
SERVICE DATA SHEET

318047401 (9704) Rev. D

Electric Wall Ovens with Electronic Oven Control (ERC III - 318010700 & 318010900)

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 some limited examples of safe 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.
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 uninsulated 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.

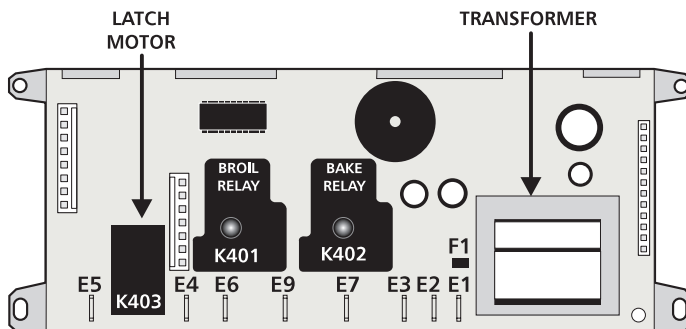
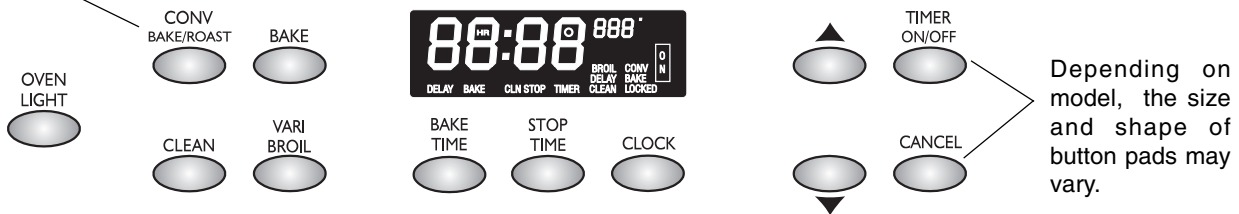
CONVECTION ELECTRONIC OVEN CONTROL

In models containing a convection oven, the electronic oven control is mounted as follows:

1. There is no Preheat pad on this control. The pad in the upper left hand corner has now become the CONV. BAKE/ROAST pad.
2. A relay is mounted beside the control which operates the convection fan in some models.
3. Another relay is mounted beside the control, which operates the oven lamp.
4. There are only two fault codes.
5. Electronic oven controls that have a PREHEAT pad instead of a CONV. BAKE/ROAST pad, do not require an additional external relay for the PREHEAT function.

The convection EOC's are not field repairable. Only temperature settings can be changed. See "Oven Calibration".

CONV. BAKE/ROAST is replaced by PREHEAT on some models



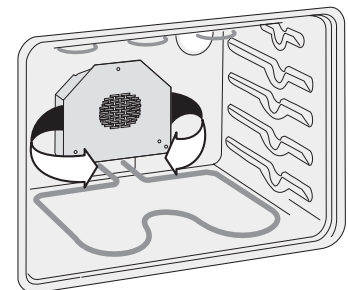
This relay operates the oven lamp.



On convection models, an additional relay is mounted outside the control to operate the convection fan.

CONVECTION MODE

The convection oven uses the addition of a fan to move the heated air already in the oven. Moving the heated air helps to destratify the heat and cause uniform heat distribution. Cooking times can be reduced by as much as 30%. The air is drawn in through a fan shroud located on the rear wall of the oven. It is then discharged around the outer edges of this shroud. The air is circulated around the food and then enters the shroud again. As with conventional electric ranges, there is still an oven vent which discharges through the top at the control panel.



