

SERVICE DATA SHEET

Electric Ranges with ES 510 Electronic Oven Control & Bake-N-Warm™ Oven (some models)

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

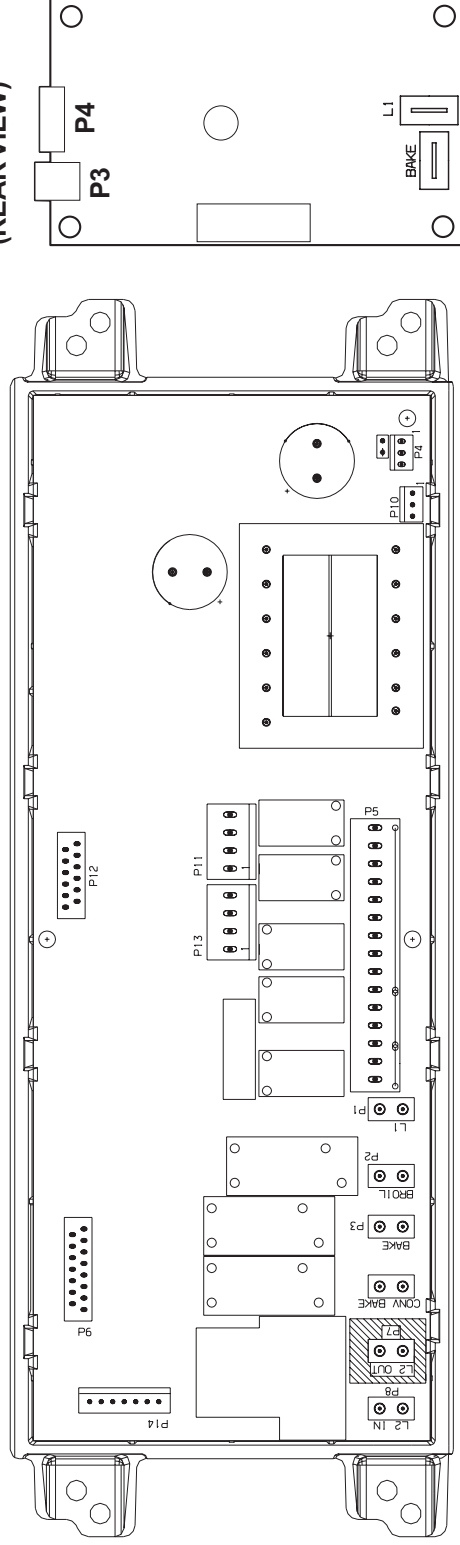
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **STOP/CLEAR** to end bake mode.

TEMPERATURE ADJUSTMENT

1. Set EOC to bake at 550°F.
2. Within 5 seconds of setting 550°F, press and hold the bake pad for approximately 15 seconds until a single beep is heard (longer may cause F11 shorted keypad alarm).
3. Calibration offset should appear in the display.
4. Refer to the instructions in the Use & Care to adjust the oven temperature up or down.
5. Once the desired (-35° to 35°) offset has been applied, press **STOP/CLEAR**.

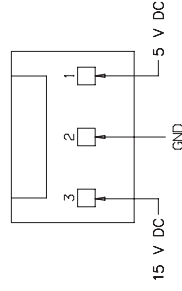
Note: Changing calibration affects normal Bake mode. The adjustments made will not change the Self-Cleaning cycle temperature.

BAKE-N-WARM™ DOUBLE OVEN CONTROL BOARD (REAR VIEW)

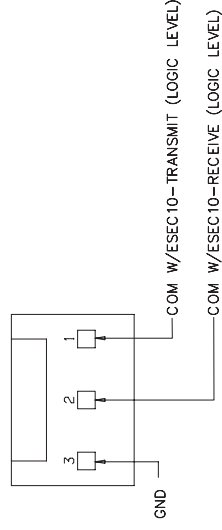


ELECTRONIC OVEN CONTROL (EOC rear view)

EOC P10 BAKE-N-WARM™ CONNECTION (some models)



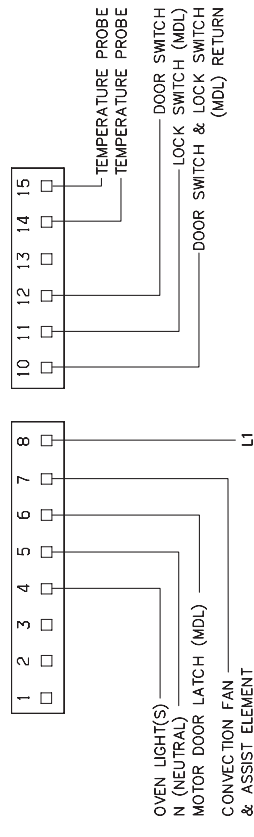
EOC P4 BAKE-N-WARM™ CONNECTION (some models)



