



Fast Track Troubleshooting

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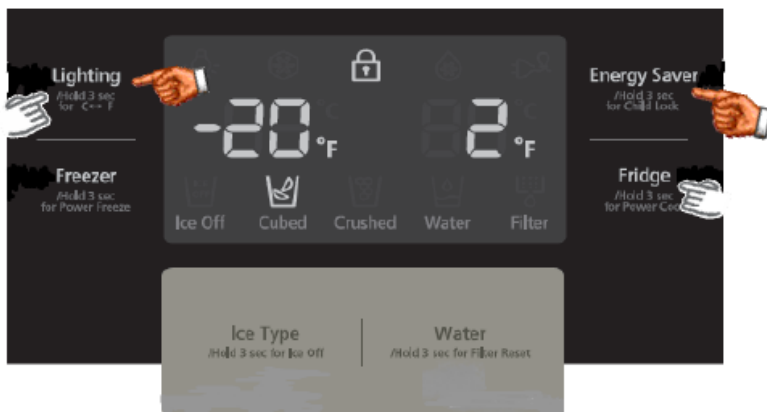
Models Covered:
RS265TDBP/XAA
RS265TDPN/XAA
RS265TDRS/XAA
RS265TDWP/XAA

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

Self Diagnosis: Press Energy Saver & Lighting buttons *simultaneously* (No sound when both buttons are pressed at the same time) for 8-12 seconds, until the display quits blinking and beeps. Release buttons and read Fault Codes.

This will also cancel the Fault Mode created by self-diagnosis at power up.

Forced Mode: Press Lighting & Fridge buttons *simultaneously* for 8-12 seconds (No sound when both buttons are pressed at the same time) until the display beeps and goes blank.



Wait 5 seconds between button pushes



Press the Freezer button one time at the Forced Mode to Force Compressor Run. Measure fan and compressor voltages at main PCB.

Press the Freezer button a second time to Force Fridge Defrost. Measure defrost voltage at Main PCB.

Press the Freezer button a third time to Force Defrost for Fridge and Freezer sections. Measure defrost voltages at Main PCB.

Refrigerant Charge
R134a 7.76 oz.

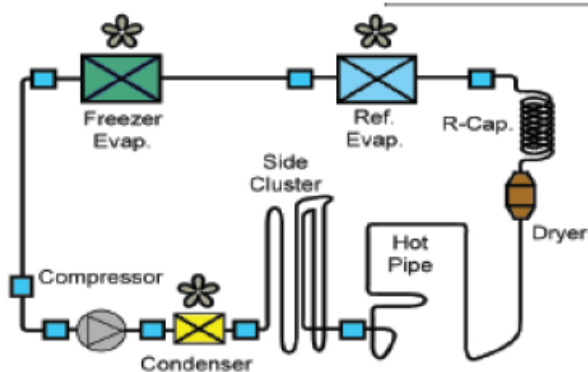
Installation Note: 2" of space are required at top, back and sides.

To Change Display from °F to °C, Press and Hold "Lighting" button for 3 seconds.

Sales Mode, No Compressor Operation

Press Lighting & Freezer buttons *simultaneously* for 3 seconds (you will hear a "Ding Dong") to remove or put into Sales Mode. When in the Sales Mode, the Display will show "OF" "OF". Removing power will not cancel this mode.

Sealed System



Compressor → Condenser → Side Cluster → Hot Pipe →
Dryer → R Capillary → R Evaporator → F Evaporator →
Suction Pipe → Compressor

Component Value Chart

Component	Resistance	Wattage	Voltage
Freezer Defrost Heater	66Ω	218	120vac
Fridge Defrost Heater	103Ω	140	120vac
Dispenser Heater	2057Ω	7	120vac
Fill Tube Heater	3130Ω	4.6	120vac
I/M Heater	99Ω	145	120vac
Sensors	2.5k-89kΩ	N/A	1~4.5vdc
Fans	N/A	N/A	7~12vdc

DC FAN MOTORS

Brushless DC Fan motors are used to save energy. The fans operate at two speeds. Fan speed information is read by the Main PCB. If the fan speed exceeds 600 RPM or the speed is too slow, or stopped the fan drive circuit is disabled. After 10 seconds the circuit tries again with 3 seconds of DC voltage. If the fan continues this activity for 5 cycles, 10 seconds off 3 seconds on, the fan drive circuit is disabled for 10 minutes.