To set the control in convection mode, follow these two steps:

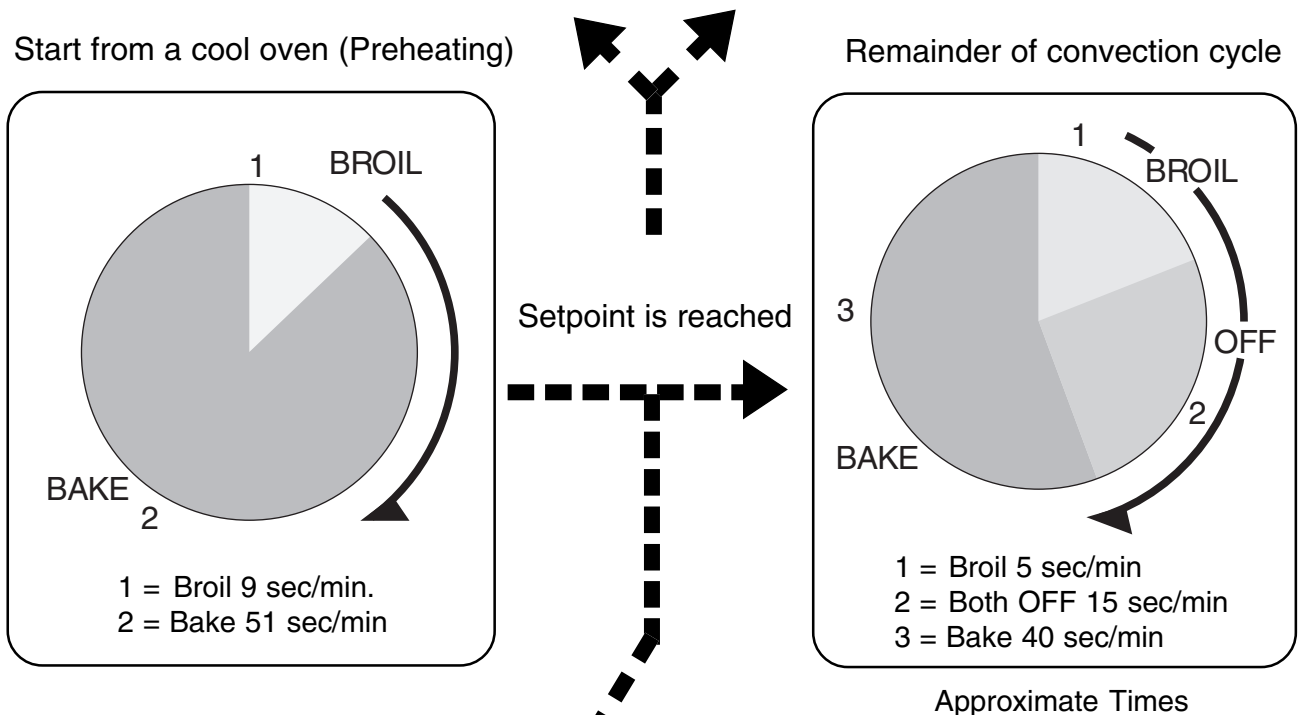
1. Press the CONV. BAKE/ROAST pad.
2. Press the UP or DOWN arrow pads to select the desired temperature.
The oven will automatically start and the fan will begin to run. To cancel the convection baking function, press the CANCEL pad.

NOTE: THE FAN RUNS CONTINUOUSLY WHILE IN THE CONVECTION MODE. THE FAN WILL STOP IF THE DOOR IS OPENED WHILE CONVECTION BAKING/ROASTING. THE HEATING ELEMENTS WILL CONTINUE TO OPERATE WITH THE DOOR OPEN.

CONVECTION CYCLING

When the control is set to the CONV. BAKE/ROAST function, the fan immediately comes on. The control then energizes the broil element for 9 seconds and switches to the bake element for 51 seconds. This switching continues until the oven convection temperature setting (setpoint) is reached. At this point, the control modifies the timing for the bake and broil elements to achieve maximum performance.

For the first 5 seconds of every minute after the setpoint is reached, the broil element is energized. For the next 15 seconds both elements are turned off. The bake element is then turned on for the remaining 40 seconds. This cycle is repeated for the duration of the cooking period.



CONVECTION MODE OVEN TEMPERATURES

Because heat is more evenly distributed during convection temperatures, food can be cooked at lower temperatures. In order to allow the consumer to bake per their existing methods using regular baking recipes, there is an offset temperature of -25°F in the programming of the control. This means that when the consumer sets the control for 375°F, the actual oven temperature is cycling at 350°F.

