

# SERVICE DATA SHEET

## Electric Ranges with ES 100/105 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.

- 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

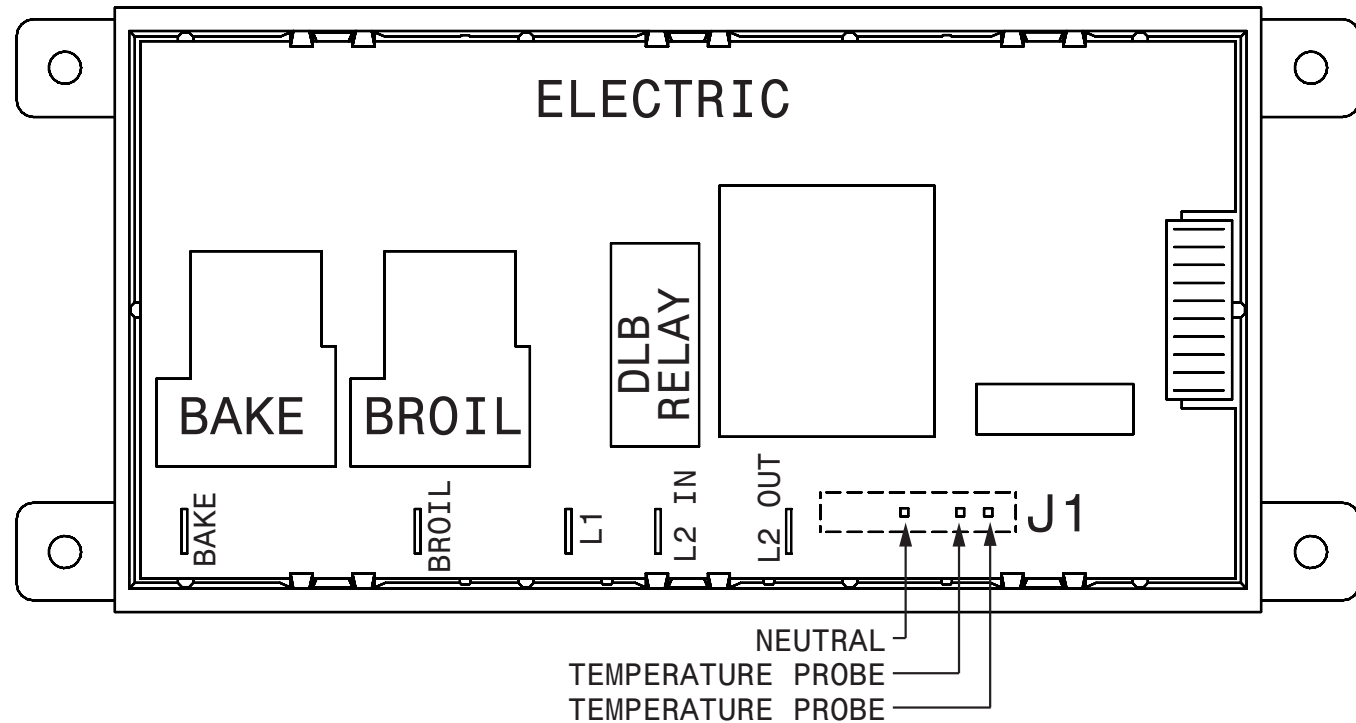
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press CANCEL or CLEAR OFF to end bake mode.

### Oven Temperature Adjustment (some models)

- Press & hold the BAKE key pad and release after the display shows the factory temperature setting of 00. If the oven temperature has been previously adjusted from the factory setting, the latest adjusted value will appear in the display instead.
- You may increase the oven temperature in 5°F increments with each press of the UP ARROW key pad. You may also adjust the oven temperature downward in 5°F increments with each press of the DOWN ARROW key-pad (total adjustment range is +35°F to -35°F).
- To accept the change, wait until the oven control provides the acceptance beep (See important notes).
- The oven temperature adjustment has been made by the oven control and the display will return to the time of day.

