# SERVICE DATA SHEET
## Gas 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.

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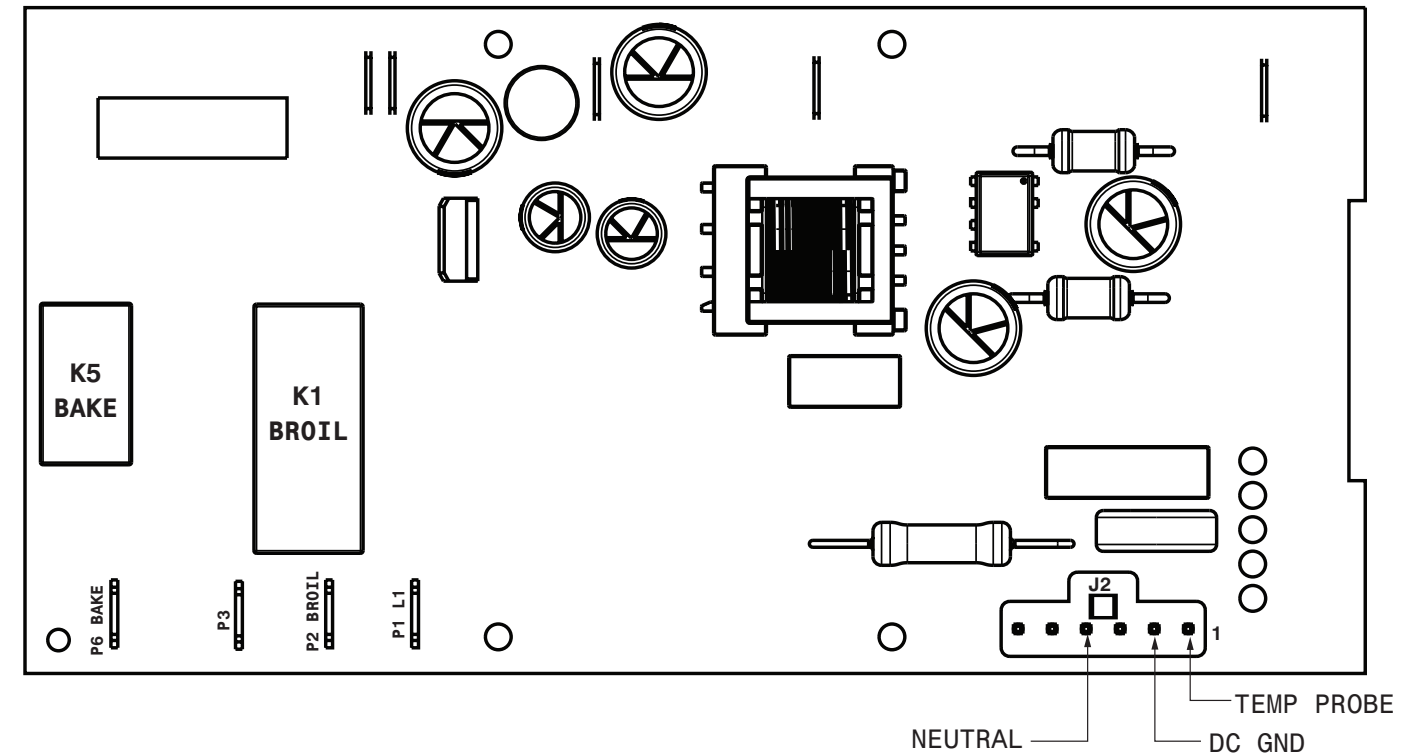
Oven Calibration
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press OFF to end bake mode.

