SERVICE DATA SHEET

Electric Ranges with ES 530 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

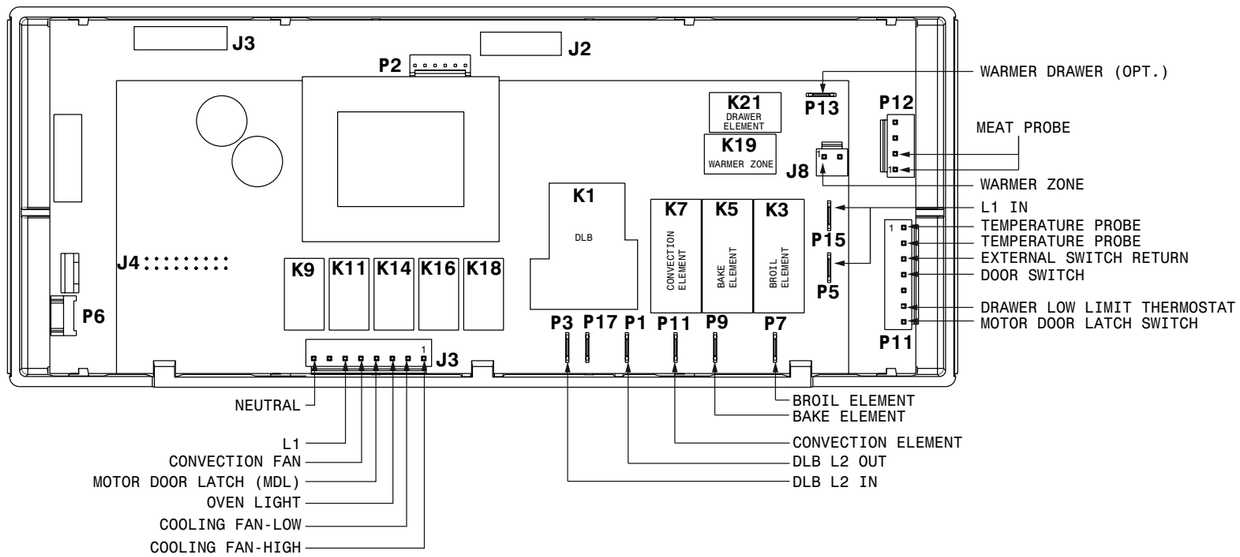
Set the electronic oven control for normal baking at 350°F. Obtain an average oven temperature after a minimum of 5 cycles. Press **Stop/Clear/Cancel** to end bake mode.

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. Use the slew keys to adjust the oven temperature up or down 35°F in 5°F increments.
5. Once the desired (-35° to 35°) offset has been applied, press **Stop/Clear/Cancel**.

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

Electronic Oven Control (rear view)



IMPORTANT

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

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

807880630 Rev A (1606)

ELECTRONIC OVEN CONTROL (EOC) FAULT CODE DESCRIPTIONS

Note: Generally speaking "F1x" implies a control failure, "F3x" an oven probe problem, and "F9x" a latch motor problem.

