



Fast Track Troubleshooting

Model:

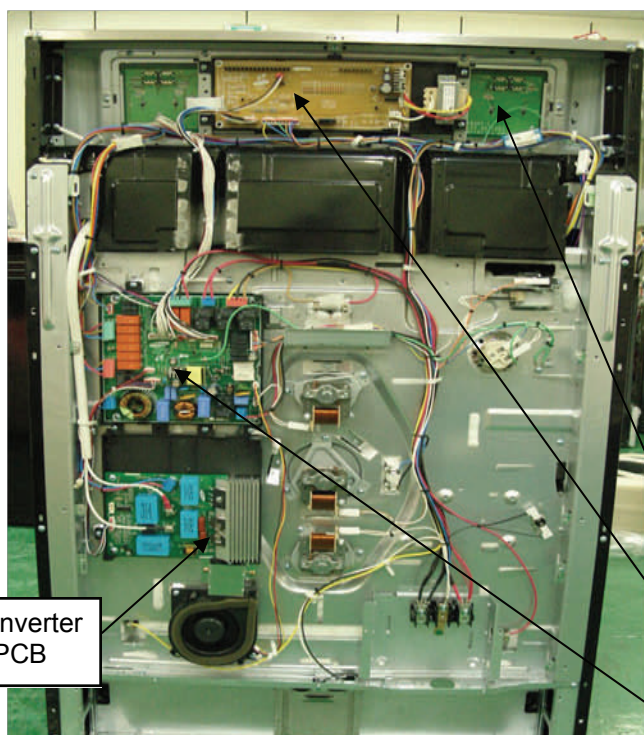
FE-N300WX/XAA

IMPORTANT SAFETY NOTICE – “For Technicians Only” This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

Publication # **tsFE-N300** Revision Date **07/19/2010**



WARNING: It is critical to route wires and wire harness identical to the way they were, to prevent electromagnetic interference causing possible fault codes.

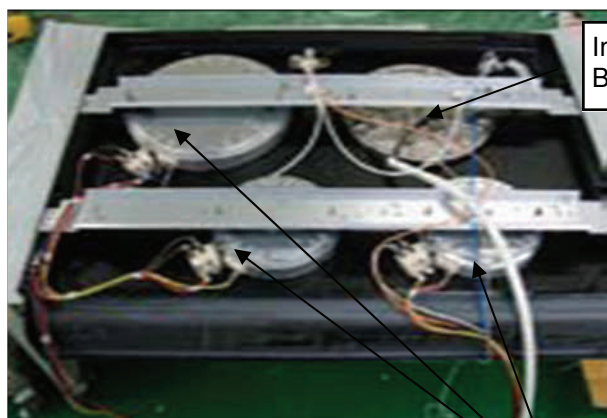


Inverter PCB

Touch Pad PCB

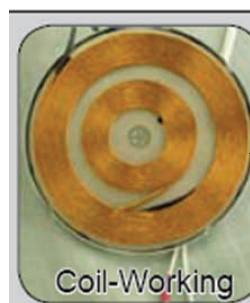
Main PCB

Power PCB



Induction Burner

Radiant Burners



Inverter Coil

Heating Elements

Induction/Radiant Elements				Oven Elements			
Component	Voltage	Wattage	Resistance @ Room Temp	Component	Voltage	Wattage	Resistance @ Room Temp
LR (Rad)	240vac	1200W	45Ω~50Ω	Broil	240vac	3800 W	Approx : 13 ~ 16Ω
RF (I)	240vac	9"-2200/3200W	0.01~1Ω	Bake	240vac	3000 W	Approx : 26 ~ 30Ω
LF (Rad)	240vac	1400/3000	41Ω/19Ω	Convection	240vac	800W	Approx : 70 ~ 73Ω
RR (Rad)	240vac	1200W	45Ω~50Ω	Warming	120vac	600 W	Approx : 22 ~ 25Ω

