

SERVICE DATA SHEET - Electric Range with ES 1030 Electronic Oven Control

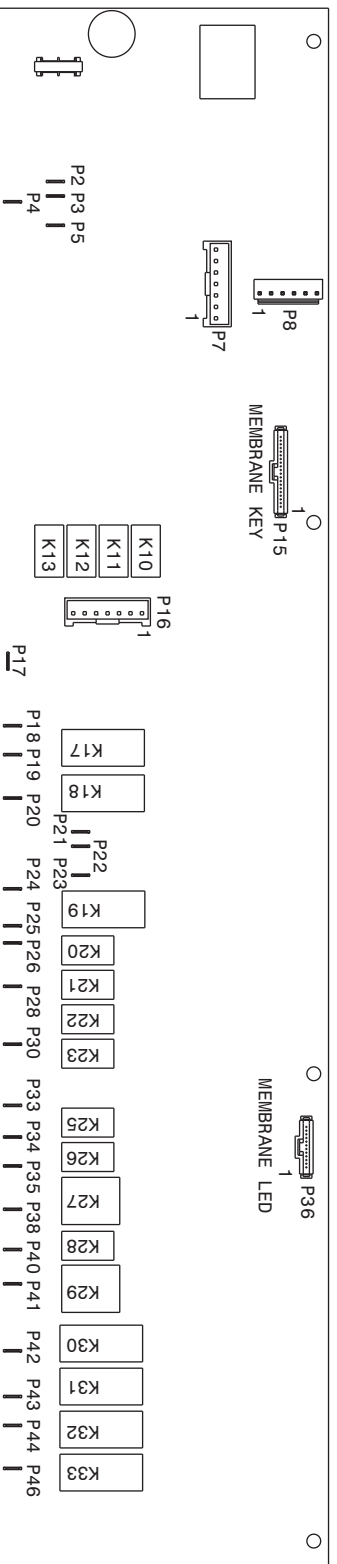
NOTICE - This service data sheet is intended for use by persons having electrical and mechanical training and a level of knowledge of these subjects generally considered acceptable in the appliance repair trade. The manufacturer cannot be responsible, nor assume any liability for injury or damage of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

Electronic oven control (EOC) & jumper connection locations



- 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.

Oven Calibration

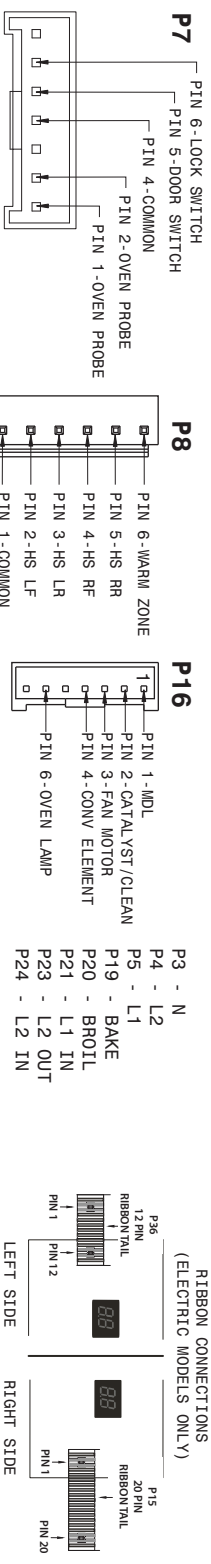
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **cancel** key to end bake mode.

Temperature Adjustment

1. While in a non-cooking mode, press and hold the **bake** key for 6 seconds.
2. The current calibration offset (temperature adjustment) should appear in the temperature display.
3. Use the number keypad (0-9) to enter the desired amount of adjustment (up to 35°F).
4. Press the **bake** key to change the sign of the adjustment to a (-) if necessary. A positive adjustment will not display a sign.
5. Once the desired adjustment (-35° to 35° F) has been entered, press the **start** key to accept the change or the **cancel** key to reject the change.

NOTE: Changing calibration affects all baking modes. The adjustments made will not change the self-cleaning temperature.

