Troubleshooting Guide

Model: WRQA59CNKZ

Introduction

The following Troubleshooting Guide is designed to further support Whirlpool's service community in diagnosing and repairing various product performance issues. Most symptoms reported by customers have multiple possible causes. This Troubleshooting Guide uses a "fault-tree" approach to detail the diagnostic steps servicers should follow to diagnose the cause of these issues better and ensure the appropriate scope of repairs.

Index

⚠DANGER

Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- **Verify the controls are in the off position so that the appliance does not start when energized.**
- **Allow enough space to perform the voltage measurements without obstructions.**
- **Keep other people a safe distance away from the appliance to prevent potential injury.**
- **Always use the proper testing equipment.**
- **After voltage measurements, always disconnect power before servicing.**

IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics
ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

- Use an antistatic wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

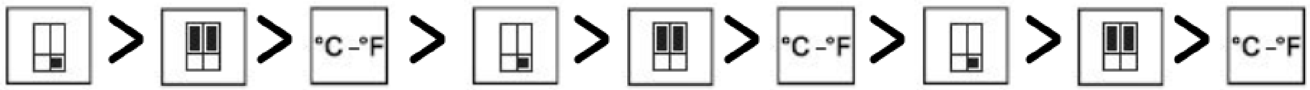
  -OR-

  Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the antistatic bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in antistatic bag, observe above instructions.

Fault codes

How to find fault codes

To **ENTER** Diagnostics Mode:, the following action must be performed on the interface:



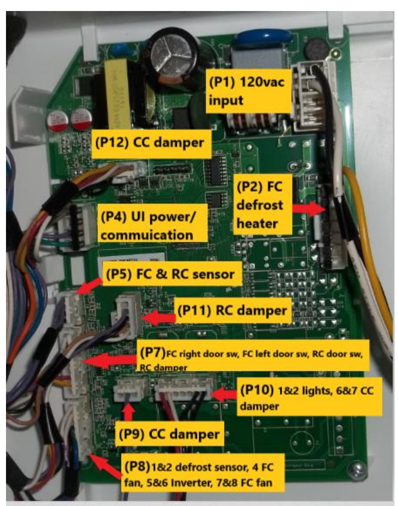
Sequence of any three unique keys, three times within 8 seconds.

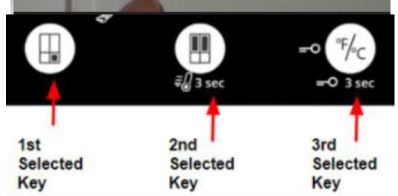
- Press and Release the **1st selected** key
- Press and Release the **2nd selected** key
- Press and Release the **3rd selected** key
- Repeat this 3 key sequence 2 more times.

To **EXIT** Service diagnostics,

- **1st selected key** on the HMI is pressed and held for 5 seconds, OR
- Cycle Power on the appliance.

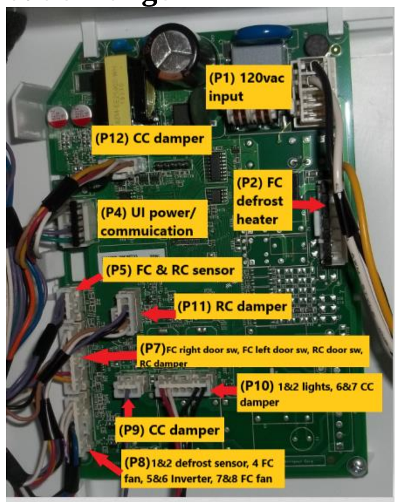
NOTE: The appliance shall exit Diagnostics Mode after 5 minutes of inactivity.

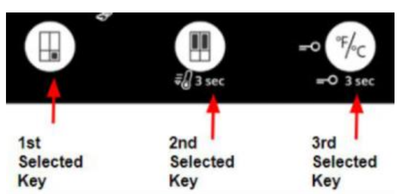
Fault Code	Possible Causes	Corrective Action
F3E1 - Refrigeration Compartment Temperature Sensor **Note:** RC AIR sensor failure will trigger safety mode where the damper will alternate open for 20 minutes then closed for 20 mins. **Note:** To RESET the error codes, press the 3rd selected key for 5 seconds. After Resetting the Error Codes, you shall see 0000 displayed on the User Interface. To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.	**Check if RC thermistor out of range** 	The RC thermistor needs to have resistance checked. 1. If the readings are out of range, then check wiring, FC fan, and airflow issues, Then replace the thermistor. 2. If the thermistor is in range, then check for other possible causes such as: A. Defrost issues B. FC fan issues C. Airflow issues D. Sealed system issue Theseus- ACU board: P5-3 to P5-4 RC thermistor. Thermistor Resistance Range: Nominal ohm (Tolerance) @ Temp 2.7kΩ(2692 - 2858) @77 F 7.6kΩ(7233 - 7995) @37 F 8.8kΩ(8325 - 9216) @32 F 22.7kΩ(21,408 - 24,140) @ 0 F 37kΩ(34,448 - 39,634) @ -15 F Link to teardown for RC tower

	 RC thermistor behind panel   3 sec °F/°C 3 sec 1st Selected Key 2nd Selected Key 3rd Selected Key	

<table>
<tr>
<td>F3E2 - Freezer Compartment Temperature Sensor

Note: FC Air sensor failure will trigger the safety mode making the compressor run 30 minutes at 100 Hz then 20 minutes at 35Hz.

Note: To RESET the error codes, press the 3rd selected key for 5 seconds.
After Resetting the Error Codes, you shall see 0000 displayed on the User Interface.
To EXIT Service diagnostics, Press the 1st selected key and hold for 5 seconds, or cycle power on the appliance.</td>
<td>Check if FC thermistor is out of range




</td>
<td>The FC thermistor needs to have resistance checked.

1. If the readings are out of range, then check wiring, FC fan, and air flow issues. Then replace the thermistor.

2. If the thermistor is in range, then check for other possible causes such as:
A. Defrost issues
B. FC fan issues
C. Air flow issues
D. Sealed system issue

Theseus- ACU board
P5-1 to P5-2 = 5VDC-12.7VDC FC thermistor.

Thermistor Resistance Range:
Nominal ohm (Tolerance) @ Temp
2.7kΩ(2692 - 2858) @77 F
7.6kΩ(7233 - 7995) @37 F
8.8kΩ(8325 - 9216) @32 F
22.7kΩ(21,408 - 24,140) @ 0 F
37kΩ(34,448 - 39,634) @ -15 F

Link to teardown video for freezer</td>
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F3E3 - Convertible Compartment Temperature Sensor

Note: CC AIR sensor failure will trigger safety mode where the damper will be open for 30 minutes and closed for 20 minutes. FC Fan shall run at 60% when the damper is open.

Note: To RESET the error codes, press the 3rd selected key for 5 seconds.
After Resetting the Error Codes, you shall see 0000 displayed on the User Interface.
To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.

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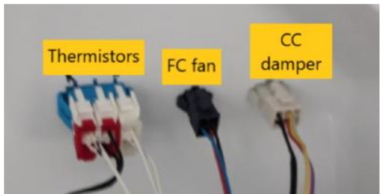
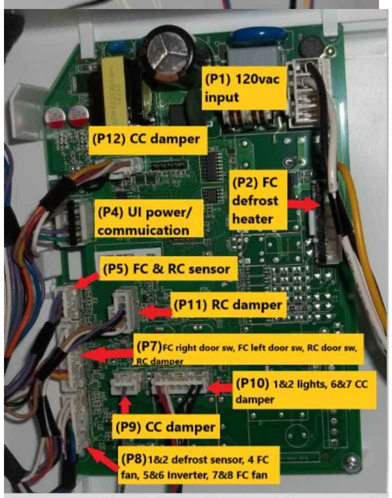
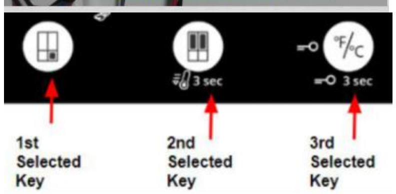
Check CC thermistors







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The CC thermistor needs to have resistance checked.

1. If the readings are out of range, then check wiring, FC fan, and air flow issues. Then replace the thermistor.

2. If the thermistor is in range, then check for other possible causes such as:
   A. Defrost Issues
   B. FC fan issues
   C. Airflow Issues
   D. Sealed system Issues

Theseus- ACU board:
P10-6 to P10-7 CC thermistor

Thermistor Resistance Range:
Nominal ohm (Tolerance) @ Temp
2.7kΩ(2692 - 2858) @77 F
7.6kΩ(7233 - 7995) @37 F
8.8kΩ(8325 - 9216) @32 F
22.7kΩ(21,408 - 24,140) @ 0 F
37kΩ(34,448 - 39,634) @ -15 F

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F3E4 - Freezer Compartment or Main Evaporator In Sensor(Defrost)

Note: To RESET the error codes, press the 3rd selected key for 5 seconds.
After Resetting the Error Codes, you shall see 0000 displayed on the User Interface.
To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.

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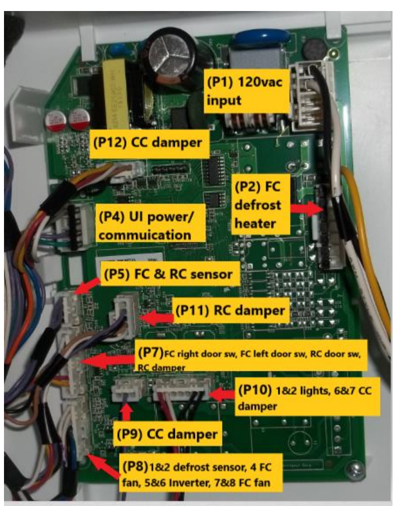
Check defrost thermistor



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The Defrost thermistor needs to have resistance checked.

1. If the readings are out of range, then check wiring and FC fan and air flow issues and then replace the thermistor

2. If the thermistor is in range, then check for other possible causes such as:
   A. Check defrost heater
   B. Loose connections
   C. FC door gaping
   D. Sealed system issue

Theseus- ACU P8-1 to P8-2 = 5-12.7 VDC defrost thermistor.

