

SERVICE DATA SHEET

Electric Ranges with ES 300 & 305 Electronic Oven Controls

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.

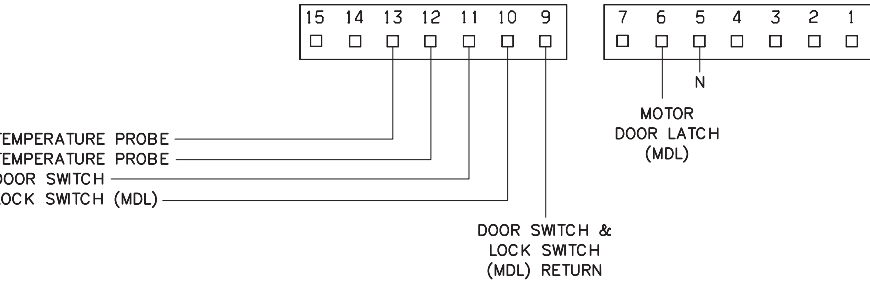
Before servicing or moving an appliance remove power cord from electrical outlet, trip circuit breaker to OFF, or remove fuse.
2.

Never interfere with the proper installation of any safety device.
3.

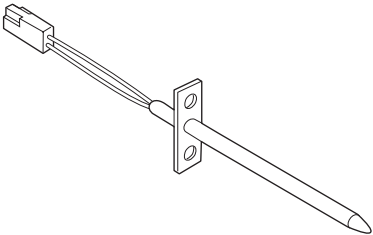
GROUNDING: The standard color coding for safety ground wires is *GREEN* or *GREEN WITH YELLOW STRIPES*. Ground leads are not to be used as current carrying conductors. **It is extremely important that the service technician reestablish all safety grounds prior to completion of service. Failure to do so will create a potential safety hazard.**
4.

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.

E.O.C. CONTROL CONNECTIONS (P5)



RESISTANCE TEMPERATURE DETECTOR



IMPORTANT

DO NOT REMOVE THIS BAG OR DESTROY THE CONTENTS

WIRING DIAGRAMS AND SERVICE INFORMATION ENCLOSED

REPLACE CONTENTS IN BAG

p/n 316441455 (0512)

OVEN CALIBRATION

Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **STOP/CLEAR** to end bake mode.

TEMPERATURE ADJUSTMENT

1.

Set EOC to bake at 550°F.
2.

Within 5 seconds of setting 550°F, press and hold the bake pad for approximately 15 seconds until a single beep is heard (longer may cause **F11** shorted keypad alarm).
3.

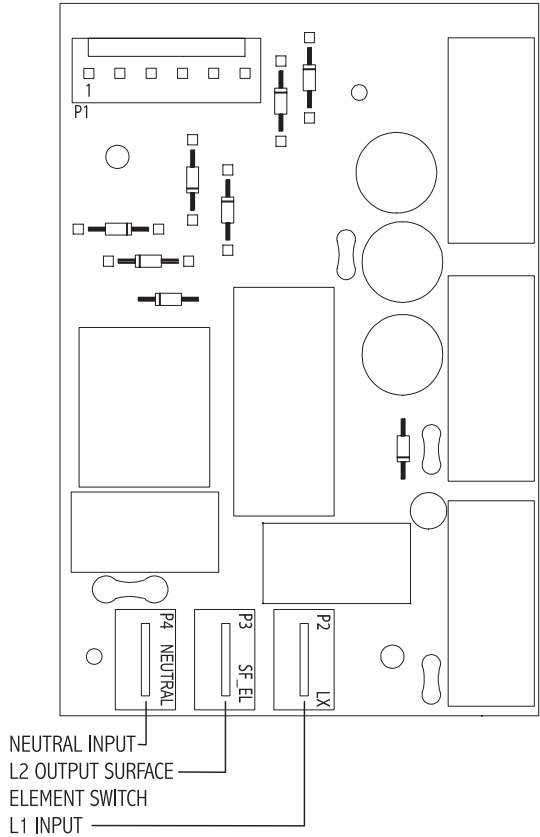
Calibration offset should appear in the display.
4.

