

SERVICE DATA SHEET

Electric Wall Oven with Electronic Oven Control

318047455 (1103) Rev. B

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 of some, but not all, of these 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.

GENERAL INFORMATION

GROUNDING INSTRUCTIONS

This oven is equipped with a three prong grounding plug. It must be plugged into the wall oven receptacle that is properly installed and grounded in accordance with the National Electrical Code and local codes and ordinances.

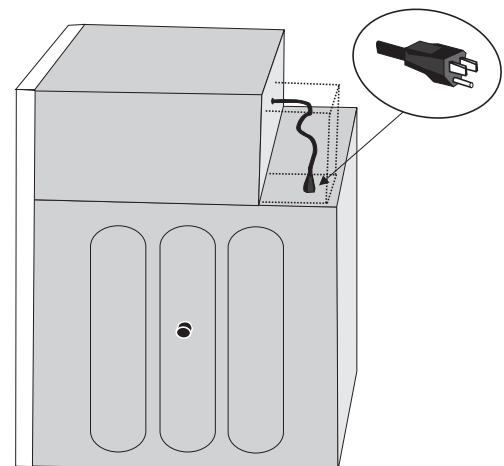
In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current.

WARNING: Improper use of the grounding plug can result in a risk of electric shock.

Electrical Requirements

The electrical requirements are a 120 volt 60 Hz, AC only, a branch circuit protection fuse, 20 amp is provided in series with the ac outlet on top of the wall oven support.

*Note: Branch circuit fuse 20 amp shall be replaced with class cc type.

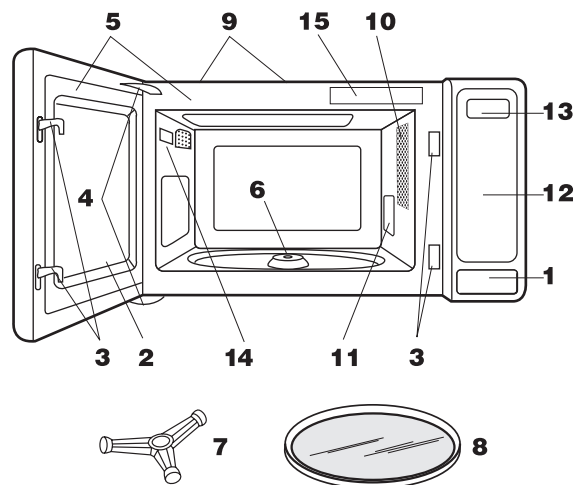


MICROWAVE INFORMATION

SPECIFICATIONS	
ITEM	DESCRIPTION
Power Requirements	120 Volts 13.0 Amperes, 1500 watts 60 Hertz Single phase, 3 wire grounded
Control Complement	Touch Control System Clock (1:00 - 12:59) Timer (0 - 99 min. 99 seconds) Microwave Power for Variable Cooking Repetition Rate; P-HI Full power throughout the cooking time P-90 approx. 90% of Full Power P-80 approx. 80% of Full Power P-70 approx. 70% of Full Power P-60 approx. 60% of Full Power P-50 approx. 50% of Full Power P-40 approx. 40% of Full Power P-30 approx. 30% of Full Power P-20 approx. 20% of Full Power P-10 approx. 10% of Full Power P-0 No power throughout the cooking time Add 30 sec pad, Sensor cooking pads, Number selection pads, Power Level pad, Timer on/off pad, stop/off pad, Start/enter pad, User pref pad, Popcorn pad, Chicken nuggets pad, Baked potato pad, Melt soften pad, Snack menu pad, Veggies pad, Sensor reheat pad, Keep warm pad, Auto reheat pad, Auto defrost pad and Auto cook pad.
Oven Cavity Light	Yes

OVEN DIAGRAM

1. One touch door open button. Push to open door.
2. Microwave Oven door with see-through window.
3. Safety door latches. The Microwave Oven will not operate unless the door is securely closed.
4. Door hinges.
5. Door seals and sealing surfaces.
6. Turntable motor shaft
7. Removable turntable support. Carefully place the turntable support in the center of the Microwave Oven floor.
8. Removable turntable. Place the turntable support securely. The turntable will rotate clockwise or counterclockwise. Only remove for cleaning.
9. Ventilation openings (rear).
10. Microwave Oven light. It will light when Microwave Oven is operating or door is open.
11. Waveguide cover: DO NOT REMOVE.
12. Auto-Touch control panel.
13. Time display: 99 minutes, 99 seconds.
14. Serial plate.
15. Menu Label.



