



Fast Track Troubleshooting

Model:
FTQ307NWGX/XAA

Notice: See Bulletins
Center Rack Issue
Inverter Cooling Fan Issue
Blown pattern fuse.

Note: There are 2 Versions
of this Range, verify
Version to order parts.

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.

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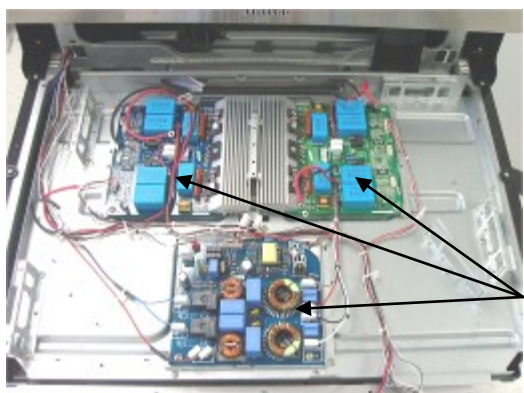
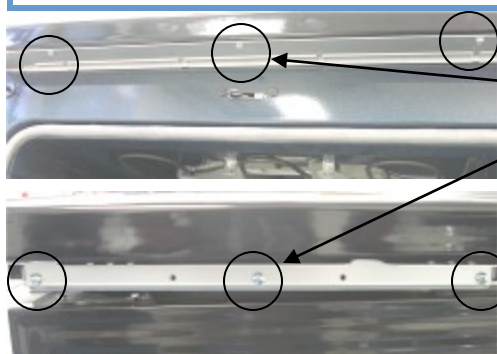
SUPPORT INFORMATION

Training — Plus One <http://my.plus1solutions.net/clientPortals/samsung/>

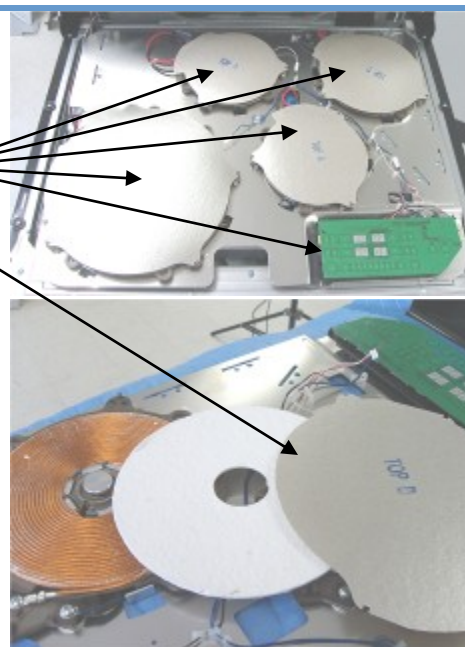
Help — GSPN <http://gspn3.samsungcsportal.com>

Samsung Product Support TV <http://support-us.samsung.com/spstv/howto.jsp>

Customer information videos and chat programs. Programs for Fridges, Laundry, Ranges & D/W

