



Fast Track Troubleshooting

Model:
NE597NO

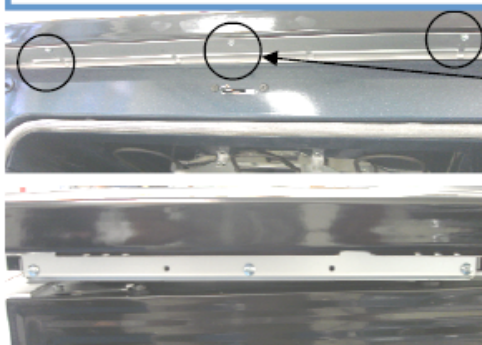
IMPORTANT SAFETY NOTICE – “For Technicians Only” This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in 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 # nw597NO

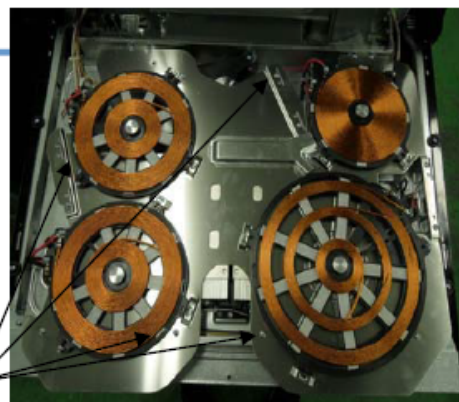
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SUPPORT INFORMATION

Training — Plus One <http://my.plus1solutions.net/clientPortals/samsung/>
Help — GSPN <http://gspn3.csportal.com>
Customer information videos and chat programs. Programs for
Fridges, Laundry, Ranges & DW



Cooktop Removal
Remove three front screws, lift top, then remove three screws on each side. You can now access the burners and Touch PCB
Note: Be very careful removing burner covers. The covers are a special material that will crack easily. The covers allow the top temperature sensor to measure the temperature of the ceramic glass. In the event the glass gets too hot the range will reduce power to the coils or shut down completely.
After removing wires to burners and 14 screws securing the induction top removing the induction top will allow access to the two induction PCBs with built in power supplies



Diagnostics Mode

1. Press Clock AM/PM pad.
2. Press Clock AM/PM pad again.
3. Press a number 1, 2, 3, 4 pad.
4. Press Start/Set pad.
5. Press Custom Cook and number 0 pads at the same time for 2 seconds. Error codes are displayed.
6. Press number 0 pad, the last 5 error codes can be checked. But, if the oven turns off, the stored error codes are deleted.
7. Press Clear/Off pad to return to normal display mode.

Clock
AM/PM

1 2 3 4

Start/Set

Custom
Cook + 0

HEATING ELEMENTS

INDUCTION ELEMENTS		
COMPONENTS	INPUT	WATTAGE
RF INDUCTION ELEMENT	240V	2300
RR INDUCTION ELEMENT	240V	1400
LF INDUCTION ELEMENT	240V	2000
LR INDUCTION ELEMENT	240V	1600

OVEN HEATING ELEMENTS		
COMPONENTS	INPUT	WATTAGE
BAKE	240V	3000W
BROIL	240V	3800W
CONVECTION	240V	800W
WARM DRAWER	120V	600W

SCHEMATIC DIAGRAM

MODEL: NE597N0PBSR/AA

COLOR	COLOR	COLOR	COLOR
RED	RED	ORA	ORANGE
WHT	WHITE	VIO	VIOLET
BLUE	BLUE	BLK	BLACK
YEL	YELLOW	GRAY	GRAY
SKY	SKY	GRE	GREEN
BRN	BROWN		