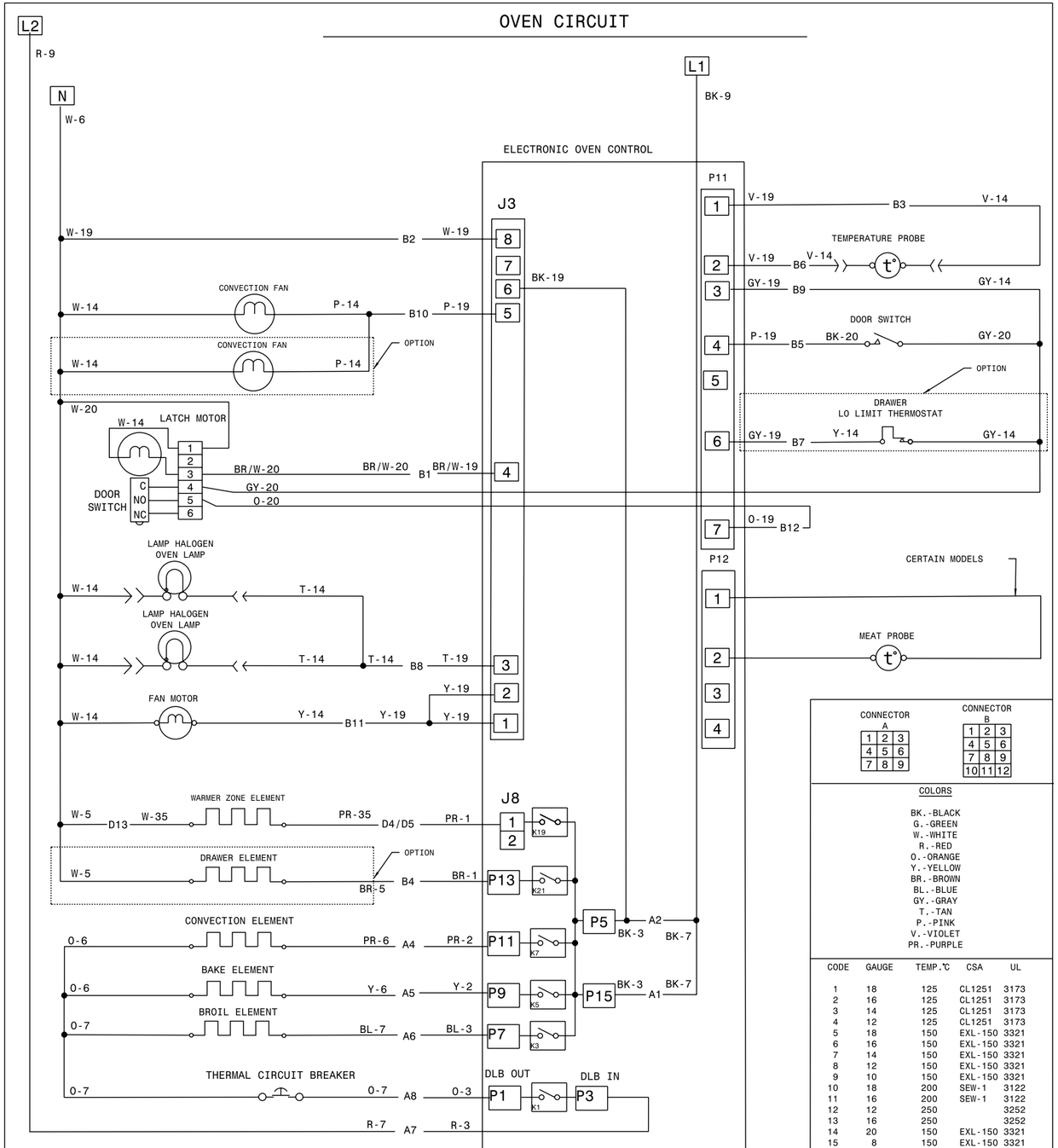
Code	Condition / Cause	Suggested Corrective Action
F10	Control has sensed a potential runaway oven condition. Control may have shorted relay, RTD sensor probe may have a gone bad.	Check RTD sensor probe and replace if necessary. If oven is overheating, disconnect power. If oven continues to overheat when power is reapplied, replace the EOC.
F11	Shorted Key: a key has been detected as pressed (for a long period) will be considered a shorted key alarm and will terminate all oven activity.	1. Press Cancel key. 2. If fault returns, replace the keyboard (membrane). 3. If the problem persists, replace the EOC.
F13	Control's internal checksum may have become corrupted.	1. Press Cancel key. 2. Disconnect power, wait 10 seconds and reapply power. If fault returns upon power-up, replace EOC.
F14	Misconnected keyboard cable.	1. Disconnect power. Verify the flat cable connection between the keyboard membrane and the EOC on J2 and J3. 2. If the problem persists, replace the EOC. 3. If the connection is good but the problem persists, replace the keyboard (membrane switch).
F15	Controller self check failed.	Replace the EOC.
F20	Control had detected a problem with the communication link with the ESEC.	1. Check connection between P6 on EOC and P7 on ESEC-UIB. 2. If problem persist, replace ESEC-UIB. 3. If all above steps failed to correct situation, replace EOC.
F30	Open RTD sensor probe/ wiring problem. Note: EOC may initially display an "F10", thinking a runaway condition exists.	1. Check wiring in probe circuit for possible open condition. 2. Check RTD resistance at room temperature (compare to probe resistance chart). If resistance does not match the chart, replace the RTD sensor probe. 3. Let the oven cool down and restart the function 4. If the problem persists, replace the EOC.
F31	Shorted RTD sensor probe / wiring problem.	
F62	Missing zero-cross signal.	Replace the EOC.
F90	Door motor mechanism failure. The controller does not see the motor rotating.	1. Press Cancel key. 2. If Cancel key does not eliminate problem, turn off power for 30 seconds, then turn on power. 3. Check wiring of Lock Motor, Lock Switch and Door Switch circuits. 4) Unplug the lock motor from the board and apply power (L1) directly to the Lock Motor. If the motor does not rotate, replace Lock Motor Assembly. 4. Check Lock Switch for proper operation (do they open and close, check with ohmmeter). The Lock Motor may be powered as in above step to open and close Lock Switch. If the Lock Switch is defective, replace Motor Lock Assembly. 5. If all above steps fail to correct situation, replace the EOC in the event of a motor that does not rotate.
F95	Door motor mechanism failure. The motor does not stop rotating.	1. Press Cancel key. 2. Turn power off for 30 seconds then turn power on. If the door motor never stops rotating, or if the F95 error comes back again, verify wiring of the motor. If wiring is good, replace the EOC. 3. If the problem persists, replace the motor door latch assembly.