EOC Jumper connections



CONNECTOR-PIN #	P15-1	P15-2	P15-3	P15-4	P15-5	P15-6	P15-8	P15-9	P15-10	P15-18	P15-19	P36-1	P36-2	P36-3	P36-4	P36-5	P36-6	P36-7	P36-8	
P15-7	CONNECT LOOP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P15-11	1 BAKE	CONV CONVERT	CONV	COOK TIME	CONTROL LOCK	9	-	WZ	ON/OFF	-	-	-	-	-	-	-	-	-	-	-
P15-12	4 BROIL	MY FAVORITES	CONV	END TIME	COOKTOP LOCK	6	-	WZ	ON/OFF	-	-	-	-	-	-	-	-	-	-	-
P15-13	7 SLOW COOK	CONV COOK	CONV ROAST	SET CLOCK	OVEN LIGHT	3	-	LF	ON/OFF	-	-	-	-	-	-	-	-	-	-	-
P15-14	START	CONV BAKE	KEEP WARM	TIMER ON/OFF	0	2	-	RR	SIZE	-	-	-	-	-	-	-	-	-	-	-
P15-15	CANCEL	CONV BROIL	CONV PREHEAT	SELF CLEAN	8	5	CONNECT LOOP	RR	SIZE	-	-	-	-	-	-	-	-	-	-	-
P15-16	LF ON/OFF	LF LOW	LF MED	LF HIGH	LR ON/OFF	LR LOW	-	LR	SIZE	-	-	-	-	-	-	-	-	-	-	-
P15-17	RF ON/OFF	RF LOW	RF MED	RF HIGH	RR ON/OFF	RR LOW	-	RR	SIZE	-	-	-	-	-	-	-	-	-	-	-
P15-20	-	-	-	-	CONNECT LOOP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P36-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P36-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P36-11 (UNUSED)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P36-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

IMPORTANT

DO NOT REMOVE THIS BAG OR DESTROY THE CONTENTS

**WIRING DIAGRAMS AND SERVICE INFORMATION ENCLOSED
REPLACE CONTENTS IN BAG**

PN316904479 EN (1206)

Electronic Oven Control Fault Code Descriptions

Fault Code	Likely failure condition/cause	Suggested Corrective Action
F10	Runaway temperature. Oven heats when no cook cycle is programmed.	If Oven is cold: 1. If fault code is present with cold oven, test oven temperature sensor probe circuit resistance. Use RTD scale found in the tech sheet. 2. Replace probe or repair wiring connections if defective. 3. If temperature sensor probe circuit is good but fault code remains when oven is cold replace the EOC. If Oven is overheating: 1. If oven is severely overheating/heating when no cook cycle is programmed, test oven temperature sensor probe circuit resistance using the RTD scale found in the service tech sheet. Also verify that the temperature sensor probe is properly installed in the oven cavity. 2. Disconnect power from the range, wait 30 seconds and reapply power. If oven continues to heat when the power is reapplied, replace the EOC. NOTE: Severe overheating may require the entire oven to be replaced should damage be extensive.
F11	Shorted keypad or selector switch.	1. Reset power supply to range - Disconnect power, wait 30 seconds and reapply power. 2. Check/reseat ribbon harness connections between touch panel and EOC. 3. Test keypad circuits using test matrix. Replace touch panel if defective. 4. If keyboard circuits check correctly, replace the EOC.
F12	EOC Internal software error or failure.	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F14	Keyboard fail failure.	1. Check/reseat ribbon harness connections between keyboard touch panel and EOC. 2. Test keyboard circuits using test matrix (below). Replace touch panel if defective. 3. If keyboard circuits check correctly, replace EOC.
F17	EOC Internal hardware error	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F18	of failure.	Disconnect power, wait 30 seconds and reapply power. If fault returns when power is reapplied, replace EOC.