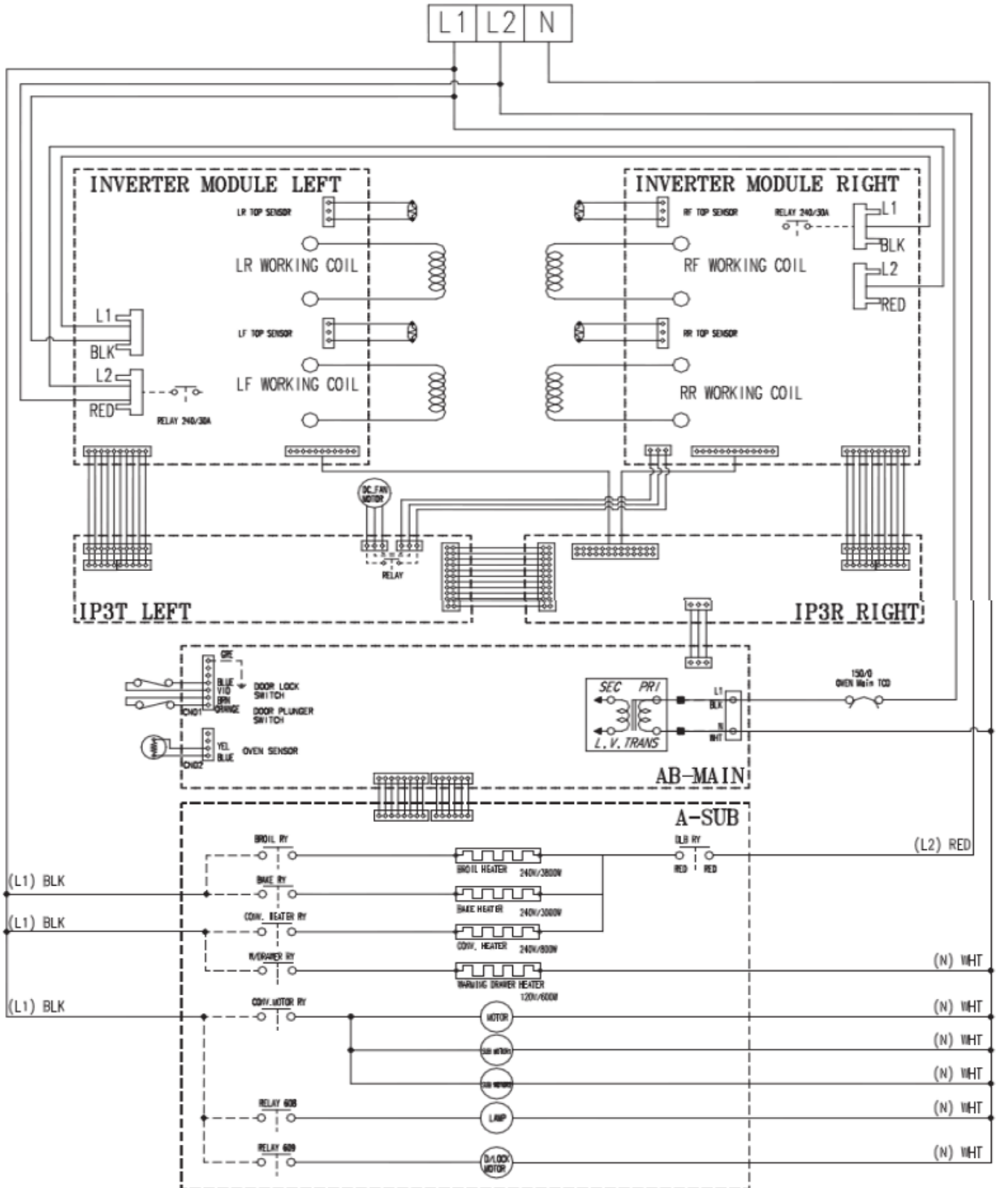
NOTE

1) INPUT POWER : AC240V 60Hz, 11800W, 49.0A

1-1) OVEN HEATER : MAX 4500W, 18.5A

1-2) COOKTOP : MAX 7300W, 30.5A

2) OVEN DOOR OPENED AND UNLOCKED



NOTE

1) INPUT POWER : AC240V 60Hz, 13200W, 55.0A

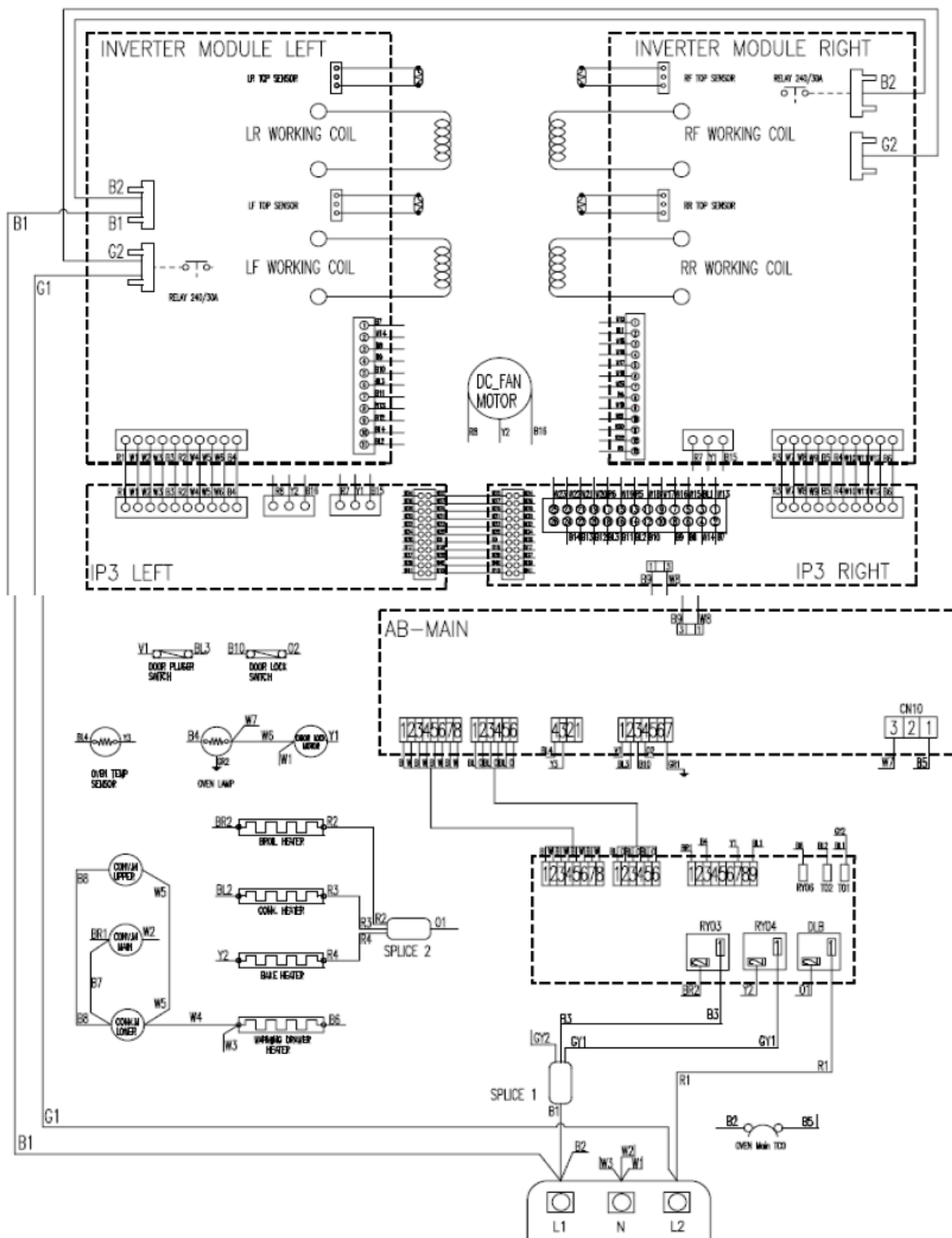
1-1) OVEN HEATER : MAX 5000W, 25.0A

1-2) COOKTOP : MAX 7200W, 30A

2) OVEN DOOR OPENED AND UNLOCKED

WIRING DIAGRAM MODEL: NE597NOPBSR/AA

COLOR		COLOR	
RED	R	ORANGE	O
WHITE	W	VIOLET	V
BLUE	BL	BLACK	B
YELLOW	Y	GRAY	GY
SKY	SK	GREEN	GR
BROWN	BR		

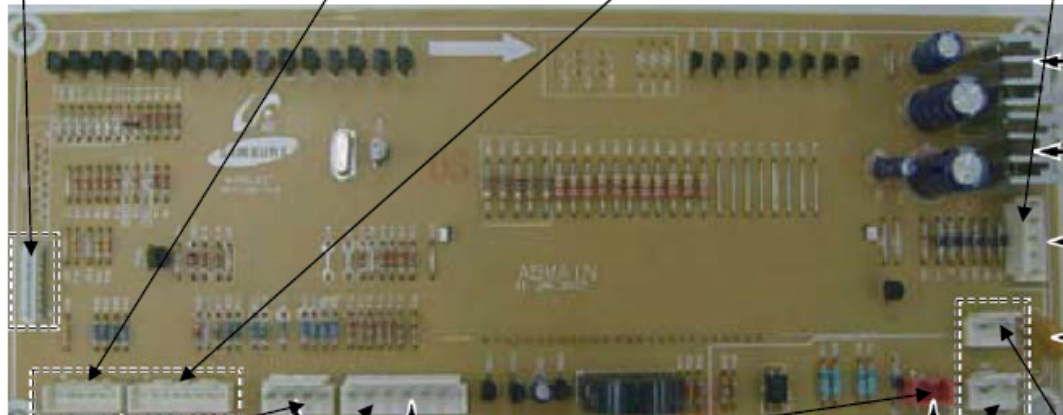