MODELS WITHOUT CONVECTION

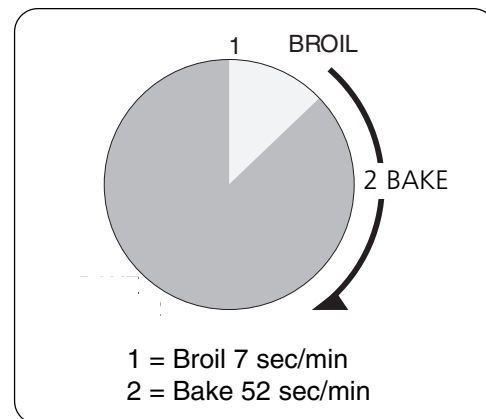
The CONV. BAKE/ROAST pad is replaced by a PREHEAT pad.

NORMAL PREHEAT MODE

During a normal preheat mode, the oven uses the broil element 100% for a maximum period of 10 minutes, or until set Bake temperature is reached. Then the oven will operate in the normal bake mode.

NORMAL BAKE MODE

During a normal bake mode, the oven uses the broil element by cycling the broil element for given periods of time (7 sec/min). After this time, the broil element is shut off, and the bake element is on the remainder of the minute. Both elements use full power when they are on, but they are never on at the same time.



FAN BLADE

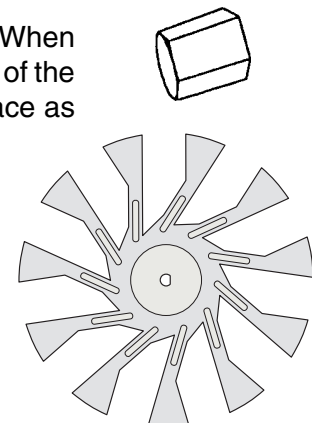
The fan blade is mounted in the rear of the oven and has a "D" shaped mounting hole. Only minimum clearance exists between the oven back, fan blade, and fan shroud. Be careful not to bend blade when removing or installing.

Access to the fan blade is gained by removing the fan shroud, held in place by three screws, from the inside of the oven.

The fan blade is held in place with a **hex nut that has left handed threads**. When removing this nut, gently hold the fan blade, and turn the nut clockwise. If one of the blades becomes deformed, it may be bent back into shape using a flat surface as a reference.

A flat washer is located on the motor shaft between the snap ring on the shaft and the fan blade.

NOTE: IF THE FAN BLADE IS BENT AND MOTOR VIBRATIONS INCREASE, THE NOISE MADE BY THE FAN WILL BE GREATER.



FAN RELAY

The fan motor runs continuously while in the convection mode unless the door is opened. If the fan does not operate, check the following:

- Display illuminated on the electronic control.
- 240 Volts available at fan motor when convection relay is closed and door is closed.
- Fan motor coil resistance 55 ohms \pm 10%.
- Voltage input to fan relay coil during convection bake with door closed.
- Door/light switch.

FAULT CODES

F1 - An error has been detected in the control circuit.
F3 - An error has occurred in the sensor circuit.

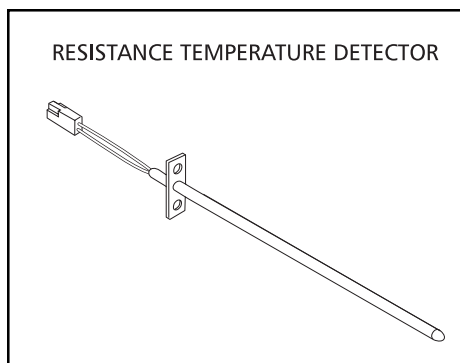
See Section F1 below.
See Section F3 below.

Section F1

The control has detected a problem with either the control itself or an external fault associated with the latch motor switches. Check the individual latch motor switches. With the unit in either the fully locked or fully unlocked position, only one of the switches should be closed. If both switches are closed, replace the latch motor assembly, or replace the control.

Section F3

The control has detected an open or shorted sensor circuit, above 3000 ohms or below 500 ohms. Using the chart below, allow the sensor to cool to room temperature (75°F/24°C) and check the resistance with an ohmmeter. If the resistance is acceptable, check the wiring and connectors between the sensor and electronic control.



