlet, trip circuit breaker to OFF, or remove fuse and turn off gas supply.
3. Never interfere with the proper installation of any safety device.
4. USE ONLY REPLACEMENT PARTS CATALOGED FOR THIS APPLIANCE. SUBSTITUTIONS MAY DEFEAT COMPLIANCE WITH SAFETY STANDARDS SET FOR HOME APPLIANCES.
5. GROUNDING: The standard color coding for safety ground wires is GREEN OR GREEN WITH YELLOW STRIPES. Ground leads are not to be used as current carrying conductors. IT IS EXTREMELY IMPORTANT THAT THE SERVICE TECHNICIAN REESTABLISH ALL SAFETY GROUNDS PRIOR TO COMPLETION OF SERVICE. FAILURE TO DO SO WILL CREATE A POTENTIAL HAZARD.
6. Prior to returning the product to service, ensure that:
   - All electric connections are correct and secure.
   - All electrical leads are properly dressed and secured away from sharp edges, high-temperature components, and moving parts.
   - All non-insulated electrical terminals, connectors, heaters, etc. are adequately spaced away from all metal parts and panels.
   - All safety grounds (both internal and external) are correctly and securely reassembled.
   - All panels are properly and securely reassembled.

ELECTRONIC OVEN CONTROL (DOUBLE WALL OVEN)

1. This self-cleaning controller offers Bake, Broil, Convection Bake, Convection Roasting and Convection Broil modes, Dehydrating, Defrosting, Temperature Probe, Perfect Turkey (some models), Bread Proof, Keep Warm and Cleaning functions.
2. Convection operates with an element and a fan dedicated to convection.
3. This controller includes a display board, a relay board, and a convection fan and oven light control board.

NOTE: These illustrations are for double wall ovens only. The illustrations for the single wall ovens can be found on the next page.

NOTE: The controllers are not field repairable. Only temperature settings can be changed. See oven calibration.

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ELECTRONIC OVEN CONTROL (SINGLE WALL OVEN)

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2. Convection operates with an element and a fan dedicated to convection.
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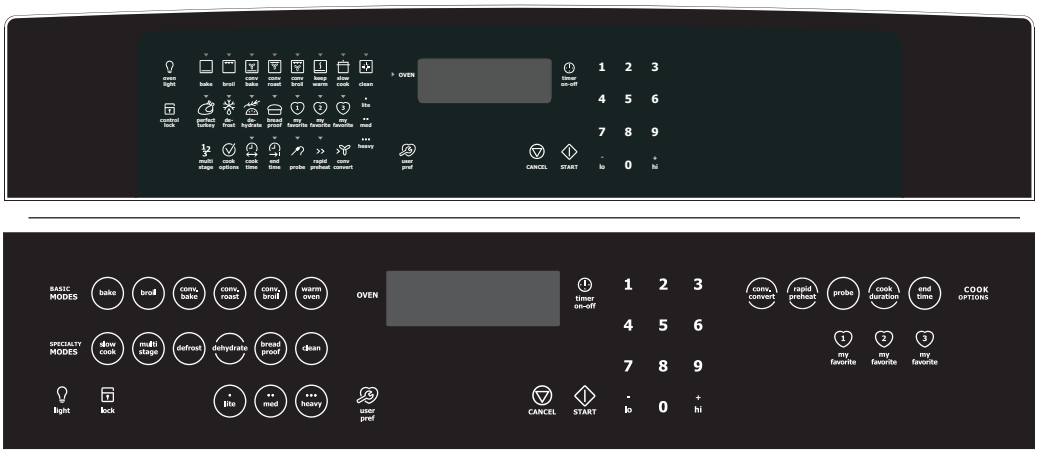
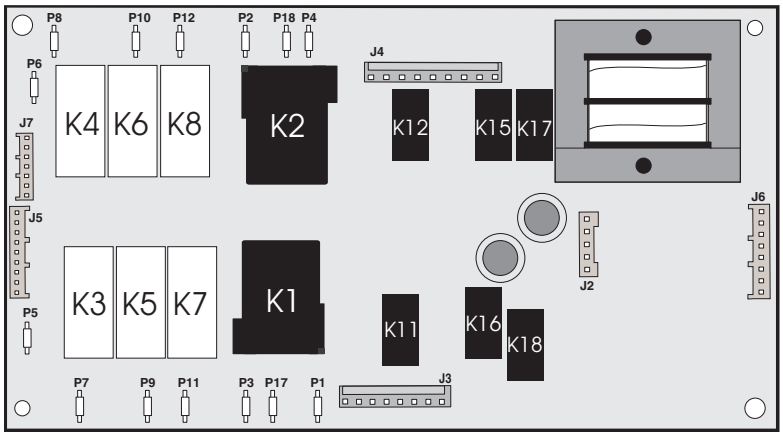
NOTE: These illustrations are for single wall ovens only. The illustrations for the double wall ovens can be found on the previous page.



