

# SERVICE DATA SHEET

## Electric Ranges with ES 100 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.

- Before servicing or moving an appliance remove power cord from electrical outlet, trip circuit breaker to OFF, or remove fuse.
- Never interfere with the proper installation of any safety device.
- 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.
- 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 OFF to end bake mode.

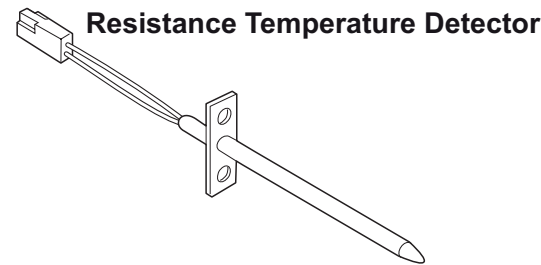
### Temperature Adjustment

(some models - do not use Bake or Broil while adjusting the oven temperature):

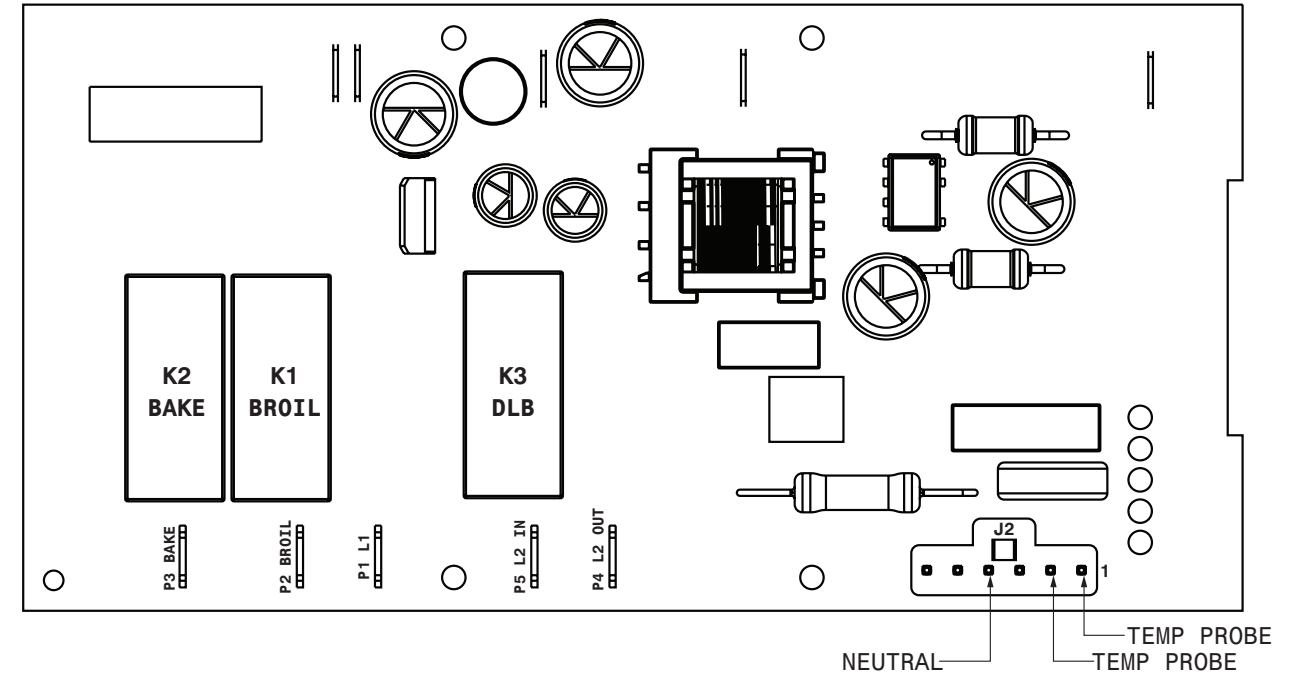
- Press & hold the BAKE key pad and release after the display begins flashing the factory temperature setting of 00.
- You may increase the oven temperature in 5°F increments with each press of the UP ARROW key pad to a maximum oven adjustment of +35°F. You may also adjust the oven temperature downward in 5°F increments with each press of the DOWN ARROW key pad (total adjustment range of -35 to +35 F. Note: Your oven control was factory set in the (Fahrenheit) °F Temperature Display Mode. To change for (Celsius) °C, see the Temperature Display in the Oven Control Functions section of the Use & Care Manual.
- If no other key pad is pressed after 5 seconds the display will begin to flash.
- If you do not want to keep the display adjustment, press the OFF key pad before the oven control beeps. This will cancel the temperature adjustment procedure. To start this procedure over again begin with step 1 above OR; If you want to keep the adjustment, wait until the display quits flashing and the oven control beeps once.
- The oven temperature adjustment has been accepted by the oven control and the display will return to the time of day.