ELECTRONIC SURFACE ELEMENT CONTROL (ESEC) FAULT CODE DESCRIPTIONS

E013	Bad EEPROM.	Replace ESEC-UIB.
E014	Loss of Display tail #0.	Check connection P1 on ESEC-UIB and P1 on ESEC Rotary HI Board (RR).
	Loss of Display tail #1.	Check connection P2 on ESEC-UIB and P2 on ESEC Rotary HI Board (RF).
	Loss of Keyboard Tail.	Check connection J2 on ESEC-UIB and J8 (RF).
E015	ESEC self test failed.	An E015 error code may indicate the ESEC-UIB is not receiving a synchronization signal from the ESEC-Relay Board. Check first if J2 pin 5 on the ESEC-Relay Board is wired to P4 pin 5 on the ESEC-UIB. If wiring is good and the problem is still there, replace the ESEC-UIB. If the problem persists, replace the ESEC-Relay Board.

OVEN CIRCUIT ANALYSIS MATRIX	On Relay Board									
	ELEMENTS									
	Bake P9	Broil P7	Conv P11	Conv Fan J3-5	Oven Light J3-3	Door Motor J3-4	DLB L2 out P1	Cooling Fan Relay 1 J3-2	Cooling Fan Relay 2 J3-1	Door Switch P11-3 / P11-4
Bake	X	X	X*	X			X	X		
Broil		X					X	X	X	
Convection Bake	X	X	X	X			X	X		
Convection Roast	X	X	X	X			X	X		
Convection Broil		X		X			X	X	X	
Clean	X	X					X	X	X	
Locking / Unlocking						X				
Light					X					
Door Open					X					
Door Closed										X

OVEN CIRCUIT



CONNECTOR A		
1	2	3
4	5	6
7	8	9

CONNECTOR B		
1	2	3
4	5	6
7	8	9
10	11	12

COLORS

BK.-BLACK
G.-GREEN
W.-WHITE
R.-RED
O.-ORANGE
Y.-YELLOW
BR.-BROWN
BL.-BLUE
GY.-GRAY
T.-TAN
P.-PINK
V.-VIOLET
PR.-PURPLE

CODE	GAUGE	TEMP.℃	CSA	UL
1	18	125	CL1251	3173
2	16	125	CL1251	3173
3	14	125	CL1251	3173
4	12	125	CL1251	3173
5	18	150	EXL-150	3321
6	16	150	EXL-150	3321
7	14	150	EXL-150	3321
8	12	150	EXL-150	3321
9	10	150	EXL-150	3321
10	18	200	SEW-1	3122
11	16	200	SEW-1	3122
12	12	250		3252
13	16	250		3252
14	20	150	EXL-150	3321
15	8	150	EXL-150	3321
16	8	60		
17	10	60		
18	10	200	SEW-1	3122
19	20	125	CL1251	3173
20	20	200	SEW-1	3122
21	22	125		3266
22	22	150		10109
23	18	200		3573
34	16	200		3512
35	18	200		3512
37	14	200		3512
41	20	200		3512

CAUTION:
DISCONNECT POWER BEFORE SERVICING UNIT.
LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS.
WIRINGS ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION.
VERIFY PROPER OPERATION AFTER SERVICING.