Use the slew keys to adjust the oven temperature up or down 35°F in 5°F increments.
5.

Once the desired (-35° to 35°) offset has been applied, press **STOP/CLEAR**.

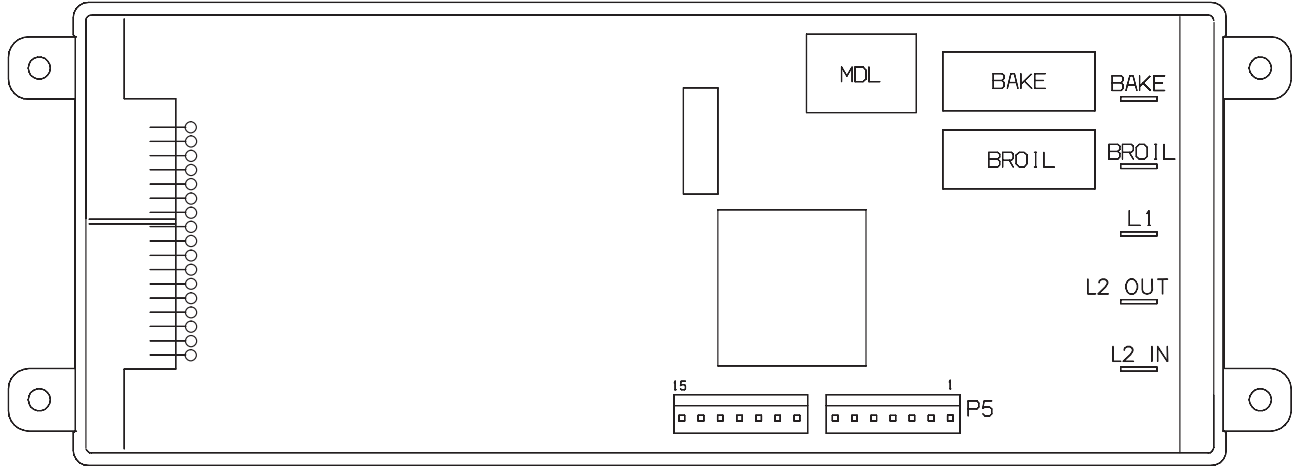
Note: Changing calibration affects normal Bake mode. The adjustments made will not change the Self-Cleaning cycle temperature.

SIMMER SELECT PCB (some models)



RTD SCALE	
Temperature (°F)	Resistance (ohms)
32 ± 1.9	1000 ± 4.0
75 ± 2.5	1091 ± 5.3
250 ± 4.4	1453 ± 8.9
350 ± 5.4	1654 ± 10.8
450 ± 6.9	1852 ± 13.5
550 ± 8.2	2047 ± 15.8
650 ± 9.6	2237 ± 18.5
900 ± 13.6	2697 ± 24.4

ELECTRONIC OVEN CONTROL (REAR VIEW)