Temperature Adjustment
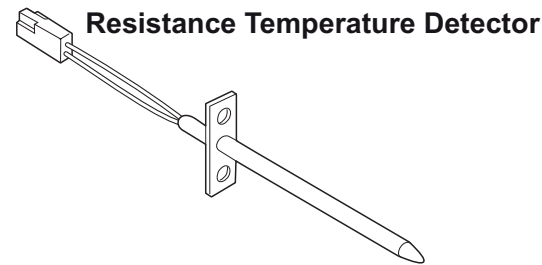(some models - do not use Bake or Broil while adjusting the oven temperature):
1. Press & hold the BAKE key pad and release after the display begins flashing the factory temperature setting of 00.
Note: If the oven temperature has been previously adjusted from the factory setting, the current temperature adjusted value will flash in the display instead.
2. 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.
3. If no other key pad is pressed after 5 seconds the display will begin to flash.
4. 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;
5. If you want to keep the adjustment, wait until the display quits flashing and the oven control beeps once.
6. The oven temperature adjustment has be 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.
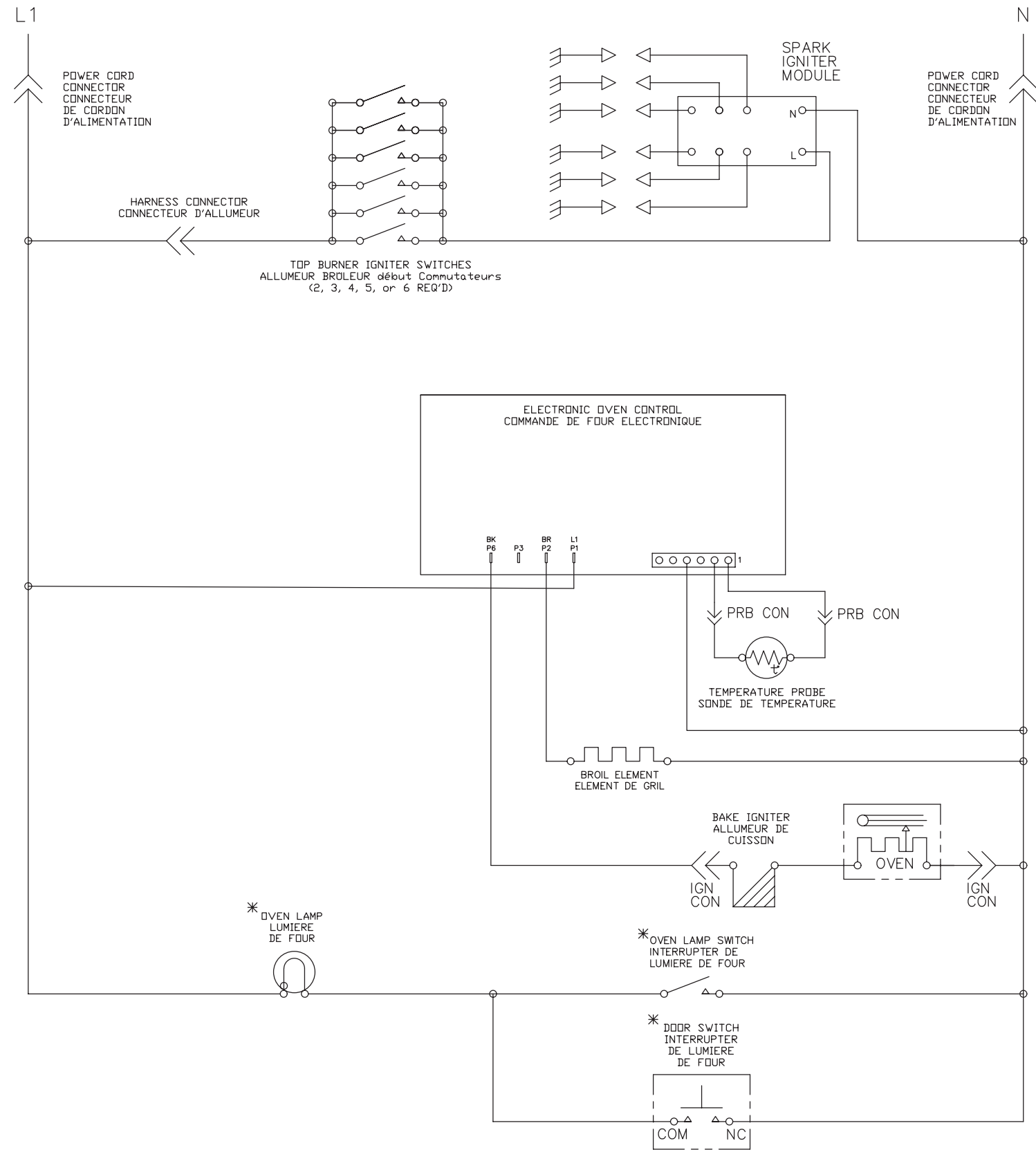
## ELECTRONIC OVEN CONTROL (EOC)