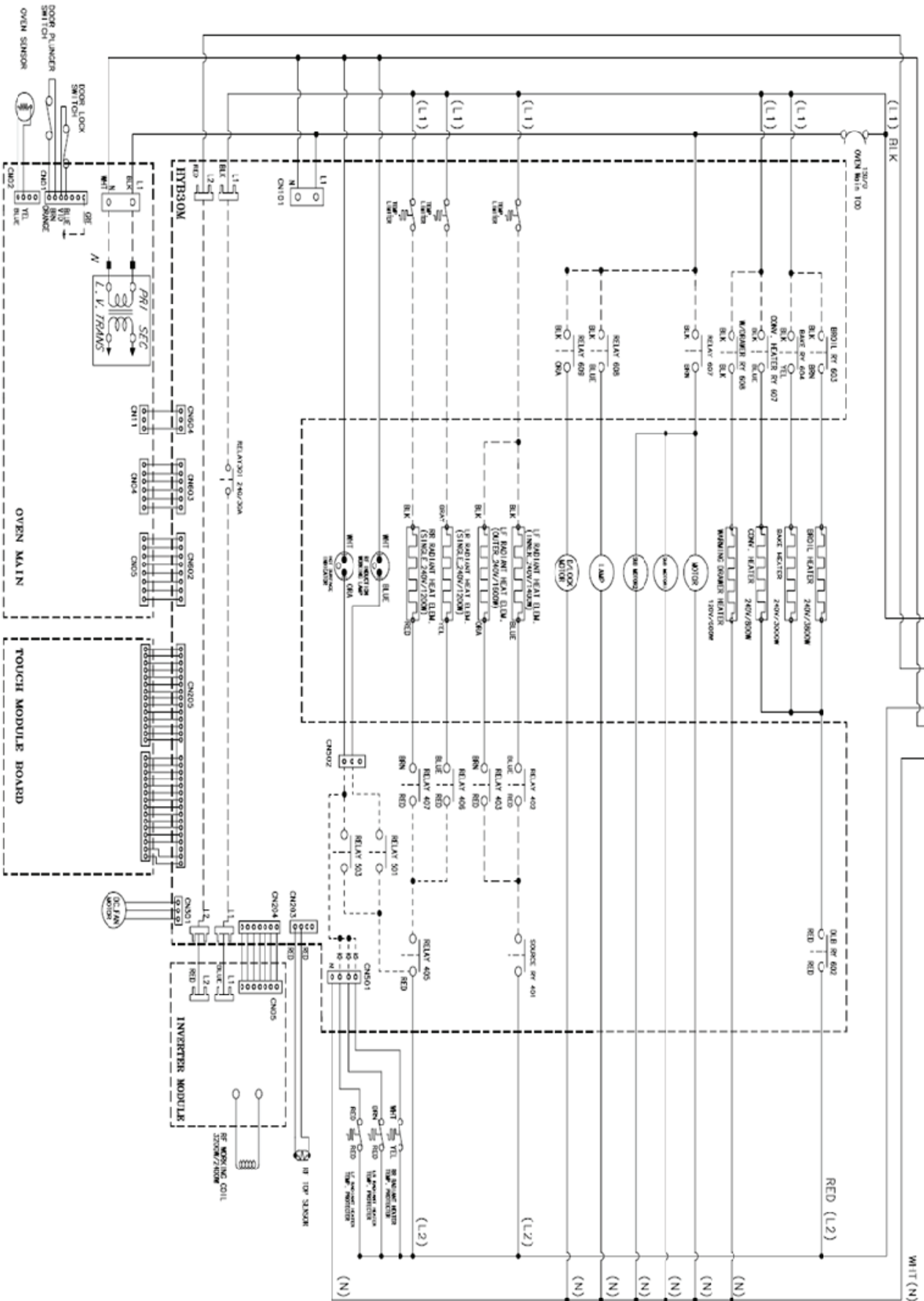
Components

Door Lock Mtr				Low Voltage Transformer			
Door Lock Mtr	120vac		1750~1850Ω	(Wht)	120vac		75 ~ 80Ω
Conv Fan	120vac		20 ~ 30Ω	(Red)	13.5vac		1.8~2.2Ω
Sub Conv Fan	120vac		85 ~ 100Ω	(Yel)	8vac		0.8~1.2Ω
DC Cooling Fan	12vdc						