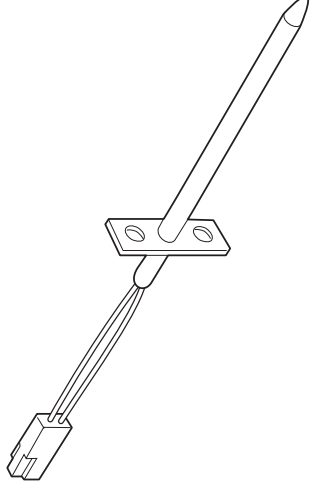
IMPORTANT

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

EOC P5 CONNECTIONS



RESISTANCE TEMPERATURE DETECTOR



RTD SCALE

Temperature (°F)	Resistance (ohms)
32 ± 1.9	1000 ± 4.0
75 ± 2.5	1091 ± 5.3
250 ± 4.4	1453 ± 8.9
350 ± 5.4	1654 ± 10.8
450 ± 6.9	1852 ± 13.5
550 ± 8.2	2047 ± 15.8
650 ± 9.6	2237 ± 18.5
900 ± 13.6	2697 ± 24.4

ELECTRONIC OVEN CONTROL FAULT CODE DESCRIPTIONS

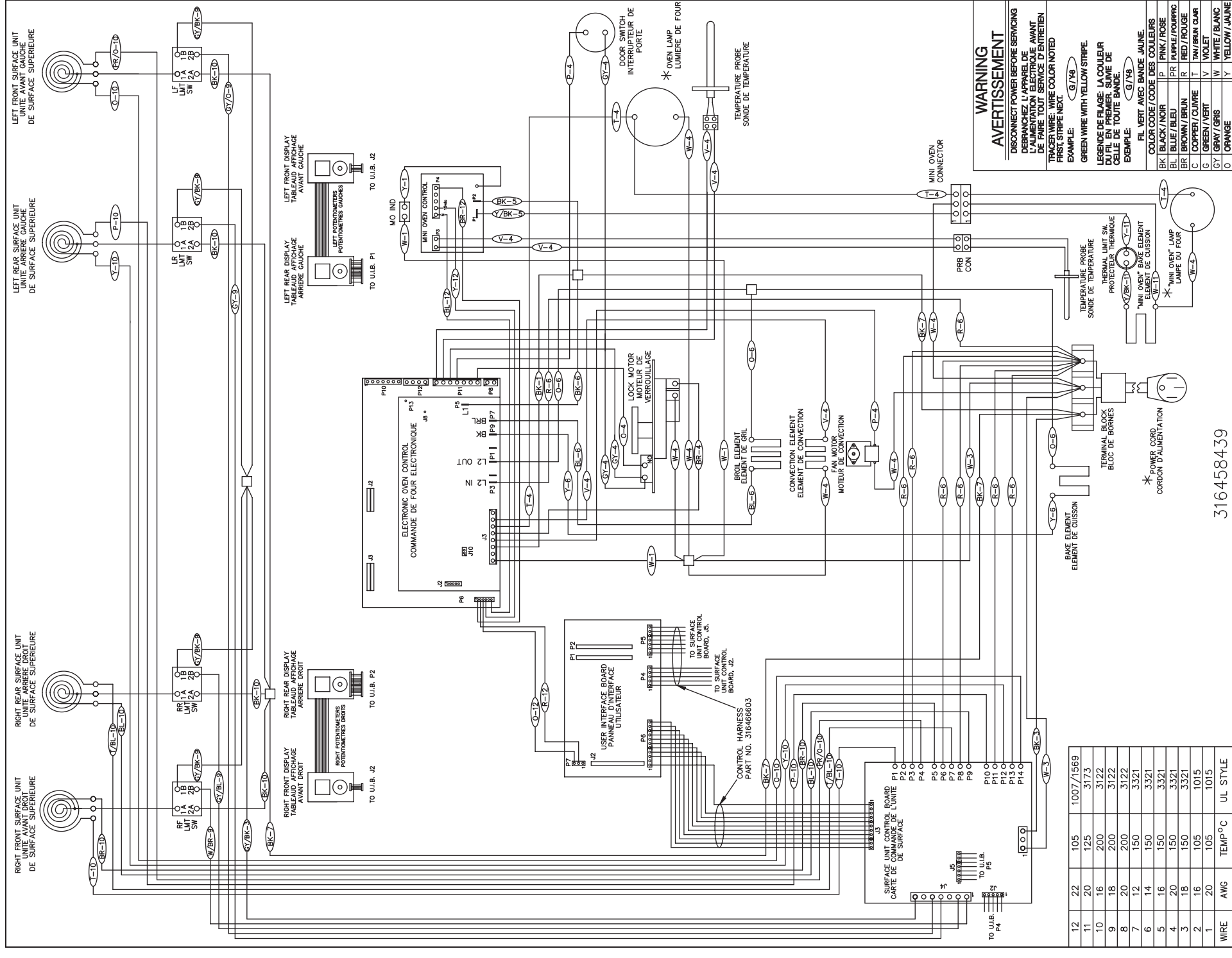
Fault Code	Likely Failure Condition/Cause	Suggested Corrective Action
F10	Runaway Temperature.	1. (F10 only) Check RTD Sensor Probe & replace if necessary. If oven is overheating, disconnect power. If oven continues to overheat when the power is reappplied, replace EOC. Severe overheating may require the entire oven to be replaced should damage be extensive.
F11	Shorted Keypad.	2. (F11, 12 & 13) Disconnect power, wait 30 seconds and reapply power.
F12	Bad Micro Identification.	3. (F11, 12 & 13) If fault returns upon power-up, replace EOC.
F13	Bad EEPROM Identification/Checksum error.	
F20	Communication failure between EOC & ESEC system	1. Test harness/connections P4 (EOC) & P11 (Surface Element Control Board) or EOC. 2. If harness checks O.K. failure can be caused by faulty UIB, Surface Element Control Board or EOC.
F26	Communication failure with Mini Oven Control Board.	1. Check harness & connectors from the EOC to Mini Oven Control Board. Check for 15VDC to Mini Oven Control Board (red & gray wires). If harness and voltage are good replace Mini Oven Control Board. If fault returns replace the EOC.
