

FOR SERVICE TECHNICIAN'S USE ONLY

⚠ 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.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- a. Do not operate or allow the oven to be operated with the door open.
- b. Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
 1. Interlock Operation
 2. Proper Door Closing
 3. Seal and Sealing Surfaces (Arcing, Wear and Other Damage)
 4. Damage to or Loosening of Hinges and Latches
 5. Evidence of Dropping or Abuse
- c. Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity and connections.
- d. Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- e. A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.
- f. Do not attempt to operate the oven if the door glass is broken.



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FAILURE CODE INDICATIONS

NOTE: Many of the problems listed in the chart below may be solved by power cycling: Unplug microwave oven or disconnect power. After 1 minute, plug in microwave oven or reconnect power.

There are two ways to enter Diagnostics mode:

Option A:

Before proceeding with any corrective action, perform the following steps to enter the Diagnostics mode: Enter the Diagnostics menu, press 3 key sequence, three times in a row within 8 seconds (i.e. Settings - Light - Home, Settings - Light - Home, Settings - Light - Home).

Option B:

Before proceeding with any corrective action, perform the following steps to enter the Diagnostics mode:

1. Press Tools - Info - Service and Support. Press Diagnostics button for 1 minute. Press 1,2,3,1,2,3,1,2,3. Press ENTER.

NOTE: The warning will be displayed. Press ENTER.

2. If control does not enter Diagnostics, continue repeating the keypad sequence from Step 1. All the keypads will light up when the control enters Diagnostics.

3. From the Diagnostic menu, scroll to the desired selection using the touch screen.

Error Diagnostics: View and clear the failure history.

Component Activation: Manually activate each relay.

Sensors & Switches: View the traditional oven cavity temperatures and door/latch switch status.

System Information: View the model number, serial number, and software versions.

Wi-Fi: View Wi-Fi-related content such as IP Address, Gateway, SSID, and connection status.

Display	Likely Failure Condition	Recommended Repair Procedure	
F1E4	Microwave ACU failure	<ol style="list-style-type: none"> 1. Unplug microwave oven or disconnect power. 2. Replace ACU. 	<ol style="list-style-type: none"> 3. Replace all parts and panels before operating. 4. Plug in microwave oven or reconnect power.
F2E1	Stuck key failure	<ol style="list-style-type: none"> 1. Re-power the unit to see if the stuck key is resolved. If not, continue to Step 2. 2. Replace touch panel. 	<ol style="list-style-type: none"> 3. Replace all parts and panels before operating. 4. Plug in microwave oven or reconnect power.
F4E1	Cavity temperature sensor failure	<ol style="list-style-type: none"> 1. Enter the Diagnostics mode, if the failure code matches the complaint, continue to Step 2. 2. Unplug microwave oven or disconnect power. 3. Disconnect sensor from ACU. 4. Measure sensor resistance between connector pins and confirm reading is between 9.7 kΩ and 10.3 kΩ at room temperature. If measurement is not correct, or if a short or open circuit is found, replace sensor. 	<ol style="list-style-type: none"> 5. Replace all parts and panels before operating. 6. Plug in microwave oven or reconnect power. 7. Enter the Diagnostics mode, select the Error Diagnostics option to see the error codes. If there is no error code, stop. 8. If the reading is still not correct, unplug microwave oven or disconnect power. 9. Replace ACU. 10. Replace all parts and panels before operating. 11. Plug in microwave oven or reconnect power.
F4E4	Humidity sensor error	<ol style="list-style-type: none"> 1. Enter the Diagnostics mode. If the failure code matches the complaint, continue to Step 2. 2. Unplug microwave oven or disconnect power. 3. Connect a new humidity sensor to the ACU P6 connector. 4. Replace all parts and panels before operating. 5. Plug in microwave oven or reconnect power. 	<ol style="list-style-type: none"> 6. Enter the Diagnostics mode (press CANCEL - CANCEL - START), and then press COOK to see if failure code reappears. NOTE: There may be a delay (approximately 1 minute, 20 seconds) before the failure code is displayed. 7. If the failure code reappears, unplug microwave oven or disconnect power. 8. Replace ACU. 9. Replace all parts and panels before operating. 10. Plug in microwave oven or reconnect power.
F4E9	AccuPop™ error	<ol style="list-style-type: none"> 1. Enter the Diagnostics mode. If the failure code matches the complaint, continue to Step 2. 2. Unplug microwave oven or disconnect power. 3. Check to see if the sound channel is blocked or the tube is loosened. 4. If the sound channel and tube are not blocked, connect a new AccuPop™ cable to the ACU. 5. Replace all parts and panels before operating. 	<ol style="list-style-type: none"> 6. Plug in microwave oven or reconnect power. 7. If failure code reappears, unplug microwave oven or disconnect power. 8. Replace AccuPop™. 9. Replace all parts and panels before operating. 10. Plug in microwave oven or reconnect power. 11. If failure code reappears, unplug microwave oven or disconnect power. 12. Replace ACU. 13. Replace all parts and panels before operating. 14. Plug in microwave oven or reconnect power.