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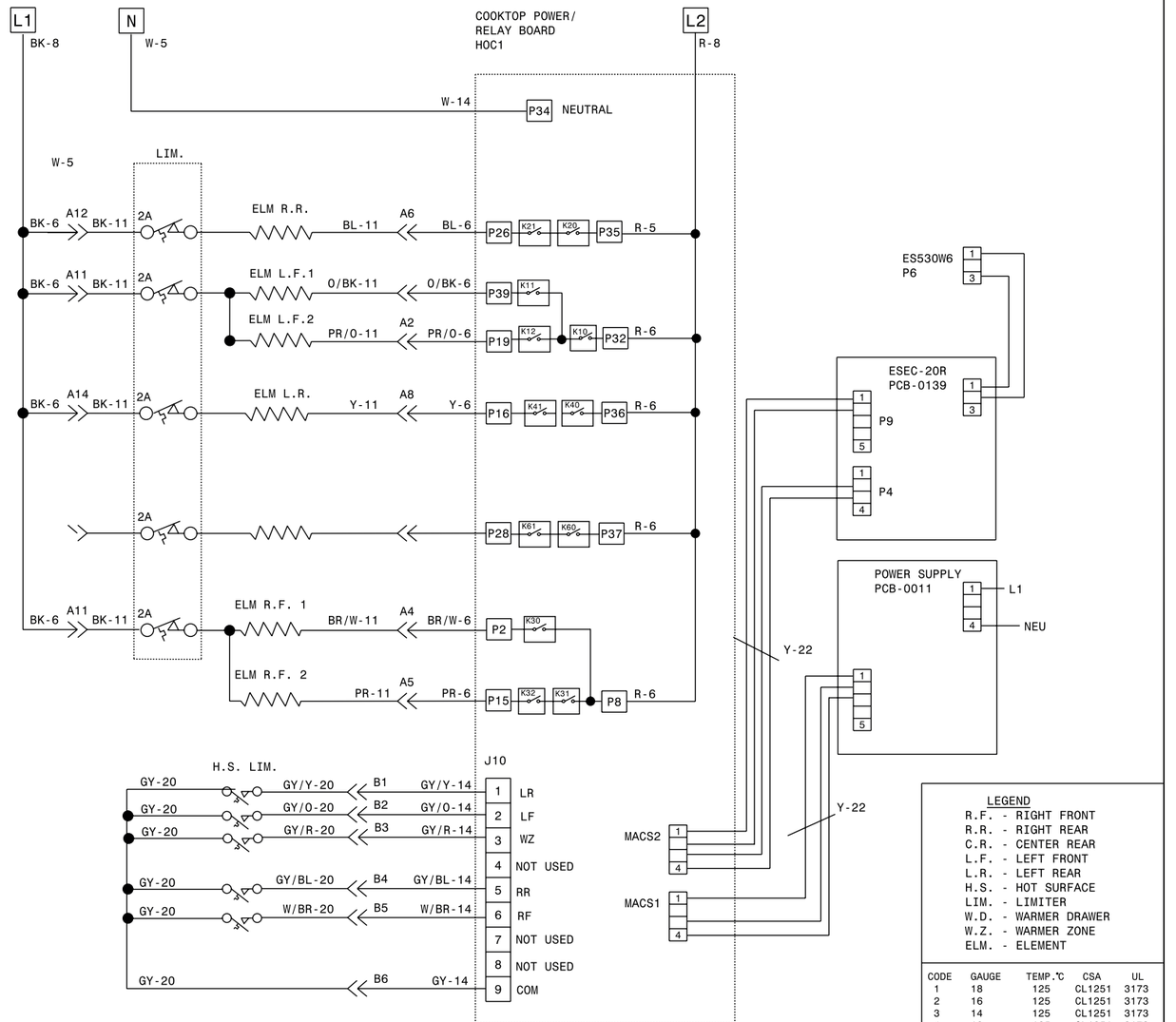
COOKTOP CIRCUIT



LEGEND
R.F. - RIGHT FRONT
R.R. - RIGHT REAR
C.R. - CENTER REAR
L.F. - LEFT FRONT
L.R. - LEFT REAR
H.S. - HOT SURFACE
LIM. - LIMITER
W.D. - WARMER DRAWER
W.Z. - WARMER ZONE
ELM. - ELEMENT

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9	10	150	EXL-150	3321
10	18	200	SEW-1	3122
11	16	200	SEW-1	3122
12	12	250		3252
13	16	250		3252
14	20	150	EXL-150	3321
15	8	150	EXL-150	3321
16	8	60		
17	10	60		
18	10	200	SEW-1	3122
19	20	125	CL1251	3173
20	20	200	SEW-1	3122
21	22	125		3266
22	22	150		10109
23	18	200		3573
34	16	200		3512
35	18	200		3512
37	14	200		3512
39	14	200	SEW-1	3122
41	20	200		3512
49	22	200		3122

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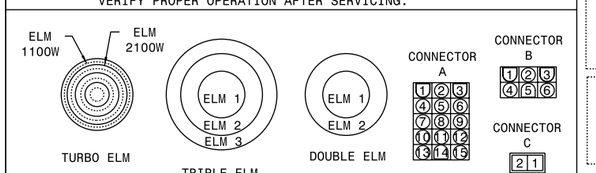

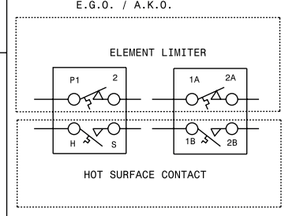

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