NOTE: The controllers are not field repairable. Only temperature settings can be changed. See oven calibration.

ELECTRONIC DOUBLE WALL OVEN CONTROL

Electronic oven control relay board for double wall oven



This relay board serves to energize the upper and lower oven heating elements, door lock motor and cooling fan.

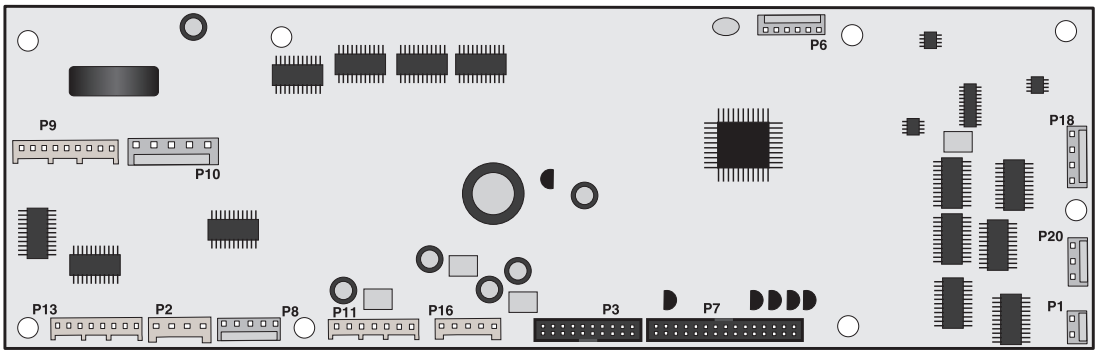
Relay Board Legend:

K1. Double Line Break - Upper Oven
K2. Double Line Break - Lower Oven
K3. Broil Relay - Upper Oven
K4. Broil Relay - Lower Oven
K5. Bake Relay - Upper Oven
K6. Bake Relay - Lower Oven
K7. Convection Element Relay - Upper Oven
K8. Convection Element Relay - Lower Oven
K11.Motor Door Latch - Upper Oven
K12.Motor Door Latch Relay - Lower Oven
K15. Cooling Fan Relay 1 - Lower Oven
K16. Cooling Fan Relay 1 - Upper Oven
K17. Cooling Fan Relay 2 - Lower Oven
K18. Cooling Fan Relay 2 - Upper Oven

P1 - L2 Out, Upper Oven
P2 - L2 Out, Lower Oven
P3 - L2 In, Upper Oven
P4 - Not Used
P5 - L1, Upper Oven
P6 - L1, Lower Oven
P7 - Broil, Upper Oven
P8 - Broil, Lower Oven
P9 - Bake, Upper Oven
P10 - Bake, Lower Oven
P11 - Convection Element, Upper Oven
P12 - Convection Element, Lower Oven
P17 - Not Used
P18 - L2 In, Lower Oven