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Display	Likely Failure Condition	Recommended Repair Procedure	
F8E5	Exhaust air template detector failure	<ol style="list-style-type: none"> 1. Enter the Diagnostics mode. If the failure code matches the complaint, continue to Step 2. 2. Unplug microwave oven or disconnect power. 3. Disconnect HF NTC thermistor cable from ACU. 4. Measure resistance between connector pins and confirm reading is between 9.5 kΩ and 10.5 kΩ at room temperature. If measurement is not correct or a short or open circuit is found, replace HF NTC thermistor. 	<ol style="list-style-type: none"> 5. Replace all parts and panels before operating. 6. Plug in microwave oven or reconnect power. 7. Run confirmation cycle to check that microwave is heating up correctly. 8. If failure does not appear, stop.
FCE2	Appliance not linked to the wireless router	<ol style="list-style-type: none"> 1. Press Settings keypad. 2. Navigate and select Wi-Fi. 3. Select your Network Name. If your network name is not present, skip to step 5. 	<ol style="list-style-type: none"> 4. Select Forget Network and press Yes, Forget. 5. Select Connect to Network and follow on-screen Network setup procedure.
FCE3	Appliance not linked to the Internet	Replace door assembly.	
FCE7	Appliance failed to connect to the wireless router	Same as FCE2 repair procedure.	

NOTE: After fixing the errors, enter the Diagnostics menu, press the three key sequence within 8 seconds, three times in a row (ie. Settings - Light - Home, Settings - Light - Home, Settings - Light - Home), then press Clear Error History.

PRIMARY, MONITOR, SECONDARY, AND DOOR INTERLOCK SWITCH CHECKOUT PROCEDURES

IMPORTANT: Before checking the interlock switches, unplug microwave oven or disconnect power. Be sure to disconnect all of the wires at the switch being tested before making any continuity readings.

NOTE: The Primary interlock switch, Monitor interlock switch, Secondary, and Door interlock switch are mounted in the door lock switch cradle. All the interlock switches can be identified by the wire colors that are connected to the terminals of the switches. See the chart below for wire color designation.