ELECTRONIC OVEN CONTROL FAULT CODE DESCRIPTIONS

Fault Code	Likely Failure Condition/Cause	Suggested Corrective Action
F10	Runaway Temperature.	1. (F10 only) Check RTD Sensor Probe & replace if necessary. If oven is overheating, disconnect power. If oven continues to overheat when the power is reapplied, replace EOC. Severe overheating may require the entire oven to be replaced should damage be extensive. 2. (F11, 12 & 13) Disconnect power, wait 30 seconds and reapply power. 3. (F11, 12 & 13) If fault returns upon power-up, replace EOC.
F11	Shorted Keypad.	
F12	Bad Micro Identification.	
F13	Bad EEPROM Identification/Checksum error.	
F30	Open probe connection.	1. (F30 or F31) Check resistance at room temperature & compare to RTD Sensor resistance chart. If resistance does not match the RTD chart replace RTD Sensor Probe. Check Sensor wiring harness between EOC & Sensor Probe connector. 2. (F30 or F31) Check resistance at room temperature, if less than 500 ohms, replace RTD Sensor Probe. Check for shorted Sensor Probe harness between EOC & Probe connector.
F31	Shorted Probe connection.	
F90	Maximum oven door unlock time exceeded.	1. (F90, 91, 92, 93 & 94) Check the wiring between EOC & Lock Motor Micro Switch. 2. (F90, 91, 92, 93 & 94) Replace the Motor Door Latch assembly if necessary. 3. (F90, 91, 92, 93 & 94) Check for binding of the Latch Cam, Lock Motor Rod & Lock Motor Cam. 4. (F90, 91, 92, 93 & 94) Check to see if Lock Motor Coil is open. If open, replace Lock Motor Assembly. 5. (F90, 91, 92, 93 & 94) Lock Motor continuously runs - if Micro Switch is open, replace Lock Motor Assembly. 6. (F92, 93 & 94) Check oven door Light Switch - if open, replace Switch. 7. If all situations above do not solve problem, replace EOC.
F91	Maximum oven door unlock attempts exceeded.	
F92	Maximum oven door open time exceeded.	
F93	Maximum oven door lock time exceeded.	
F94	Maximum oven door lock attempts exceeded.	

CIRCUIT ANALYSIS MATRIX

	EOC Relays			Door Switch COM-NO	Warmer Drawer Lock Switch (Motor Door Latch)
	L1 to Bake	L1 to Broil	L1 to Motor Door Latch		
Bake/Time Bake	X	X*			X
Broil		X			X
Clean	X				
Unlocked					X
Locking			X		X
Locked					
Unlocking			X		X
Door Open					
Door Closed				X	

Note: X=Check listed circuits. *=Alternates with Bake element.

WIRE	AWG	TEMP °C	UL STYLE
10	16	200	3122
9	18	200	3122
8	20	200	3122
7	12	150	3321
6	14	150	3321
5	18	150	3321
4	20	150	3321
3	14	105	1015
2	16	105	1015
1	20	105	1015

RIGHT FRONT SURFACE UNIT SWITCH
P2 4a 4

RIGHT FRONT SURFACE UNIT
OUTER COIL
INNER COIL

TEMPERATURE LIMIT SWITCH
1A 2A

SURFACE UNIT SWITCH
2 P1

TEMPERATURE LIMIT SWITCH
2A 1A

SURFACE UNIT (1 SHOWN, 3 REQ'D)

SURFACE UNIT SWITCH
H2 L2

SURFACE UNIT SWITCH (1 SHOWN, 3 REQ'D)
L1 P H1

SURFACE INDICATOR

HOT SURFACE SENSE SWITCH (1 SHOWN, 4 REQUIRED)
1B 2B

HOT SURFACE INDICATOR

WARMING ZONE SWITCH
L1 P H1

WARMING ZONE

TEMPERATURE LIMIT SWITCH
1A 2A

WARMING ZONE SWITCH
H2 L2

HOT SURFACE SENSE SWITCH
1B 2B

WARMING ZONE INDICATOR

ELECTRONIC OVEN CONTROL
BK
BRL
L1
L2 OUT
L2 IN

15 1

TEMPERATURE PROBE
PRB CON

LOCK SWITCH
COM NO

DOOR SWITCH
COM NO NC

BROIL ELEMENT
BAKE ELEMENT

LOCK MOTOR

* OVEN LAMP

* OVEN LAMP SWITCH

NOTES:

- CIRCUIT SHOWN WITH ALL CONTROLS SET TO OFF.
OVEN DOOR CLOSED AND UNLOCKED.
- COMPONENTS WITH * DO NOT APPEAR ON ALL MODELS.

316441455