**Notes:** The oven temperature adjustment may be made if your oven control has been set to operate in the (Celsius) °C Temperature Display Mode. In this case each press of the UP ARROW or DOWN ARROW key pad will adjust in 1°C increments upward (maximum +18°C) or downward (maximum -18°C), depending on which arrow key pad is pressed.

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



## ELECTRONIC OVEN CONTROL (EOC)



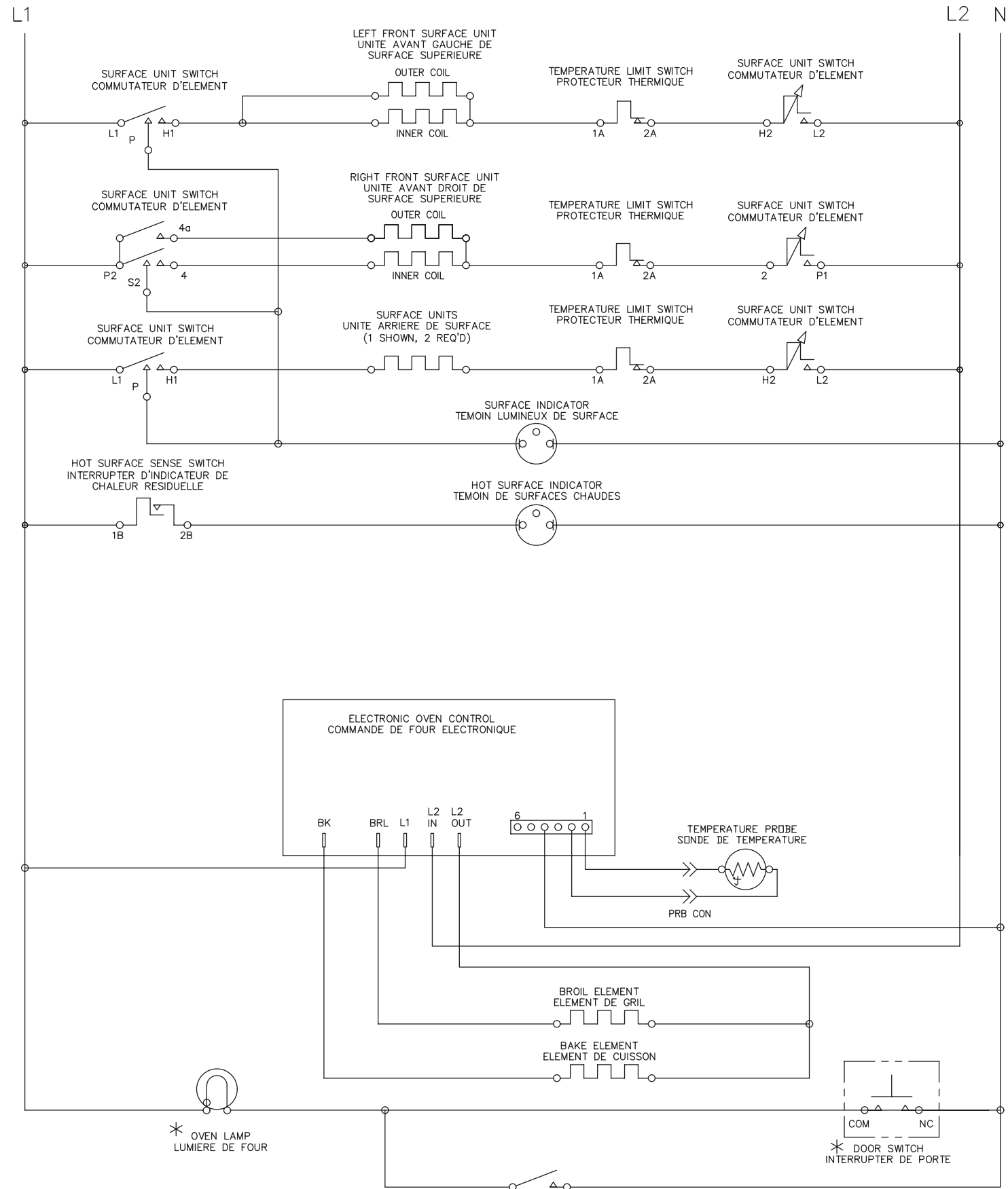
Electric Oven Control Fault Description		
Fault Code	Likely Failure Condition/Cause	Suggested Corrective Action
F10	Runaway temperature Oven heats when no cook cycle is programmed.	<ol style="list-style-type: none"> <li>If oven is overheating, disconnect power. Check oven temperature probe (RTD) and replace if necessary.</li> <li>If the oven temperature probe is good and if oven continues to overheat when power is reapplied, replace the oven relay board.</li> </ol>
F11	Short key	<ol style="list-style-type: none"> <li>If a key was pressed inadvertently for a long time this error code will be displayed. Make sure there is nothing (water, utensils) in contact with the keyboard. The fault code should go away once the key is released and the Stop key is pressed. If the F011 error comes back when a key is pressed it means the error condition is still there. If the F011 error does not come back it means the error condition is gone and the oven can be used.</li> <li>If the fault code cannot be cleared, replace the EOC.</li> </ol>
F13	Incorrect Configuration Check-sum	<ol style="list-style-type: none"> <li>Disconnect power, wait 30 seconds and reapply power.</li> <li>If fault returns upon power-up, replace EOC.</li> </ol>
F30 F31	Open Temperature Probe Short Temperature Probe	<ol style="list-style-type: none"> <li>Check probe circuit wiring for possible open or short condition.</li> <li>Verify RTD resistance at room temperature (compare to probe resistance chart). If resistance does not match the chart, replace the RTD probe.</li> <li>If the problem persists replace the oven relay board.</li> </ol>
F50	Unable to properly read cavity probe A2D	<ol style="list-style-type: none"> <li>Disconnect power, wait 30 seconds and reapply power.</li> <li>If fault returns upon power-up, replace EOC.</li> </ol>

### Circuit Analysis Matrix

	EOC RELAYS		Door Switch COM-NO (some models)
	L1 to Bake	L1 to Broil	
Bake	X	X*	
Broil		X	
Door Open			X
Door Closed			