MICROWAVE INFORMATION

TOUCH CONTROL PANEL

NOTE:

The Popcorn, Sensor Reheat & add 30 sec features are disabled after three minutes when the oven is not in use. These features are automatically enabled when the door is opened and closed or the STOP/ CLEAR pad is pressed.

DOOR OPEN MECHANISM

The door is opened by pushing the open button on the control panel, refer to the Figure D-1. When the open button is pushed, the open button pushes up the switch lever, and then the switch lever pushes up the latch head. The latch heads are moved upward and released from latch hook. Now the door will open.

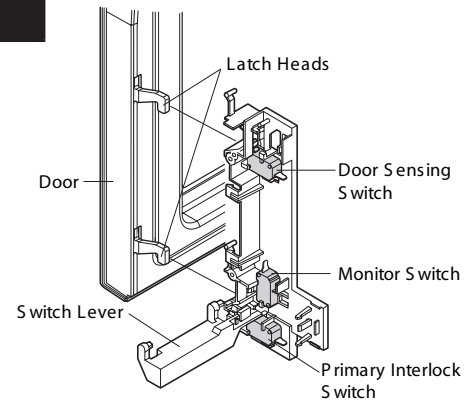


Figure D-1. Door Open Mechanism

DESCRIPTION AND FUNCTION OF COMPONENTS

DOOR SENSING AND PRIMARY INTERLOCK SWITCHES

The primary interlock switch is mounted in the lower position of the latch hook and the door sensing switch in the secondary interlock system is mounted in the upper position of the latch hook. They are activated by the latch heads on the door. When the door is opened, the switches interrupt the power to all high voltage components. A cook cycle cannot take place until the door is firmly closed thereby activating both interlock switches. The secondary interlock system consists of the door sensing switch and secondary interlock relay located on the control circuit board.

MONITOR SWITCH

The monitor switch is activated (the contacts opened) by the latch head on the door while the door is closed. The switch is intended to render the oven inoperative, by means of blowing the monitor fuse, when the contacts of the secondary interlock relay (RY2) and primary interlock switch fail to open when the door is opened.

Functions:

1. When the door is opened, the monitor switch contact close (to the ON condition) due to their being normally closed. At this time the secondary interlock relay (RY2) and primary interlock switch are in the OFF condition (contacts open) due to their being normally open contact switches.
2. As the door goes to a closed position, the monitor switch contacts are first opened and then the door sensing switch and the primary interlock switch contacts close. (On opening the door, each of these switches operate inversely.)
3. If the door is opened, and the secondary interlock relay (RY2) and primary interlock switch contacts fail to open, the monitor fuse blows simultaneously with closing of the monitor switch contacts.

CAUTION: BEFORE REPLACING A BLOWN MONITOR FUSE TEST THE DOOR SENSING SWITCH, SECONDARY INTERLOCK RELAY (RY2), RELAY (RY1), PRIMARY INTERLOCK SWITCH AND MONITOR SWITCH FOR PROPER OPERATION. (REFER TO CHAPTER "TEST PROCEDURE").

NOTE: MONITOR FUSE AND MONITOR SWITCH ARE REPLACED AS AN ASSEMBLY.

MICROWAVE INFORMATION

DESCRIPTION AND FUNCTION OF COMPONENTS

TURNTABLE MOTOR

The turntable motor rotates the turntable located on the bottom of the oven cavity, so that the foods on the turntable cook evenly during cooking. The turntable may turn in either direction.