TO TEST THE FAN CIRCUIT VOLTAGE.

Power off and back on to check the DC voltage to the motor, wait from 10 to 60 seconds for the fan voltage to kick in, and then check fan voltage, the average reading is 9 VDC. If you get 3 seconds of voltage every 10 seconds for the 5 fan power up cycles, then the Main PCB is good.

NOTE: You may need to put unit in FORCED FREEZE mode to activate the fans/compressor.

If the fan blade is blocked by ice, then defrost and check the motor again, after removing power from the unit.

If the evaporator is ice blocked and thus blocking the air flow, the fan will over RPM and is stopped. Remove ice and check the motor again. If everything is clear around the fan blade then the motor would be at fault. Continuous fan errors will be displayed on the front panel display. **PLEASE NOTE:** The door switches control the evaporator fan motors. Have them closed to test the motors. Delay time 10 – 60 seconds.

Heat Release Ice Makers

Heat Release Ice production Explanation

38 minutes after the water fill is complete, the control board will check the temperature of the eject Thermistor on the Ice Maker Head. If the Thermistor reads a temperature lower than 18.5°F for more than 5 seconds, the ice production process is complete. The Ice Maker will harvest if the ice bucket is not sensed as full. If a Fault Mode is detected with the Ice Maker operation, the Ice Maker stops working for 3 hours, which means that the Ice Maker checks the operation every 3 hours until it works properly.

Heat Release I/M Test Mode

Press and hold the ICE TEST Switch for at least 1.5 sec. and the harvest function will start. If the Ice Maker thermistor is below 0°F, the Ice Maker heater turns on for about two minutes. If the temperature exceeds 0°F, the Ice Maker heater turns on for 30 seconds. After the Ice Maker heater turns on for 30 seconds, the heater turns off and the Ice Maker harvest motor turns on. The motor will rotate in right direction for about 3 minutes, then the water supply valve is energized and then de-energized and the test mode is complete. If the above operation is not carried out within 6 minutes, the Ice Maker will go into a fault mode.

FREEZER TEMPERATURE CONTROLLED BY THE ICE MAKER

Interior Temperature of the freezer will be set to -14°F until the ice bucket is full. When the ice bucket is full, the freezer will maintain original set temperature. Also, whenever some ice is used, the freezer will again set to -14°F. Selecting "Ice Off" will allow the freezer to be controlled by the set temperature. *****NOTE***** If water is not hooked up, the freezer will always be at -14°F unless "Ice Off" is selected.

Temperature/Resistance/Voltage Chart for Samsung Refrigerators Sensors

Temp.	(Ω)	Volts	Temp.	(Ω)	Volts	Temp.	(Ω)	Volts	Temp.	(Ω)	Volts
-29.2°F	64227	4.326	1.4°F	28021	3.685	32.0°F	13290	2.853	62.6°F	6771	2.019
-27.4°F	61012	4.296	3.2°F	26760	3.64	33.8°F	12749	2.802	64.4°F	6521	1.974
-25.6°F	57977	4.264	5.0°F	25562	3.594	35.6°F	12233	2.751	66.2°F	6281	1.929
-23.8°F	55112	4.232	6.8°F	24425	3.548	37.4°F	11741	2.7	68.0°F	6052	1.885
-22.0°F	52406	4.199	8.6°F	23345	3.501	39.2°F	11271	2.649	69.8°F	5832	1.842
-20.2°F	49848	4.165	10.4°F	22320	3.453	41.0°F	10823	2.599	71.6°F	5621	1.799
-18.4°F	47431	4.129	12.2°F	21345	3.405	42.8°F	10395	2.548	75.2°F	5225	1.716
-16.6°F	45146	4.093	14.0°F	20418	3.356	44.6°F	9986	2.498	77.0°F	5000	1.675
-14.8°F	42984	4.056	15.8°F	19537	3.307	46.4°F	9596	2.449	78.8°F	4861	1.636
-13.0°F	40938	4.018	17.6°F	18698	3.258	48.2°F	9223	2.399	80.6°F	4690	1.596
-11.2°F	39002	3.98	19.4°F	17901	3.208	50.0°F	8867	2.35	86.0°F	4218	1.483
-9.4°F	37169	3.94	21.2°F	17142	3.158	51.8°F	8526	2.301	87.8°F	4072	1.447
-7.6°F	35433	3.899	23.0°F	16419	3.107	53.6°F	8200	2.253	89.6°F	3933	1.412
-5.8°F	33788	3.858	24.8°F	15731	3.057	55.4°F	7888	2.205	91.4°F	3799	1.377
-4.0°F	32230	3.816	26.6°F	15076	3.006	57.2°F	7590	2.158	95.0°F	3547	1.309
-2.2°F	30752	3.773	28.4°F	14452	2.955	59.0°F	7305	2.111	96.8°F	3428	1.277
-0.4°F	29350	3.729	30.2°F	13857	2.904	60.8°F	7032	2.064	100.4°F	3204	1.213

