

SERVICE DATA SHEET

Electric Range with ES 540 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

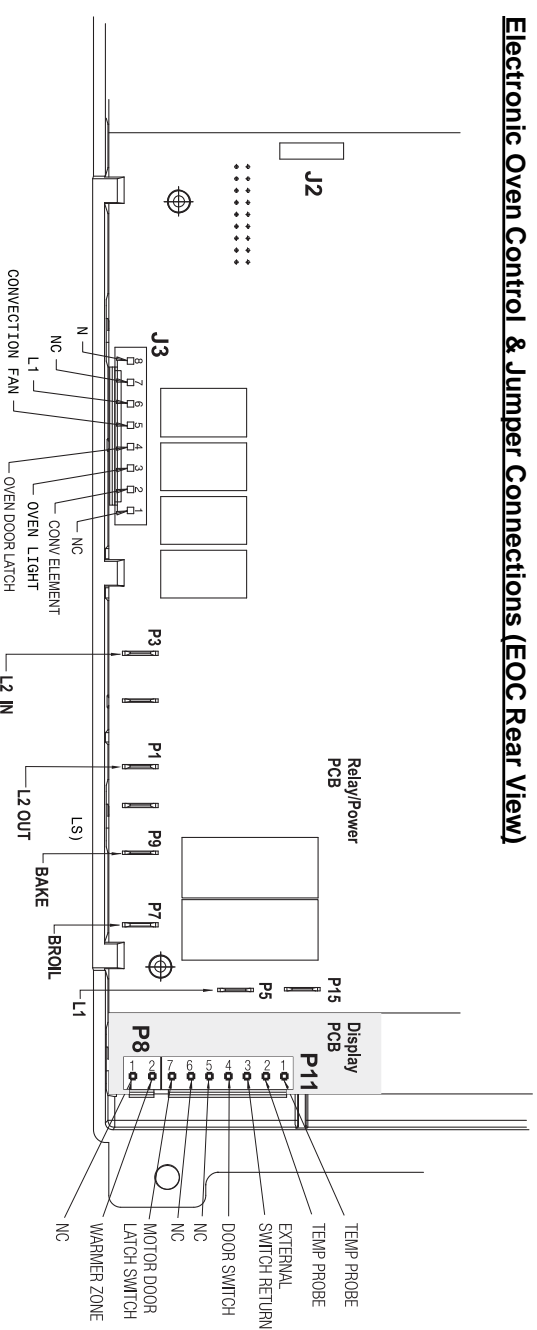
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **STOP/CLEAR** or **CANCEL** keypad to end Bake mode.

Temperature Adjustment

- While in a non-cooking mode, press and hold the **BAKE** key pad for 6 seconds.
- The current calibration offset (temperature adjustment) should appear in the temperature display.
- Use the number key pads (0-9) to enter the desired amount of adjustment (up to 35°F).
- Press the **CLEAN** key pad to change the sign of the adjustment to a (-) if necessary. A positive adjustment will not display a sign.
- Once the desired adjustment (-35° to 35° F) has been entered, press the **START** key pad to accept the change or the **STOP/CLEAR** or **CANCEL** key pad to reject the change.

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

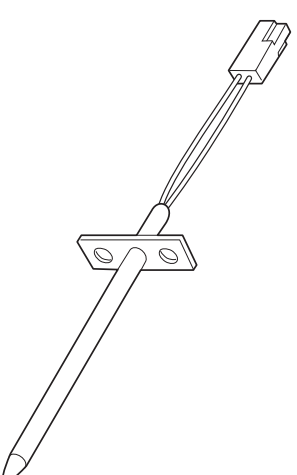
Electronic Oven Control & Jumper Connections (EOC Rear View)



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

p/n 316905240(1110)

Resistance Temperature Detector (RTD)