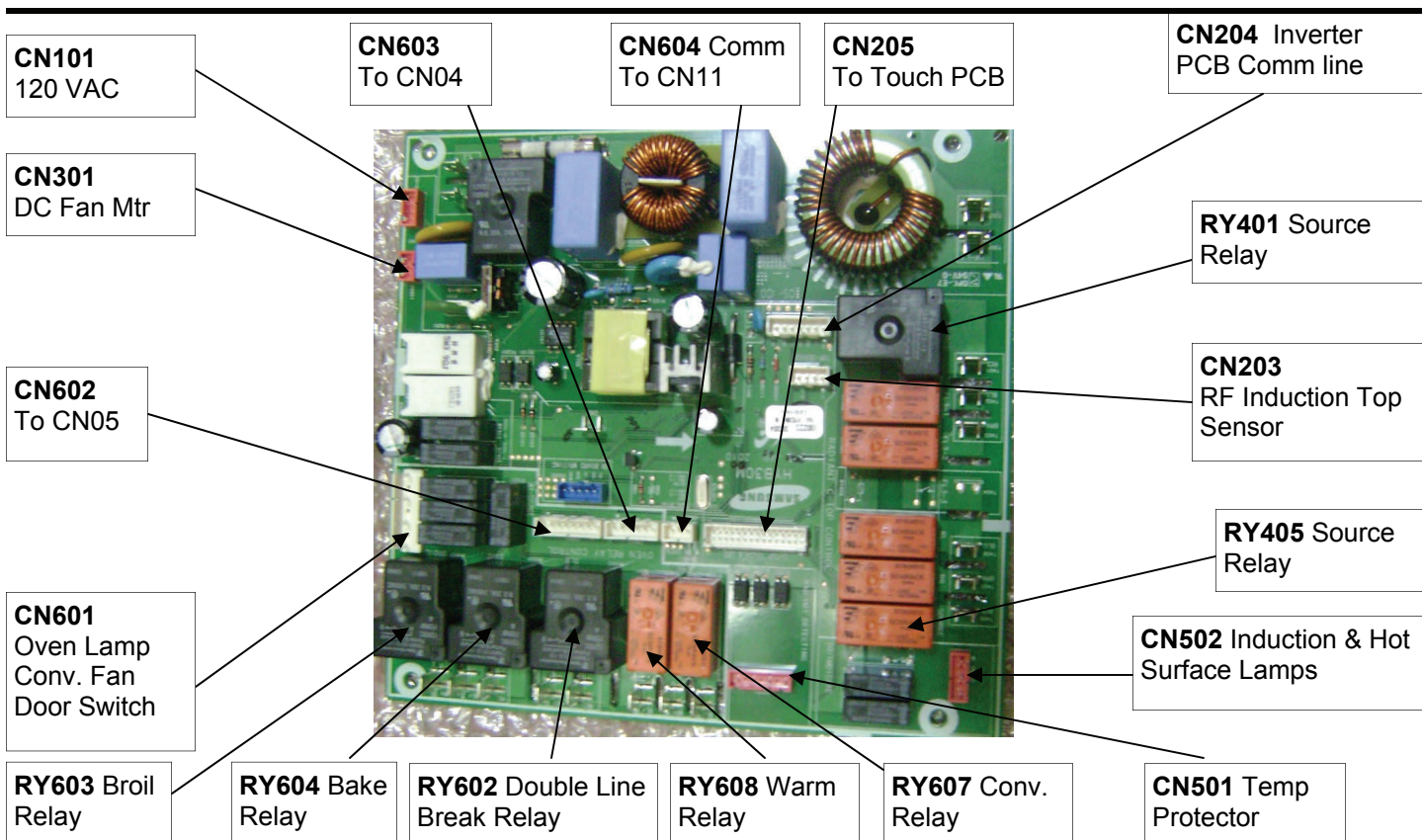
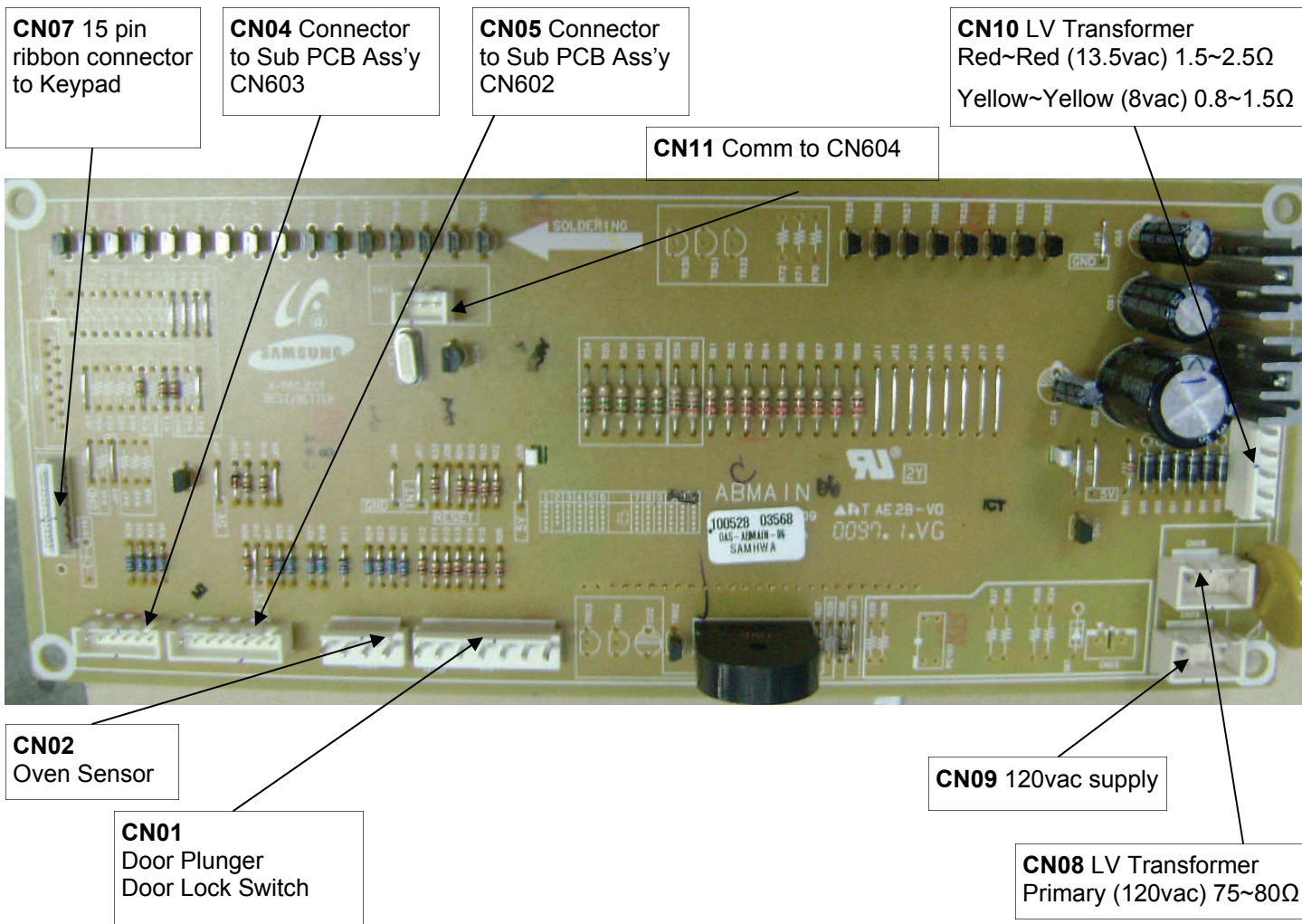
NOTE
 1) INPUT POWER : AC240V 60Hz, 12000W, 50.0A
 1-1) OVEN HEATER : MAX 4500W, 18.5A
 1-2) COOKTOP : MAX. 7500W, 32.5A
 2) OVEN DOOR OPENED AND UNLOCKED

