



Tech Tip	
PRODUCT:	Refrigerator
TIP NUMBER:	ASC20061103002
TIP DATE:	11/03/2006
MODELS:	RS2630

SUBJECT: Sensor and PC Board Test Procedures

Defective sensors can cause no cooling, incorrect temperature, incorrect defrost operation or slow ice production. Before replacing the main PC Board verify the condition of the each of the sensors.

Checking the sensors in any Samsung refrigerator can be accomplished using a Volt – Ohm Meter (VOM) to measure the resistance or voltage of the sensor from the main PCB. Refer to the temperature/resistance/voltage chart shown in table A for the correct resistance or voltage at a given temperature. Measuring the voltage verifies operation of the main PCB as well as the wiring harness.

NOTE: Temperature Sensors are Negative Temperature Coefficient measuring between 2.2 KΩ and 100KΩ. No sensor should measure 0Ω (shorted) or ∞ (open).

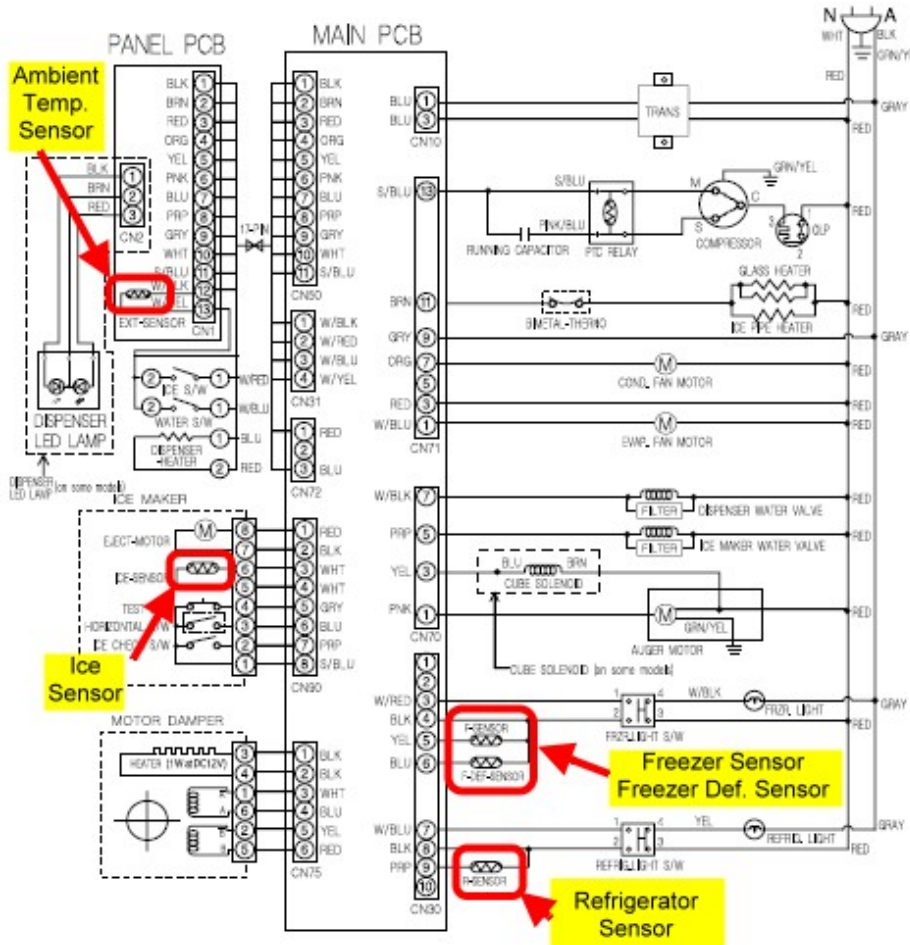
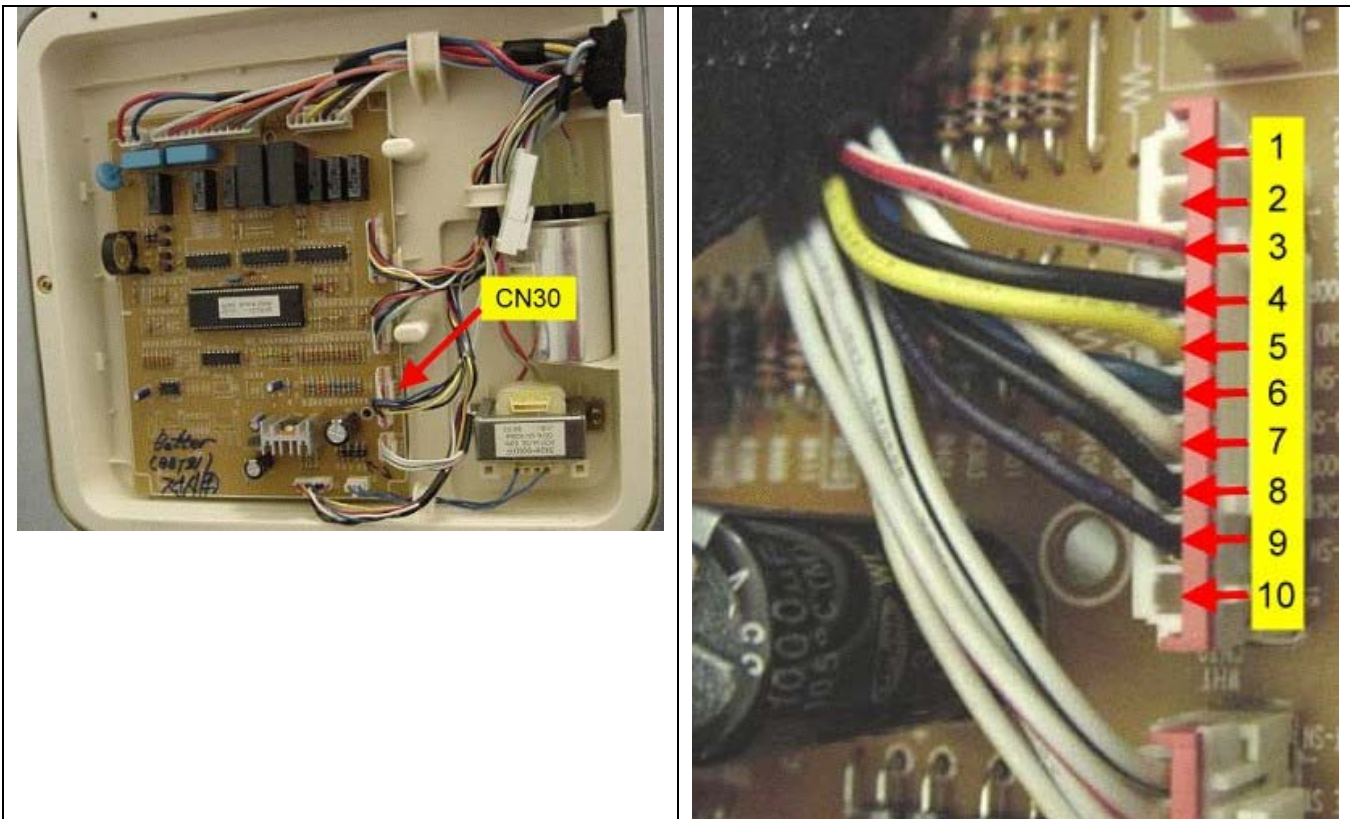


Figure 1

This information is published for experienced repair technicians only and is not intended for use by the public. It does not contain warnings to advise non-technical individuals of possible dangers in attempting to service a product. Only experienced professional technicians should repair products powered by electricity. Any attempt to service or repair the product or products dealt with in this information by anyone else could result in serious injury or death. Information provided in this bulletin is subject to change or update without notice.



The PC board and connections are located under the unit next to the compressor, in the machine compartment.