Thermistor Resistance Range:
Nominal ohm (Tolerance) @ Temp

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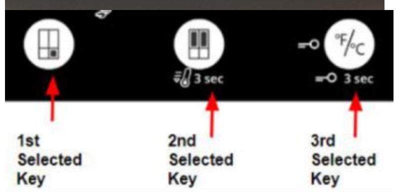
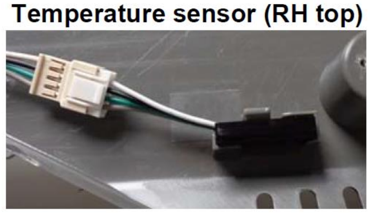
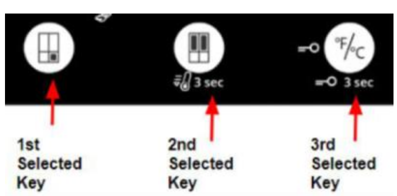
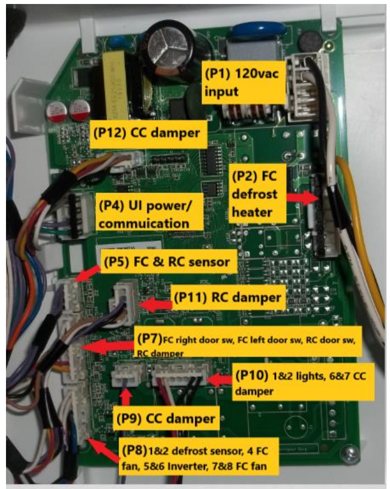
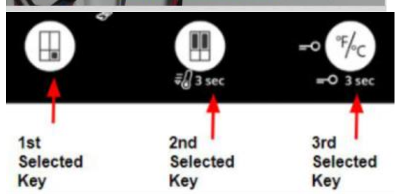
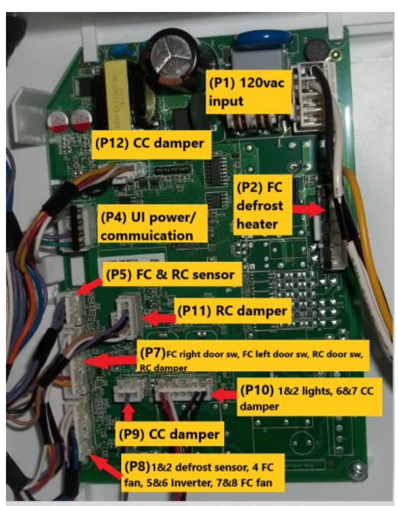
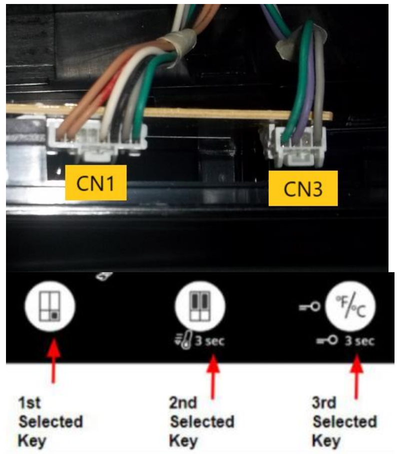
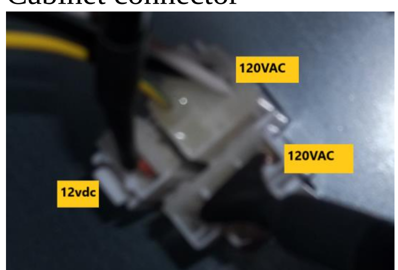
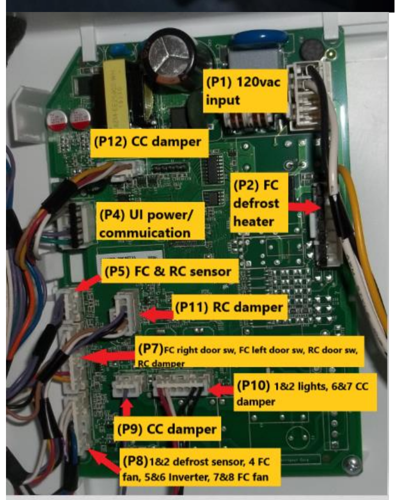
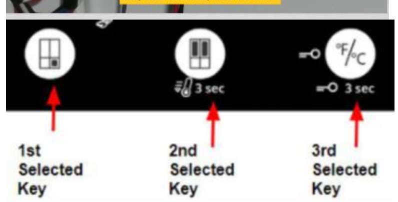
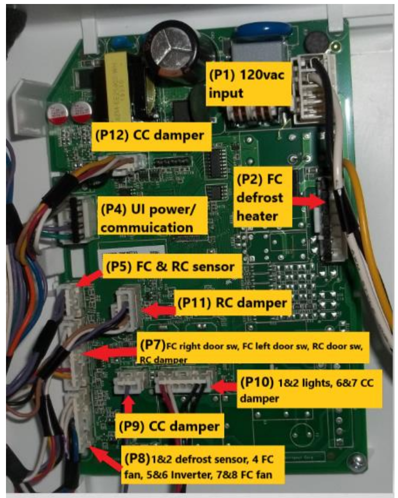
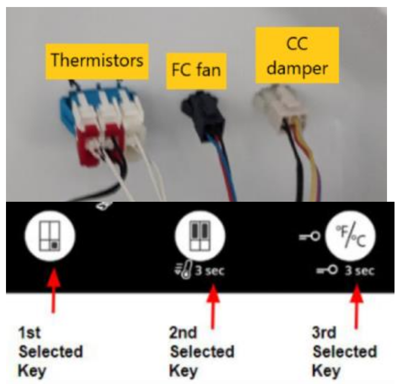
		2.7kΩ(2692 - 2858) @77 F 7.6kΩ(7233 - 7995) @37 F 8.8kΩ(8325 - 9216) @32 F 22.7kΩ(21,408 - 24,140) @ 0 F 37kΩ(34,448 - 39,634) @ -15 Link to teardown video for freezer
F3E5 - Freezer Compartment Evaporator Out Sensor	**Not used**	
F3E6 - Refrigeration Compartment Evaporator In Sensor	**Not used**	
F3E7 - Convertible Compartment Evaporator In Sensor	**Not used**	
F3E8 - External RH Sensor (Should combine Together with Amb temp sensor) **Note:** RH sensor failure: (top right hinge location) The mullion Flipper heater will run at 100% (10 watts)	**Cabinet moisture or sweating on flipper mullion.** Humidity sensor	Run test 104 to get humidity reading. The readout on display will be in a percentage. Also run test Service Test - 12 Ambient Temperature Thermistor • Temp will read in Celsius. • "SH" indicates shorted • "OP" indicates open If no reading is displayed on the UI in test, then check wiring to HMI

Note: To RESET the error codes, press the 3rd selected key for 5 seconds. After Resetting the Error Codes, you shall see 0000 displayed on the User Interface. To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.	  	from sensor, if good change sensor 1. To check flipper mullion run Service Test - 63 Vertical Mullion Heater Test A. When entering the Service Test, the Vertical Mullion Heater turns on. The display shows "ON." B. When leaving the Service Test, the Vertical Mullion Heater turns off. Test voltage at Theseus-ACU CN1-6 to CN1-7 = 12.7 VDC Flipper mullion heater Resistance =18 ohms 2. If the voltage is missing, check wiring and replace the HMI board. 3. If the voltage is present, then check the resistance of the heater. 4. If the resistance is out of range, then change flipper mullion. 5. If the resistance is in range, then change HMI.
F3E9 - Ambient Temperature Sensor **Note:** To RESET the error codes, press the 3rd selected key for 5 seconds. After Resetting the Error Codes, you shall see 0000 displayed on the User Interface. To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.	**Ambient Humidity and Temperature sensor (RH top)**  RH sensor failure: (top right hinge location) Mullion Flipper heater shall run at 100% (10 watts).  	Run test 12 Will read current temp in Celsius. SH indicates shorted OP indicates open HMI board CN1-2 to CN1-4 Check wiring to the HMI board and if no issue is found, then change the sensor.

F4E1 - Freezer Compartment or Main Evaporator Heater **Note:** To RESET the error codes, press the 3rd selected key for 5 seconds. After Resetting the Error Codes, you shall see 0000 displayed on the User Interface. To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.	**Defrost heater is not working.**  	Service Test - 89 Run FC Defrost Heater A. When entering this Service Test defrost heater turns on and stays on for 5 minutes or until the evaporator thermistor goes above 60°F. B. "ON" will be displayed while the operation is executed. 1. Check for voltage at Theseus board. P2-7 to P1-2 =115VAC**.** 2. If the voltage is not present at the board, then replace the board. 3. If the voltage is present, then check for power at the defrost heater. 4. If the voltage is present at the heater, then replace the heater. 5. If the voltage is missing, then check the wiring in the unit. Defrost heater resistance 51 ohms Link to teardown video for freezer
F6E1 - Comm Failure Between ACU and HMI **Note:** To RESET the error codes, press the 3rd selected key for 5 seconds. After Resetting the Error Codes, you shall see 0000 displayed on the User Interface. To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.	**Check communication line between Theseus board and HMI** 	Check for poor connection or wiring issues with communication wire. 1. Ohm out between the Theseus board P4-3 to Goddess HMI CN1-3. 2. If the wiring is open, then please call Whirlpool Techline. 3. If wiring ohms out correctly, then make sure all connections are tight and secure. Link to HMI removal video

		
F7E1 - Compressor Not Functioning **Note:** To RESET the error codes, press the 3rd selected key for 5 seconds. After Resetting the Error Codes, you shall see 0000 displayed on the User Interface. To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.	**Check compressor for running** Cabinet connector 	Service Test - 40 Compressor and Compartment Freezing Cooling Test A. When entering the service test, compressor runs at max power and shall only be turned off after leaving the service step. 1. Check voltage at Theseus board P8-5 to P8-6 = 12.7VDC. 2. Check for 120vac at Inverter on Black to White and 12.7VDC on Orange to Blue. 3. If the AC voltage is missing, then check wiring. 4. If the DC voltage is missing at the inverter and it is present at board, then check the wiring harness. 5. If the both voltages are present then ohm out windings of the compressor. 6. If the compressor windings are in range, then replace the inverter. 7. If the compressor windings are open, then replace the compressor and inverter.

FAE1 - Refrigeration Compartment or Main Evaporator Fan **Note:** To RESET the error codes, press the 3rd selected key for 5 seconds. After Resetting the Error Codes, you shall see 0000 displayed on the User Interface. To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.	**Check for fan running.**  	Service Test - 56 FC Fan Test A. When entering Service Test, the Freezer Fan turns on. The display shows "ON." B. When leaving Service Test, the Freezer Fan turns off. 1. Check for voltage at Theseus board from P8-8 to p8-4 = 2.7VDC. 2. Check PWM voltage at P8-7 to P8-4 = 12.7 VDC 3. If the voltage is present at Theseus board, then check voltage at FC fan. 4. If the voltage is missing at board, then change board. 5. If the voltage is missing at FC fan check connections and wiring. 6. If the voltage is present at the FC fan, then replace the fan.
FAEd - RC Damper 1 - Blocked Duct Fail **Note:** To RESET the error codes, press the 3rd selected key for 5 seconds. After Resetting the Error Codes, you shall see 0000 displayed on the User Interface. To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.	**Refrigerator damper not moving** **NOTE:** The connections on the board are very small. To get these readings you will have to use needle probes on your meter to be able to insert into the connector. Connections in the RC section are easier to use leads on. **NOTE:** This is a Pulse DC voltage. Some meters may not be able to read this pulse. If you have no DC voltage reading then switch the meter to AC voltage. You should get about the same 12 volts.	1. Run test 41 in the service test mode to verify damper operation, When entering Service Test, the damper continuously turns, showing the state in the numeric display. Possible position readings: 00 – Air baffle in open position. 02 – Air baffle in closed position. You can feel the air flow change in the RC section at the supply air. 1. Check the voltage at Theseus-ACU P7-7 to P7-8 = 0 to 12.7 VDC Refrigerator damper feedback. As damper cycles Open and Close this voltage will come and go. P11-1 to P11-2 = 0 to 12.7 VDC Refrigerator damper output.