CN07 15 pin ribbon
connector to Keypad

CN04 Connector to
Sub PCB Ass'y
Blue Orange,
Blue Orange,
Blue Orange

CN05 Connector to
Sub PCB Ass'y
Blk~Wht, Blk~Wht,
Blk~Wht, Blk~Wht

CN10 LV Transformer
Red~Red (13.5vac)
1.5~2.5Ω
Yellow~Yellow (8vac)
0.8~1.5Ω



CN02 Oven Sensor
Yellow, Blue

CN01
Door Plunger
Door Lock Switch

CN03 Cooktop Lockout
Stops self clean/steam
if Hot lamp is on

CN09 120vac supply

CN08 LV Transformer
Primary (120vac)
75~80Ω

CN01
Lock Motor (Yellow)
Oven Lamp (White)
Conv. Fan (White)
Door Switch
Warming Center

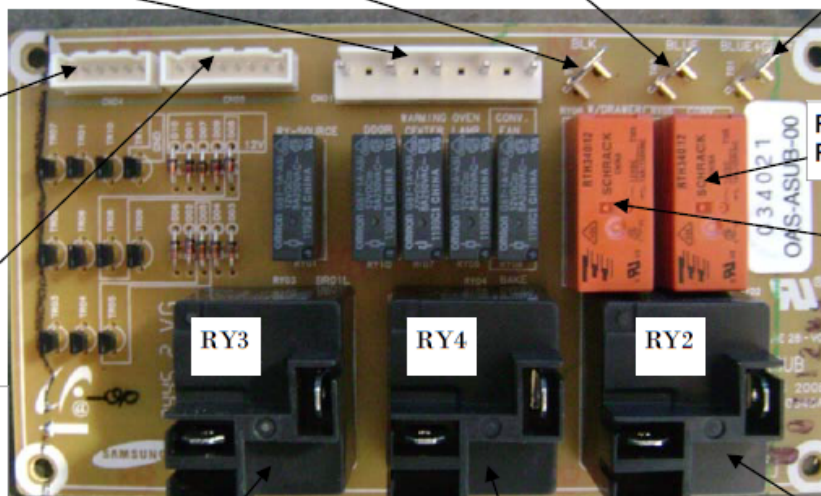
T03 Warming Drawer
Out (Black)

T02 Convection
Heater Out (Blue)

T01 L1 120vac Supply
for Warming Drawer &
Convection Heater
Relays (Blue + Gray)

CN04 Connector to
Oven PCB Ass'y
Blue Orange,
Blue Orange,
Blue Orange

CN05 Connector to
Oven PCB Ass'y
Blk~Wht,
Blk~Wht,
Blk~Wht,
Blk~Wht



RY5 Convection
Relay

RY6 Warmer
Relay

Broil Relay
Brown ~ Black

Bake Relay
Gray ~ Yellow

Double Line Break Relay
Red ~ Orange

Induction Coil Temperature Sensor Temp/Resistance/Voltage | Oven Temp Sensor Resistance Chart