### Important notes:

- The oven temperature adjustment may be made if your oven control has been set for °C (Celsius) 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 keypad is pressed.
- If at any time during the process of adjusting the oven temperature feature you decide not to make the change, press the CANCEL or CLEAR OFF key pad once before the acceptance beep.
- The oven temperature adjustment feature can not be modified if BAKE or BROIL is active.



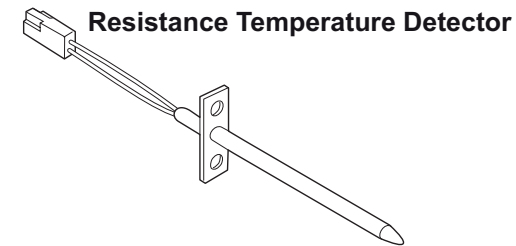
### Electronic Oven Control (E.O.C.) Fault Code Descriptions

| Fault Code | Likely Failure Condition/Cause  | Suggested Corrective Action  |
|------------|---|--|
| F1         | <ul style="list-style-type: none"> <li>Shorted keypad.</li> <li>Control's internal checksum may have become corrupted.</li> <li>Control has sensed a potential runaway oven condition. Control may have shorted relay, RTD sensor probe may have gone bad.</li> </ul>   | <ol style="list-style-type: none"> <li>Disconnect power, wait 30 seconds and reapply power. If fault returns upon power-up, replace EOC.</li> <li>Check RTD sensor probe and 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.</li> <li>Replace EOC.</li> </ol> |
| F3         | <ul style="list-style-type: none"> <li>Open RTD sensor probe.<br/>Note: The EOC will initially display an F1 for this condition. The EOC thinks a runaway oven condition exists.</li> <li>Shorted RTD sensor probe.<br/>Note: The F3 for shorted probe should only occur when the oven is active or when an attempt is made to enter a mode.</li> </ul> | <ol style="list-style-type: none"> <li>Check resistance at room temperature and compare to RTD sensor resistance chart. If resistance does not match the chart, replace RTD sensor probe.</li> <li>Check resistance at room temperature, if less than 500 ohms, replace RTD sensor probe.</li> </ol>   |
| F10        | Runaway temperature.  | 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  |
| F11        | Shorted keypad.<br>Bad micro identification.  | <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>   |
| F13        | Bad EEPROM identification/checksum error.   |  |
| F30        | Open probe connection.  | <ol style="list-style-type: none"> <li>Check resistance at room temperature &amp; compare to RTD Sensor resistance chart. If resistance does not match the RTD chart replace RTD Sensor Probe. Check Sensor wiring harness between EOC &amp; Sensor Probe connector.</li> </ol>  |
| F31        | Shorted probe connection.   | <ol style="list-style-type: none"> <li>Check resistance at room temperature, if less than 500 ohms, replace RTD Sensor Probe. Check for shorted Sensor Probe harness between EOC &amp; Probe connector.</li> </ol>   |