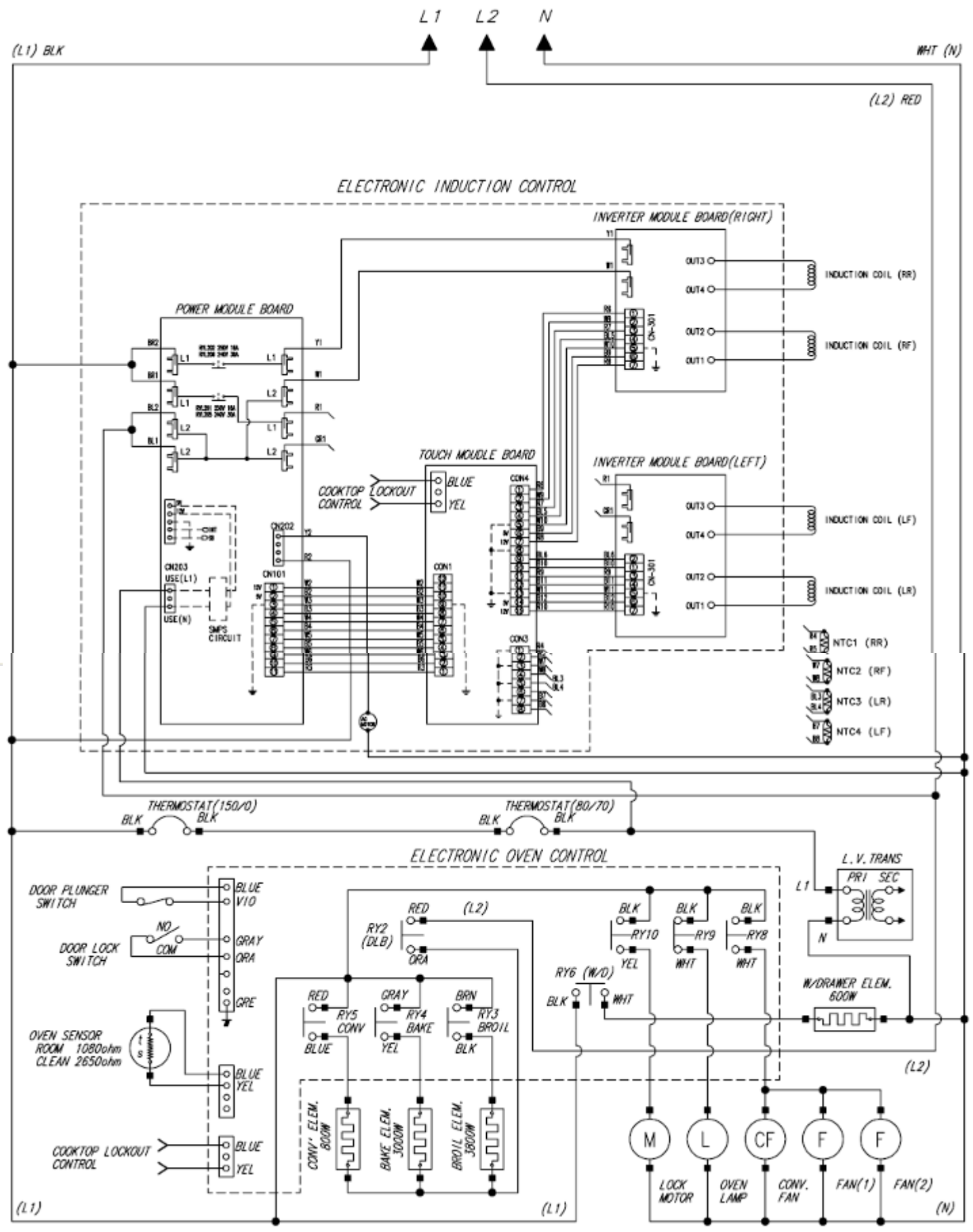


Cooktop Removal
Remove three front screws, lift top, then remove three screws on each side. You can now access the burners and Touch PCB
Note: Be very careful removing burner covers. The covers are a special material that will crack easily. The covers allow the top temperature sensor to measure the temperature 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 12 screws securing the induction top (two are hidden under the rear center burner), removing the induction top will allow access to the two induction PCBs and the power supply PCB



Heating Elements							
Induction Elements				Oven Elements			
Component	Voltage	Wattage	Resistance @ Room Temp	Component	Voltage	Wattage	Resistance @ Room Temp
LR	240vac	6"-1400/2000W	0.01~1Ω	Broil	240vac	3800 W	Approx : 13 ~ 16Ω
RR	240vac	7"-1800/2600W	0.01~1Ω	Bake	240vac	3000 W	Approx : 26 ~ 30Ω
LF	240vac	11"-2400/3700W	0.01~1Ω	Convection	240vac	800W	Approx : 70 ~ 73Ω
RF	240vac	6"-1400/2000W	0.01~1Ω	Warming	120vac	600 W	Approx : 22 ~ 25Ω
Components							
				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 Fan	120vac		85 ~ 100Ω*	(Yel)	8vac		0.8~1.2Ω
Cooling Fan	120vac		29.7Ω				