SCHEMATIC DIAGRAM

MODEL : FE-N300WX/XAA



COLOR		COLOR	
RED	RED	GRAY	ORANGE
WHITE	WHITE	VIO	VIOLET
BLUE	BLUE	BLK	BLACK
YEL	YELLOW	GRAY	GRAY
SKY	SKY	GRN	GREEN
BROWN	BROWN		



Induction Coil Temperature Sensor Temp/Resistance/Voltage

(Temp °F)	Resistance (Ω)	Input volt	(Temp °F)	Resistance (Ω)	Input volt
-4	60879	4.919	311	229.33	0.933
34	22707	4.789	320	207.62	0.860
41	19085	4.751	329	188.37	0.793
50	15449	4.696	338	171.25	0.731
59	12583	4.632	347	156	0.675
68	10309	4.558	356	142.38	0.623
77	8494.5	4.473	365	130.2	0.576
86	7037.3	4.378	374	119.29	0.533
95	5860.4	4.271	383	109.48	0.493
104	4904.9	4.153	392	100.65	0.457
113	4124.9	4.024	401	92.7	0.424
122	3485	3.885	410	85.51	0.394
131	2957.5	3.737	419	79.01	0.366
140	2520.5	3.580	428	73.12	0.341
149	2157	3.416	437	67.77	0.317
158	1853.3	3.248	446	62.9	0.296
167	1598.4	3.076	455	58.47	0.276
176	1383.6	2.902	464	54.43	0.258
185	1202	2.729	473	50.74	0.241
194	1047.8	2.558	482	47.36	0.226
203	916.42	2.391	491	44.26	0.212
212	804.08	2.229	500	41.42	0.199
221	707.7	2.072	509	38.81	0.187
230	624.75	1.923	518	36.41	0.176
239	553.11	1.781	527	34.2	0.165
248	491.06	1.647	536	32.16	0.156
257	437.16	1.521	545	30.28	0.147
266	390.2	1.403	554	28.54	0.139
275	349.18	1.294	563	26.92	0.131
284	313.24	1.193	572	25.43	0.124
293	281.67	1.099			
302	253.87	1.012			

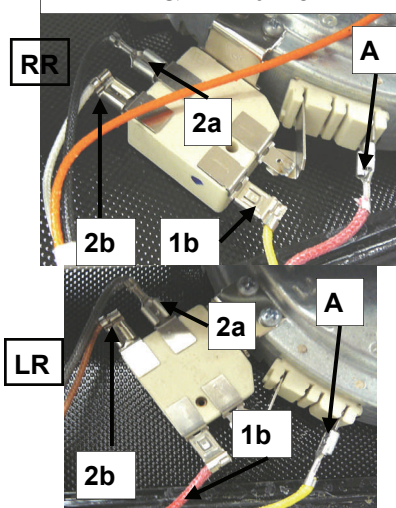
Oven Temp Sensor Resistance Chart

Degree °F	Resistance Ω
0	932.12
14	961.86
23	980.95
32	1000.00
41	1019.02
50	1038.02
59	1056.99
68	1075.92
77	1094.83
86	1113.71
95	1132.56
104	1151.38
113	1170.17
122	1188.93
212	1374.93
302	1558.01
392	1738.06
482	1915.39
572	2089.69
662	2261.07
752	2429.52
842	2595.05
932	2757.65
1000	2878.57

