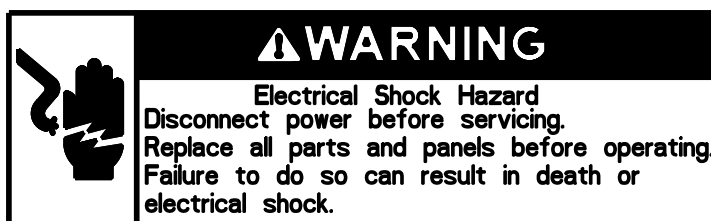


MAIN CONTROL BOARD SERVICE SHEET

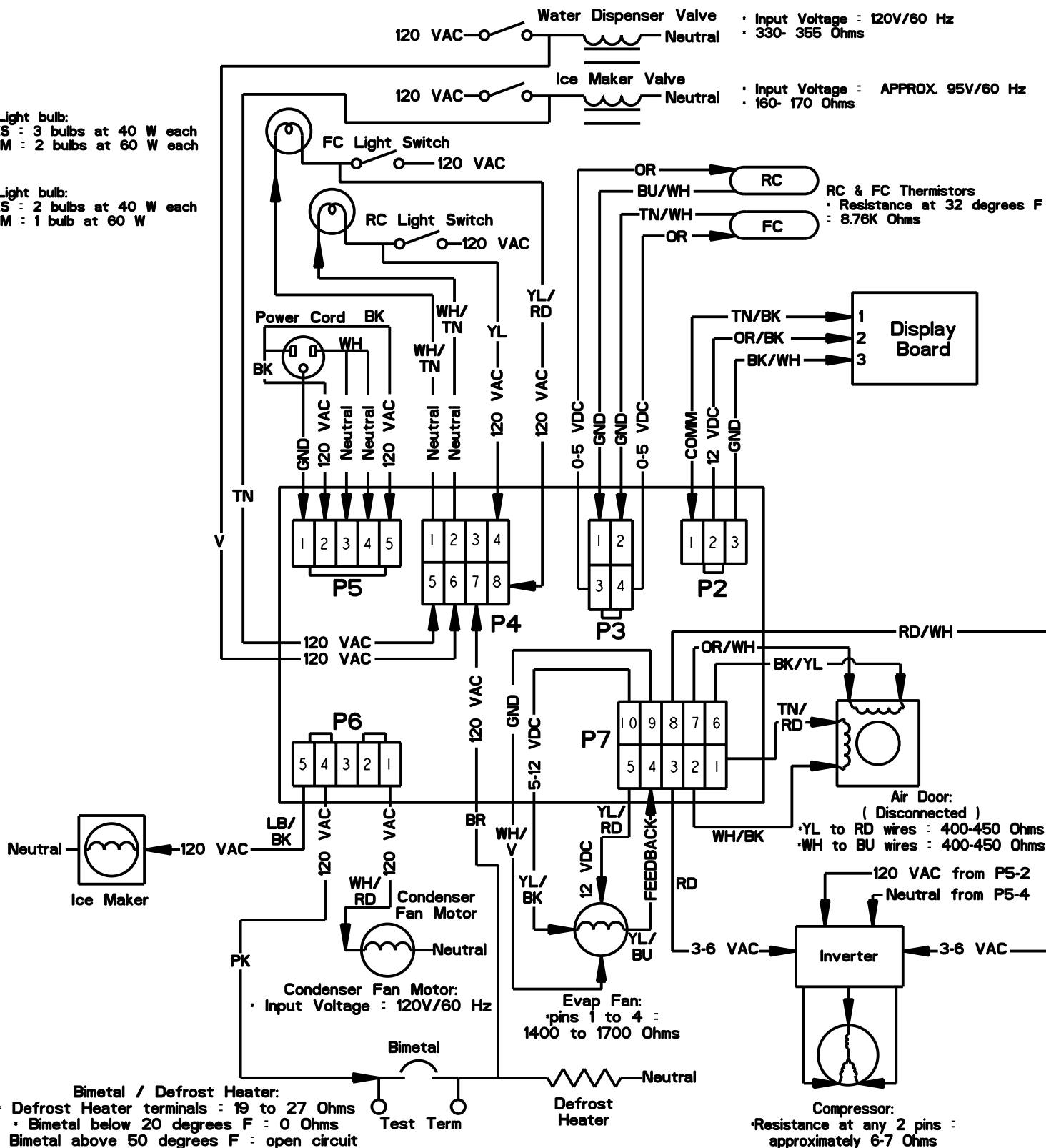
RC : Refrigerator Compartment, FC : Freezer Compartment