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

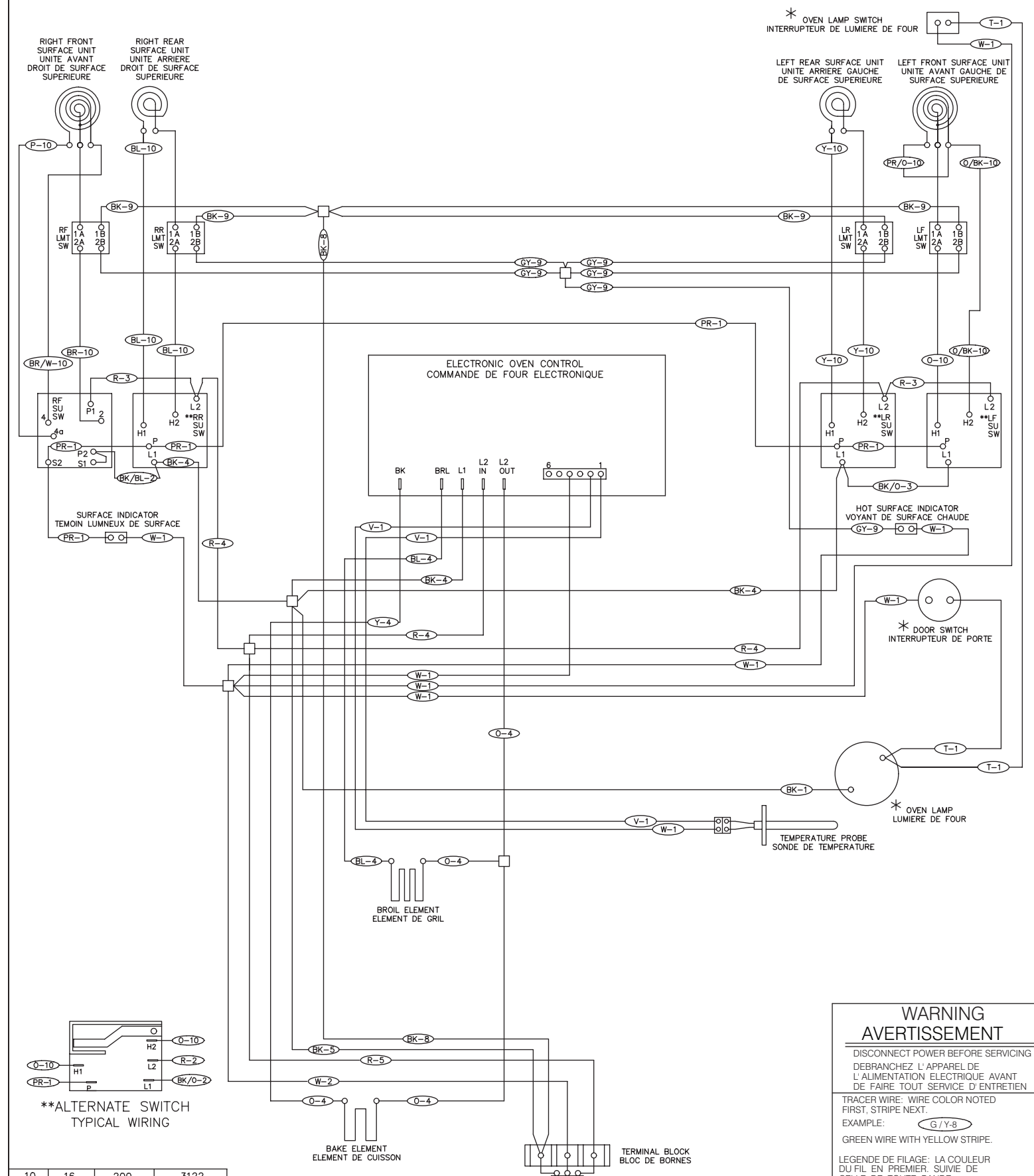
**IMPORTANT**  
**DO NOT REMOVE THIS BAG**  
**OR DESTROY THE CONTENTS**  
 WIRING DIAGRAMS AND SERVICE  
 INFORMATION ENCLOSED  
**REPLACE CONTENTS IN BAG**



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'UN \* NE SONT PAS COMPRIS DANS TOUTS LES MODELES.

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\*\*ALTERNATE SWITCH TYPICAL WIRING

WIRE	AWG	TEMP °C	UL STYLE
10	16	200	3122
9	18	200	3122
8	18	150	3321
7	12	125	3173
6	14	125	3173
5	12	105	1015
4	14	105	1015
3	16	105	1015
2	18	105	1015
1	20	105	1015

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**WARNING AVERTISSEMENT**

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

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

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

COLOR CODE / CODE DES COULEURS

BK	BLACK / NOIR	IP	PINK / ROSE
BL	BLUE / BLEU	PR	PURPLE / POURPRE
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