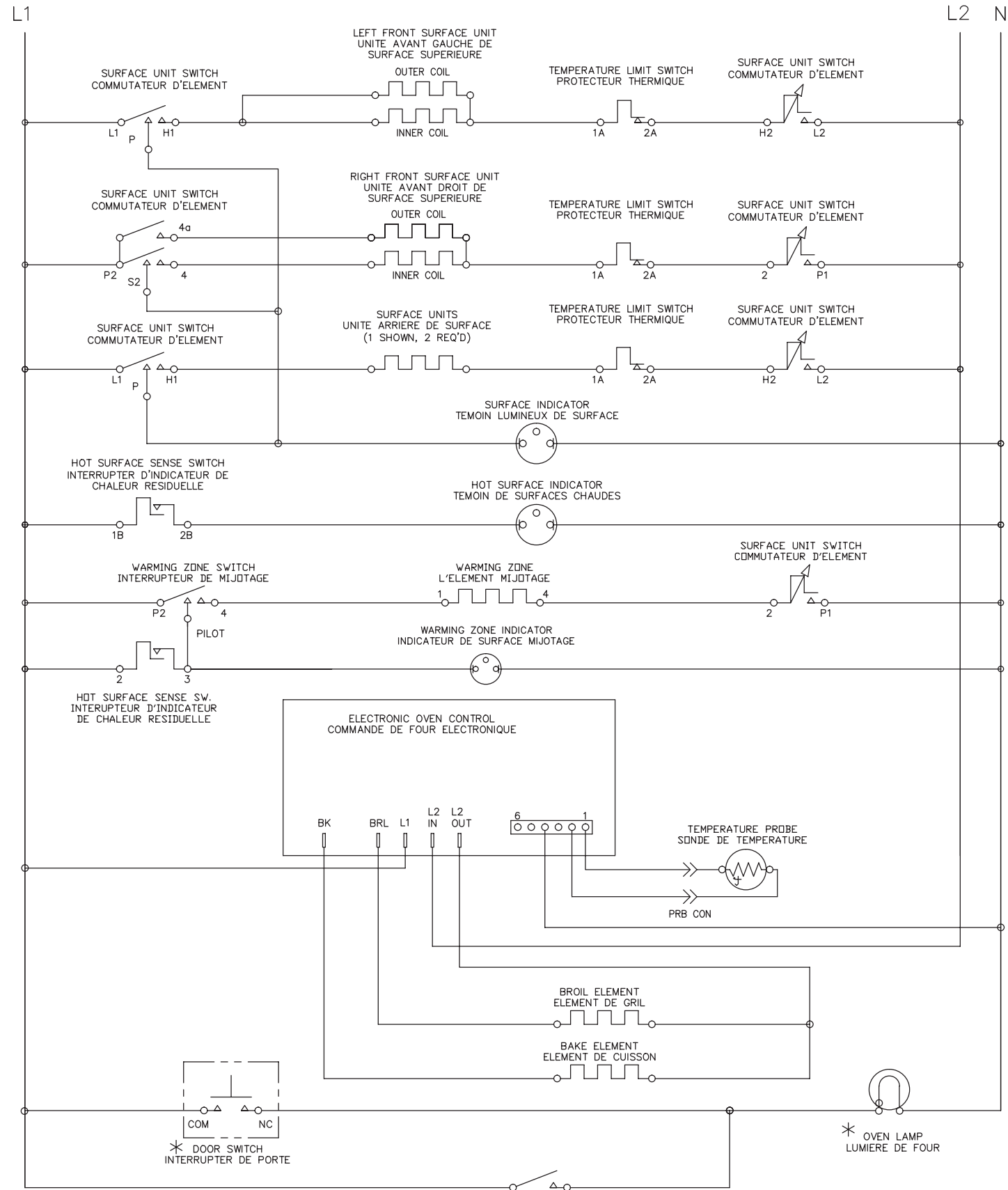
| CIRCUIT ANALYSIS MATRIX | EOC Relays |             |                    |
|-------------------------|------------|-------------|--------------------|
|                         | L1 to Bake | L1 to Broil | Door Switch COM-NC |
| Bake                    | X          | X*          |                    |
| Broil                   |            | X           |                    |
| Door Open               |            |             | X                  |
| Door Closed             |            |             |                    |