Resistance Temperature Detector Scale

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

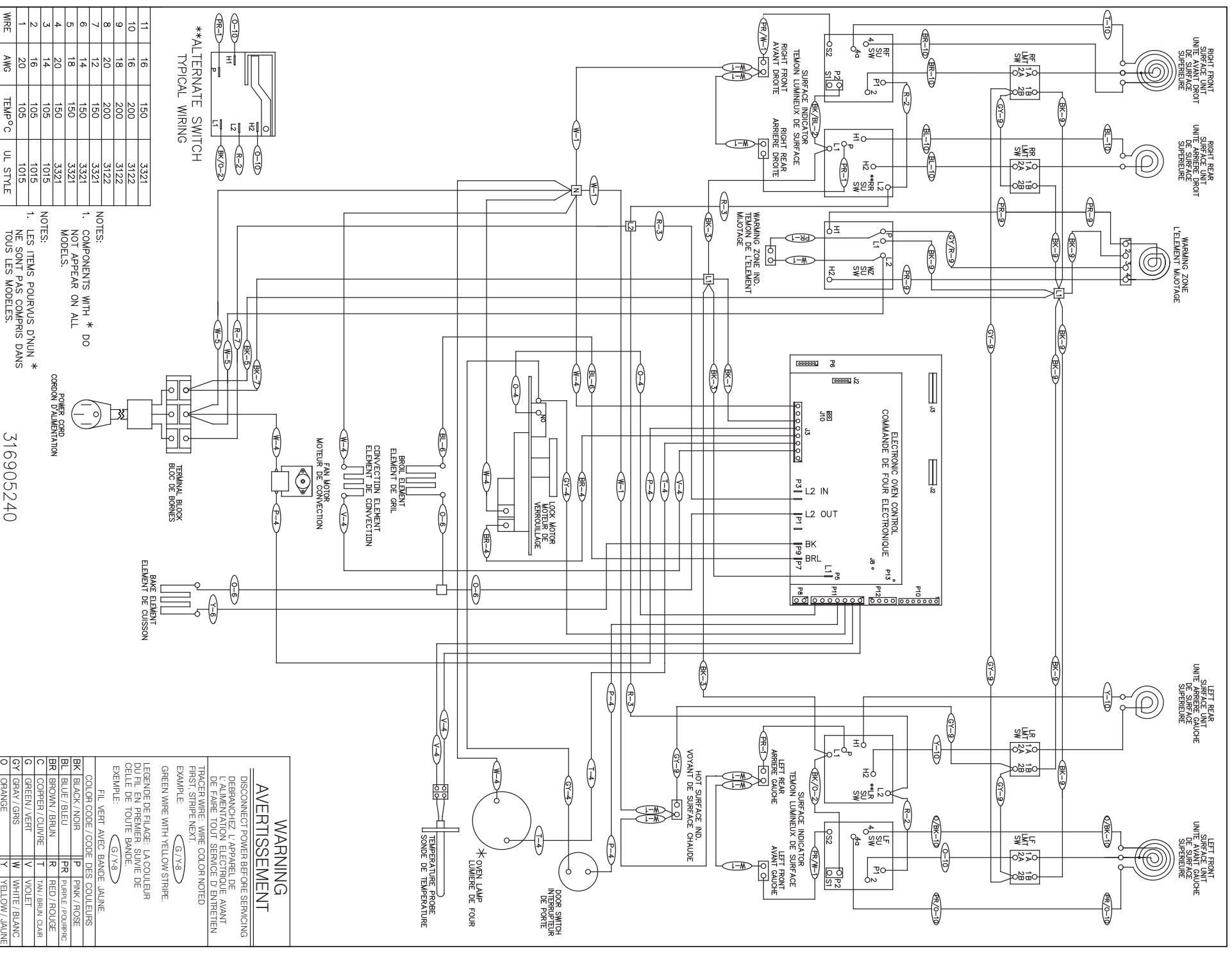
Fault Code	Likely Failure Condition/Cause	Suggested Corrective Action
F10	Runaway Temperature.	1. (F10 only) Check RTD Sensor Probe & replace if necessary. If oven is overheating, disconnect power. If oven continues to overheat when the power is reappplied, replace EOC. Severe overheating may require 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 <i>(for electric range models ONLY)</i>	1. Test harness/connections P4 (EOC) & P7 (Surface Element Control Board) 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. <i>(for models equipped with Bake-n-Warm™ ONLY)</i>	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		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) Check the wiring between EOC & Lock Motor Micro Switch.
F91	Maximum oven door unlock attempts exceeded.	2. (F90) Replace the Motor Door Latch assembly if necessary.
F92	Maximum oven door open time exceeded.	3. (F90) Check for binding of the Latch Cam, Lock Motor Rod & Lock Motor Cam.
F93	Maximum oven door lock time exceeded.	4. (F90) Check to see if Lock Motor Coil is open. If open, replace Lock Motor Assembly.
F94	Maximum oven door lock attempts exceeded.	5. (F90) Lock Motor continuously runs - If Micro Switch is open, replace Lock Motor Assembly.
F95	Door Latch	6. (F90) 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	Door Switch COM-NO
Baker/Time Bake	X	X*			X
Conv/Speed Bake	X	X*		X	X
Broil		X			X
Clean	X				X
Unlocked					X
Locked			X		X
Unlocking			X		X
Door Open					X
Door Closed					X
Cooktop Active					X