(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			

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	

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

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.	
Failure Code	Cause	Solution
E27 E28	Oven sensor opened(over 2950Ω) Oven sensor shorted (Under 930Ω)	1. Disconnect power. Open the back cover. Disconnect sensor harness from control Measure sensor resistance :1080Ω at room temperature → If different value, replace oven sensor. 2. If there is not any problem with oven sensor, Please check whether there is a damaged terminal or wire on harness. 3. Check resistance of oven sensor connector on main PCB (Normal:2850Ω)
E-08 E-0A	Oven not heating error Oven over heating error	1. Disconnect power. Open the back cover. Disconnect sensor harness from control. Measure sensor resistance :1080Ω at the room temperature → If different value, replace oven sensor. 2. Check the broil, bake and convection heater. Check the resistance of each. 3. Check whether DLB of sub PCB, Broil, Bake and Convection heater relay are being activated 4. Check wiring harnesses between main PCB on sub PCB. 5. Check the resistance of oven sensor connector on main PCB. (Normal : 2850Ω)
SE	Shorted key	1. Check if cable of keypad has been inserted into connector of main PCB. 2. Check for short between main PCB and connector or keypad and cable. 3. If there is not a problem with connector on main PCB and cable of keypad, replace the main PCB.
E-OE	Door locking error	1. Disconnect power. Open the back cover. Check wiring harness connections between door lock switch and motor. 2. Check resistance of door lock motor ,1750~1850Ω at the room temperature. 3. With operating door lockout, measure voltage at door lock motor. (Normal Voltage : AC 120V) 4. 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.
	Top Sensor (to) Open Error	This error occurs when there is an open sensor, disconnected wires or a defective PCB, may occur when the 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 error occurs when there is an open sensor, disconnected wires or a defective PCB, may occur when the ambient temperature falls under 14° F.
	IGBT (Insulated gate bipolar transistor) (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 the temperature of the Top Sensor rises very highly.
	Pan Detection Error	It occurs when the cookware is unsuitable or too small or no cookware has been placed on the cooking zone.
	UART communication Error	Cause 1. Did not get a communication signal between each channel of inverter pcb. check the inverter PCB wire harness or resistance value of IGBT (short or open) → replaced wire harness or inverter pcb Cause 2. LVT of oven pcb is damaged or LVT connector is disconnected. → RE-connect LVT connector or replace oven main PCB.
	Communication Error	It occurs when Touch IC can't communicate with each inverter channel. (channel : 00~03)
		It occurs when Touch IC can't communicate with pcb sub.

#. Error code [E-84, E-85]