RTD SCALE	
Temperature (°F)	Resistance (Ohms)
32	1000 \pm 4
75	1091 \pm 5
212	1375 \pm 7
250	1453 \pm 9
350	1654 \pm 11

OVEN CALIBRATION

Set EOC for conventional bake at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press CANCEL to end bake mode. Touch the BAKE pad. Set temperature to maximum (550°F). Quickly (within two seconds), press and hold the BAKE pad (for about 5 seconds) until the special two digit display appears. Release the BAKE pad.

NOTE: The display indicates the offset temperature from original factory setting. Original setting will read "00".

The temperature can now be adjusted up or down 35°F, in 5°F increments, by pressing the UP or DOWN arrow pad. Press the pad until the desired amount of offset appears in the display. A minus sign (-) will appear before the number to indicate the oven will be cooler by the displayed number of degrees. Press CANCEL to go back to the time of day display.

NOTE: CHANGING CALIBRATION EFFECTS BOTH CONVENTIONAL AND CONVECTION MODES.

SPECIAL FEATURES

Some models with ERC III timers have the following features:

Lockout (Child Resistant Lock)

Lockout is an added feature that allows the oven controls to be locked when the wall oven will not be used for an extended period of time. This feature makes the oven child-resistant and allows cleaning of the control panel without accidentally activating the oven.

Lockout can be set or cancelled by pressing the BAKE TIME and STOP TIME pads at the same time. During this mode, depressing any button results in the word "OFF" being displayed for 2 seconds.

While in Lockout, the display will show the current time of day.

Temperature Conversion

Electronic oven controls are set to operate in °F. To change the temperature to °C or from °C to °F

1. Push the CONV. BAKE/ROAST or PREHEAT pad and set the oven temperature to 500°F/260°C or more using the UP or DOWN arrow pad.
2. Push the CONV. BAKE/ROAST or PREHEAT pad within the next 6 seconds for 3-4 seconds. A beep sounds and a number appears in red to the right of the display. For the conversion, "1" must be displayed. If another number is displayed, push the CONV. BAKE/ROAST or PREHEAT pad and select "1".
3. Push the UP or DOWN arrow pad to change °F to °C or °C to °F in the display.
4. Push the CANCEL pad to confirm your choice.

12 Hour Shut-off

For energy conservation, the electronic oven control has been set at the factory to shut off automatically after a continuous 12 hour operation of the oven (except during timed bake). To cancel this setting:

1. Push the CONV. BAKE/ROAST or PREHEAT pad and set the oven temperature to 500°F/260°C or more using the UP or DOWN arrow pad.
2. Push the CONV. BAKE/ROAST or PREHEAT pad within the next 6 seconds for 3-4 seconds. A beep sounds and a number appears in red to the right of the display. For the conversion, "3" must be displayed. If another number is displayed, push the CONV. BAKE/ROAST or PREHEAT pad and select "3"
3. Push the UP or DOWN arrow pad to change from 12 hour to 9999 in the display, for no 12 hour shut-off.
4. Push the CANCEL pad to confirm your choice.

Circuit analysis matrix								
	EOC relays			Convection Relay Fan	Latch Switches		Door Switch	Relay Oven Lamp
	E1 to E7	E6 to E9	E4 to E5	C to NO	Lock Sw A	Lock Sw B	COM to NO	C to NO
BAKE/Time Bake	X	X*				X		
Convection Bake	X	X*		X		X		
Broil		X				X		
Clean	X				X			
Unlocked						X		
Locking			X					
Locked					X			
Unlocking			X					
Door Open								X
Door Closed								
Preheat	X	X*				X		

X = Check Listed Circuits

* = Denotes top heat

ELECTRICAL RATING				
	Wall Oven 24"	Wall Oven 27" 18.5" Cavity	Wall oven 27" 20" Cavity	Wall oven 30"
KW rating 240/208	3.5/2.6	3.5/2.6	3.5/2.6	3.1/2.3
Bake Element Wattage	2100W / 1577W	2100W / 1577W	2300W / 1727W	3000W / 2254W
Broil Element Wattage	3400W / 2554W	3400W / 2554W	3400W / 2554W	2750W / 2065W