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

General Troubleshooting Diagram



****ALTERNATE SWITCH
TYPICAL WIRING**

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

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

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

**WARNING
AVERTISSEMENT**

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

TRACER/WIRE WIRE COLOR/NOID
PINS / STRIPE NENT
EXAMPLE G/Y+8

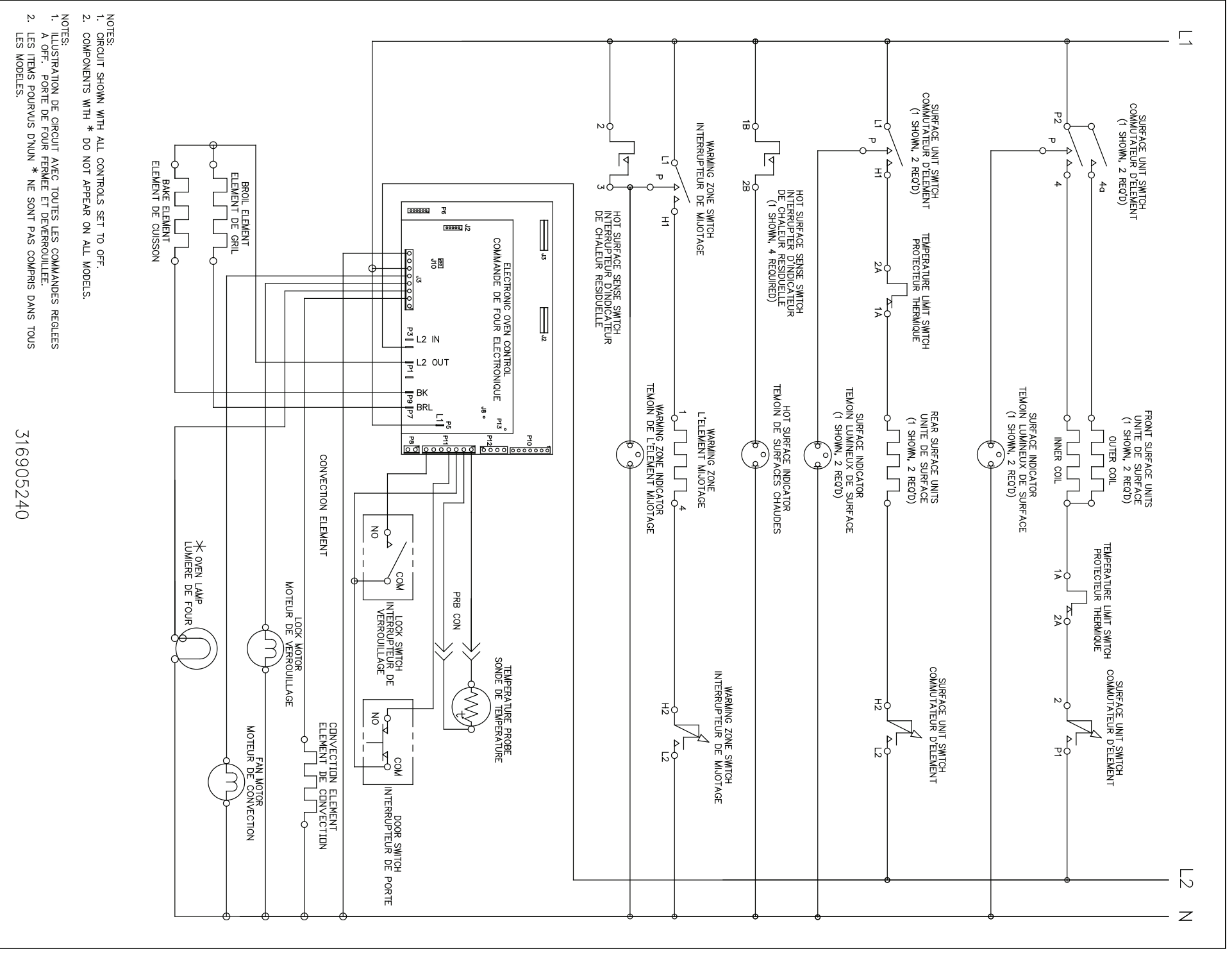
GREEN WIRE WITH YELLOW STRIPE
LEGENDE DE FILAGE: LA COULEUR
DU FIL EN PREMIER SUIVE DE
DELE DE TOUTE BANDE
EXEMPLE: G/Y+8

FIL VERT AVEC BANDE JAUNE

COLOUR CODE / CODE DES COULEURS	IP	IP	IP
BL BLACK / NOIR	BR	BU	PK / ROSE
BR BROWN / BRUN	BR	BU	PK / ROSE
CO COPPER / COUVRE	CO	GR	GR / ROUGE
GY GREEN / VERT	GY	GR	GR / ROUGE
W WHITE / BLANC	W	Y	Y / JAUNE
OR ORANGE	O	Y	Y / JAUNE

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General Troubleshooting Schematic



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1	20	105	1015
WIRE	AWG	TEMP°C	UL STYLE

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 TEMS POURVUS D'UN * NE SONT PAS COMPRIS DANS TOUS
LES MODELES.

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