Error Code Chart

1 E Error	FZ SENSOR ERROR- The sensor is read as open or shorted, check the wiring connections in the respective compartment and at the Main PCB
2 E Error	R SENSOR ERROR- The sensor is read as open or shorted, check the wiring connections in the respective compartment and at the Main PCB
4 E Error	FZ DEF SENSOR ERROR- The sensor is read as open or shorted, check the wiring connections in the respective compartment and at the Main PCB
5 E Error	R DEF SENSOR ERROR-- The sensor is read as open or shorted, check the wiring connections in the respective compartment and at the Main PCB
6 E Error	AMBIENT-SENSOR ERROR- The sensor is read as open or shorted, check the wiring connections in the respective compartment and at the Main PCB
13 E Error	HUMIDITY-SENSOR ERROR- The sensor is read as open or shorted, check the wiring connections in the respective compartment and at the Main PCB
14 E Error	IM SENSOR ERROR-- The sensor is read as open or shorted, check the wiring connections at the Icemaker, the ice room and at the Main PCB
21 E Error	FZ FAN ERROR-The Freezer Fan motor is read as not connected or the fan has stopped, check the wiring connections in the freezer and at the Main PCB
22 E Error	R FAN ERROR-The Ref. Fan motor is read as not connected or the fan has stopped, check the wiring connections in the freezer and at the Main PCB
23 E Error	C-FAN ERROR-The Comp. Fan motor is read as not connected or the fan has stopped, check the wiring connections in the freezer and at the Main PCB
24 E Error	FZ DEF FUNCTION ERROR-The freezer defrost heater is read as open or the heater has been heating continuously for more than 80 minutes.
25 E Error	R DEF FUNCTION ERROR-The refrigerator defrost heater is read as open or the heater has been heating continuously for more than 80 minutes.
26 E Error	ICE Maker function Error- Ice Maker In FZ Function will put out an error
39 E Error	IM FUNCTION ERROR- The Icemaker release heater reads as open circuit or the ice rake did not return to the home position
41 E Error	MAIN<->LCD COMM ERROR- The Main PCB and the LCD display are not communicating properly verify the wiring at both PCB's
81 E Error	COMP STARTING FAILURE- The compressor did not start properly, check for an overload condition
83 E Error	COMP ABNORMAL CURRENT DETECTION -Excessive current detected at the Compressor check the compressor windings for shorts
84 E Error	COMP MOTOR LOCKED OVER RPM ERROR- Compressor Over speed error check for low refrigerant levels
85 E Error	COMP UNDER VOLTAGE- Low voltage to the compressor Check the DC supply from the Main PCB
86 E Error	COMP OVER VOLTAGE- Over voltage to the compressor Check the DC supply from the Main PCB