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

| 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 |



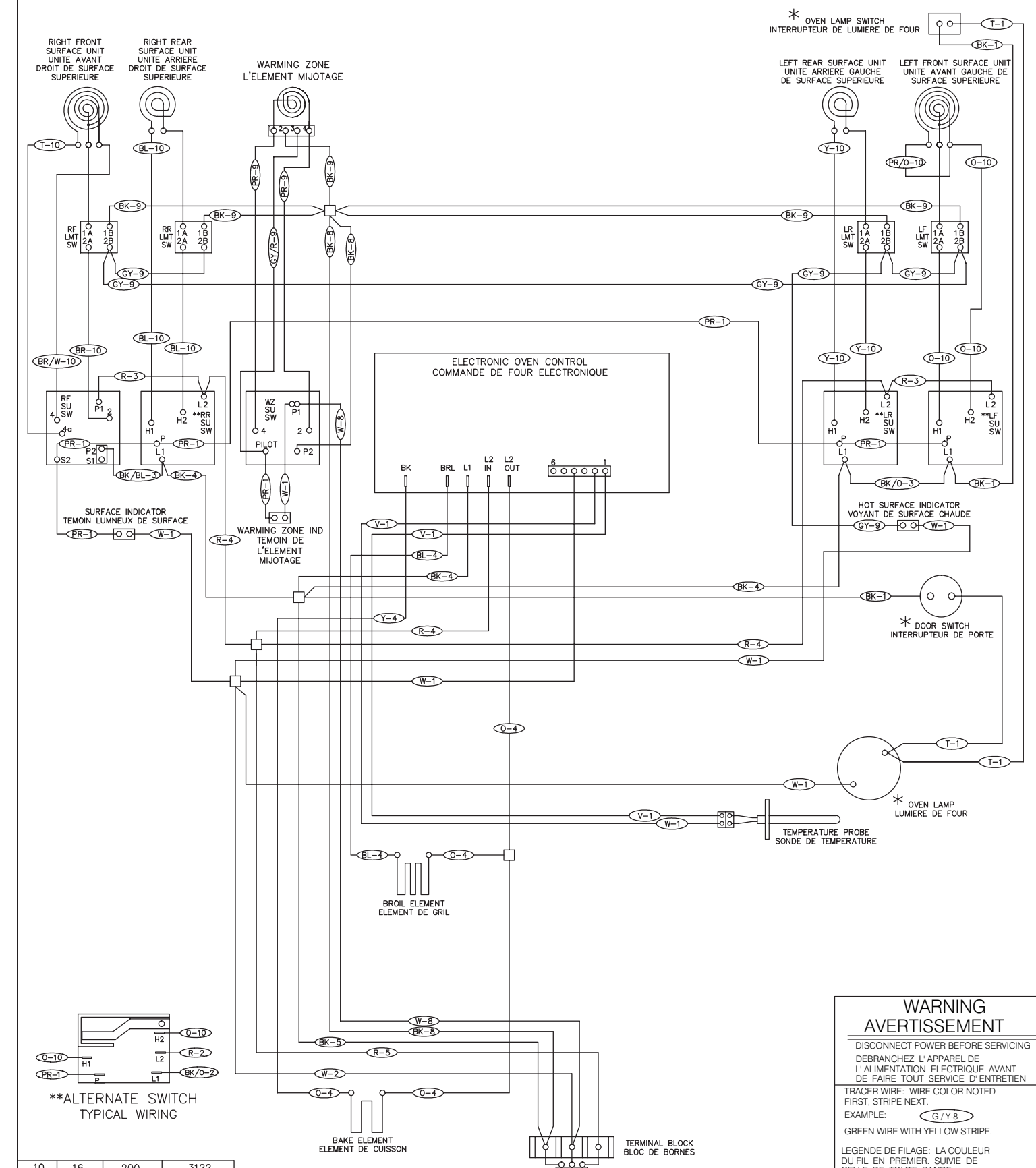
**IMPORTANT**  
**DO NOT REMOVE THIS BAG**  
**OR DESTROY THE CONTENTS**  
 WIRING DIAGRAMS AND SERVICE  
 INFORMATION ENCLOSED  
**REPLACE CONTENTS IN BAG**



- 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-8  
GREEN WIRE WITH YELLOW STRIPE.

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

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