The oven sensor is considered open if it measures > ~2950Ω

The oven sensor is considered shorted if it measures < ~930Ω

LR & RR Burner



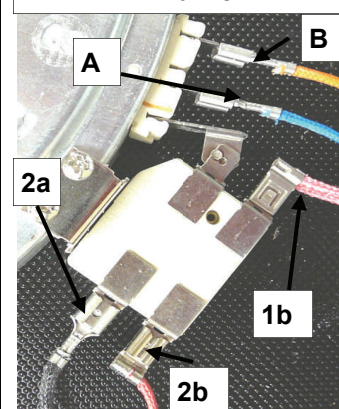
LR & RR radiant element

Position	Color
(RR) A	Red
(LR) A	Yellow
(RR) 1b	Yellow
(LR) 1b	Red
(LR) 2b	Orange
(RR) 2b	Gray
2a	Black
Position	Ohms
1b-2b	∞Ω
2a-"A"	45~50Ω

LF radiant element

Position	Color
A	Blue
B	Yellow
1b	Red
2b	Dark Red
2a	Black
Position	Ohms
1b-2b	∞Ω
2a-"A"	45~55Ω
2a-"B"	42~48Ω

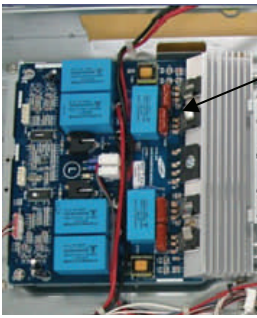
LF Burner



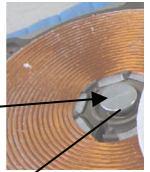
Samsung 'Electric Range' Diagnostic Code Quick Guide

Display Failure Codes	POWER LOSS CLEARS CODES 1)Press Clock AM/PM pad. 2) Press pad again, select AM. 3)Press # 1-2-3-4 pads. 4)Press Set/Start pad. 5)Press Custom Cook & # 0 pads simultaneously for 2 seconds. 6) error codes will display. 7) Press number 0 pad to review last 5 codes. 8) Press Clear/Off to exit.	
Code	Cause	Solution
E27 E28	Oven sensor opened(over 2950Ω) Oven sensor shorted (Under 930Ω)	Disconnect sensor. Check resistance:1080Ω at room temp If off value, replace sensor. If sensor is OK, check harness. Check resistance of sensor connector on main PCB (Normal:2850Ω)
E-08 E-0A	Oven not heating error Oven over heating error	Disconnect sensor. Check resistance :1080Ω at the room temp. If off value, replace sensor. Check resistance of the broil, bake & convection heater. Check DLB of sub PCB, Broil, Bake and Convection heater relays are being activated Check wiring harnesses between main PCB on sub PCB. Check resistance of oven sensor connector on main PCB. (Normal : 2850Ω)
SE	Shorted key	Check keypad connector at main PCB. Check for short between main PCB and connector or keypad and cable. If no problem with connector and cable of keypad, replace the main PCB.
E-OE	Door locking error	Check wiring harness connections between door lock switch and motor. Check resistance of door lock motor ,1750~1850Ω at the room temperature. With operating door lockout, measure voltage at door lock motor. (Normal Voltage : AC 120V) Check whether door locking switch is operating properly.
LE	Low Voltage Error	It occurs when the DC 12V is dropped under 9V. It may occurs due to defects of PCB or wiring.
E-54	Communication error (Oven Main PCB ↔ HYB30M)	Check harness connection between Oven main PCB and HYB30M PCB. If there is no problem with connector or wire, replace the Oven main PCB or HYB30M PCB.
E-55	Communication error (Oven Main PCB ↔ Touch Control PCB)	Check wire harness connection between Oven main PCB and Touch control PCB. If there is no problem with connector or wire, replace the Oven main PCB or Touch control PCB.
E-56	Warning error (When Cooktop part has some error)	Refer to Cooktop Failure Display Codes section
FL	DC Motor Locking Error	It occurs when the DC Motor cannot operate due to defects of PCB, wiring or some disturbance on motor blade.
cE56	Communication Error (Oven Main PCB has some problem)	Instantaneous electrical noise affect MICOM signal. Reset Power. Check CN08, CN09, CN10. Replace Main PCB
	Top Sensor (to) Open Error	This is an open sensor error, disconnected wires or a defective PCB, may occur when ambient temperature falls under 14° F.
	Top Sensor (ts) Short Error	This error occurs when there is an shorted sensor, wires or a defective PCB
	IGBT (Insulated gate bipolar transistor) (bo) Sensor Open (high resistance) Error (Inverter Board).	This is an open sensor error, disconnected wires or a defective PCB, may occur when ambient temperature falls under 14° F.
	IGBT (bs) Sensor Short (low resistance) Error (Inverter Board).	This error occurs when there is a shorted sensor, wires or a defective PCB
	Over Temperature Error	It occurs when temperature of Top Sensor rises too high.
	Pan Detection Error	It occurs when the cookware is unsuitable or too small or no cookware has been placed on the cooking zone.