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RC Light bulb:
• SXS : 3 bulbs at 40 W each
• BTM : 2 bulbs at 60 W each

FC Light bulb:
• SXS : 2 bulbs at 40 W each
• BTM : 1 bulb at 60 W



Bimetal / Defrost Heater:
• Defrost Heater terminals : 19 to 27 Ohms
• Bimetal below 20 degrees F : 0 Ohms
• Bimetal above 50 degrees F : open circuit

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SERVICE SHEET NO.

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2302865REL**Built-In Refrigerator Trouble Shooting Tips**

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE / ACTION
"Call Service" icon lights & alarm is sounding	Open evaporator fan feedback	See Evaporator Fan section.
	RC is over 48°F or the FC is over 15°F for more than three hours	See Over Temperature section.
	Failed thermistors	See RC & FC Thermistor sections.
Freezer Compartment (FC) too cold	FC control set too cold.	See Control Setting section.
	Temperatures are -5°F in the FC and 34°F in the RC	Refrigerator operating in the "Max Cool" mode. Press the "Max Cool" button to return to normal operation.
	FC thermistor	See FC Thermistor section.
	Open evaporator fan feedback.	See Evaporator Fan section.
	Main control board	See Main Control Board section.
Freezer Compartment (FC) too warm	FC control set too warm	See Control Setting section.
	FC thermistor	See FC Thermistor section.
	Freezer light not shutting off.	See Door Switch section.
	Evaporator fan not running or not running up to speed.	See Evaporator Fan section.
	Condenser fan not running	See Condenser Fan section.
	Frost blocking evaporator air flow	See Evaporator Fan section.
	FC thermistor wires reversed	See FC Thermistor section.
	Main control board	See Main Control Board section.
	Compressor not operational	See Compressor section.
Indicator light & alarm continue to activate after service has been performed	Inverter not operational	See Inverter section.
	The indicator lights have not been reset.	See Alarm Reset section.
No display, can't change settings	If the display and the evaporator fan do not operate, the evaporator fan wiring is incorrect.	See Evaporator Fan section.
	Touch/ display board has lost power connection.	See Touch/ Display Board section.
	Main control board is not supplying power to the user interface.	See Main Control Board section.
No display, no interior lights, can't change settings	Control is in the Holiday Mode.	Press the "Holiday Mode" button to return to normal mode.
	The FC or RC doors have been open for more than ten minutes.	See Door Open section.
	Door light switch problem.	See Door Switch section.
	Control is in the Powered Off Mode.	See Power Off Mode section.
No / Low Ice	The modular icemaker or the ice level detector is not operating properly.	See Modular Ice Maker and Ice Detector Service Sheet.
Not defrosting	Faulty Bimetal.	See Bimetal/ Defrost Heater section.
	Faulty defrost heater.	See Bimetal/ Defrost Heater section.
Overtemp Alarm	Temperatures are 48°F in the RC or 15°F in the FC for more than 1.5 hrs	See Over Temperature section.
	The compressor or sealed system is not operating.	See Compressor section.
	The inverter is not operating.	See Inverter section.
	The evaporator fan is not operating.	See Evaporator Fan section.
	The air door is not operating.	See Air Door section.
Product does not run	Control powered off	See Power Off Mode section.
	No power to the control board	Verify power to the control board by using the diagram.
Product is noisy	The noise is coming from the freezer section. The evaporator fan motor is binding, hitting, misaligned, or vibrating.	See Evaporator Fan section.
	The noise is coming from the unit compartment section. Condenser fan blade is hitting.	See Condenser Fan section
	The noise is coming from the unit compartment section. Compressor is noisy.	See Compressor section.
Refrigerator Compartment (RC) too cold	RC control set too cold	See Control Setting section.
	RC thermistor	See RC Thermistor section.
	Air door stuck open.	See Air Door section.
	Air door seal missing, damaged or reversed.	A missing seal will let cold evaporator air bypass the air door.
	Reversed RC thermistor wiring.	See RC Thermistor section.
	Main control board	See Main Control Board section.
Refrigerator Compartment (RC) too warm	RC control set too warm	See Control Setting section.
	RC thermistor	See RC Thermistor section.
	Refrigerator light not shutting off.	See Door Switch section.
	Air door stuck closed or inoperative	See Air Door section.
	Blocked air flow	Check for any restriction to the airflow in the RC and FC.
	Warm FC temperature	Cold air for the RC is drawn from the FC. Check for proper FC temperatures. (see FC compartment too warm).
	Reversed air door wiring	See Air Door section.
	Evaporator fan not running or not running up to speed	See Evaporator Fan section.