NEUTRAL — DC GND — TEMP PROBE

### 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 |

**Resistance Temperature Detector**



### Electric Oven Control Fault Description

| Fault Code | Likely Failure Conditon/Cause | Suggested Corrective Action |
|---|---|---|
| F10 | Runaway temperature Oven heats when no cook cycle is programmed. | 1. If oven is overheating, disconnect power. Check oven temperature probe (RTD) and replace if necessary. 2. If the oven temperature probe is good and if oven continues to overheat when power is reapplied, replace the oven relay board. |
| F11 | Short key | 1. 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. 2. If the fault code cannot be cleared, replace the EOC. |
| F13 | Incorrect Configuration Check-sum | 1. Disconnect power, wait 30 seconds and reapply power. 2. If fault returns upon power-up, replace EOC. |
| F30 | Temperature Probe | 1. Check probe circuit wiring for possible open or short condition. 2. Verify RTD resistance at room temperature (compare to probe resistance chart). If resistance does not match the chart, replace the RTD probe. 3. If the problem persists replace the oven relay board. |
| F31 | Short Temperature Probe | |
| F50 | Unable to properly read cavity probe A2D | 1. Disconnect power, wait 30 seconds and reapply power. 2. If fault returns upon power-up, replace EOC. |

### Circuit Analysis Matrix

| | EOC RELAYS | | |
|---|---|---|---|
| | L1 to Bake | L1 to Broil | Door Switch COM-NO (some models) |
| Bake | X | X* | |
| Broil | X | X | |
| Door Open | | | X |
| Door Closed | | | |
| Note: X=Check listed circuits. *=Alternates with Bake element | | | |

L1

N

POWER CORD
CONNECTOR
CONNECTEUR
DE CORDON
D'ALIMENTATION

POWER CORD
CONNECTOR
CONNECTEUR
DE CORDON
D'ALIMENTATION

SPARK
IGNITER
MODULE

N

L

HARNESS CONNECTOR
CONNECTEUR D'ALLUMEUR

TOP BURNER IGNITER SWITCHES
ALLUMEUR BROLEUR début Commutateurs
(2, 3, 4, 5, or 6 REQ'D)

ELECTRONIC OVEN CONTROL
COMMANDE DE FOUR ELECTRONIQUE

BK
P6    P3    BR    L1
             P2    P1

PRB CON    PRB CON

TEMPERATURE PROBE
SONDE DE TEMPERATURE

BROIL ELEMENT
ELEMENT DE GRIL

BAKE IGNITER
ALLUMEUR DE
CUISSON

IGN
CON

OVEN

IGN
CON

* OVEN LAMP
LUMIERE
DE FOUR

* OVEN LAMP SWITCH
INTERRUPTER DE
LUMIERE DE FOUR

* DOOR SWITCH
INTERRUPTER
DE LUMIERE
DE FOUR

COM    NC

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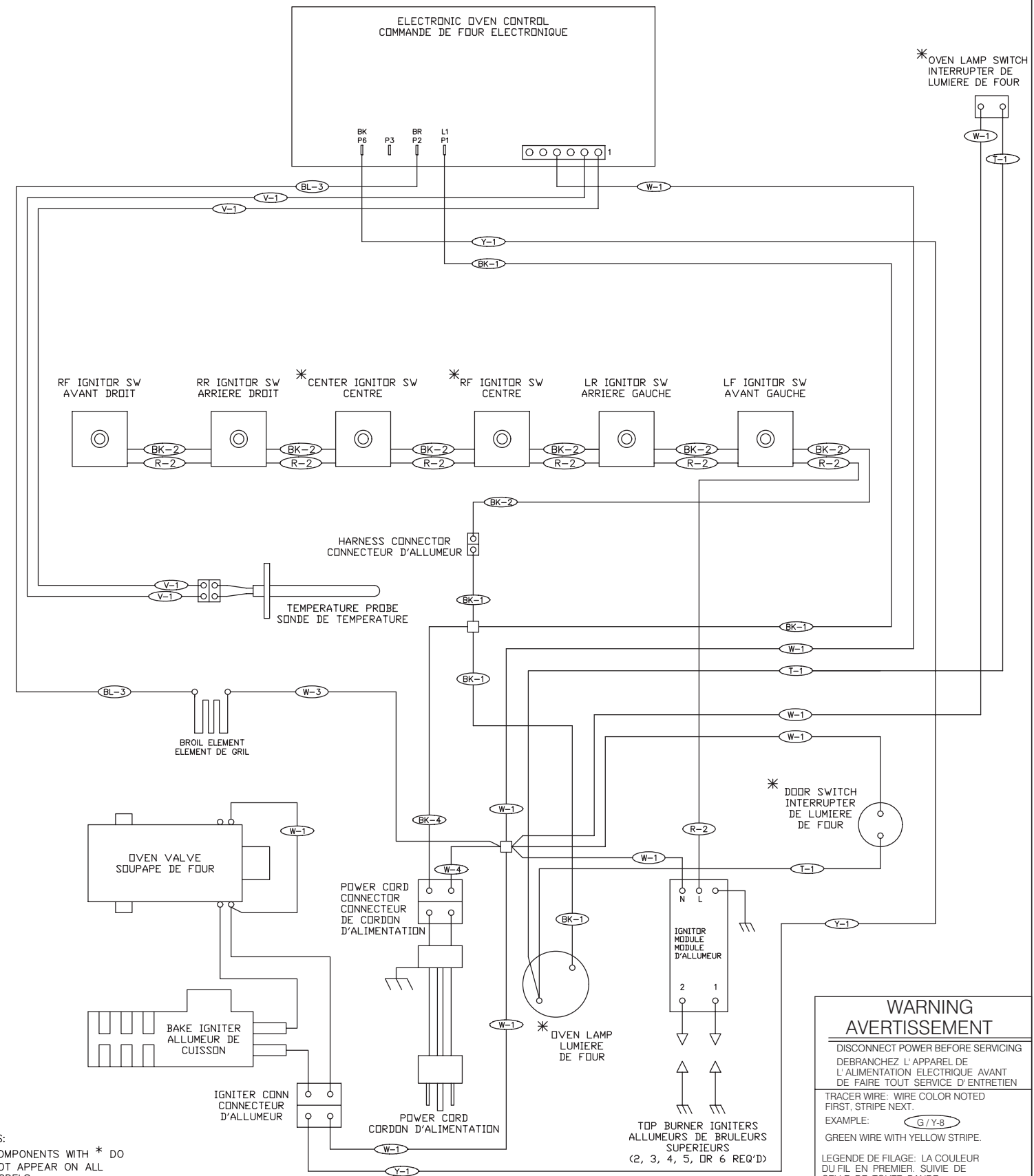2.  COMPONENTS WITH * DO NOT APPEAR ON ALL MODELS.