Component Troubleshooting

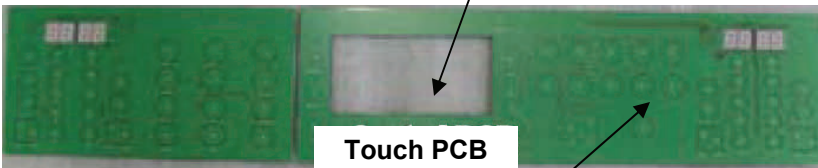


IGBT Errors: If top sensor resistance matches chart, wiring is OK, Replace Ass'y Inverter Module PCB, may also occur when the ambient temperature falls under 14° F.



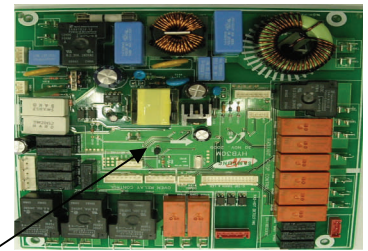
Top Sensor Ass'y Power PCB CN203 connector

Top Sensor Errors: If top sensor resistance (CN203 power PCB) matches chart, wiring is OK, Replace Ass'y Touch PCB, may occur when the ambient temperature falls under 14° F.

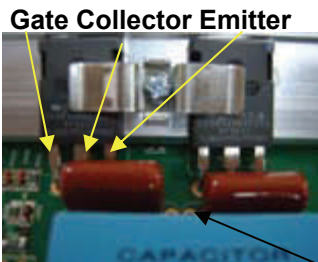


Touch PCB

Over Temperature Error: Verify proper pans being used. If top sensor resistance matches chart, wiring is OK, Replace Ass'y Touch PCB



Low Voltage Error: (12vdc below 9vdc) Check all wiring between Main PCB and Ass'y Touch PCB and Power PCB if OK, Replace Ass'y Power PCB.



Gate Collector Emitter

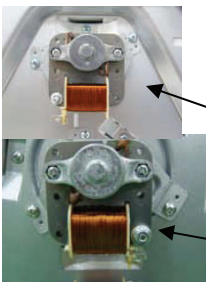
No Burner operation: Check relay terminal for 240vac, Check wiring from Inverter PCB to Touch PCB. Remove power, Check resistance between (G-E, G-C, E-C), any short replace Inverter PCB.



Pan Detection Error: Verify proper pans being used. Check wiring from Inverter PCB to Touch PCB, wiring is OK, Replace Ass'y Touch PCB or Inverter PCB.



Door Lock Error: Press and hold Cook Time & Delay Start for 3 seconds to test motor operation.



Upper Sub Convection Fan: Measure 120vac voltage for over 1 minute, as voltage is cycled.

Convection Fan: Measure 120vac voltage for over 1 minute, as voltage is cycled.

Lower Sub Convection Fan: Measure 120vac voltage for over 1 minute, as voltage is cycled.