COOLING FAN MOTOR

The cooling fan motor drives a blade which draws external cool air. This cool air is directed through the air vanes surrounding the magnetron and cools the magnetron. This air is channeled through the oven cavity to remove steam and vapors given off from the heating foods. It is then exhausted through the exhausting air vents at the oven cavity.

CAVITY TEMPERATURE FUSE

The cavity temperature fuse located on the top of the oven cavity, is designed to prevent damage to the oven by fire. If the food load is overcooked, by either error in cook time or defect in the control unit, the cavity temperature fuse will open.

Under normal operation, the cavity temperature fuse remains closed. However, when abnormally high temperatures are reached within the oven cavity, the cavity temperature fuse will open at 302°F(150°C) causing the oven to shut down.

NOTE: This is fuse. It does not reset.

MONITOR FUSE

1. The monitor fuse blows when the contacts (COM-NO) of the primary interlock relay (RY2) and secondary interlock switch remain closed with the oven door open and when the monitor switch closes.
2. If the wire harness or electrical components are short-circuited, this monitor fuse blows to prevent an electric shock or fire hazard.

MAGNETRON TEMPERATURE FUSE

The magnetron temperature fuse located near the magnetron is designed to prevent damage to the magnetron if an over heated condition develops in the tube due to cooling fan failure, obstructed air guide, dirty or blocked air intake, etc.

Under normal operation, the magnetron temperature fuse remains closed. However, when abnormally high temperatures are reached within the magnetron, the magnetron temperature fuse will open at 302°F(150°C) causing the oven to shut down.

NOTE: This is a fuse. It does not reset.

MICROWAVE INFORMATION

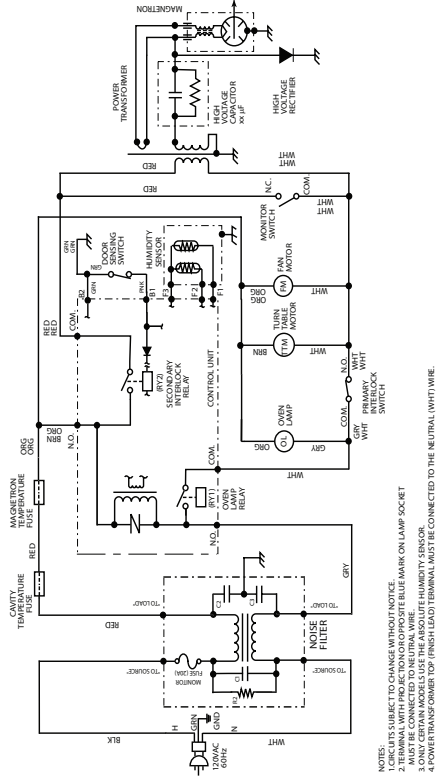
WIRING DIAGRAM

Note: * Indicates component

SCHEMATIC

NOTE: CONDITION OF OVEN

1. Door Closed
2. Clock Appears on Display

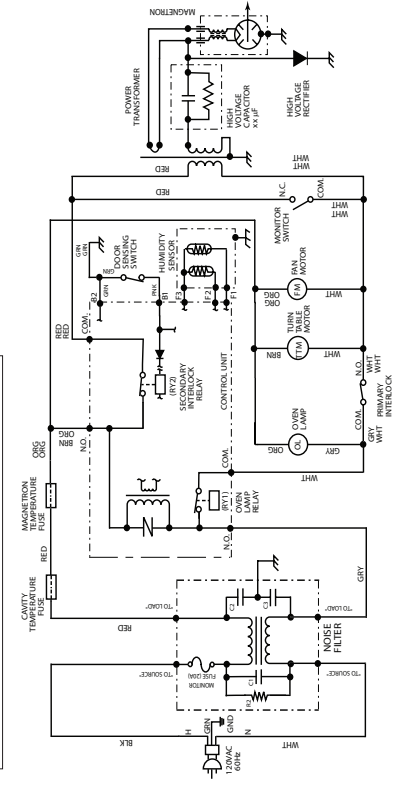


- NOTE:
1. CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE.
 2. TERMINAL WITH PROJECTION OR OPPOSITE BLUE MARK ON LAMP SOCKET
 3. ONLY CERTAIN MODELS USE THE ABSOLUTE HUMIDITY SENSOR.
 4. POWER TRANSFORMER TOP (FINISH LEAD) TERMINAL MUST BE CONNECTED TO THE NEUTRAL (WHT) WIRE.