IMPORTANT: Wiring Diagram for Version 00



ELECTRONIC INDUCTION CONTROL

POWER MODULE BOARD

TOUCH MODULE BOARD

INVERTER MODULE BOARD (RIGHT)

INVERTER MODULE BOARD (LEFT)

INDUCTION COIL (RR)

INDUCTION COIL (RF)

INDUCTION COIL (LR)

INDUCTION COIL (LF)

NTC1 (RR)

NTC2 (RF)

NTC3 (LR)

NTC4 (LF)

COOLING MOTOR

THERMOSTAT (150/0)

THERMOSTAT (80/70)

ELECTRONIC OVEN CONTROL

DOOR PLUNGER SWITCH

DOOR LOCK SWITCH

OVEN SENSOR

COOKTOP LOCKOUT CONTROL

RY1 (DLB)

RY2 (DLB)

RY3 BROIL

RY4 BAKE

RY5 CONV

RY6 (W/D)

RY7

RY8

RY9

RY10

L.V. TRANS

W/DRAWER ELEM. 600W

CONV. ELEM. 800W

BAKE ELEM. 3000W

BROIL ELEM. 3500W

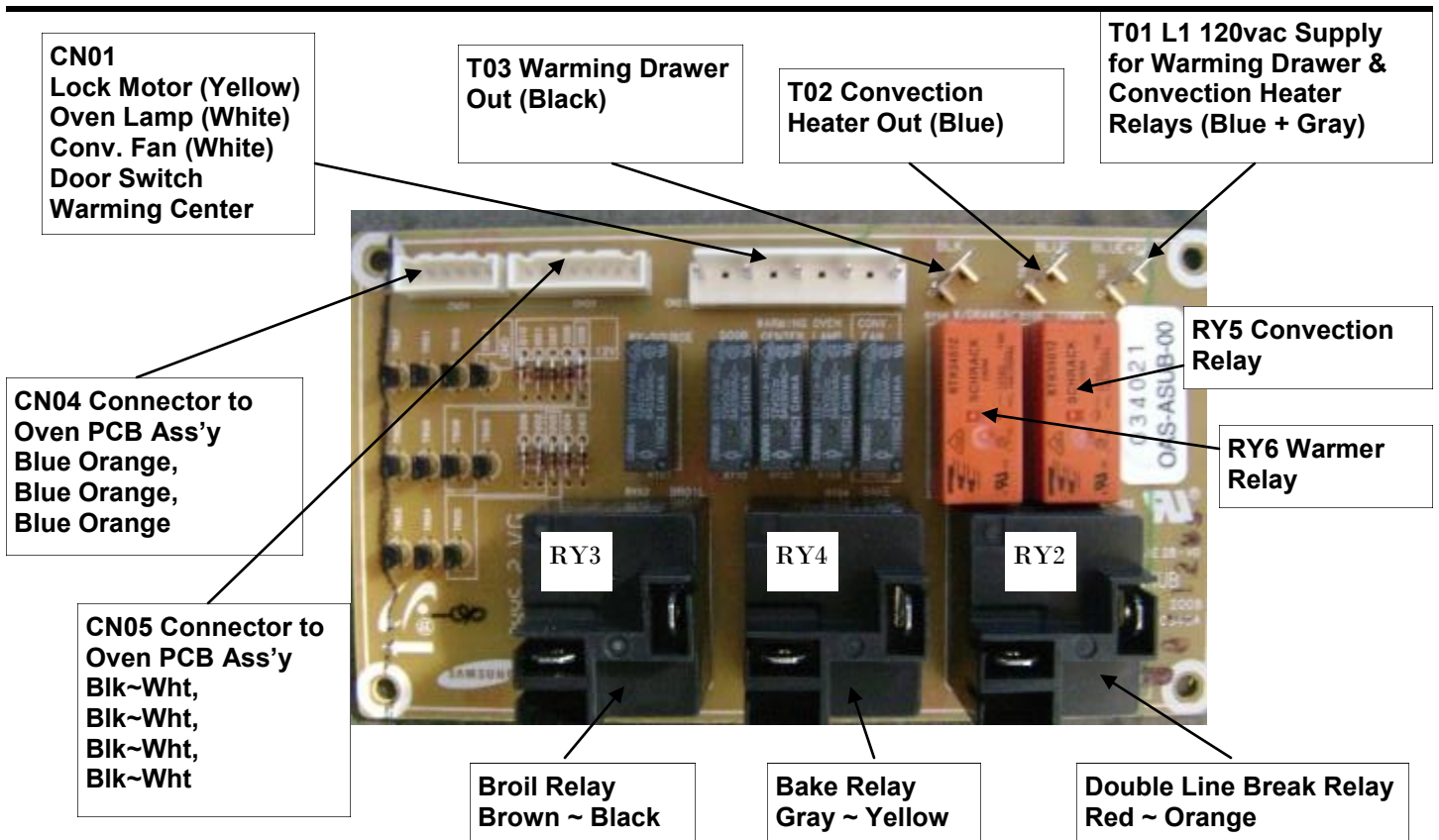
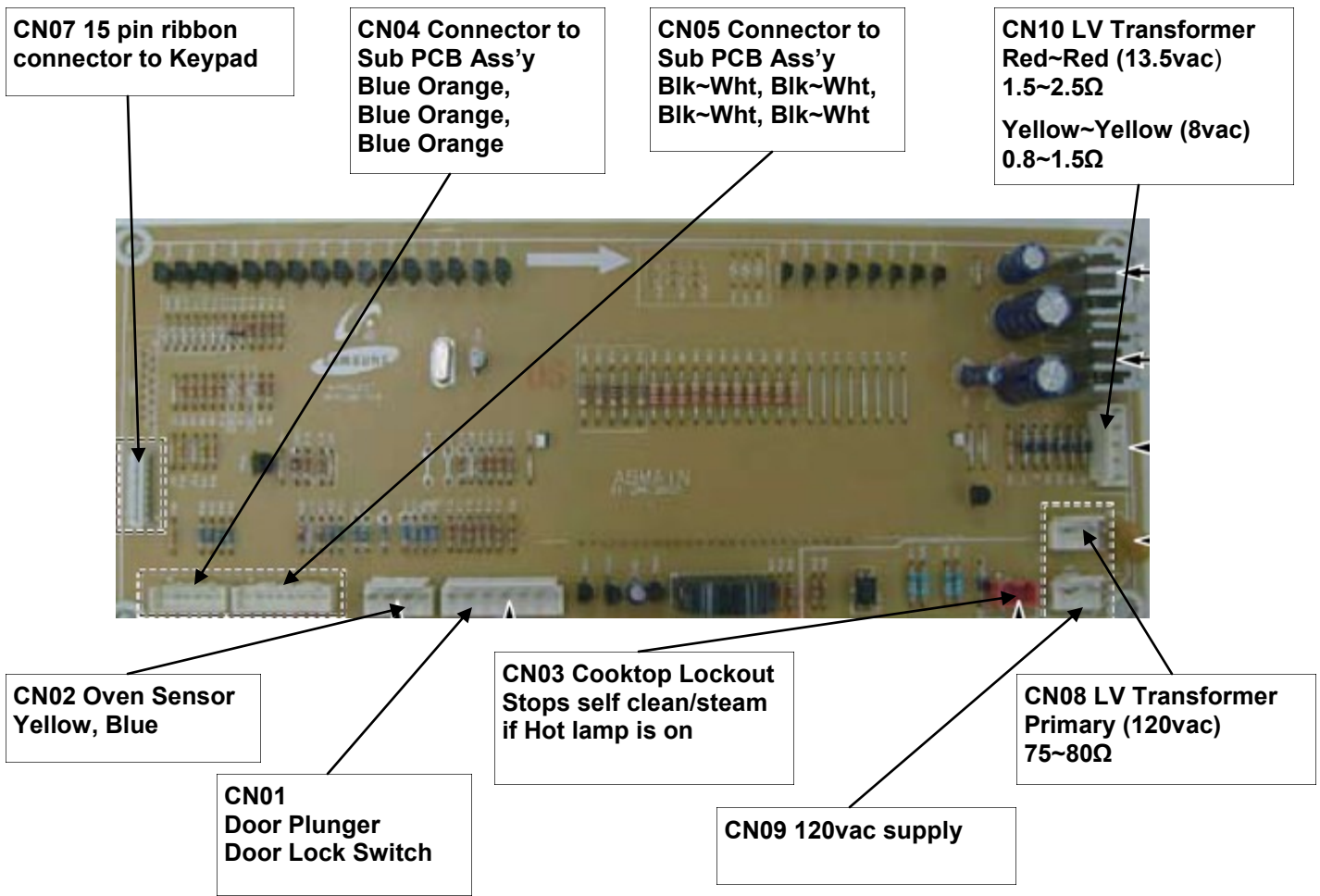
LOCK MOTOR