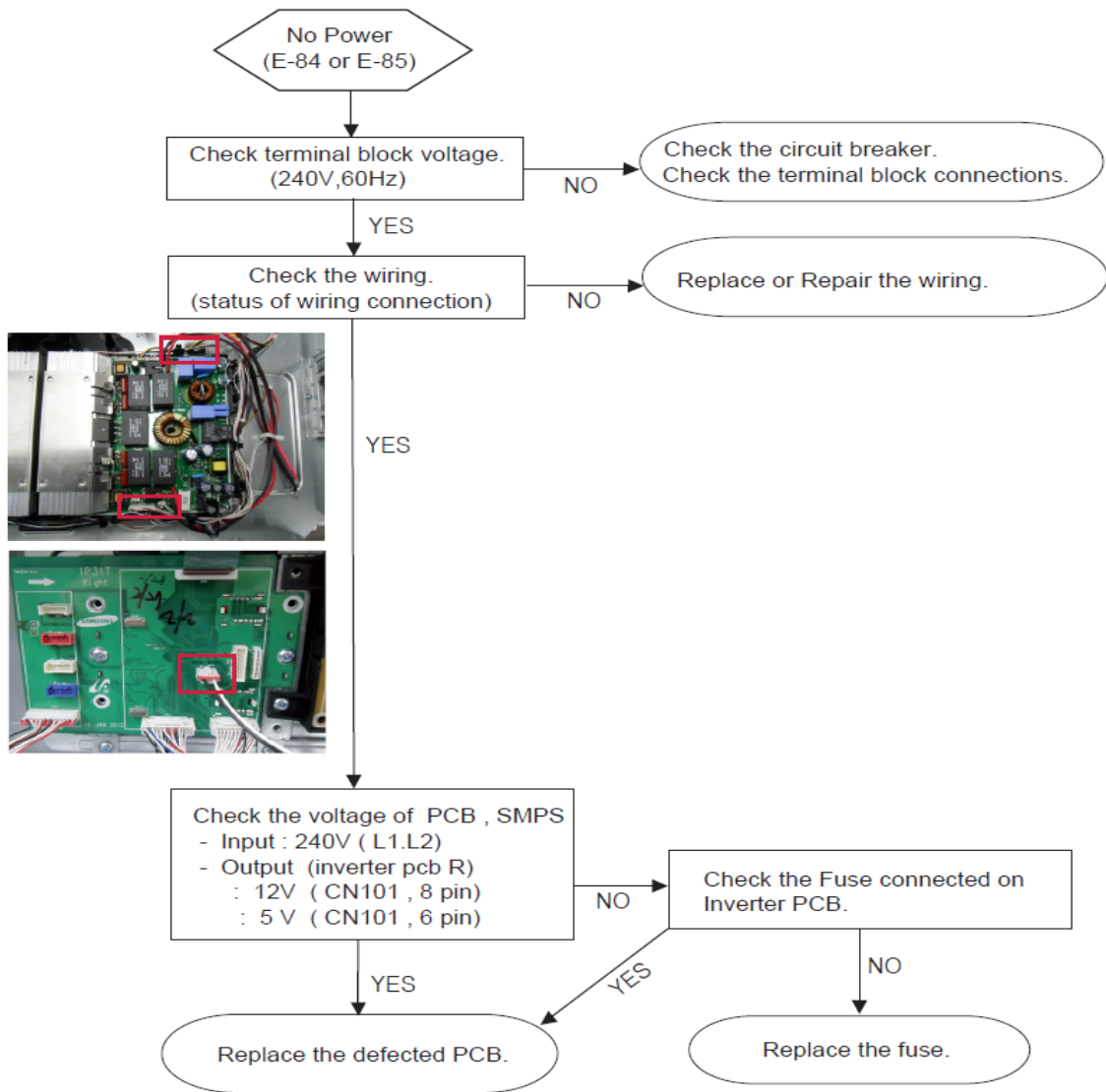
E-84, E-85

Communication Error (Oven Main PCB has some problem)

 Check Point

Power Plug, Main PCB, Wire connection

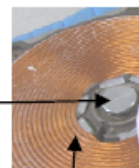
- Cause 1. Instantaneous electrical noise affect MICOM signal. →
After re-connecting power plug, can use normally.
- Cause 2. Power plug of 120V is loosely connected with outlet → Cooktop display use 240V(L1&L2), and Oven display use 120V(L&N) If Oven have no power, Cooktop display will show this error code. Check your power plug pin & outlet.
- Cause 3 : LVT of oven PCB is damaged or LVT connector is disconnected →
Re-connect LVT connector or replace oven Main PCB.



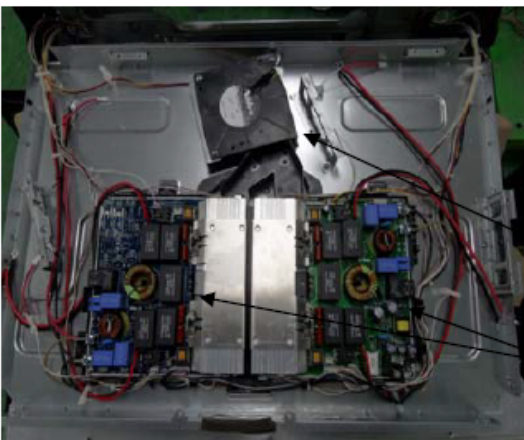
Component Troubleshooting

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

PULL &
ROTATE
COUNTER
CLOCKWISE



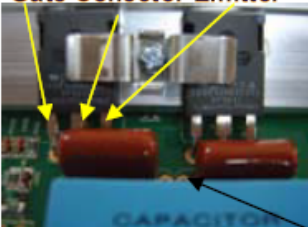
Top Sensors Errors: If top sensor resistance (CN03 touch pad) matches chart, wiring is OK, Replace Ass'y Touch PCB, may occur when the ambient temperature falls under 14° F. At room temperature it should read 7.65K ohms



Cooling Fan operates on DC power with a FG line back to the main PCB. If fan is slower than 500 rpms it will trigger an error code.

Each inverter board has a built in power supply.

Gate Collector Emitter



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

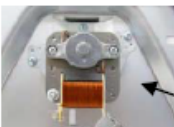
No Burner operation: Check relay terminal for 240vac, Check wiring from Inverter PCB to Touch PCB. Remove power, Check resistance between (G-E, G-C, E-C), any short replace Inverter PCB.



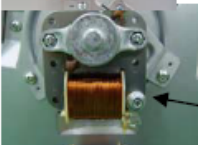
Pan Detection Error: Verify proper pans being used. Check wiring from Inverter PCB to Touch PCB, wiring is OK, Replace Ass'y Touch PCB & Inverter PCB.



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.