Figure O-1 Oven Schematic - Off Condition

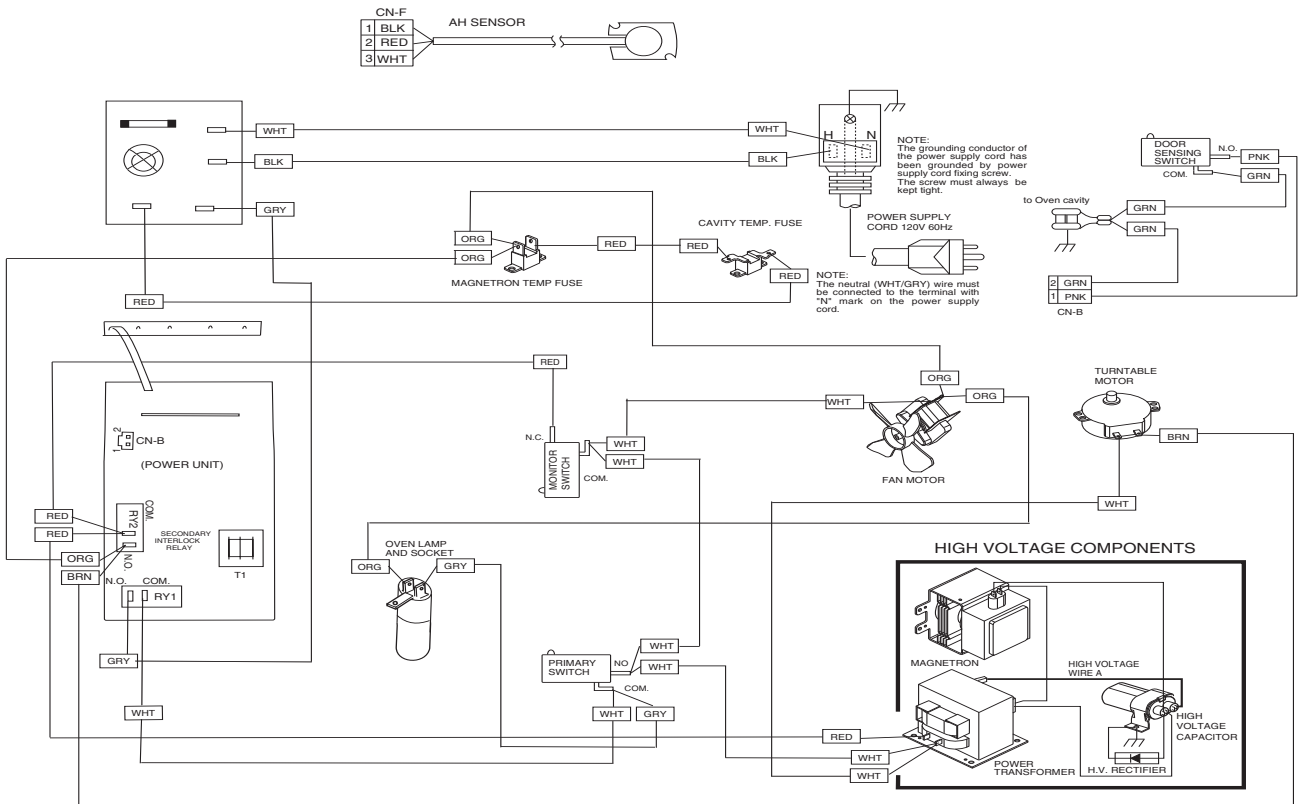
SCHEMATIC

- #### NOTE: CONDITION OF OVEN
1. DOOR CLOSED
 2. COOKING TIME PROGRAMMED
 3. VARIABLE COOKING CONTROL "HIGH"
 4. "START" PAD TOUCHED



