SERVICE DATA SHEET

Electric Range with ES 5XX 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.
   - 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

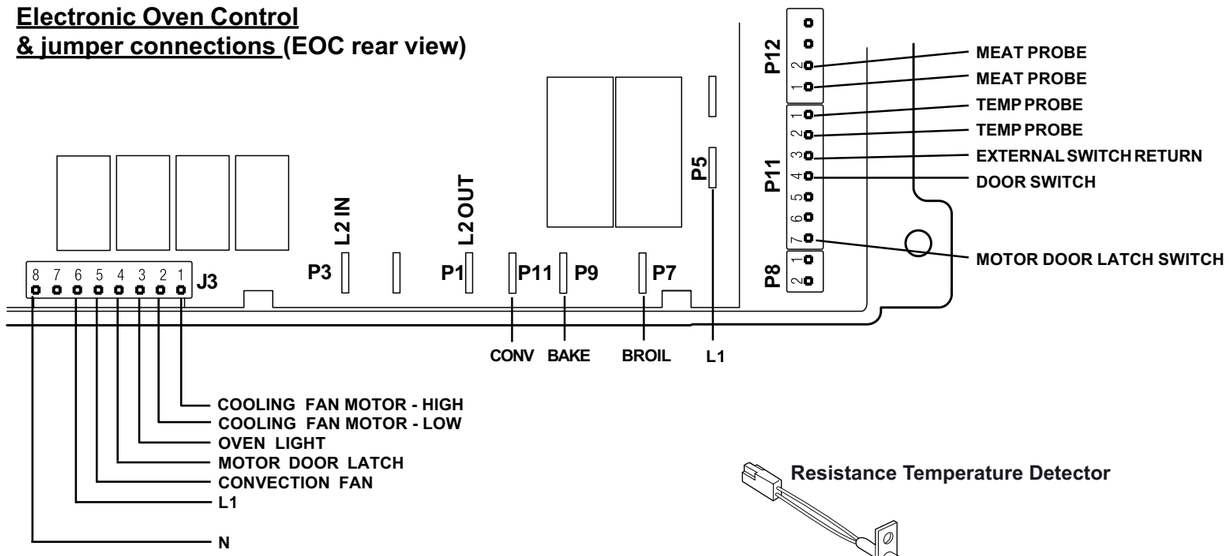
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **cancel** keypad to end bake mode.

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. To turn the temperature up, use number keys (0-9) to enter desired adjustment (up to 35°F).
4. To turn the temperature down, use number keys (0-9) to enter desired adjustment (up to 35°F).
   - *On models with a numeric keypad:* Press the **self-clean** key to change between + and - value. A positive adjustment will not display a + sign.
   - *On models with UP and DOWN arrow keys:* Press the DOWN arrow key until the display shows - value. 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** keypad to reject the change.

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

Electronic Oven Control & jumper connections (EOC rear view)



Resistance Temperature Detector

MEAT PROBE TEMPERATURE VS RESISTANCE	
Temperature °F (°C)	Resistance (Kohm)
77 (25)	50.0 ± 7%
122 (50)	18.0 ± 4.9%
176 (80)	6.3 ± 3.3%
212 (100)	3.4 ± 4.6%