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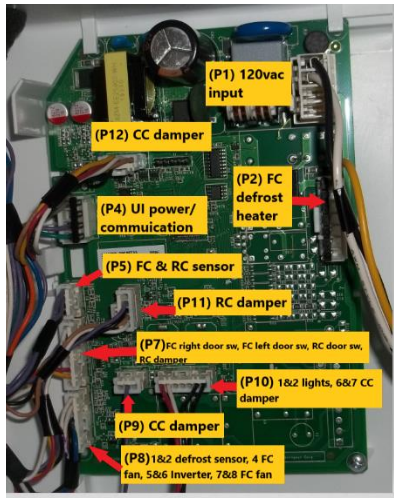

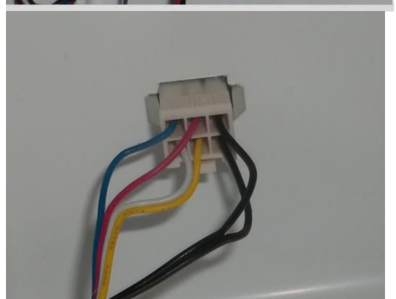
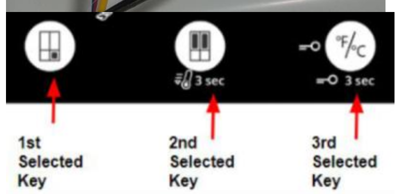

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While in test mode, This will vary with opening and closing of the damper. (if having issue checking the voltage, then check at damper)

2. If the voltage is present at the board but damper and display are not moving or changing, then check voltage at damper.

3. If the voltage is present at the damper and is not moving, then replace the damper.

4. If the voltage is missing at the damper, then check the wiring harness and connections.

5. If the voltage is not present at the board, then replace the Theseus-ACU board.

Ohms on each winding of damper is about 377.
Heater on the damper is about 140 ohms

Link to teardown for RC tower
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FAE6 - CC Damper 2 - Blocked Duct Fail

Note: This damper controls the airflow between the two FC compartments so they can be set at different temperatures.

Note: To RESET the error codes, press the 3rd selected key for 5 seconds.
After Resetting the Error Codes, you shall see 0000 displayed on the User Interface.
To EXIT Service diagnostics, Press 1st selected key and hold for 5 seconds, or cycle power on the appliance.
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Check CC damper

NOTE: The connections on the board are VERY small. To get these readings you will have to use needle probes on your meter to be able to insert into the connector.

NOTE: This is a Pulse DC voltage. Some meters may not be able to read this pulse. If you have no DC voltage reading then switch the meter to AC voltage. You should get about the same 12 volts.
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Run Service Test - 43 CC Air Baffle/Damper State
A. When entering the Service Test, the damper continuously turns, showing the state in the numeric display.

B. Possible position readings:
00 – Air baffle in open position
02 – Air baffle in closed position.

1. Check for DC voltage at the Theseus-ACU board
P12-1 to P12-2 = 0 to 12.7 VDC (voltage will come and go with cycling of damper). Resistance is 400 ohms on windings

P12-3 to P12-4= 0-12.7 VDC Voltage will come and go with cycling of CC damper. Resistance is 400 ohms on windings
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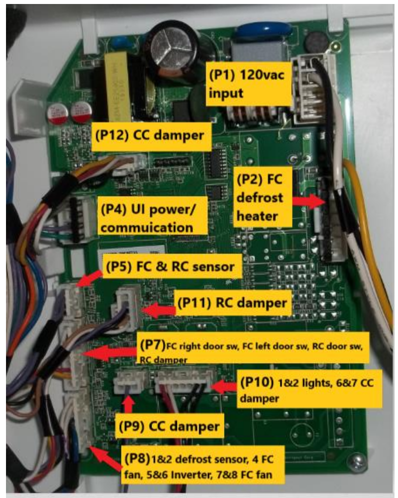
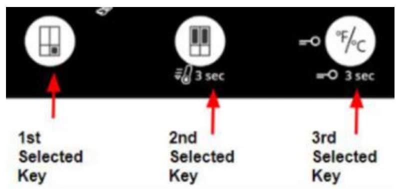
<td>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<td>2. If the voltage is present at board, then check voltage at damper.

3. If the voltage is present at damper and damper is NOT moving, then replace damper.

4. If the voltage is missing at Theseus-ACU board, then replace the board.
Link to teardown video for freezer</td>
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<tr>
<td>0</td>
<td>No error found</td>
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How to enter service mode

Service mode requirement	Button on Main UI
Enter Service Key Combination	" " and " " buttons for 3 seconds
Enter Key for Navigation	" " Button
Increment Key for Navigation	" " Button
Decrement Key for Navigation	" " Button
Back Key for Navigation	" °C-°F " Button
Degree C LED Indicator	"°C" indicator
Degree F LED Indicator	"°F" indicator

To Exit Service Mode, use °C-°F Key to back out of functional test. Press and hold and buttons simultaneously for 3 seconds.

Cooling issues

DANGER

Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- **Verify the controls are in the off position so that the appliance does not start when energized.**
- **Allow enough space to perform the voltage measurements without obstructions.**
- **Keep other people a safe distance away from the appliance to prevent potential injury.**
- **Always use the proper testing equipment.**
- **After voltage measurements, always disconnect power before servicing.**

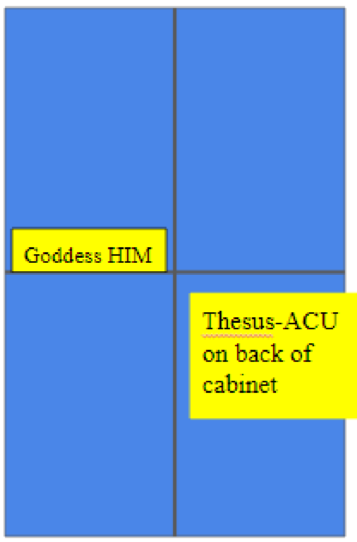
IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics

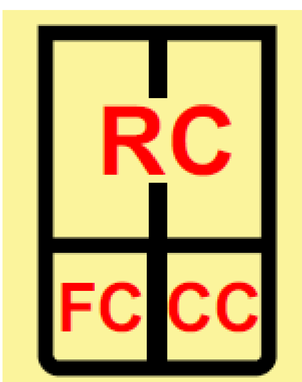
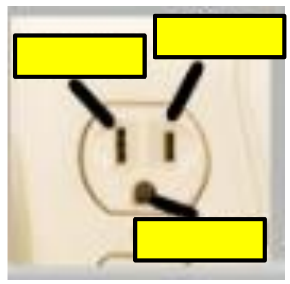
ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

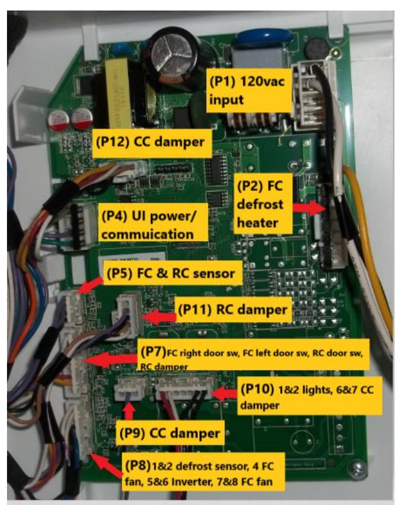
- Use an antistatic wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

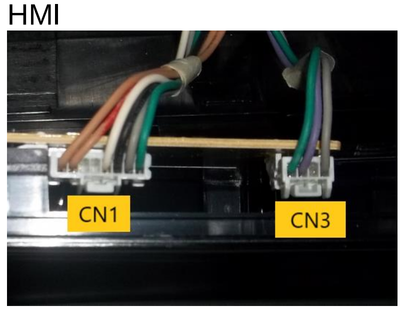
  -OR-

  Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the antistatic bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in antistatic bag, observe above instructions.

<table>
<tr><th>Symptoms</th><th>Possible Causes</th><th>Corrective Action</th></tr>
<tr><td rowspan="3">No cool, no fans, compressor, lights, or UI display



</td><td>Check power to outlet
</td><td>Check for 120vac at the outlet.

1. Also make sure it is polarized and grounded correctly.</td></tr>
<tr><td>Check all wiring connections</td><td>Make sure ALL wiring connections in the machine compartment area are secured and locked and wiring connections at the Theseus-ACU board are tight.</td></tr>
<tr><td>Check voltage at Theseus board


HMI

</td><td>Check for power at the Theseus-ACU board P1-1 to P1-2 = 115VAC.

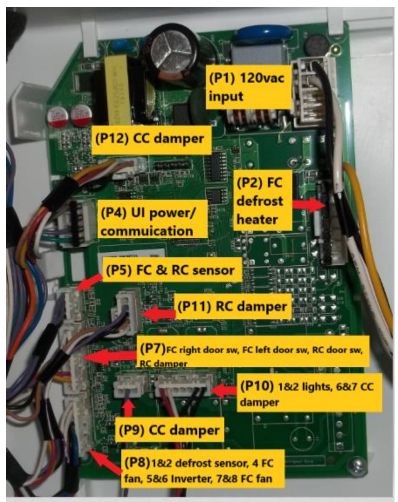
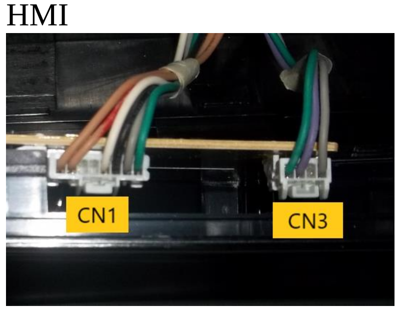
1. If the voltage is present, then check for DC voltage at P4-1 to P4-4 =12VDC.