F30	Shorted Probe connection.	1. (F30 or F31) Check resistance at room temperature & compare to RTD Sensor resistance chart. If resistance does not match the RTD chart replace RTD Sensor Probe. Check Sensor wiring harness between EOC & Sensor Probe connector.
F31	Shorted Probe connection.	2. (F30 or F31) Check resistance at room temperature, if less than 500 ohms, replace RTD Sensor Probe. Check for shorted Sensor Probe harness between EOC & Probe connector.
F90	Maximum oven door unlock time exceeded.	1. (F90, 91, 92, 93 & 94) Check the wiring between EOC & Lock Motor Micro Switch.
F91	Maximum oven door unlock attempts exceeded.	2. (F90, 91, 92, 93 & 94) Replace the Motor Door Latch assembly if necessary.
F92	Maximum oven door open time exceeded.	3. (F90, 91, 92, 93 & 94) Check for binding of the Latch Cam, Lock Motor Rod & Lock Motor Cam Assembly.
F93	Maximum oven door lock time exceeded.	4. (F90, 91, 92, 93 & 94) Check to see if Lock Motor Coil is open. If open, replace Lock Motor Assembly.
F94	Maximum oven door lock attempts exceeded.	5. (F90, 91, 92, 93 & 94) Lock Motor continuously runs - if Micro Switch is open, replace Lock Motor Assembly. 6. (F92, 93 & 94) Check oven door Light Switch - if open, replace Switch. 7. If all situations above do not solve problem, replace EOC.