J2 - DC Power Output To Display Board
J3 - AC Power Output (motor door latch, cooling fan) For Upper Oven
J4 - AC Power Output (motor door latch, cooling fan) For Lower Oven and Power Input (L1, Neutral)
J5 - Relay Control Inputs (bake and broil elements, motor door latch, DLB) For Upper Oven
J6 - Relay Control Inputs (cooling fan, conv element) For Both Ovens
J7 - Relay Control Inputs (bake and broil elements, motor door latch, DLB) For Lower Oven

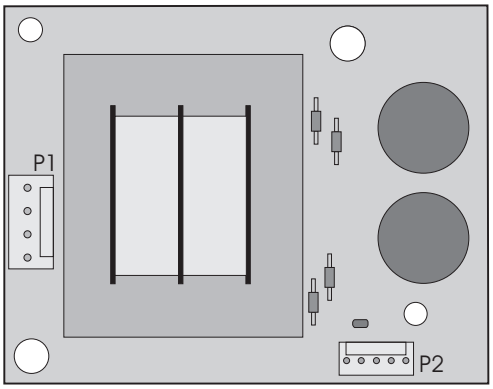
ELECTRONIC OVEN DISPLAY BOARD FOR DOUBLE WALL OVEN



Connector Legend:

P1 - Upper Oven Probe Input
P2 - Communication with Convection Fan and Oven Light Control Board
P3 - Keyboard (touch panel)
P6 - Microprocessor Programming (not used)
P7 - Touch Panel LEDs
P8 - Power Supply Input for Touch Panel LEDs
P9 - Relay Control Output (heating elements, DLB, motor door latch) for Upper Oven
P10 - Switches Input (motor door latch switch, door switch, rack switch) for Upper Oven
P11 - Relay Control Output (heating elements, DLB, motor door latch) for Lower Oven
P12 - Switches Input (motor door latch switch, door switch, rack switch) for Lower Oven
P13 - Relay Control Output (cooling fans) for Upper and Lower Ovens
P16 - DC Power Supply Input
P18 - Upper and Lower Oven Meat Probe Input
P20 - Lower Oven Probe Input

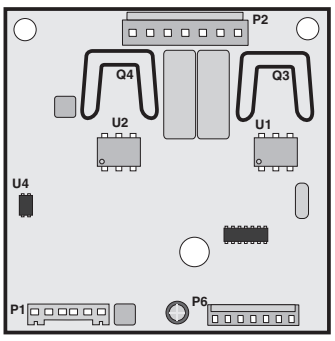
POWER SUPPLY BOARD FOR SINGLE AND DOUBLE WALL OVEN



This board provides power to the oven control display.
P1 - AC Power Input (L2 and Neutral)

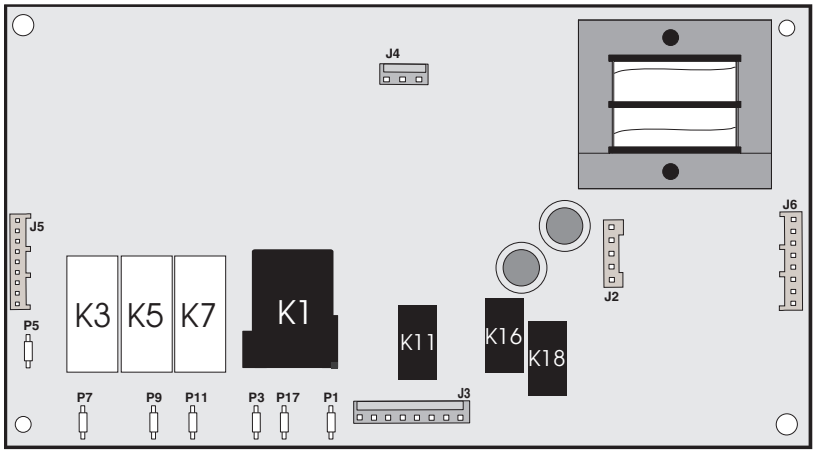
P2 - DC Power Output

CONVECTION FAN AND OVEN LIGHTS CONTROL BOARD



This board control the power output of the convection fan and oven lights.
The double wall oven is equipped with 2 of these variable convection boards. One for each oven.
P1 - Communication with display board and power supply input
P2 - AC power output for convection fan and oven lights, power inputs (L1, neutral)
P3 - Microprocessor programming (not used)