IMPORTANT

DO NOT REMOVE THIS BAG OR DESTROY THE CONTENTS

WIRING DIAGRAMS AND SERVICE INFORMATION ENCLOSED

REPLACE CONTENTS IN BAG

809008412 REV B (17/01)

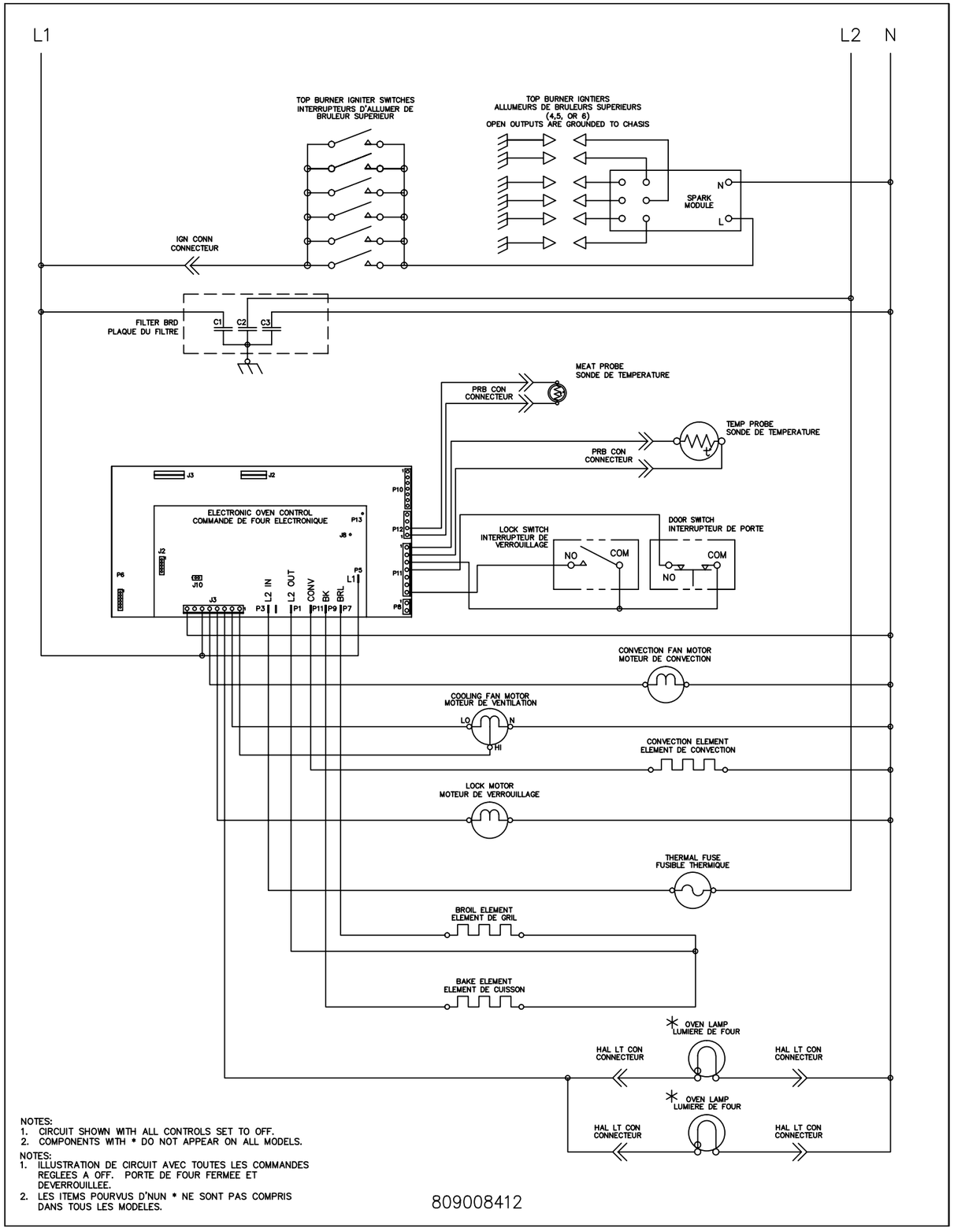
ELECTRONIC OVEN CONTROL (EOC) FAULT CODE DESCRIPTIONS

Fault Code	Likely Failure/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 in 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. 3. Replace the EOC.
F12 F13	EOC internal software error or failure (some models).	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F15	EOC internal hardware error or failure (some models).	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F16 F17 F18	EOC internal software error or failure (some models).	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.
F30	Open oven sensor probe circuit.	Check resistance at room temperature & 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 & Sensor Probe connector.
F31	Shorted oven sensor probe circuit.	Check resistance at room temperature, if less than 500 ohms, replace RTD Sensor Probe. Check for shorted Sensor Probe harness between EOC & Probe connector. If resistance is correct replace the EOC.
F33	Meat probe temperature sensor shorted or too hot.	1. The error is triggered if the meat probe sees a temperature in excess of 392°F. Make sure the meat probe was not used in such way that it could have seen such temperature. If the tip of the probe is not inserted in the meat it will see the cavity temperature, which can be higher than 392°F (depending on the setpoint) and trigger the alarm. 2. When the meat probe is connected to the socket inside the oven cavity, if the meat probe is not fully inserted into the socket it may short the contacts and cause the error. Make sure the probe is inserted as much as it can. 3. Verify meat probe resistance at room temperature. Compare to meat probe resistance chart. If the meat probe does not match the chart, replace it. 4. If the above steps failed to correct the problem, replace the oven relay board.
F60	Electronic Oven Control (EOC) over temperature. Higher than normal temperature detected on the EOC circuit 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).
F90 F91 F92 F93 F94 F95	Door lock motor or latch circuit failure.	***If lock motor runs:*** 1. Test continuity of wiring between EOC and lock switch on 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 assy. 3. If motor runs and switch contacts and wiring harness test good, 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.
Line ERR	EOC Internal voltage test error or failure.	Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.

RTD SCALE	
Temperature °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

Circuit Analysis Matrix	L1 to Bake	L1 to Broil	L1 to Conv	L1 to MDL	Conv Fan J3-5	Cooling Fan - High J3-1	Cooling Fan - Low J3-2	Door Switch COM_NO
Bake/Time Bake	X	X*	X†		X†	X	X	
Conv	X	X*	X		X	X	X	
Broil		X*				X	X	
Clean	X					X		
Unlocked								
Locking				X				
Locked								
Unlocking				X				
Door Open								
Door Closed								X

Note: X=Check listed circuits * = Alternates with bake element † = During Preheat



NOTES:
1. CIRCUIT SHOWN WITH ALL CONTROLS SET TO OFF.
2. COMPONENTS WITH * DO NOT APPEAR ON ALL MODELS.