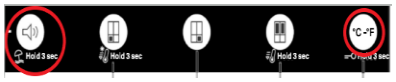
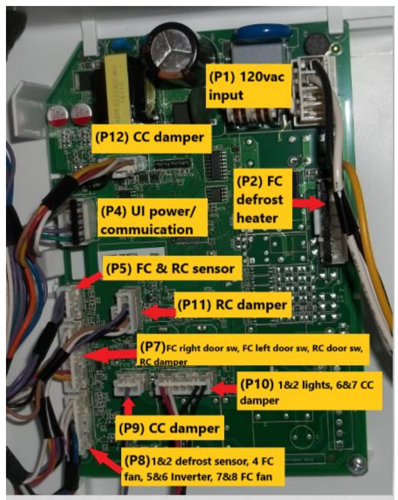
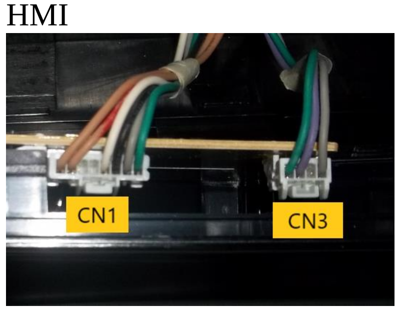
2. If this voltage is present, then check power at Goddess (HMI) on the CN3-1 to CN3-4 = 12VDC.

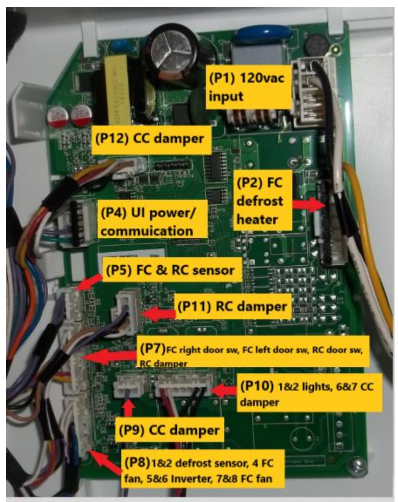
3. If the voltage is present at HMI, then replace the HMI board.

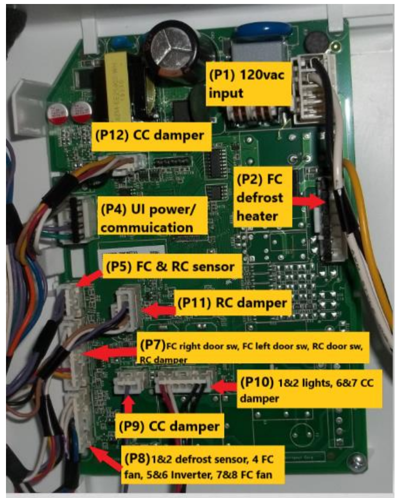
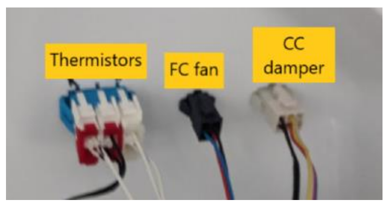
2. If either AC or DC voltages are missing at ACU, then check the wiring harness and connections, then replace the ACU board.

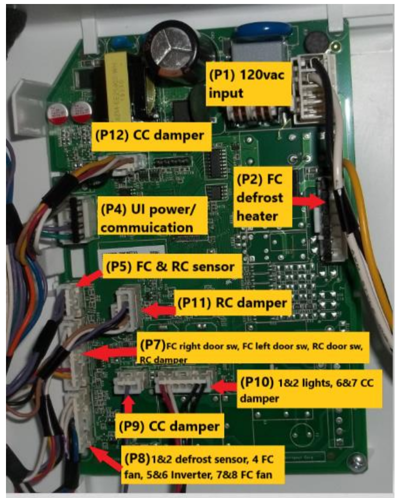
Link to HMI removal video</td></tr>
</table>

No UI display, interior lights working, Unit not cooling	**Check all wiring connections**	Make sure all wiring connection in the machine compartment area are secured and locked and wiring connections at the Theseus ACU are tight and HMI connections are tight
	Check voltage at Theseus ACU board and Goddess HIM  HMI 	Check for voltage at the Theseus board P4-1 to P4-4= 12.7VDC. 1. If this voltage is present, then check voltage at Goddess HMI CN4-1 to CN4-4 = 12.7VDC. 2. If voltage is missing, then go to step 5 3. If this voltage is present at both boards, and no code is found, then replace Goddess HIM board. 4. If no voltage is found at Goddess HMI, then check wiring and connection for issues. 5. If this voltage is missing, then check the Theseus-ACU board P1-1 to P1-2 = 115VAC. 6. If the AC voltage is present but not the DC voltage, then replace Theseus ACU board. 7. If the voltage is missing, then check the wiring harness and connections for issues. Link to HMI removal video

No cool, both sections are room temp, lights working, UI is on, no FC fan or compressor	**Any Fault codes?**	Check the service mode for fault codes. If any are found use the fault chart above to check the issue. 1. If fault code is not present, then go to next section
	Is unit in Showroom mode? 	Enter or exit Showroom mode by pressing and holding the Sound On/Off button and the Lock button simultaneously for 3 seconds.
	Do all parts work in service mode?  HMI 	Run the ALL service mode on the unit and check for components that do not work. 1. If all components work, but will not run in normal mode and the unit is not in Showroom mode, then replace the Theseus ACU board. 2. If no components work in service mode, then check Communication wire between the Theseus- ACU and Goddess HMI. If this wire is open then in service mode you can activate the component but it will not run. Also all thermistors will show SH on the testing. Ohm out between the Theseus board P4-3 to Goddess HMI CN1-3. 3. If the wiring is open, then please call Whirlpool Techline. 4. If the wiring ohms out correctly then make sure all connections are tight and secure. Link to HMI removal video
	Check all wiring connections	Make sure all wiring connections in the machine compartment area are secured and locked and wiring connections at the Theseus-ACU board are tight.

No cool, both section are room temp, FC Fan is running, no compressor	**Any Fault codes?**	Check the service mode for fault codes . If any are found use the fault chart above to check the issue. 1. If fault code is not present then go to next section
	Check all wiring connections	Make sure all wiring connections in the machine compartment area are secured and locked and wiring connections at the Theseus ACU are tight.
	Check RC thermistor   	Run Service test 01, RC thermistor check. Display will read out Current temperature(reading will be in Celsius degrees) SH indicates shorted OP indicates open 1. If the readings are out of range, then check wiring and replace the thermistor . 2. If the thermistor is in range, then check for loading issues, FC fan issues Theseus- ACU P5-3 to p5-4 thermistor. Thermistor Resistance Range: Nominal ohm (Tolerance) @ Temp 2.7kΩ(2692 - 2858) @77 F 7.6kΩ(7233 - 7995) @37 F 8.8kΩ(8325 - 9216) @32 F 22.7kΩ(21,408 - 24,140) @ 0 F 37kΩ(34,448 - 39,634) @ -15 F Link to teardown for RC tower

No cool, both section are room temp, FC Fan is running, No Compressor (Cont'd)	**Check FC thermistor**   	Run service test 02, FC thermistor check. Display will read out Current temperature(reading will be in Celsius degrees) SH indicates shorted OP indicates open 1. If the readings are out of range, then check wiring and replace the thermistor. 2. If the thermistor is in range, then check for loading issues, FC fan issues, Defrost issue. Theseus- ACU board P5-1 to P5-2 = 5VDC-12.7VDC, FC thermistor. Thermistor Resistance Range: Nominal ohm (Tolerance) @ Temp 2.7kΩ(2692 - 2858) @77 F 7.6kΩ(7233 - 7995) @37 F 8.8kΩ(8325 - 9216) @32 F 22.7kΩ(21,408 - 24,140) @ 0 F 37kΩ(34,448 - 39,634) @ -15 F Link to teardown video for freezer
	Check voltage at the board for compressor	Service Test - 40 Compressor and Compartment Freezing Cooling Test A. When entering the service test, compressor runs at max power and shall only be turned off after leaving the service step. 1. Check the voltage at Theseus board P8-5 to P8-6 = 12.7VDC.

<table>
<tr>
<td rowspan="2">No cool, both section are room temp, FC Fan is running, No Compressor (Cont’d)</td>
<td>


</td>
<td>2. Check for 120VAC at Inverter on Black to White and 12.7VDC on Orange to Blue.

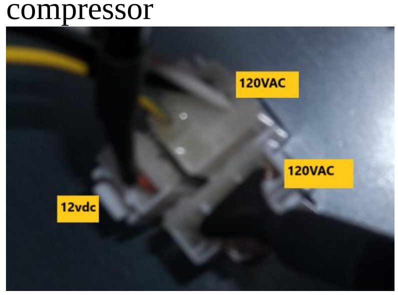
3. If the AC voltage is missing, then check wiring.

4. If the DC voltage is missing at the inverter and it is present at board, then check the wiring harness.

5. If both voltages are present, then ohm out windings of the compressor.

6. If the compressor windings are good, then replace the inverter.

7. If the compressor windings are open, then replace the compressor and inverter.</td>
</tr>
<tr>
<td>Check inverter and compressor

Cabinet connection for compressor


</td>
<td>Check power to inverter

1. Check for 120vac at Inverter on Black to White and 12.7VDC on Orange to Blue.

2. If the AC voltage is missing, then check wiring.

3. If the DC voltage is missing at the inverter and it is present at board, then check the wiring harness.

4. If both voltages are present then ohm out windings of compressor

5. If the compressor windings are in range, then replace the inverter.

6. If the compressor windings are open, then replace the compressor and inverter.</td>
</tr>
</table>

No cool in both sections, fans and compressor running but unit is room temp	**Check Sealed system**	This unit uses R600a refrigerant. Before opening the Sealed system, do the following. 1. With the unit uninstalled, remove the Machine Compartment cover and feel for normal condenser and compressor temperature. 2. If a leak is still suspected, proceed the following: Use an electronic leak detector rated for HC refrigerants to check interior compartments and the machine compartment for leaks. Look for oil around Sealed system fittings. 3. Using a Watt meter plugged into the unit, check for wattage on the unit. Check tech sheet for compressor wattage. 4. Once you have wattage then go to Technical Training Pointer #: W10683203, Use pointer to determine Sealed system issue. 5. Check the Sealed system for any leaks or restrictions Please follow all safety procedures while testing. Look at the Service manual W11105483 for more information.

No cool/ low cool in RC section, FC section is good.	**Check Product Temp** **Note:** Do not use an Infrared scanner. The surfaces of a refrigerator are highly reflective to IR light. When measuring with an IR non-contact device it is probable that you are measuring reflected temp and NOT surface temps	**IMPORTANT:** Do not use Infrared temperature gun Verify unit temp with probe or thermometer and compare to set points before starting service.