F30	Open oven sensor probe circuit.	1. (F30) Check resistance at room temperature and compare to RTD Sensor resistance chart. If resistance is correct replace the EOC. If resistance does not match the RTD chart, replace RTD sensor probe. Check sensor wiring harness between EOC and sensor probe connector. 2. (F31) Check resistance at room temperature. If less than 500 ohms, replace RTD sensor probe. Check for shorted sensor probe harness between EOC and probe connector. If resistance is correct, replace the EOC.
F31	Shorted oven sensor probe circuit.	Usually this failure code would only appear if the EOC has been replaced with an incorrect version. Verify that the correct replacement part number is being used. Disconnect power, wait 30 seconds and reapply power. If fault returns when power is reapplied, replace EOC.
F42	EOC internal software configuration error.	Disconnect power, wait 30 seconds and reapply power. If fault returns when power is reapplied, replace EOC.
F50	Internal signal voltage error. Display communication error.	Disconnect power, wait 30 seconds and reapply power. If fault returns when power is reapplied, replace EOC.
F51	Display communication error.	Disconnect power, wait 30 seconds and reapply power. If fault returns when power is reapplied, replace EOC.
F60	EOC oven temperature. Higher than normal temperature detected on the EOC board.	1. Verify proper assembly of backguard panel. Check for damaged or loose panels, brackets, endcaps, etc. 2. Check for blocked ventilation slots in control panel rear cover. 3. Inspect oven vent for proper assembly and air flow. 4. Verify operation of cooling fan (if present).
F64	Time Base failure. The EOC cannot determine if connected to 50Hz or 60Hz power supply.	Confirm that range is connected to proper power source (50Hz or 60Hz). Generators or other portable power supplies and solar grids, etc., may not provide proper power supply. If power source is correct, replace the EOC.
F65	Keyboard short circuit or internal EOC failure.	1. Test keyboard circuits using test matrix. Replace touch panel if defective. 2. If keyboard circuits check correctly, replace the EOC
F66	EOC internal power supply failure.	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F68	High voltage condition. L1 or L2 may be crossed with Neutral on incoming PS.	1. Verify proper incoming line voltage and polarity of L1, L2 and Neutral power supply connections at range terminal block. 2. If power supply voltage and polarity are correct, replace EOC.
F90	Door lock motor or latch circuit failure.	If lock motor runs: 1. Test continuity of wiring between EOC and lock motor assy. Repair if needed. 2. Advance motor until cam depresses the plunger on lock motor switch. Test continuity of switch contacts. If switch is open replace lock motor assembly. 3. If motor runs and switch contacts and wiring harness test correctly, replace the EOC. If lock motor does not run: 1. Test continuity of lock motor windings. Replace lock motor assembly if windings are open. 2. Test lock motor operation by using a test cord to apply voltage. If motor does not operate, replace lock motor assy. 3. If motor runs with test cord, check continuity of wire harness to lock motor terminals. If harness is good replace the EOC.