ELECTRONIC OVEN CONTROL RELAY BOARD FOR SINGLE WALL OVEN



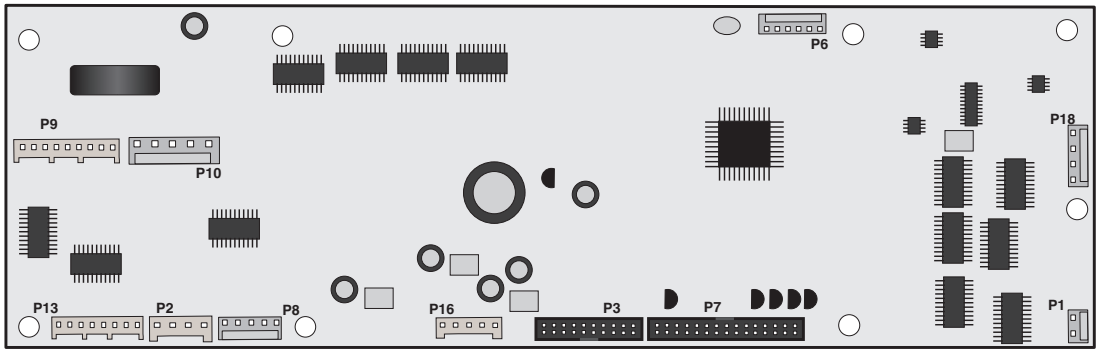
This relay board serves to energize the oven heating elements, door lock motor and cooling fan.

Relay Board Legend:
K1. Double Line Break
K3. Broil Relay
K5. Bake Relay
K7. Convection Element Relay
K11.Motor Door Latch
K16. Cooling Fan Relay 1
K18. Cooling Fan Relay 2

P1 - L2 Out
P3 - L2 In
P5 - L1
P7 - Broil
P9 - Bake
P11 - Convection Element
P17 - Not Used

J2 - DC Power Output To Display Control Board
J3 - AC Power Output (motor door latch, light, cooling fan)
J4 - Power Input (L1, Neutral)
J5 - Relay Control Inputs (bake and broil elements, motor door latch, DLB)
J6 - Relay Control Inputs (cooling fan, conv element)

ELECTRONIC OVEN DISPLAY BOARD FOR SINGLE WALL OVEN



Connector Legend:
P1 - Oven Probe Input
P2 - Communication with Convection Fan and Oven Light Control Board
P3 - Keyboard (touch panel)
P6 - Microprocessor Programming (not used)
P7 - Touch Panel LEDs
P8 - Power Supply Input for Touch Panel LEDs
P9 - Relay Control Output (heating elements, DLB, motor door latch)
P10 - Switches Input (motor door latch switch, door switch, rack switch)
P13 - Relay Control Output (cooling fans)
P16 - DC Power Supply Input
P18 - Meat Probe Input

ELECTRONIC OVEN CONTROL (EOC) FAULT CODE DESCRIPTIONS

Note: Generally speaking "F1X" implies a control failure, "F3X" an oven probe problem, and "F9X" a latch motor problem.