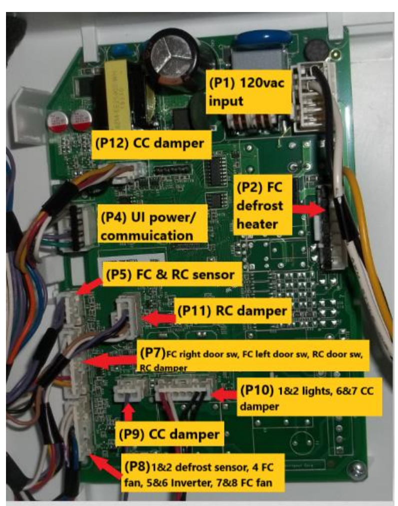
<table>
<tr><td rowspan="6">No cool/ low cool in RC section, FC section is good. (Cont’d)</td><td></td><td></td></tr>
<tr><td>Any Fault codes?</td><td>Check the service mode for fault codes. If any are found use the fault above to check the issue.

1. If fault code is not present, then go to next section</td></tr>
<tr><td>Check for RC door gasket</td><td>Make sure all door gaskets are sealing.

1. If gaps are present, use a heat gun on a low heat setting and carefully heat the gasket to reform the part so that it seals properly.

2. If the gasket does not hold shape, then replace the gasket.</td></tr>
<tr><td>Product loading</td><td>1. There may be an issue where containers are blocking air flow or items are interfering with the door closing and causing warm spots in the RC section.

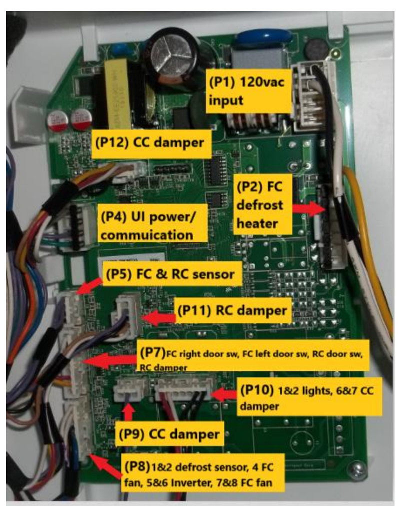
2. Make sure the customer is not putting hot food in the unit.</td></tr>
<tr><td>Check air flow</td><td>Make sure there is good air flow into the unit and no vents are blocked with ice or debris</td></tr>
<tr><td>Check RC thermistor

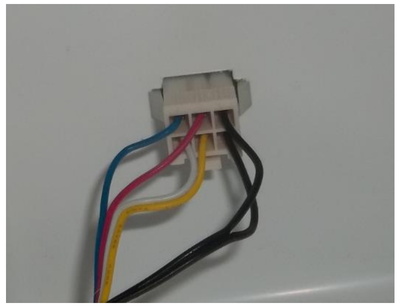

</td><td>Run Service test 01, RC thermistor check. Display will read out Current temperature(reading will be in Celsius degrees)
SH indicates shorted
OP indicates open

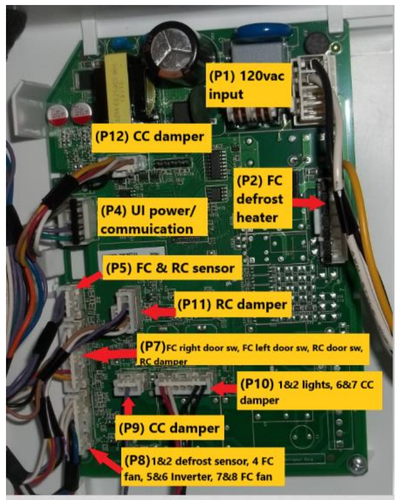
1. If the readings are out of range, then check wiring and replace the thermistor
.
2. If the thermistor is in range, then check for loading issues, FC fan issues

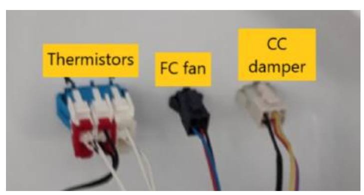
Theseus- ACU P5-3 to p5-4 thermistor.

Thermistor Resistance Range:
Nominal ohm (Tolerance) @ Temp
2.7kΩ(2692 - 2858) @77 F</td></tr>
</table>

No cool/ low cool in RC section, FC section is good. (Cont'd)		7.6kΩ(7233 - 7995) @37 F 8.8kΩ(8325 - 9216) @32 F 22.7kΩ(21,408 - 24,140) @ 0 F 37kΩ(34,448 - 39,634) @ -15 F [Link to teardown for RC tower](#)
	Check RC damper for not moving **NOTE:** The connections on the board are VERY small. To get these readings you will have to use needle probes on your meter to be able to insert into the connector. Connections in the RC section are easier to use leads on. **NOTE:** This is a Pulse DC voltage. Some meters may not be able to read this pulse. If you have no DC voltage reading then switch the meter to AC voltage. You should get about the same 12 volts. 	Run test 41 in the service test mode to verify damper operation, When entering Service Test, the damper continuously turns, showing the state in the numeric display. Possible position readings: 00 – Air baffle in open position. 02 – Air baffle in closed position. You can feel the air flow change in the RC section at the supply air. 1. Check voltage at Theseus-ACU P7-7 to P7-8 = 0 to 12.7 VDC Refrigerator damper feedback. As damper cycles Open and Close this voltage will come and go. P11-1 to P11-2 = 0 to 12.7 VDC Refrigerator damper output While in test mode, This will vary with opening and closing of the damper. (if having issue checking the voltage, then check at damper) 2. If voltage is present at board but damper and display are not moving or changing, then check voltage at damper. 3. If voltage is present at the damper and is not moving, then replace the damper. 4. If voltage is missing at the damper, then check the wiring harness and connections. 5. If voltage is not present at the board, then replace the Theseus-ACU board. Ohms on each winding of damper is

<table>
<tr>
<td>No cool/ low cool in RC section, FC section is good. (Cont’d)</td>
<td></td>
<td>about 377.
Heater on the damper is about 140 ohms

Link to teardown for RC tower</td>
</tr>
<tr>
<td></td>
<td>Check FC fan



</td>
<td>In service test 56 FC Fan Test
A. When entering Service Test, the freezer Fan turns on. The display shows “ON.”

B. When leaving the Service Test, the Freezer Fan turns off.

1. Check voltage at Theseus-ACU board:
P8-8 to P8-4 12.7 VDC

2. Also check the PWM voltage. This voltage tells the fan to run.
P8-7 to P8-4 = 12.7 VDC

3. If the voltage is missing at the board, then check connections and wiring then replace the board.

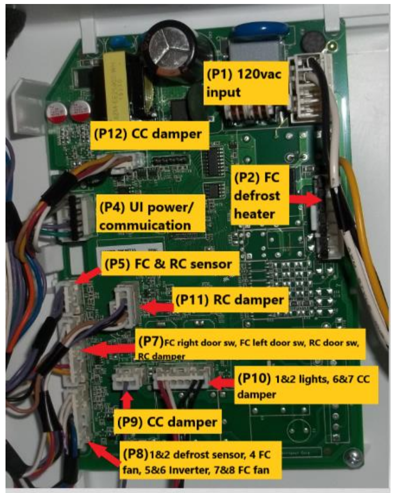
4. If the voltage is present, then check the voltage at the FC fan.

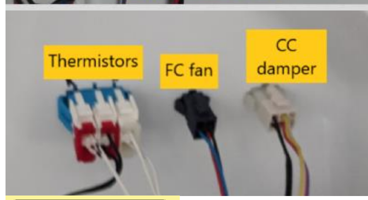
5. If the voltage is missing at the FC fan, then check the wiring harness and connections.

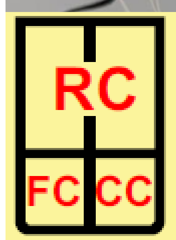
6. If voltage is present and the fan is not running, then replace FC fan motor.

Link to teardown video for freezer</td>
</tr>
</table>

No / low cool in FC section, RC section temps are good.	**Check Product Temp** **Note:** Do not use an Infrared scanner. The surfaces of a refrigerator are highly reflective to IR light. When measuring with an IR non-contact device it is probable that you are measuring reflected temp and not surface temps	**IMPORTANT:** Do not use Infrared temperature gun Verify unit temp with probe or thermometer and compare to set points before starting service.
	Which side is NOT cooling well?	You can set the right and left side to different temperature settings. Please look in Use and Care manual for setting information
	Any Fault codes?	Check the service mode for fault codes. If any are found use the fault above to check the issue. 1. If fault code is not present then go to next section
	Product loading	1. There may be an issue where containers are blocking air flow or items are interfering with the door closing and causing warm spots in the RC section. 2. Make sure the customer is NOT putting hot food in the unit.
	Check air flow	Make sure there is good air flow into the unit and no vents are blocked with ice or debris
	Check install of unit	This unit does not have a condenser fan motor. The condenser is on the sides of the unit. If the unit is not installed properly this can cause cooling issues. Check Use and Care guide for install.
	Check FC thermistor	Run service test 02, FC thermistor check. Display will read out Current temperature(reading will be in Celsius degrees) SH indicates shorted OP indicates open

<table>
<tr>
<td>No / low cool in FC section, RC section temps are good. (Cont’d)</td>
<td>







</td>
<td>1. If the readings are out of range, then check wiring and replace the thermistor.

2. If the thermistor is in range, then check for loading issues, FC fan issues, and Defrost issue.

Theseus- ACU board
P5-1 to P5-2 = 5VDC-12.7VDC FC thermistor.
Thermistor Resistance Range:
Nominal ohm (Tolerance) @ Temp
2.7kΩ(2692 - 2858) @77 F
7.6kΩ(7233 - 7995) @37 F
8.8kΩ(8325 - 9216) @32 F
22.7kΩ(21,408 - 24,140) @ 0 F
37kΩ(34,448 - 39,634) @ -15 F

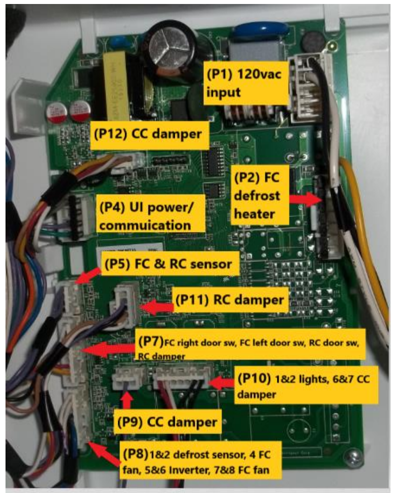
Link to teardown video for freezer</td>
</tr>
<tr>
<td></td>
<td>Check CC damper

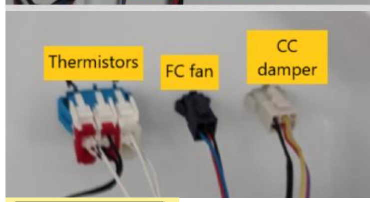
NOTE: The connections on the board are very small. To get these readings you will have to use needle probes on your meter to able to insert into the connector,

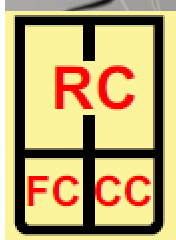
NOTE: This is a pulse DC</td>
<td>Run Service Test - 43 CC Air Baffle/Damper State
A. When entering the Service Test, the damper continuously turns, showing the state in the numeric display.