Resistance Temperature Detector Scale

RTD SCALE	
Temperature of F (°C)	Resistance (ohms)
32 ± 1.9 (0 ± 1.0)	1000 ± 4.0
75 ± 2.5 (24 ± 1.3)	1091 ± 5.3
250 ± 4.4 (121 ± 2.4)	1453 ± 8.9
350 ± 5.4 (177 ± 3.0)	1654 ± 10.8
450 ± 6.9 (232 ± 3.8)	1852 ± 13.5
550 ± 8.2 (288 ± 4.5)	2047 ± 15.8
650 ± 9.6 (343 ± 5.3)	2237 ± 18.5
900 ± 13.6 (482 ± 7.5)	2697 ± 24.4

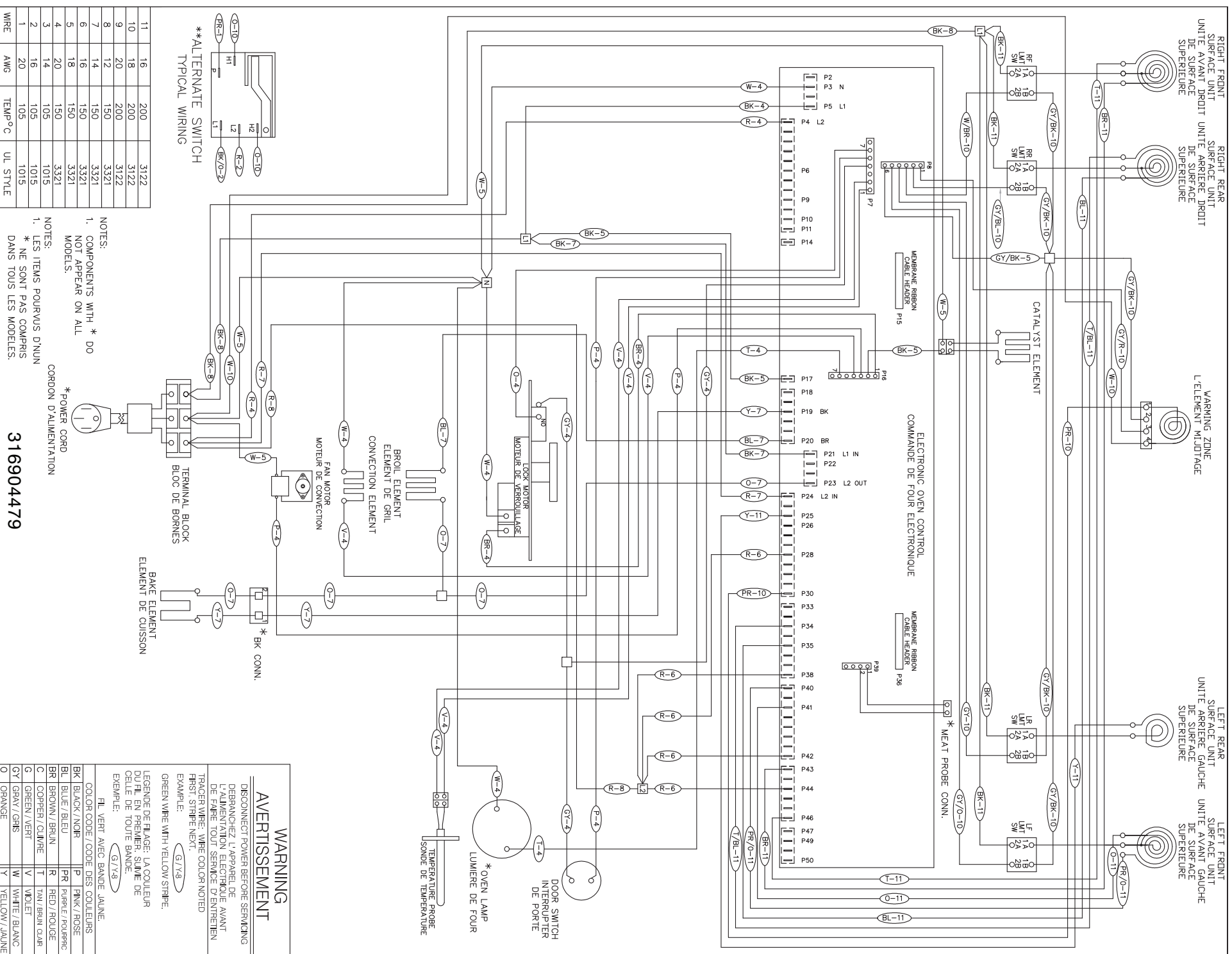
Probe circuit to case ground Open circuit/infinite resistance

EOC Relays - ES1030 Oven Control (Electric)

	L1 to Bake	L1 to Broil	Motor Door Latch	Conv Bake Fan	Conv. Heating Element	L2 In to L2 Out	L1 to Warming Drawer	L1 to Catalyst Element	L1 to Oven Lamps	Door Switch
Bake/Time Bake	X0	X*		X†	X†	X				
Conv Bake	X0	X*		X	X	X				
Clean		X0	X*			X		X		
Unlocked			X							
locking										
locked			X							
unlocking										
Door Open									X	O
Door Closed										
Oven Lamps ON									O	X
Warming Drawer							X0			

NOTE: X=Circuit Contacts Closed O = Circuit Contacts Open * = Alternates with Bake Element † = During Preheat 0 = Cycles as Needed

General Troubleshooting Diagram



WARNING
AVERTISSEMENT

DISCONNECT POWER BEFORE SERVICING
DEBRANCHEZ L'APPAREIL DE L'ALIMENTATION ELECTRIQUE AVANT DE FAIRE TOUT SERVICE D'ENTRETIEN

FRASER WIRE: WIRE COLOR NOTED
FRASER STRIPE NEXT

EXAMPLE: G/Y-Y-G

LEGENDE DE BLAGE: LA COULEUR DU FIL EN PREMIER, SUIVE DE CELLE DE TOUTE BANDE.

EXEMPLE: G/Y-Y-G

FL. VERT AVEC BANDE JAUNE.

BK	BLACK/NOIR	P	PINK/ROSE
BL	BLUE/BLEU	PR	PURPLE/ROSEAU
BR	BROWN/BRUN	R	RED/ROUGE
C	COPPER/CUIVRE	T	TAN/BRUN CLAIR
G	GREEN/VERT	V	VIOLET
GY	GRAY/GRIS	W	WHITE/BLANC
O	ORANGE	Y	YELLOW/JAUNE

General Troubleshooting Schematic