Compressor & System Operation Testing

TEST BEFORE INTERPRETING LED BLINKING FREQUENCY

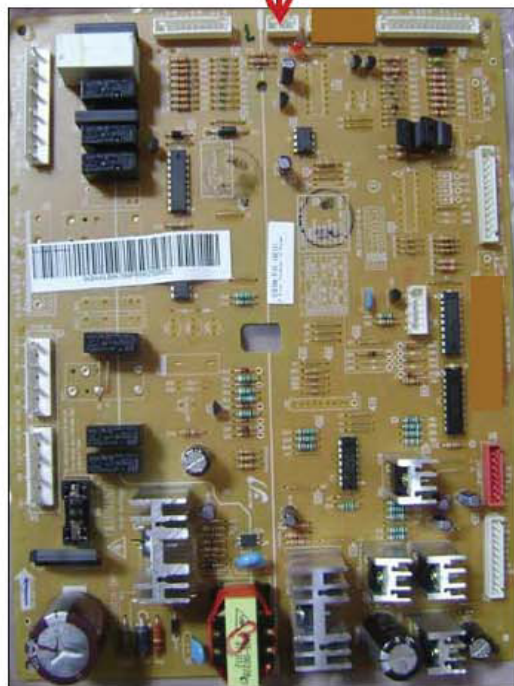
Compressor not running

1. Activate Forced Compressor Operation, wait 2 minutes (in case of high head pressure)
2. If compressor doesn't start, check CN79 for 2.5vdc (if not there replace Main PCB)
3. If voltage is OK, remove power, disconnect CN03 (Inverter PCB) and check resistance to the windings. Aproxamety 10 ohms. If not correct , inspect wire harness, if OK replace compressor.
4. Disconnect CN02 (SMPS PCB), check resistance to Overload , if open replace overload.

CN79 To Comp Inverter Board

2-(CN40-4) (Brn-Gry) 5vdc

4-(CN40-4) Comp control (Org-Gry) 2.5vdc



CN02

Overload &

A/C Line

1 OLP (Brn)

3 OLP (S/Blu)

3 L (Blk)

1 N (Red)

CN03 Compressor

Windings

1 Compressor (Blue)

3 Compressor (Prp)

5 Compressor (Wht)

CN04 Compressor Control

2- (CN40-4) 5vdc (Brn-Gry)

4 Comp Signal (Org)



Protection Functions	LED Blinking Frequency	Test	Replace
Starting Failure		Check the Inverter PCB & Comp Relay Connectors	Connectors OK, replace Inverter PCB, if same, replace compressor
SPM Fault		If blinking after reset,	Check System for restriction & refrigerant, if OK replace Inverter, if same, replace compressor
Detecting Position Failure		Check Inverter Connectors,	Connectors measure OK, replace compressor, if same, replace Inverter PCB
Motor Locked		Compressor Locking	Compressor
Low Voltage		Compressor Locking, check input voltage	Replace Inverter PCB, if same, replace Compressor
Over Voltage		Compressor Locking, check input voltage	Replace Inverter PCB, if same, replace Compressor

Models : RS265TD**/XAA

CN78 Lamps & Flow Meter
 1-2 Fz LED (Gry-Brn)
 3-5 FF Low LED (S/Blu-Gry)
 4-5 FF Upper LED (Prp-Gry)
 11 Flow Sensor Hall in (Red)
 12 Flow Sensor Gnd (Blk)
 13 Flow Sensor Hall out (Wht)

CN90 Ice Maker
 3-8 Sensor I/M eject (Wht-Gry) 2.3~3.3vdc
 4-8 Test Sw (S/Blu-Gry) 5vdc
 5 Full Hall IC out (Blu)
 6 Horiz Hall IC out (Prp)
 7-8 +5vdc (Red-Gry)

CN75 F, R, C Fans
 2-10 C Fan (S/Blu-Gry) 7-11vdc
 3-10 R Fan (Org-Gry) 7-11vdc
 4-10 F Fan (Yel-Gry) 7-11vdc
 5 F Fan FG (Blk)
 6 R Fan FG (Brn)
 7 C Fan FG (Red)
 10- vdc Gnd