B. Possible position readings:
00 – Air baffle in open position
02 – Air baffle in closed position.</td>
</tr>
</table>

<table>
<tr>
<td rowspan="2">No / low cool in FC section, RC section temps are good. (Cont’d)</td>
<td>voltage. Some meters may not be able to read this pulse. If you have no DC voltage reading then switch the meter to AC voltage. You should get about the same 12 volts.







</td>
<td>1. Check for DC voltage at the Theseus-ACU board

P12-1 to P12-2 = 0 to 12.7 VDC (voltage will come and go with cycling of damper). Resistance is 400 ohms on windings.

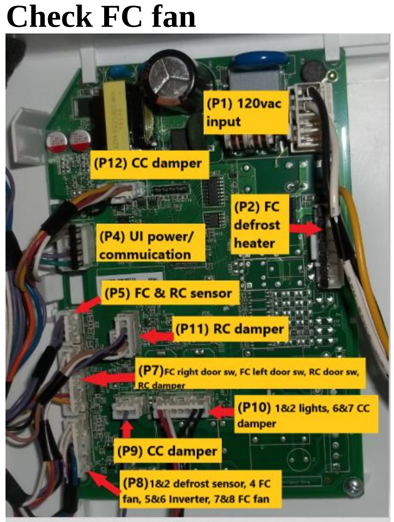
P12-3 to P12-4= 0 to 12.7 VDC (voltage will come and go with cycling of damper). Resistance is 400 ohms on windings.

2. If the voltage is present at board, then check voltage at damper.

3. If the voltage is present at damper and damper is not moving, then replace damper.

4. If the voltage is missing at Thesus-ACU board, then replace the board.

Link to teardown video for freezer</td>
</tr>
<tr>
<td>Check FC fan

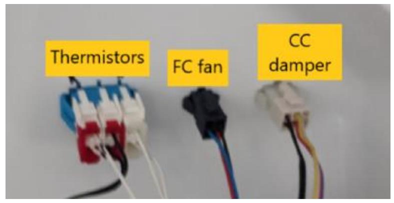


</td>
<td>In service test 56 FC Fan Test
A. When entering Service Test, the Freezer Fan turns on. The display shows “ON.”

B. When leaving Service Test, the Freezer Fan turns
Off.

1. Check voltage at Theseus-ACU board:
P8-8 to P8-4 12.7 VDC

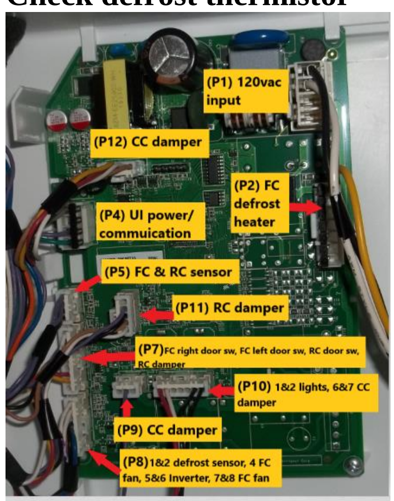
2. Also check the PWM voltage. This voltage tells the fan to run.
P8-7 to P8-4 = 12.7 VDC</td>
</tr>
</table>

<table>
<tr>
<td rowspan="2">No / low cool in FC section, RC section temps are good. (Cont’d)</td>
<td>
</td>
<td>3. If the voltage is missing at the board, then check connections and wiring then replace the board.

4. If the voltage is present, then check the voltage at the FC fan.

5. If the voltage is missing at the FC fan, then check the wiring harness and connections.

6. If the voltage is present and the fan is not running, then replace FC fan motor.

Link to teardown video for freezer</td>
</tr>
<tr>
<td>Check defrost thermistor


</td>
<td>Run Service test 04, FC defrost thermistor check. Display will read out

Current temperature(reading will be in Celsius degrees)
SH “shorted”
OP “open”

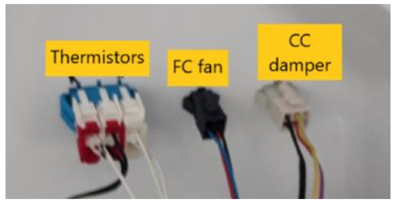
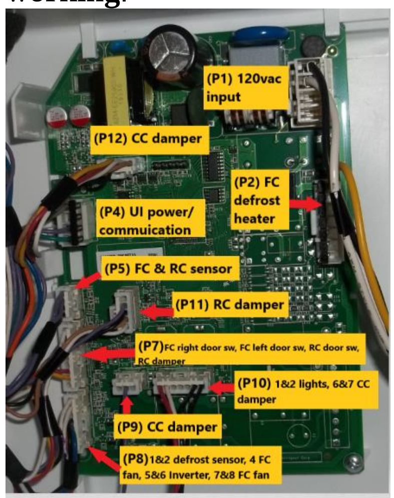
1. If the readings are out of range, then check wiring and replace the thermistor.

2. If the thermistor is in range, then check the Defrost heater and wiring connections.

Theseus- ACU P8-1 to P8-2 = 5-12.7 VDC defrost thermistor.

Thermistor Resistance Range:
Nominal ohm (Tolerance) @ Temp
2.7kΩ(2692 - 2858) @77 F
7.6kΩ(7233 - 7995) @37 F
8.8kΩ(8325 - 9216) @32 F
22.7kΩ(21,408 - 24,140) @ 0 F
37kΩ(34,448 - 39,634) @ -15 F

Link to teardown video for freezer</td>
</tr>
</table>

<table>
<tr>
<td rowspan="3">No / low cool in FC section, RC section temps are good. (Cont’d)</td>
<td>
</td>
<td></td>
</tr>
<tr>
<td>Defrost heater is not working.


</td>
<td>Service Test - 89 Run FC Defrost Heater

A. When entering this Service Test defrost heater turns on and stays on for 5 minutes or until the evaporator thermistor goes above 60°F.

B. “ON” will be displayed while the operation is executed.

1. Check for voltage at Theseus board. P2-7 to P1-2 =115VAC.

2. If the voltage is not present at the board, then replace the board.

3. If the voltage is present, then check for power at the defrost heater.

4. If the voltage is present at the heater, then replace the heater.

5. If the voltage is missing, then check the wiring in the unit.

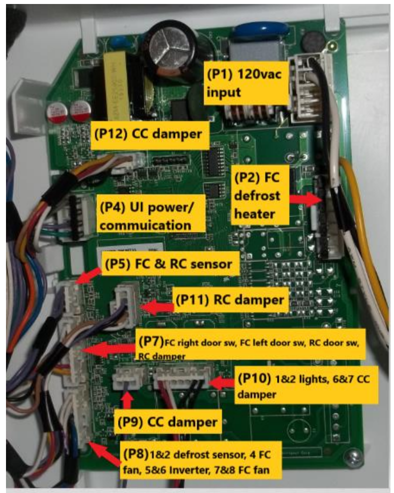
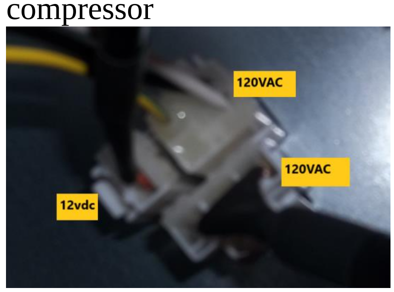
Defrost heater resistance 51 ohms

Link to teardown video for freezer</td>
</tr>
<tr>
<td>Check voltage at the board for compressor</td>
<td>Service Test - 40 Compressor and Compartment

Freezing Cooling Test

A. When entering the service test, compressor runs at max power and shall only be turned off after leaving the service step.

1. Check the voltage at Theseus board P8-5 to P8-6 = 12.7VDC.</td>
</tr>
</table>

No / low cool in FC section, RC section temps are good. (Cont'd)		2. Check for 120VAC at Inverter on Black to White and 12.7VDC on Orange to Blue. 3. If the AC voltage is missing, then check wiring. 4. If the DC voltage is missing at the inverter and it is present at board, then check the wiring harness. 5. If both voltages are present, then ohm out windings of the compressor. 6. If the compressor windings are in range, then replace the inverter. 7. If the compressor windings are open, then replace the compressor and inverter.
	Check inverter and compressor Cabinet connection for compressor 	Check power to inverter 1. Check for 120vac at Inverter on Black to White and 12.7VDC on Orange to Blue. 2. If the AC voltage is missing, then check the wiring. 3. If the DC voltage is missing at the inverter and it is present at board, then check the wiring harness. 4. If both voltages are present then ohm out windings of compressor 5. If the compressor windings are in range, then replace the inverter. 6. If the compressor windings are open, then replace the compressor and inverter.
	Check Sealed system	This unit uses R600 refrigerant. Before opening the Sealed system, do the following. 1. With the unit, uninstalled, remove the Machine Compartment cover, and feel for normal

No / low cool in FC section, RC section temps are good. (Cont'd)		condenser and compressor temperature. 2. If a leak is still suspected, proceed the following: Use an electronic leak detector rated for HC refrigerants to check interior compartments and the machine compartment for leaks. Look for oil around Sealed system fittings. 3. Using a Watt meter plugged into the unit, check for wattage on the unit. Check tech sheet for compressor wattage. 4. Once you have wattage then go to Technical Training Pointer #: W10683203, Use pointer to determine Sealed system issue. 5. Check the Sealed system for any leaks or restrictions Please follow all safety procedures while testing. Look at the Service manual W11105483 for more information.

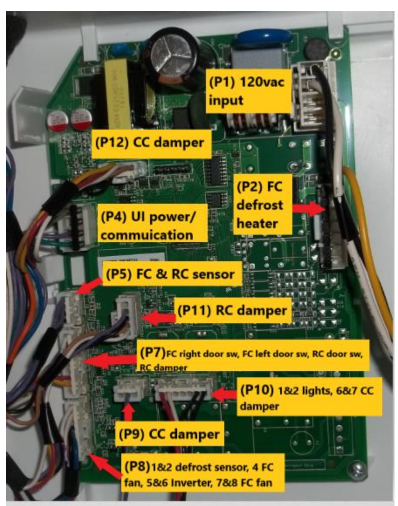
RC freezing in spots or crispers	**Make sure unit is NOT in Vacation mode**	In this mode the RC temperature will go down to 30 degrees till the Vacation mode is shut off. Look in Use and care for further details
	Check door gasket	Make sure there are no gaps or tears in the door gasket. 1. If gaps are present, use a heat gun on a low heat setting and carefully heat the gasket to reform the part so that it seals properly. 2. If the gasket does not hold shape, then replace the gasket.