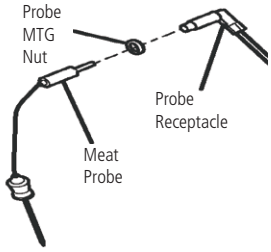
Failure Code/ Condition/Cause	Suggested Corrective Action
F10 Control has sensed a potential runaway oven condition. Control may have shorted relay, RTD sensor probe may have a gone bad.	Check RTD sensor probe and replace if necessary. If oven is overheating, disconnect power. If oven continues to overheat when power is reapplied, replace relay board and/ or display board.
F11 Shorted Key: a key has been detected as pressed for a long period and will be considered a shorted key alarm and will terminate all oven activity.	Press any key to clear the error.
	If fault returns, replace the keyboard (touch panel).
	If the problem persists, replace the display board.
F13 Control's internal checksum may have become corrupted.	Press any key to clear the error.
	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace display board.
F14 Misconnected keyboard cable	Verify connection between display board and touch panel (2 ribbon cables). Make sure the cables are well connected at both ends.
	If the cables are good, replace the touch panel.
	If the problem persists, replace the display board.
F15 Controller self check failed.	Verify if relay board receives 120VAC between J4 pin 1 and 3.
	Verify the wiring between J2 on the relay board and P16 on the display board.
	If wiring and 120VAC supply is good replace the display board.
	If problem persists replace the relay board.
F23 The controller failed to communicate with the (upper) convection fan and oven lights control board.	Verify wiring between P2 on the display board and P2 on the convection fan and oven lights control board.
	If wiring is good, replace convection fan and oven lights board.
	If the problem persists, replace the display board.
F24 The controller failed to communicate with the lower convection fan and oven lights control board. (On double wall oven)	Verify wiring between P2 on the display board and P2 on the convection fan and oven lights control board.
	If wiring is good, replace convection fan and oven lights board.
	If the problem persists, replace the display board.
F25 No zero cross signal detected on the upper or lower convection fan and oven lights control board.	Make sure L1 and Neutral are connected to the convection fan and oven lights control board on connector P2 (P2 pin 3= neutral / P2 pin 5 = L1).
	If problem persists, replace the upper and/or lower oven convection fan and oven lights control board.
F26 Missing lower oven select signal on the lower oven convection fan and oven lights control board (double wall oven only).	The lower oven conv. fan and oven lights board is supposed to receive 5V on pin 5 of connector P1. This voltage originates from the display board (connector P2 pin 4), check wiring.
	If problem persists, replace the con. fan and oven lights control board.
F30 Open RTD sensor probe/ wiring problem. Note: EOC may initially display an "F10", thinking a runaway condition exists. **F31** Shorted RTD sensor probe / wiring problem. Note: **F30** or **F31** is displayed when oven is in active mode or an attempt to enter an active mode is made.	Check wiring in probe circuit for possible open condition.
	Check RTD resistance at room temperature (compare to probe resistance chart). If resistance does not match the chart, replace the RTD sensor probe.
	Let the oven cool down and restart the function.
	If the problem persists, replace the display board.
F90 Door motor mechanism failure.	Press any key to clear the error.
	If it does not eliminate the problem, turn off power for 30 seconds, then turn on power.
	Check wiring of Lock Motor, Lock Switch and Door Switch circuits.
	Unplug the lock motor from the board and apply power (L1) directly to the Lock Motor. If the motor does not rotate, replace Lock Motor Assembly.
	Check Lock Switch for proper operation (do they open and close, check with ohmmeter). The Lock Motor may be powered as in above step to open and close Lock Switch. If the Lock Switch is defective, replace Motor Lock Assembly.
	If all above steps fail to correct situation, replace the display board and/or the relay board in the event of a motor that does not rotate.
	If all the above steps fail to correct the situation, replace the display board in the event of a motor that rotates endlessly.