2302865REL**Built-In Refrigerator Trouble Shooting Tips (Continued)**

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE / ACTION
Refrigerator Compartment (RC) too warm	Frost blocking evaporator air flow	See Evaporator Fan section.
	Main control board	See Main Control Board section.
	Compressor not operational	See Compressor section.
	Condenser fan not operational.	See Condenser Fan section.
	Inverter not operational	See Inverter section.

COMPONENT TABLE

COMPONENT	SYMPTOM	TEST PROCEDURE / ACTION
Air Door	Stuck closed	(1) Run control diagnostics to check the air door operation in step 6. (2) A 12 Volts square wave is supplied to the air door in a series of short pulses. It is not possible to obtain a reliable voltage reading with a VOM.
	Inoperative	(3) Check for the air door binding with the cover. (4) Disconnect power or unplug the product. Check the resistance of the air door motor through the air door connector. The yellow wire to red wire should have a resistance reading of 400 - 450Ω. The white wire to blue wire should have a resistance reading of 400 - 450Ω.
	Reversed wiring	(1) Reversed wiring at the air door or at the control board will cause the air door to operate exactly contrary to the needs of the refrigerator. Verify the air door and cabinet wiring is correct. DO NOT DISCONNECT THE AIR DOOR WHILE THE CYCLE IS IN PROGRESS
	Stuck open	(1) Look for any kind of mechanical blockage.
Alarm Reset	The indicator lights and alarm continue to activate after service has been performed	Pressing the OVER TEMPERATURE RESET will shut off the audio alarm, but this does not affect the indicator light the first time the OVER TEMPERATURE RESET is pressed. The indicator light will shut off once the OVER TEMPERATURE RESET is pressed the second time. The audio alarm will not sound again for the current condition that caused the alarm until a new condition occurs or until a Master Alarm Reset is performed. (1) A Master Alarm Reset can be performed by pressing the POWER (On/Off) twice or by turning the power to the refrigerator off and on again. (2) The indicator light will reactivate after the OVER TEMPERATURE RESET is pressed if the condition that caused the alarm is still present.
Bimetal / Defrost Heater	Not defrosting	(1) Run control diagnostics to check Bimetal status in step 7. (2) "O1" indicates that the defrost heater is energized/ bimetal is closed. "O2" indicates that the defrost heater is energized/ bimetal is open. Bimetal closed, the voltage at the defrost heater terminals will be 120 volts AC. (3) Disconnect power or unplug the product. Touch the ohmmeter test leads to the defrost heater terminals. The meter should indicate approximately 19 to 27 Ω. (4) Disconnect power or unplug the product. Touch the ohmmeter test leads to the defrost bimetal wire connectors. With the bimetal below 20°F, the meter should indicate 0Ω. With the bimetal above 50°F, the meter should indicate an open circuit.
Call Service Alarm	Both thermistors have failed	Call service is a visual and audio signal that alerts the customer that the refrigerator needs service but only for specific failure modes, none of which are necessarily related to performance. (1) Run control diagnostics to check the operation of components. (2) If a particular component is not operating properly, see that individual component's section.
	Evaporator fan motor feedback signal lost	
	An over-temp condition occurs for 3 hrs or more	The alarm needs to be reset. Press the OVER TEMPERATURE RESET to deactivate the call service indicator. See Alarm Reset section.
Compressor	Control board is overheating	(1) Check the temperatures in the area of the control box. (2) Also, check the control to see if any components on the control have overheated. If the control board has visual damage, replace.
	Inoperative	(1) Check to make sure that it is not on the 7-minute delay. (2) Disconnect the power or unplug the product. Touch the ohmmeter test leads to any two pins. (3) The meter should indicate approximately 6 to 7 Ω. (4) Check between each set of pins for the resistance. If no resistance is present, replace compressor. NEVER APPLY 120 VAC TO COMPRESSOR PINS See Inverter section to check the inverter.
	Noisy	(1) If mechanical clanking noise is evident, replace compressor. (2) If the consumer is complaining about varying sound level, explain variable speed operation of the compressor to consumer.
Condenser Fan	Not operational / not running	(1) Run control diagnostics to check condenser fan operation in step 4. (2) The condenser fan runs independently of the compressor but is a constant speed motor. AC voltage is supplied to the condenser fan by a relay on main control board.
	Blocked	(1) Check for blade hits. (2) Check the mounting system.
	Noisy	(1) Check for blade hits. (2) Check the mounting system.
Control Setting	RC control set too warm	Change to a colder temperature setting. A mid point setting will deliver approximately 37°F in the RC and 0°F in the FC in most usage and ambient conditions.
	FC control set too warm	Change to a colder temperature setting. A mid point setting will deliver approximately 37°F in the RC and 0°F in the FC in most usage and ambient conditions.
	RC control set too cold	Change to a warmer temperature setting. A mid point setting will deliver approximately 37°F in the RC and 0°F in the FC in most usage and ambient conditions.
	FC control set too cold	Change to a warmer temperature setting. A mid point setting will deliver approximately 37°F in the RC and 0°F in the FC in most usage and ambient conditions.
Door open Alarm	No display, no interior lights	(1) If either door is open for more than ten minutes, the control will turn off the light circuit. This includes the control user interface in the RC. The user interface is powered down when the RC door is closed and is inactive. The Door Open indicator light will flash and an audio alarm will sound. (2) The probable cause is a failure of the light switch actuator to cause the switch to change position.