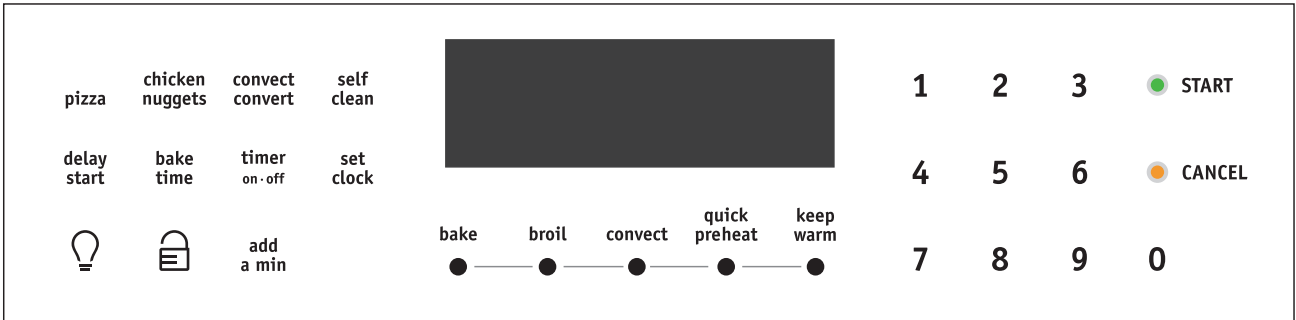
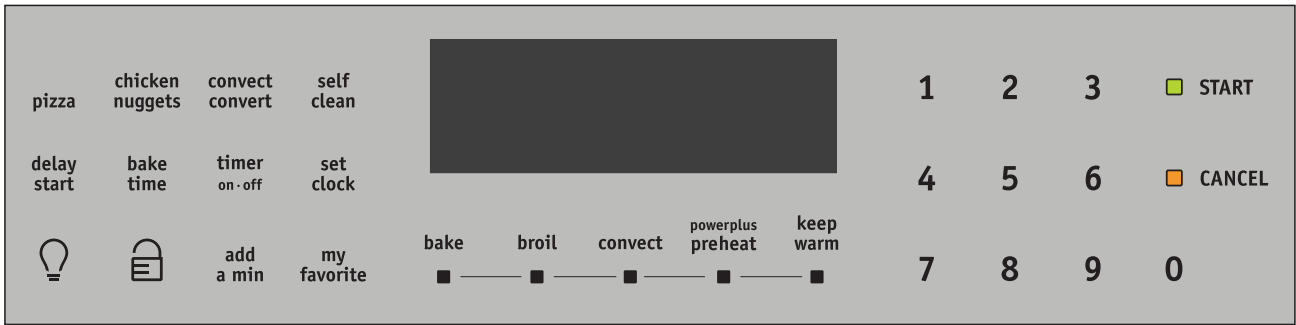
- NOTE:
1. CIRCUITS SUBJECT TO CHANGE WITHOUT NOTICE.
 2. TERMINAL WITH PROJECTION OR OPPOSITE BLUE MARK ON LAMP SOCKET
 3. MUST BE CONNECTED TO NEUTRAL WIRE.
 4. POWER TRANSFORMER TOP (FINISH LEAD) TERMINAL MUST BE CONNECTED TO THE NEUTRAL (WHT) WIRE.