RTD SCALE		
Temp. °F	Temp. °C	Resistance (ohms)
32 ± 1.9	0.0 ± 1.1	1000 ± 4.0
75 ± 2.5	23.9 ± 1.4	1091 ± 5.3
250 ± 4.4	121.1 ± 2.4	1453 ± 8.9
350 ± 5.4	176.7 ± 3.0	1654 ± 10.8
450 ± 6.9	232.2 ± 3.8	1852 ± 13.5
550 ± 8.2	287.8 ± 4.6	2047 ± 15.8
650 ± 9.6	343.3 ± 5.3	2237 ± 18.5
900 ± 13.6	482.2 ± 7.6	2697 ± 24.4

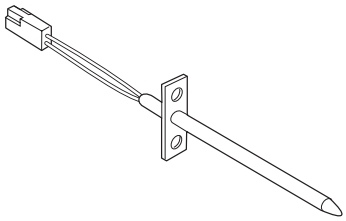
ELECTRICAL RATING			
Kw Rating 240/208V	See Nameplate	Bake Element Wattage	2200W/1653W
Broil Element Wattage	27" Models 3400W/2554W 30" Models 4000W/3004W	Convection Element Wattage	Electrolux models 2500W/1879W Electrolux/ICON Models 1600W/1202W

MEAT PROBE TEMPERATURE VS RESISTANCE TABLE

Temp. Celsius	Temp. Fahreinheit	Probe Resistance
25°C	**77°F**	**49.478 Kohm +/- 7%**
50°C	**122°F**	**17.737 Kohm +/- 4.9%**
80°C	**176°F**	**6.107 Kohm +/- 3.3%**
100°C	**212°F**	**3.264 Kohm +/- 4.6%**



OVEN TEMPERATURE SENSOR



COOLING FAN

The oven control controls the cooling fan. The two relays are used but their output are tied together. Relay 2 will become active during clean cycle at high temperature. The cooling fan is activated during any cooking and cleaning functions.

SINGLE WALL OVEN / UPPER OVEN ON DOUBLE WALL OVEN CIRCUIT ANALYSIS MATRIX

	On Relay Board				On Convection Fan and Oven Lights Control Board		On Display Board	On Relay Board		
	ELEMENTS			Door Motor J3-5				DLB L2 out P1	Cooling Relay 1 J3-7	Cooling Relay 2 speed J3-8
	Bake P9	Broil P7	Conv. P13		Light P2-1	Convection Fan P2-7	Door Switch P8-3 / P8-5			
Bake	X	X	X*			X*		X	X	
Keep Warm	X							X	X	
Broil		X						X	X***	X***
Conv. Bake	X	X	X			X		X	X	
Conv. Roast	X	X	X			X		X	X	
Conv. Broil		X	X			X		X	X	
Clean	X	X	X**			X**		X	X	X
Locking				X						
Locked										
Unlocking				X						
Unlocked										
Light					X					
Door Open					X		X			
Door Closed										
Bread Proof	X							X	X	

LOWER OVEN ON DOUBLE WALL OVEN CIRCUIT ANALYSIS MATRIX

	On Relay Board				On Convection Fan and Oven Lights Control Board		On Display Board	On Relay Board		
	ELEMENTS			Door Motor J4-6				DLB L2 out P2	Cooling Relay 1 J4-8	Cooling Relay 2 J4-9
	Bake P10	Broil P8	Conv. P16		Light P2-1	Convection Fan P2-7	Door Switch P10-3 / P10-6			
Bake	X	X	X*			X*		X	X	
Keep Warm	X							X	X	
Broil		X						X	X***	X***
Conv. Bake	X	X	X			X		X	X	
Conv. Roast	X	X	X			X		X	X	
Conv. Broil		X	X			X		X	X	
Clean	X	X	X**			X**		X	X	X
Locking				X						
Locked										
Unlocking				X						
Unlocked										
Light					X					
Door Open					X					
Door Closed							X			
Bread Proof	X							X	X	

Relay will operate in this condition only.

* Convection element and fan are used for the first rise of temperature.

** Convection element & fan are used during the cleaning cycle on the Electrolux/ICON models.

*** Electrolux models use cooling fan high speed during broil. Electrolux ICON models use cooling fan low speed during broil.

Block Diagram and System Interconnections

Double wall oven is illustrated. For single oven simply omit lower oven components and connections.