2302865REL**COMPONENT TABLE (CONTINUED)**

COMPONENT	SYMPTOM	TEST PROCEDURE / ACTION
Door switch	No display, no interior lights	(1) The actuating mechanism of the light switch is attached directly to the top door hinge pin. If the door is set low the actuator blade may not contact the rocker style light switch.
	RC Compartment too warm	(2) The quickest repair is to raise the affected door until the mechanism operates properly. Details are in the Service Manual.
	FC Compartment too warm	(3) Align the second door to match the first. Make sure the metal is clean.
Evaporator fan	Not running	(1) Run control diagnostics to check the evaporator fan operation in step 3. (2) The evaporator fan receives voltage from the main control board. (3) Disconnect power or unplug the product. Touch the ohmmeter test leads to pins 1 and 4 of the evaporator fan motor connector.
	Not running up to speed	(4) The meter should indicate approximately 1400 to 1700 Ω . (5) A failed evaporator fan motor or any condition that can mimic a failed motor will cause the control to run the compressor 100% at 4500 RPM.
	Open evaporator fan feedback circuit	(6) If voltage is still present and the evaporator fan is still not operating, verify evaporator fan harness wiring (See Evaporator Fan-Improper Wiring section below).
	Frost blocking evaporator air flow	(1) Run control diagnostics to check the defrost system operation in step 7. (2) The test mode can be used for a manual defrost cycle to clear the coil. (3) A frost load as the result of one or more doors being left open can take several days to clear.
	Improper wiring	(1) Verify the wires connecting from the square connector of the evaporator fan harness to the bimetal harness. WH/V to WH, YL/BU to BU, YL/BK to YL, and YL/RD to RD. (2) If wiring is incorrect, order evaporator fan kit.
	Noisy	(1) Binding - Check for the evap fan to be misaligned and for the wire harness to be pulling on the evap fan. (2) Hitting - Check for the fan blade hitting the scroll and realign.
Freezer (FC) thermistor	Inoperative	(1) Check wires and connectors. (2) Thermistor may be out of range. Run control diagnostics to check the FC thermistor operation in step 1. (3) Disconnect power or unplug product. Check resistance given in the diagram on page 1. (4) If the thermistor circuit is open the control will initiate default run time to hold temps until service can be performed.
	Reversed wiring	(1) The thermistor wires can be reversed in the connector at the main control boards. A quick way to confirm this is to remove the FC thermistor. (2) Initiate control diagnostics and look for a "2" in step 1, which is an indication of an open circuit for the FC thermistor.
Inverter	Compressor not operational	(1) Check compressor connection from the inverter to make sure that it is secure. (2) Voltage should be present from the inverter to the compressor. (3) Disconnect the power or unplug the product. Touch the ohmmeter test leads to any two pins. (4) The meter should indicate approximately 6 to 7 Ω . (5) Check between each set of pins for the resistance. (6) If resistance is not present, replace compressor. (7) If there is voltage from the main control board to the inverter present, no voltage out of the inverter to the compressor, and the compressor has approximately 6 to 7 Ω , replace the inverter.