NOTES:
1. ILLUSTRATION DE CIRCUIT AVEC TOUTES LES COMMANDES REGLEES A OFF. PORTE DE FOUR FERMEE ET DEVERROUILLEE.
2. LES ITEMS POURVUS D'NUN * NE SONT PAS COMPRIS DANS TOUS LES MODELES.

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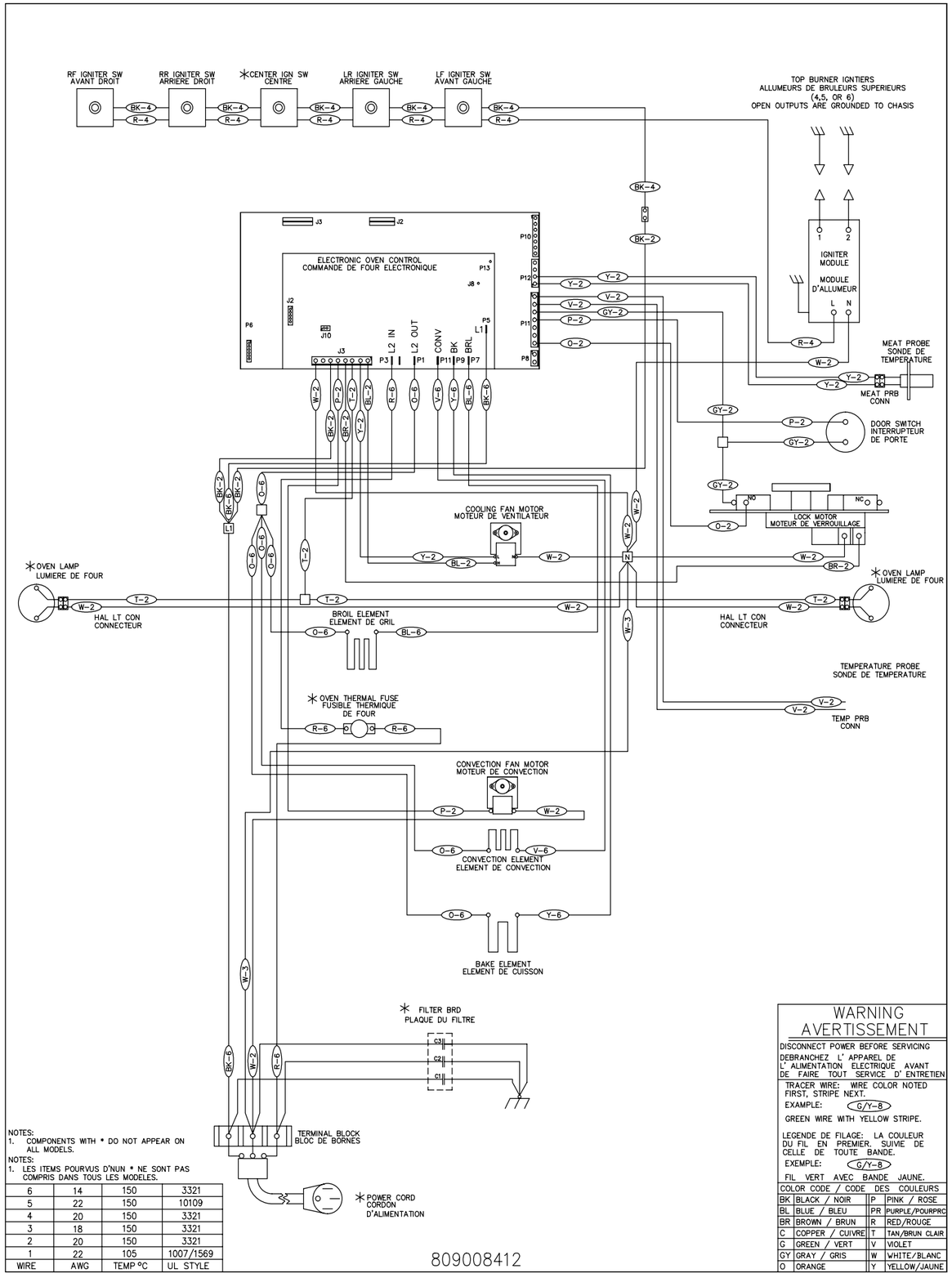

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6	14	150	3321
5	22	150	10109
4	20	150	3321
3	18	150	3321
2	20	150	3321
1	22	105	1007/1569
WIRE	AWG	TEMP °C	UL STYLE

WARNING
AVERTISSEMENT

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

TRACER WIRE: WIRE COLOR NOTED FIRST, STRIPE NEXT.
EXAMPLE: G/Y-8
GREEN WIRE WITH YELLOW STRIPE.

LEGENDE DE FILAGE: LA COULEUR DU FIL EN PREMIER, SUIVIE DE CELLE DE TOUTE BANDE.
EXEMPLE: G/Y-8
FIL VERT AVEC BANDE JAUNE.

COLOR CODE / CODE DES COULEURS			
BK	BLACK / NOIR	P	PINK / ROSE
BL	BLUE / BLEU	PR	PURPLE/POURPRC
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

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