Figure O-2 Oven Schematic - Cooking Condition

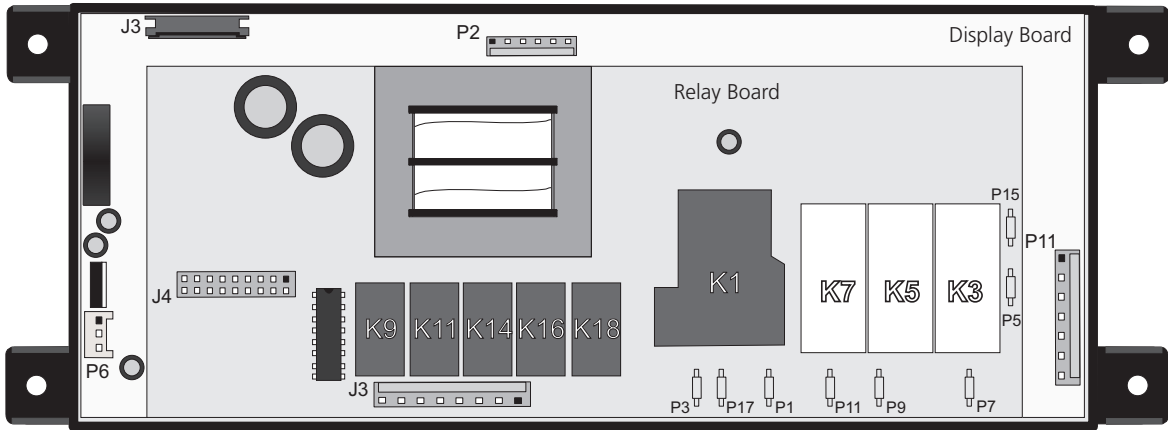


LOWER OVEN INFORMATION

ILLUSTRATION OF OVEN CONTROLS



ELECTRONIC OVEN CONTROL (EOC)



Relay Board Legend:

- K1. Double Line Break Relay
- K3. Broil Relay
- K5. Bake Relay
- K7. Convection Element Relay
- K9. Convection Fan Relay
- K11. Motor Door Latch Relay
- K14. Oven Light Relay
- K16. Cooling Fan Low Speed Relay
- K18. Cooling Fan High Speed Relay
- J3. Relay Outputs : Convection Fan, Motor Door Latch, Oven Light, Cooling Fan. Power Input (L1 and Neutral).
- J4. Display Board to Relay Board Connections

- P1. L2 Out
- P3. L2 In
- P5. L1 Input
- P7. Broil Connector
- P9. Bake Connector
- P11. Convection Element Connector
- P15. L1 Input
- P17. L2 In (not used)

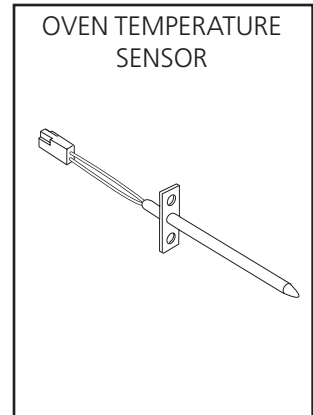
Display Board Legend:

- J3. Keyboard Connector
- P2. Micro Programming Header (not used)
- P6. Not used
- P11. Door switch, Motor Door Latch Switch and Oven Probe Inputs.

LOWER OVEN INFORMATION

ELECTRICAL RATING		
	27" Model with True Hidden Bake	30" Model with True Hidden Bake
Bake Element Wattage	1450W 1089W	2200W 1652W
Broil Element Wattage	3400W 2553W	4000W 3004W
Conv. Element Wattage	350W	350W or 500W♦
KW Rating 240/208	See serial plate	

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



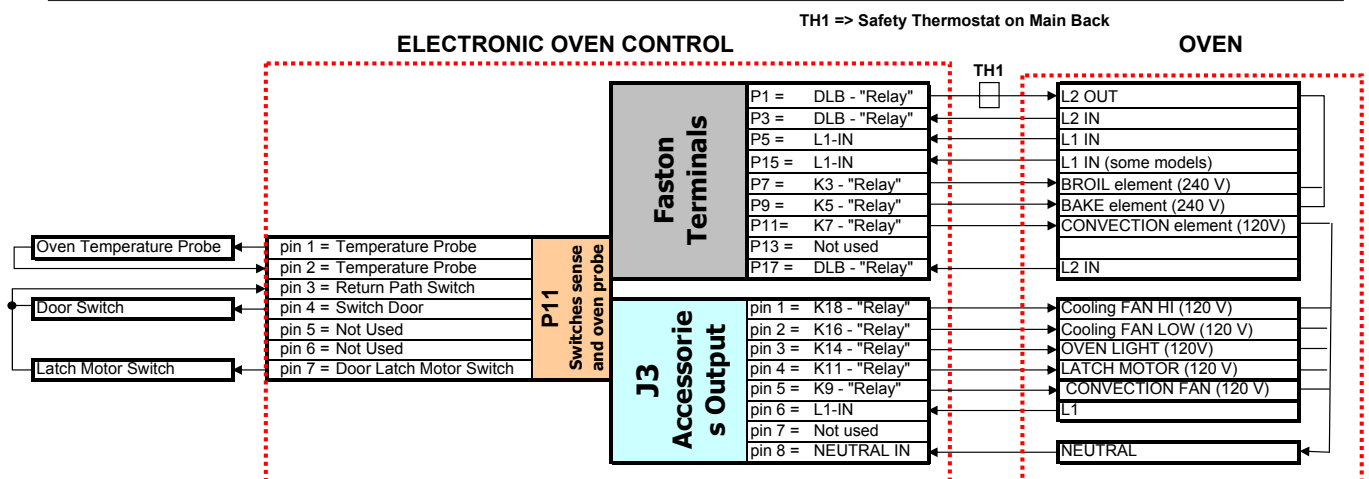
♦ Models with dual convection fans.