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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ELECTRONIC OVEN CONTROL
COMMANDE DE FOUR ELECTRONIQUE

BK
P6    P3    BR    L1
             P2    P1

BL-3

V-1    V-1

Y-1

BK-1

* OVEN LAMP SWITCH
INTERRUPTER DE
LUMIERE DE FOUR

W-1

T-1

W-1

RF IGNITOR SW
AVANT DROIT

RR IGNITOR SW
ARRIERE DROIT

* CENTER IGNITOR SW
CENTRE

* RF IGNITOR SW
CENTRE

LR IGNITOR SW
ARRIERE GAUCHE

LF IGNITOR SW
AVANT GAUCHE

BK-2    BK-2    BK-2    BK-2    BK-2    BK-2
R-2     R-2     R-2     R-2     R-2     R-2

BK-2

HARNESS CONNECTOR
CONNECTEUR D'ALLUMEUR

BK-1

V-1
V-1

TEMPERATURE PROBE
SONDE DE TEMPERATURE

BK-1

BK-1

W-1

T-1

BL-3    W-3

BROIL ELEMENT
ELEMENT DE GRIL

BK-4

W-1

W-1

W-1

* DOOR SWITCH
INTERRUPTER DE
LUMIERE DE FOUR

R-2

T-1

OVEN VALVE
SOUPAPE DE FOUR

W-1

W-4

N    L

W-1

IGNITOR
MODULE
MODULE
D'ALLUMEUR

2    1

BK-1

* OVEN LAMP
LUMIERE
DE FOUR

Y-1

POWER CORD
CONNECTOR
CONNECTEUR
DE CORDON
D'ALIMENTATION

BAKE IGNITER
ALLUMEUR DE
CUISSON

IGNITER CONN
CONNECTEUR
D'ALLUMEUR

POWER CORD
CORDON D'ALIMENTATION

W-1

Y-1

TOP BURNER IGNITERS
ALLUMEURS DE BRULEURS
SUPERIEURS
(2, 3, 4, 5, OR 6 REQ'D)

NOTES:
1.  COMPONENTS WITH * DO
    NOT APPEAR ON ALL
    MODELS.

NOTES:
1.  LES ITEMS POURVUS D'NUN
    * NE SONT PAS COMPRIS
    DANS TOUS LES MODELES.

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| 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 |

| WIRE | AWG | TEMP °C | UL STYLE |
|---|---|---|---|
| 4 | 16 | 125 | 3173 |
| 3 | 18 | 125 | 3173 |
| 2 | 20 | 150 | 3321 |
| 1 | 20 | 125 | 3173 |