Main control board	FC or RC compartment too warm	(1) Check for loose terminals or connectors at the main control board.
	FC or RC compartment too cold	(2) Voltage should be present at the respective pin of the respective connector of the main control board during operation.
	No display, no interior lights, can't change settings	(3) If the proper voltage to the component in question is not present from the respective pin location on the main control board during operation, replace the Main control board.
	Product does not run	(1) This connection supplies the main control board with power. (2) If the proper voltage to the main control board is not present, check cabinet wiring and power cord. (3) If the proper voltage to the main control board is present and the product still does not run, replace the main control board.
Overtemp Alarm	Evaporator fan motor does not run	(1) Jump the red to yellow wire in the evaporator fan motor harness to check the 12 VDC fan operation. (2) If the fan runs after jumping the wire, replace the main control board.
	Temperatures are 48°F in the RC or 15°F in the FC for more than 1.5 hrs	The overtemp alarm is a visual and audio signal that alerts the customer to unacceptably warm temperatures in either compartment for more than 1.5 hours. The trigger points are 48°F in the RC or 15°F in the FC. The corresponding temperature display will flash to indicate the problem compartment. The audio alarm stops if the temperatures return to normal but the visual alarm will continue to flash until reset.
Power Off Mode	Product does not run, no display, no interior lights, can't change settings	(1) Press the "Power on/off" button for 2 seconds. (2) If there is no response, unplug the refrigerator for 30 seconds. (3) Plug in refrigerator and check for normal operation. (4) Failed control board. Run diagnostic test.
Refrigerator (RC) thermistor	Inoperative	(1) Check wires and connectors. (2) Thermistor may be out of range. Run control diagnostics to check the RC thermistor operation in step 2. (3) Disconnect power or unplug product. Check resistance given in the diagram on page 1. (4) If the thermistor circuit is open the control will initiate default run time to hold temps until service can be performed.
	Reversed wiring	(1) The thermistor wires can be reversed in the connector at the Main control boards. A quick way to confirm this is to remove the RC thermistor. (2) Initiate control diagnostics and look for a "2" in step 2, which is an indication of an open circuit for the RC thermistor.
Touch / display board	No display, no interior lights, can't change settings.	(1) Verify Touch/display board connection and wiring to the cabinet. (2) See Power Off mode section. (3) If control is in the Holiday mode, press the "Holiday Mode" button to return to normal mode.

NOTE: Refrigerator Compartment = RC
Freezer Compartment = FC

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