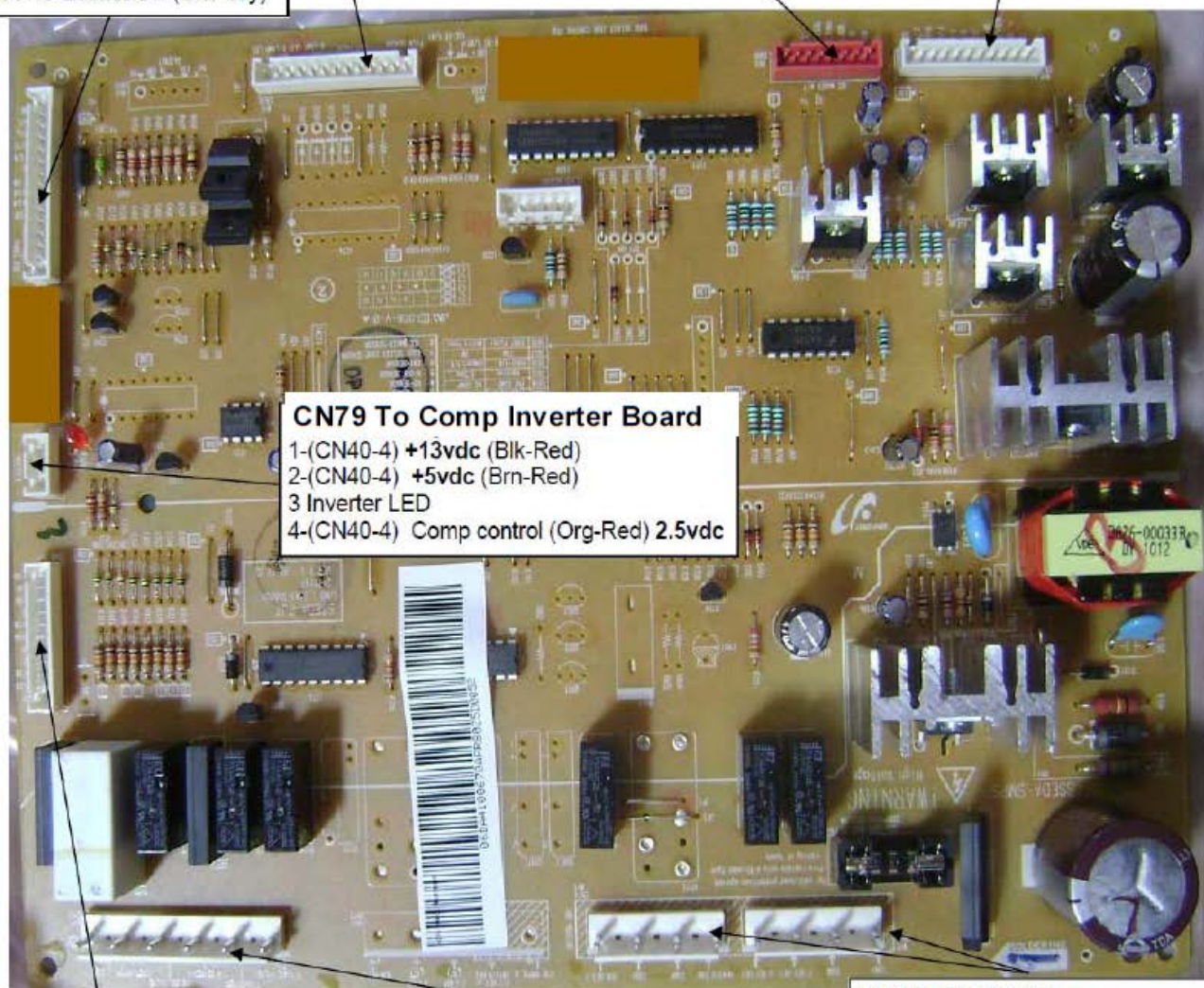
CN50
 3-5 13vdc (Red-Gry)
 4-5 5vdc (Org-Gry)
 6-10 Ice Sw (Pnk-Gry)
 7-10 Water Sw (Blu-Gry)
 8-15 Jumper (Prp)
 11-10 Bucket Sw (Grn-Gry)

CN79 To Comp Inverter Board
 1-(CN40-4) +13vdc (Blk-Red)
 2-(CN40-4) +5vdc (Brn-Red)
 3 Inverter LED
 4-(CN40-4) Comp control (Org-Red) 2.5vdc

CN40 Sensors & Switches
 2-1 Ambient Sensor (Yel-Yel) 1.2~2 vdc
 3-4 Frz Dr Sw (W/Grn-Gry)
 5-4 Fz Sensor (Yel-Gry) 3.5~4.2vdc
 6-4 F Def Sensor (Blu-Gry) 2.3~4.2vdc
 7-4 R Door Sw (W/Red-Gry)
 9-4 R Sensor (Blk-Gry) 2~4.2vdc
 11-4 R Def Sensor (Prp-Gry) 2~4.2vdc

CN73 All 120vac
 1-(CN70-9) Dispenser Valve (W/Blk-Red)
 3-(CN70-3) I/M Htr (W/Blu-Red)
 5-(CN70-3) I/M Mtr (Brn-Red)
 7-(CN70-9) I/M Valve Fridge (Prp-Red)
 9-(CN70-9) Auger Motor (Pnk-Red)
 11-(CN70-9) Cube Solenoid (Yel-Red)