<table>
<tr>
<td rowspan="3">RC freezing in spots or crispers (Cont’d)</td>
<td>Check door closing</td>
<td>Make sure door is closing properly and nothing is blocking it from closing</td>
</tr>
<tr>
<td>Product loading</td>
<td>1. There may be an issue where containers are blocking air flow or items are interfering with the door closing and causing warm spots in the RC section.

2. Make sure the customer is not putting hot food in the unit.</td>
</tr>
<tr>
<td>Check RC air damper

NOTE: The connections on the board are VERY small. To get these readings you will have to use needle probes on your meter to be able to insert into the connector. Connections in the RC section are easier to use leads on.

NOTE: This is a Pulse DC voltage. Some meters may not be able to read this pulse. If you have no DC voltage reading then switch the meter to AC voltage. You should get about the same 12 volts.


</td>
<td>Check the air damper going to the RC compartment for air leakage and make sure it is working properly.

1. Run test 41 in the service test mode to verify damper operation, When entering Service Test, the damper continuously turns, showing the state in the numeric display.

Possible position readings:
00 – Air baffle in open position.
02 – Air baffle in closed position.

You can feel the air flow change in the RC section at the supply air.

1. Check voltage at Theseus-ACU P7-7 to P7-8 = 0 to 12.7 VDC Refrigerator damper feedback.
As damper cycles open and close this voltage will come and go.

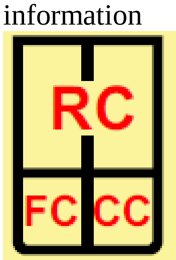
P11-1 to P11-2 = 0 to 12.7 VDC Refrigerator damper output.
While in test mode, This will vary with opening and closing of the damper. (if having issue checking the voltage, then check at damper)

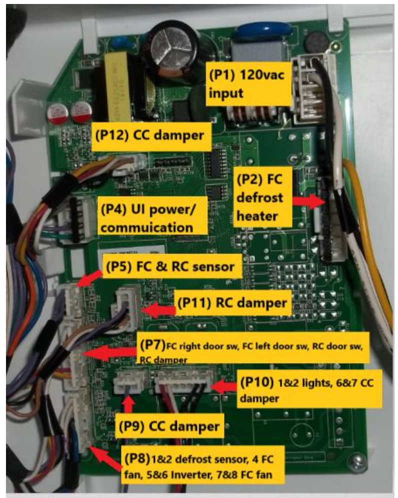
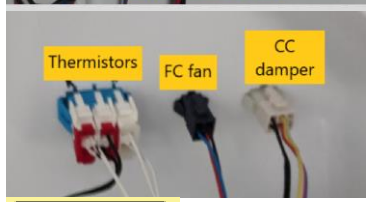
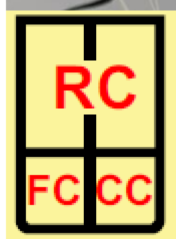
2. If the voltage is present at the board but damper and display are not moving or changing, then check voltage at damper.

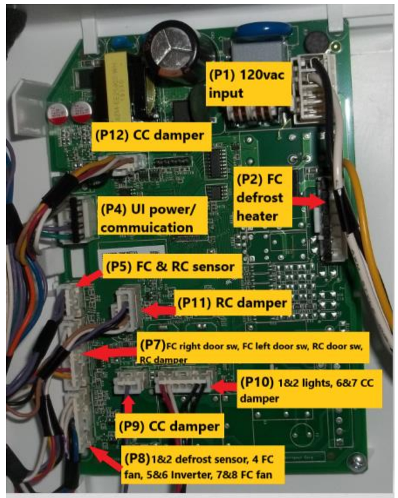
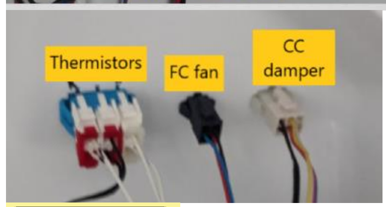
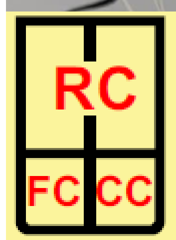
3. If the voltage is present at the damper and is not moving, then replace the damper.

4. If the voltage is missing at the damper, then check the wiring harness and connections.</td>
</tr>
</table>

RC freezing in spots or crispers (Cont'd)	 	5. If the voltage is not present at the board, then replace the Theseus-ACU board. Ohms on each winding of damper is about 377. Heater on the damper is about 140 ohms Link to teardown for RC tower

Freezer left side not holding temp **Note:** You can set the right and left side to different temperature settings. Please look in Use and Care manual for setting information  	**Check Product Temp** **Note:** Do not use an Infrared scanner. The surfaces of a refrigerator are highly reflective to IR light. When measuring with an IR non-contact device it is probable that you are measuring reflected temp and not surface temps	**IMPORTANT:** Do not use Infrared temperature gun Verify unit temp with probe or thermometer and compare to set points before starting service.
	Check door gasket	Make sure there are no gaps or tears in the door gasket. 1. If gaps are present, use a heat gun on a low heat setting and carefully heat the gasket to reform the part so that it seals properly. 2. If the gasket does not hold shape, then replace the gasket.
	Check door closing	Make sure door is closing properly and nothing is blocking it from closing
	Check CC Thermistor	Run Service test 18, FC defrost thermistor check. Display will read out Current temperature(reading will be in Celsius degrees) SH indicates shorted OP indicates open 1. If the readings are out of range,

Freezer left side not holding temp (Cont'd)	   	then check wiring and replace the thermistor. 2. If the thermistor is in range then check the defrost heater and wiring connections. Theseus-ACU P10-6 to P10-7 CC SENSOR Thermistor Resistance Range: Nominal ohm (Tolerance) @ Temp 2.7kΩ(2692 - 2858) @77 F 7.6kΩ(7233 - 7995) @37 F 8.8kΩ(8325 - 9216) @32 F 22.7kΩ(21,408 - 24,140) @ 0 F 37kΩ(34,448 - 39,634) @ -15 F Link to teardown video for freezer
	Check CC damper **NOTE:** The connections on the board are VERY small. To get these readings you will have to use needle probes on your meter to able to insert into the connector, **NOTE:** This is a Pulse DC voltage. Some meters may not be able to read this pulse. If you have no DC voltage reading then switch the meter to AC voltage. You should get about the same 12 volts.	Run Service Test - 43 CC Air Baffle/Damper State A. When entering the Service Test, the damper continuously turns, showing the state in the numeric display. B. Possible position readings: 00 – Air baffle in open position 02 – Air baffle in closed position. 1. Check for DC voltage at the Theseus-ACU board P12-1 to P12-2 = 0 to 12.7 VDC (voltage will come and go with cycling of damper). Resistance is 400 ohms on windings P12-3 to P12-4= 0 to 12.7 VDC (voltage will come and go with cycling of damper).Resistance is 400 ohms on windings Heater is 140 ohms

Freezer left side not holding temp (Cont'd)	  	2. If the voltage is present at board, then check voltage at damper. 3. If the voltage is present at the damper and the damper is not moving, then replace the damper. 4. If the voltage is missing at Thesus-ACU board, then replace the board. Link to teardown video for freezer

Light issues

⚠ DANGER

Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- **Verify the controls are in the off position so that the appliance does not start when energized.**
- **Allow enough space to perform the voltage measurements without obstructions.**
- **Keep other people a safe distance away from the appliance to prevent potential injury.**
- **Always use the proper testing equipment.**
- **After voltage measurements, always disconnect power before servicing.**

IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics

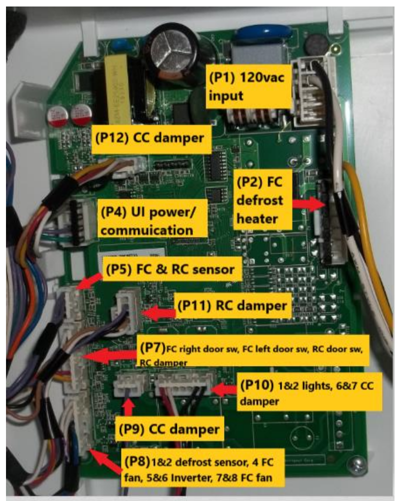
ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

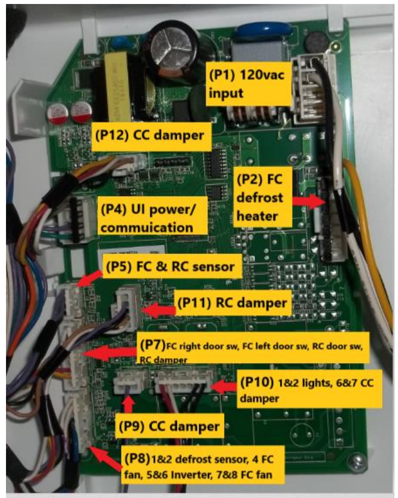
- Use an antistatic wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

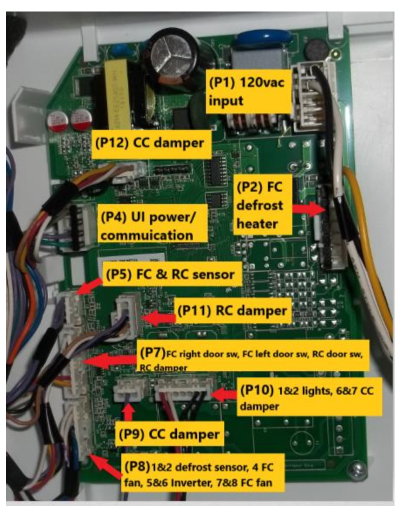
  -OR-

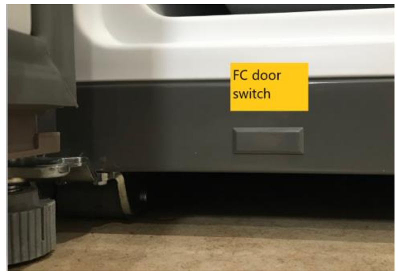
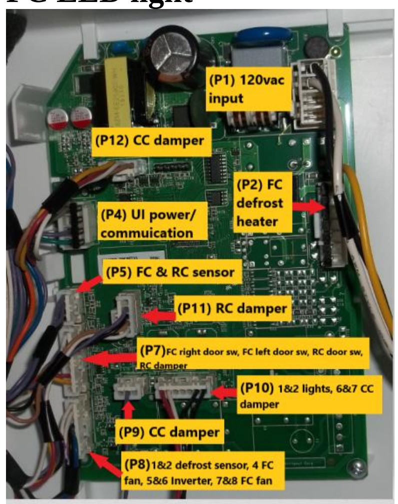
  Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the antistatic bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in antistatic bag, observe above instructions.