CIRCUIT ANALYSIS MATRIX

	EOC Relays					
	L1 to Bake	L1 to Broil	L1 to Motor Door Latch	L1 to Conv/Speed Bake Fan	L2 IN to L2 OUT	Door Switch COM-NO
Bake/Time Bake	X	X*			X	
Conv/Speed Bake	X	X*		X	X	
Broil		X			X	
Clean	X				X	
Locking			X			
Unlocking			X			
Door Open						
Door Closed						X
Cooktop Active						

Note: X=Relay Contacts Closed. * Alternates with the Bake Element.

GENERAL TROUBLESHOOTING DIAGRAM

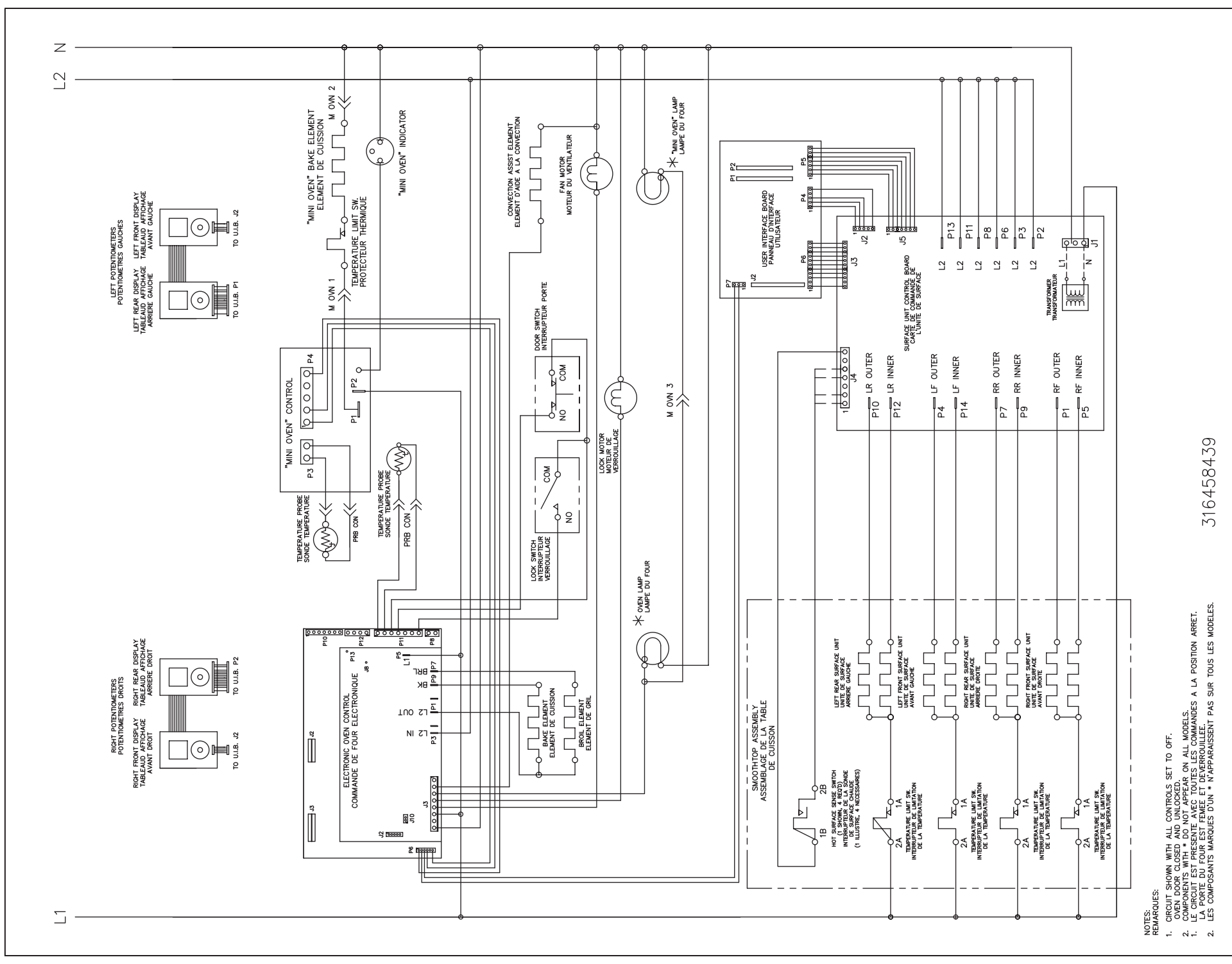


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WIRE	AWG	TEMP °C	UL STYLE
12	22	105	1007/1569
11	20	125	3173
10	16	200	3122
9	18	200	3122
8	20	200	3122
7	12	150	3321
6	14	150	3321
5	16	150	3321
4	20	150	3321
3	18	150	3321
2	16	105	1015
1	20	105	1015

WARNING / AVERTISSEMENT
 DISCONNECT POWER BEFORE SERVICING / DEBRANCHEZ L'APPAREIL DE L'ALIMENTATION ELECTRIQUE AVANT LE TRAVAIL.
 DO NOT TOUCH SERVICE D'ENTRETIEN / NE PAS TOUCHER LE SERVICE D'ENTRETIEN.
 FIRST STRIPE WHITE / PREMIER STRIPE BLANC.
 GREEN WIRE WITH YELLOW STRIPE / LEGENDE DE FLAGAGE: LA COULEUR DU FIL EN PREMIER, SUIVIE DE CELLE DE TOUTE BANDE.
 EXEMPLE: G/Y/B
 FL VERT AVEC BANDE JAUNE.
 COLOR CODE / CODE DES COULEURS
 BK BLACK / NOIR P PINK / ROSE
 BL BLUE / BLEU PR PURPLE / POURPRE
 BR BROWN / BRUN R RED / ROUGE
 C COPPER / CUivre T TAN / BRUN OMBRE
 G GREEN / VERT W WHITE / BLANC
 O ORANGE Y YELLOW / JAUNE

GENERAL TROUBLESHOOTING SCHEMATIC



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- NOTES: REMARQUES:
- CIRCUIT SHOWN WITH ALL CONTROLS SET TO OFF. OVEN DOOR CLOSED AND UNLOCKED.
 - COMPONENTS WITH * DO NOT APPEAR ON ALL MODELS.
 - LE CIRCUIT EST PRESENTE AVEC TOUTES LES COMMANDES A LA POSITION ARRET.
 - LES COMPOSANTS MARQUES D'UN * N'APPARAISSENT PAS SUR TOUS LES MODELES.