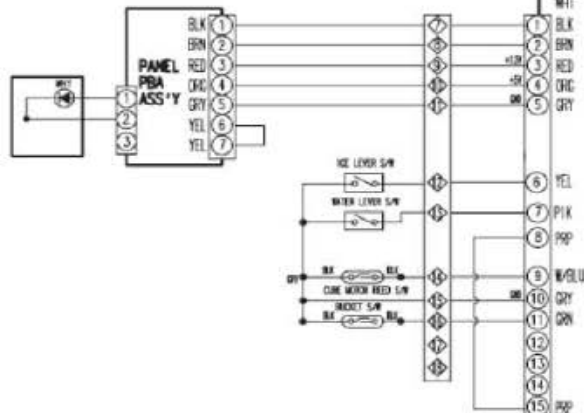
CN70/CN71 All 120vac
 1 Common N (Blk)
 3 Common L (Red)
 5-9 F Defrost (Brn-Org)
 7-9 R Defrost/Fill Tube (Wht-Org)
 9 Hearer Common (Org)
 13- Common N (Blk)
 15-3 Door Cap/Disp Heater (Blu-Red)



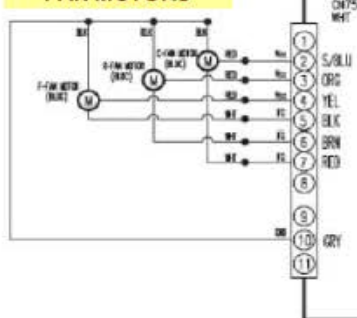
Models: RS265TD**/XAA

SENSORS / REED SWITCHES

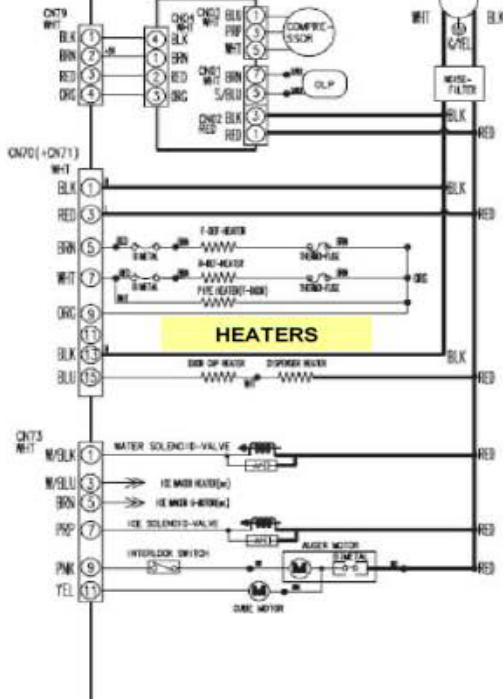
<DOOR S/W>		F	R
Close	On (Lo)	On (Lo)	On (Lo)
Open	Off (Hi)	Off (Hi)	Off (Hi)



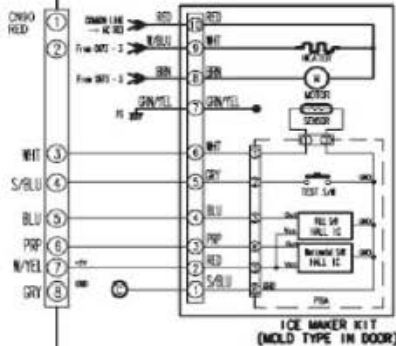
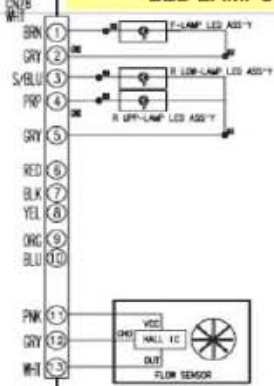
FAN MOTORS



INVERTER PBA



LED LAMPS



- BLU-BLUE
- BRN-BROWN
- RED-RED
- GRY-GRAY
- GRN-GREEN
- ORG-ORANGE
- PNK-PINK
- E-EARTH
- PRP-PURPLE
- S/BLU-SKY BLUE
- W/IT-WHITE
- YEL-YELLOW
- BLK-BLACK
- W/BLK-WHITE BLACK
- W/RED-WHITE RED
- W/BLU-WHITE BLUE
- W/BRN-WHITE BROWN
- W/YEL-WHITE YELLOW
- W/GRN-WHITE GREEN