Measurement Points

SENSOR	CONNECTOR & PINS	LOCATION
FREEZER TEMP.	CN 30 PINS 4 & 5	MAIN PCB
FREEZER DEFROST	CN 30 PINS 4 & 6	MAIN PCB
REFRIGERATOR TEMP.	CN 30 PINS 8 & 9	MAIN PCB
ICE MAKER	CN 90 PINS 3 & 4	MAIN PCB
AMBIENT TEMP.	CN 1 PINS 12 & 13	FRONT PANEL PCB

An example of a correct reading would be a reading of ~3.11 volts measured across pins 4 and 5(GND) with a freezer temperature of 23 degrees Fahrenheit. Refer to table A for other temperature and voltage values.

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Temperature/Resistance/Voltage Chart

Temp. (°F)	Resistance ()	Voltage (V)	Temp. (°F)	Resistance ()	Voltage (V)	Temp. (°F)	Resistance ()	Voltage (V)
-43.6	98.9	4.54	12.2	21.4	3.41	68.0	6.01	1.88
-41.8	93.7	4.52	14.0	20.5	3.36	69.8	5.79	1.83
-40.0	88.9	4.49	15.8	19.6	3.31	71.6	5.58	1.79
-38.2	84.2	4.47	17.6	18.7	3.26	73.4	5.38	1.75
-36.4	79.8	4.44	19.4	17.9	3.21	75.2	5.19	1.71
-34.6	75.7	4.42	21.2	17.2	3.16	77.0	5.00	1.67
-32.8	71.8	4.39	23.0	16.4	3.11	78.8	4.82	1.63
-31.0	68.2	4.36	24.8	15.7	3.06	80.6	4.65	1.59
-29.2	64.7	4.33	26.6	15.1	3.01	82.4	4.49	1.55
-27.4	61.5	4.30	28.4	14.5	2.96	84.2	4.33	1.51
-25.6	58.4	4.27	30.2	13.9	2.90	86.0	4.18	1.47
-23.8	55.6	4.24	32.0	13.3	2.85	87.8	4.03	1.44
-22.0	52.8	4.20	33.8	12.7	2.80	89.6	3.89	1.40
-20.2	50.2	4.17	35.6	12.2	2.75	91.4	3.76	1.37
-18.4	47.8	4.13	37.4	11.7	2.70	93.2	3.63	1.33
16.6	45.5	4.10	39.2	11.3	2.65	95.0	3.51	1.30
-14.8	43.3	4.06	41.0	10.8	2.60	96.8	3.39	1.27
-13.0	41.2	4.02	42.8	10.4	2.55	98.6	3.28	1.23
-11.2	39.2	3.99	44.6	10.0	2.50	100.4	3.17	1.20
-9.40	37.4	3.95	46.4	9.60	2.45	102.2	3.06	1.17
-7.60	35.7	3.91	48.2	9.20	2.40	104.0	2.96	1.14
-5.80	34.0	3.86	50.0	8.80	2.35	105.8	2.86	1.11
-4.00	32.4	3.82	51.8	8.50	2.30	107.6	2.77	1.09
-2.20	30.9	3.78	53.6	8.20	2.25	109.4	2.68	1.06
-0.40	29.5	3.73	55.4	7.90	2.20	111.2	2.59	1.03
1.40	28.1	3.69	57.2	7.60	2.15	113.0	2.51	1.00
3.20	26.9	3.64	59.0	7.30	2.10	114.8	2.43	0.98
5.00	25.7	3.60	60.8	7.00	2.06	116.6	2.35	0.95
6.80	24.5	3.55	62.6	6.70	2.01	118.4	2.28	0.93
8.60	23.4	3.50	64.4	6.50	1.97	120.2	2.21	0.90
10.4	22.4	3.46	66.2	6.20	1.92			

Table A

Note: Consult the Samsung Service Website at (service.samsungportal.com) for the Service Manual and other information on this product.

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