	OVEN CIRCUIT ANALYSIS MATRIX									
	On Relay Board									On Display Board
	ELEMENTS			Oven Light	Conv. Fan	Door Motor	Cooling Fan Low Speed	Cooling Fan High Speed	DLB L2 Out	
	Bake P9	Broil P7	Conv. P11	J3-3	J3-5	J3-4	J3-2	J3-1	P1	Door Switch P11-4 / P11-3
Preheat	X	X	X		X		X	X	X	
Bake	X	X	X*		X*		X	X	X	
Broil		X					X	X	X	
Convection Bake	X	X	X		X		X	X	X	
Convection Roast	X	X	X		X		X	X	X	
Convection Broil		X			X		X	X	X	
Clean	X	X					X	X	X	
Locking / Unlocking						X				
Light				X						
Door Open				X						
Door Closed										X

Relay will operate in this condition only

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

OVEN BLOCK DIAGRAM



LOWER OVEN INFORMATION

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.

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 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 the <i>EOC</i> .
F11	Shorted Key: a key has been detected as pressed (for a long period) will be considered a shorted key alarm and will terminate all oven activity.	- Press Clear key. - If fault returns, replace the keyboard (membrane). - If the problem persists, replace the <i>EOC</i> .
F13	Control's internal checksum may have become corrupted.	- Press CLEAR key. - Disconnect power, wait 10 seconds and reapply power. If fault returns upon power-up, replace <i>EOC</i> .
F14	Misconnected keyboard cable.	- Disconnect power. Verify the flat cable connection between the keyboard membrane and the <i>EOC</i> on J2 and J3. - If the problem persists, replace the <i>EOC</i> . - If the connection is good but the problem persists, replace the keyboard (membrane switch).
F15	Controller self check failed.	- Replace the <i>EOC</i> .
F30	Open RTD sensor probe/ wiring problem. Note: <i>EOC</i> may initially display an "F10", thinking a runaway condition exists.	- 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.
F31	Shorted RTD sensor probe / wiring problem.	- Let the oven cool down and restart the function - If the problem persists, replace the <i>EOC</i> .
F62	Missing zero-cross signal.	- Replace the <i>EOC</i> .
F90	Door motor mechanism failure. The controller does not see the motor rotating.	- Press CLEAR key. - If CLEAR key does not eliminate 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 <i>EOC</i> in the event of a motor that does not rotate.
F95	Door motor mechanism failure. The motor does not stop rotating.	- Press STOP key. - Turn power off for 30 seconds then turn power on. If the door motor never stops rotating, or if the F95 error comes back again, verify wiring of the motor. If wiring is good, replace the <i>EOC</i> . - If the problem persists, replace the motor door latch assembly.

2 SPEEDS COOLING FAN

The *EOC* controls the speed of the cooling fan. The cooling fan is activated at low speed during any cooking function and will remain on until the oven is cooled down. The high speed is activated during any cooking features and during clean cycles only when the temperature is above approximately 475°F.