No RC lights **Note**. These are reed switches. There is a magnet in the door to activate the switch when the door closes.	**Check for a magnet on the door.**	There is a magnet on the door that activates the Reed door switch open and close. 1. If this is missing, then replace the door.

No RC lights (Cont'd)		2. If the magnet is present, then proceed to the next check
	Check RC door switch  	Run Service Test - 73 Right RC Door Switch State 00 = identifies door open 01 = identifies door closed. 1. If the test fails, then check the RC door switch under the hinge cap. A. Check for loose wiring connections then ohm out switch. When the door is open and closed the switch should open and close. 2. If the switch is ohms out correctly, then go to Theseus-ACU in the back. P7-3 to P7-4 and ohm out with the door open and close. 3. If the switch works at the Theseus-ACU board, then check for voltage at the RC lights section. 4. If the switch does not work, then check the wiring harness and reed switch again.
	RC/FC LED light	1. Check power at the Theseus-ACU for the light. P10-1 to P10-2 = 12VDC 2. If the voltage is present, then check at light connection in RC or FC and check for voltage, 3. If the voltage is not present at the light but is present at the board, then check the wiring harness.

No RC lights (Cont'd)		4. If the voltage is present at the light and connections are good, then replace light. [Link for RC light removal]()

No FC light	**Check for a magnet on the door.** 	The magnet on the door activates the door reed switch 1. If the door magnet is missing, then replace the door. 2. If the magnet is present, then go to the Check FC door switch section.
	Check FC door switch. 	Run Service Test - 75 FC Door Switch State 00= identifies door open 01= identifies door closed. 1. If the test fails, then check the RC door switch under the hinge cap. A. Check for loose wiring connections then ohm out switch. When the door is open and closed the switch should open and close. 2. If the switch ohms out correctly, then go to Theseus-ACU in the back P7-1 to P7-2 and ohm out with the door open and close. 3. If the switch works at the Theseus-ACU board, then check for voltage at the FC lights section.

No FC light (Cont'd)		4. If the switch does not work, then check the wiring harness and reed switch again.
	FC LED light 	1. Check power at the Theseus-ACU for the light. P10-1 to P10-2 = 12VDC 2. If the voltage is present, then check at light connection in the FC and check for voltage, 3. If the voltage is not present at the light but is present at the board, then check the wiring harness. 4. If the voltage is present at the light and connections are good, then replace light.

Ice maker issue

In 24 hrs. the ice maker will make 56-72 ice cubes
The ice maker requires 2-3 days to fill the ice bin container (The refrigerator requires 3 hours to stabilize after the appliance is first plugged in.
Thermistor input to control- harvest ice once thermistor input reaches -13°C/8.6°F after 100 minutes.
Water fill-117cc(ml) in 13.5 seconds(in normal running mode)

[Link to Ice maker removal video]

⚠ DANGER

Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- **Verify the controls are in the off position so that the appliance does not start when energized.**
- **Allow enough space to perform the voltage measurements without obstructions.**
- **Keep other people a safe distance away from the appliance to prevent potential injury.**
- **Always use the proper testing equipment.**
- **After voltage measurements, always disconnect power before servicing.**

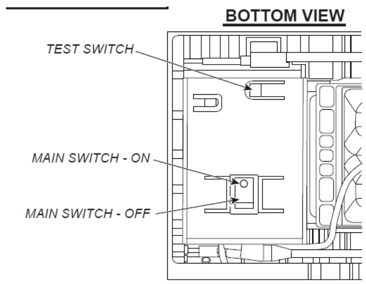
IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics
ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

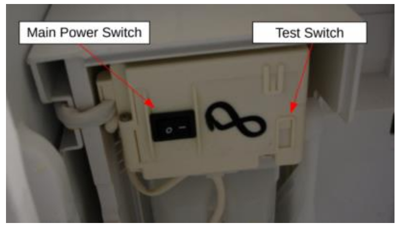
- Use an antistatic wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

  -OR-

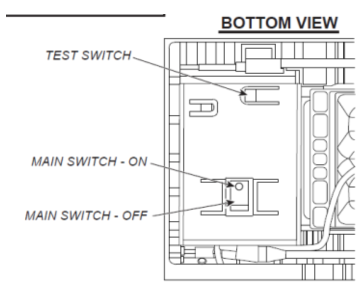
  Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the antistatic bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in antistatic bag, observe above instructions.

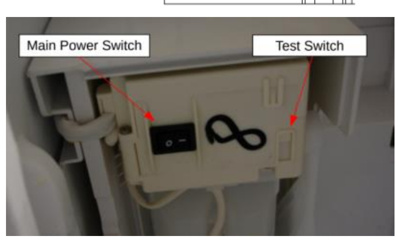
Code/Symptoms	Possible Causes	Corrective Action
No ice production	**Check Product Temp** **Note:** Do not use an Infrared scanner. The surfaces of a refrigerator are highly reflective to IR light. When measuring with an IR non-contact device it is probable that you are measuring reflected temp and not surface temps	**IMPORTANT:** Do not use Infrared temperature gun Verify unit temp with probe or thermometer and compare to set points before starting service.
	Verify water supply is turned on **Check for kinked line**	Verify water supply is turned on to the unit and the supply line or other water lines are not kinked.
	Is Ice maker turned on?	There is an ON/OFF switch on the bottom of the ice maker head. Make sure this is turned on.

<table>
<tr>
<td rowspan="3">No ice production (Cont’d)</td>
<td>


</td>
<td></td>
</tr>
<tr>
<td>Is the Ice maker tray stuck in a harvest mode?</td>
<td>If the customer pulls the ice bin while IM is in harvest mode it might force the bale arm up.

The IM might think there is an issue and stop the IM harvest.

To reset the IM, press the TEST switch and hold for 3 seconds. This will start the IM and let IM run through the test mode. This will reset the IM.</td>
</tr>
<tr>
<td>Will ice maker run service mode correctly



</td>
<td>There is a TEST switch on the bottom of the ice maker. When this button is pushed the IM will run a cycle. Fault tree for ice maker is document W11218398B

1.Press and hold for 3 sec (test switch)

2. Thermistor check (open or close). If the ice maker does not try to run and 120vac is present at the IM, then replace the Ice maker.

3. Ice maker starts to twist tray

4. Detection of the ice quantity (bail arm movement)
A. If the bail arm finds the bin full, then the IM tray will return to its home position.
B. If the bail arm does not detect a full bin, then the tray will continue to twist.</td>
</tr>
</table>

No ice production (Cont'd)		5. Ice ejection 6.Return home position 7. Water fill 6.8 sec (~60 ml / ~2oz.) A. Check for 120vac to the water valve. If this voltage is missing, then check the wiring harness and replace the Ice maker. B. If voltage is present at the water valve and Ice maker is NOT filling. Then check for a frozen fill tube and replace the water valve. 8. Water flow stop for 3 sec 9. Water fill 6.8 sec (~60 ml / ~2oz.) 10. End
	Check for IM fill during test	When running the service tech the IM will fill for a short time then stop then start again. 1. Check for 120VAC across the water valve during the test. 2. If no voltage is present during the fill, then check the wiring harness and IM. 3. If the voltage is present and IM did not fill, then replace the valve or check for a frozen fill tube.

Moisture issues

⚠ DANGER

Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ WARNING

Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- **Verify the controls are in the off position so that the appliance does not start when energized.**
- **Allow enough space to perform the voltage measurements without obstructions.**
- **Keep other people a safe distance away from the appliance to prevent potential injury.**
- **Always use the proper testing equipment.**
- **After voltage measurements, always disconnect power before servicing.**

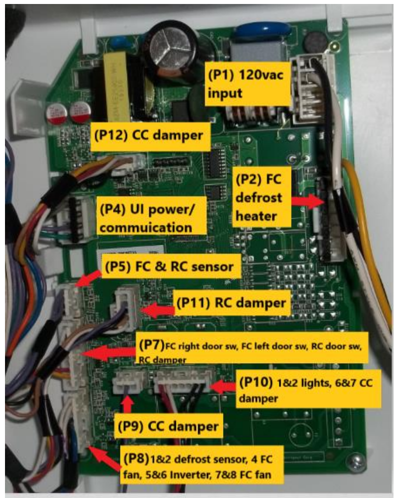
IMPORTANT: Electrostatic Discharge (ESD) Sensitive Electronics

ESD problems are present everywhere. ESD may damage or weaken the electronic control assembly. The new control assembly may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

- Use an antistatic wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance

  -OR-

  Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the antistatic bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic control assembly by edges only.
- When repackaging failed electronic control assembly in antistatic bag, observe above instructions.

Code/Symptoms	Possible Causes	Corrective Action
Vertical "Flipper" mullion sweating. **Note:** RH sensor failure: (top right hinge location) Mullion Flipper heater shall run at 100% (10 watts)	**Check power to flipper mullion**  Humidity sensor 	To check flipper mullion run Service Test - 63 Vertical Mullion Heater Test A. When entering the Service Test, the vertical mullion heater turns on. The display shows "ON." B. When leaving the Service Test, the Vertical Mullion Heater turns off. Test voltage at Theseus-ACU CN1-6 to CN1-7 = 12.7 VDC Flipper mullion heater Resistance = 18 ohms 1. If the voltage is missing, check wiring and replace the HMI board. 2. If the voltage is present, then check the resistance of the heater. 3. If the resistance is out of range, then change flipper mullion. 4. If the resistance is in spec, then change HMI.
RC compartment moisture	**Check door gasket**	Make sure there are no gaps or tears in the door gasket. 1. If gaps are present, use a heat gun on a low heat setting and carefully heat the gasket to reform the part so that it seals properly. 2. If the gasket does not hold shape, then replace the gasket.
	Check liner	Check for gaps between the liner and cabinet. If gaps are present then fill in with

RC compartment moisture (Cont'd)		food grade RTV PN#WP482338
	Check door closing	Make sure door is closing properly and nothing is blocking it from closing
	Check for hot foods put in unit	If the customer is putting HOT food in the unit, it can cause moisture issues.
	Check for open containers	Open containers of liquid will produce extra moisture in the RC section.

Frosting in freezer, not defrost issue	**Check door gasket**	Make sure there are no gaps or tears in the door gasket. 1. If gaps are present, use a heat gun on a low heat setting and carefully heat the gasket to reform the part so that it seals properly. 2. If the gasket does not hold shape, then replace the gasket.
	Check liner	Check for gaps between the liner and cabinet. If gaps are present then fill in with food grade RTV PN#WP482338
	Check door closing	Make sure door is closing properly and nothing is blocking it from closing
	Check for hot foods	If the customer is putting hot food in the unit, it can cause moisture issues.
	Check for open containers	Open containers of liquid will produce extra moisture in the RC section.