OVEN LAMP

CONV. FAN

FAN(1)

FAN(2)



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			

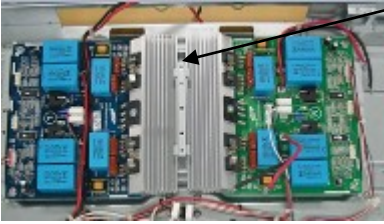
Degree °F	Resistance Ω
0	932.12
14	961.86
23	980.95
32	1000.00
41	1019.02
50	1038.02
59	1056.99
68	1075.92
77	1094.83
86	1113.71
95	1132.56
104	1151.38
113	1170.17
122	1188.93
212	1374.93
302	1558.01
392	1738.06
482	1915.39
572	2089.69
662	2261.07
752	2429.52
842	2595.05
932	2757.65
1000	2878.57
The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

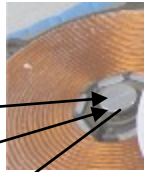
Samsung 'Electric Range' Diagnostic Code Quick Guide

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.

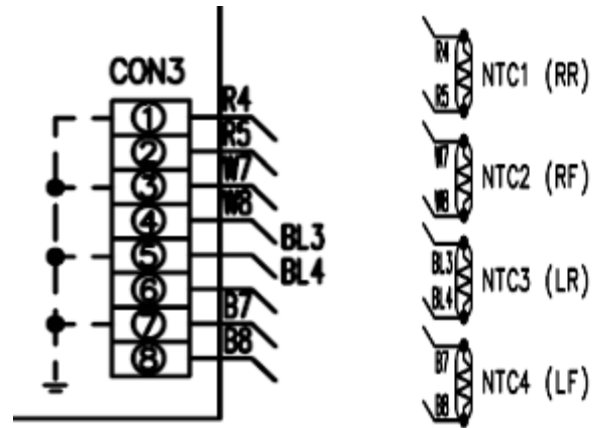
Component Troubleshooting



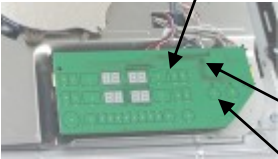
IGBT Errors: If top sensor resistance matches chart, wiring is OK, Replace Ass'y Inverter Module PCB, may occur when the ambient temperature falls under 14° F.



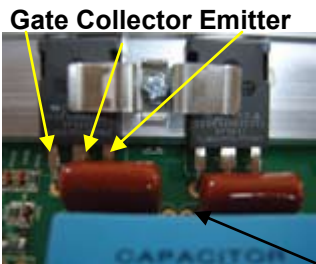
Top Sensors Ass'y Touch PCB CN03 connector



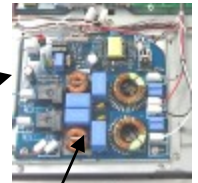
Top Sensors Errors: If top sensor resistance (CN03 touch pad) matches chart, wiring is OK, Replace Ass'y Touch PCB, may occur when the ambient temperature falls under 14° F.



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



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.



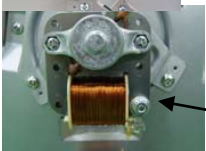
Pan Detection Error: Verify proper pans being used. Check wiring from Inverter PCB to Touch PCB, wiring is OK, Replace Ass'y Touch PCB & Inverter PCB.



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.