Switch	Check By	Door Open	Door Closed
Primary Interlock	<ol style="list-style-type: none"> 1. Unplug microwave oven or disconnect power. 2. Disconnect the wires at the Primary interlock switch. 3. Check from the common terminal (black/brown wires) to the normally open terminal (black/white wires). 4. Reconnect wires to switch. 	-	+
Monitor Interlock	<ol style="list-style-type: none"> 1. Unplug microwave oven or disconnect power. 2. Disconnect the wires at the Monitor interlock switch. 3. Check from the common terminal (white/red wires) to the normally closed terminal (blue/white wires). 4. Reconnect wires to switch. 	+	-
Secondary Interlock	<ol style="list-style-type: none"> 1. Unplug microwave oven or disconnect power. 2. Disconnect the wires at the Secondary interlock switch. 3. Check from the common terminal (white wire) to the normally open terminal (blue wire). 4. Reconnect wires to switch. 	-	+
Door Interlock	<ol style="list-style-type: none"> 1. Unplug microwave oven or disconnect power. 2. Disconnect the wires at the Door interlock switch. 3. Check from the common terminal (blue wire) to the normally closed terminal (orange wire). 4. Reconnect wires to switch. 	+	-

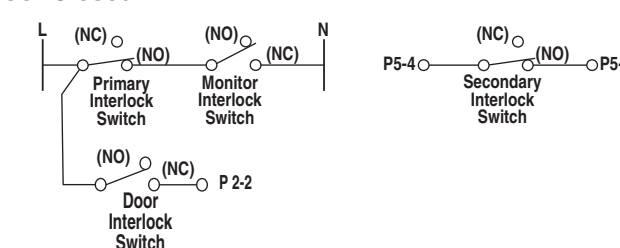
(+) Continuity (-) No Continuity

NOTES:

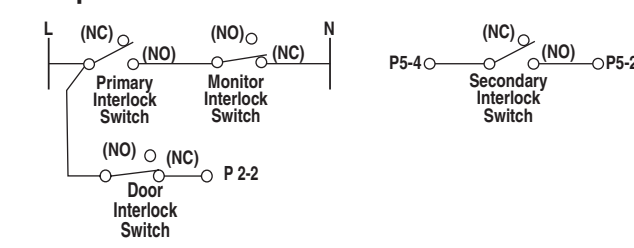
- Interlock, Monitor switches and Door interlock switch cannot be adjusted and all these switches should be replaced if any one of them is found to be defective. After replacing interlock/monitor switches, reconnect wires to switch and check for continuity. Safety interlocks and monitor switches will actuate within 2 mm.

- These diagrams are not intended to show a complete circuit; they represent the position of switches during "DOOR OPEN" or "DOOR CLOSED" (continuity checks only).

Door Closed



Door Open



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NOT HEATING TROUBLESHOOTING INSTRUCTION

IMPORTANT: High voltage is present at the magnetron and high-voltage capacitor terminals. Avoid direct contact when power is connected to these components to avoid serious injury or possible death. Always be sure that the high-voltage capacitor is discharged before accessing any of these components.

For a no-heat condition, refer to the following step-by-step instructions:

1. Unplug microwave oven or disconnect power.
2. Discharge the high-voltage capacitor.
3. Disconnect the high-voltage transformer primary windings.
4. Attach the voltmeter leads to the high-voltage transformer primary input wires.
5. Plug in microwave oven or reconnect power.
6. Close door and program the microwave oven to operate for 30 seconds.
7. Press START.
8. Check the input voltage at the high-voltage transformer primary input wires. If the voltage is not close to the rating voltage 120 +/- 15 VAC, unplug microwave oven or disconnect power. Check the circuitry as follows:
 - Measure resistance of the fuse, microswitches, and thermostats. Replace any failed components (refer to the wiring diagram).
 - Check for loose terminals (refer to the wiring diagram). Check all of the terminals on the main route from the power supply to the high-voltage transformer.
9. If these check out OK, plug in microwave oven or reconnect power.
10. Check for loose or failed connectors on the ACU (P1, P2, P4). If these check out OK, plug in microwave oven or reconnect power.
11. Check for ACU failure. Refer to "ACU Pin Voltage Matrix."
12. If the input voltage at the high-voltage transformer primary input wires is close to the rating voltage 120 +/- 15 VAC, unplug microwave oven or disconnect power.
13. Check the power supply components. Refer to "Component Tests."
14. High-voltage transformer
15. High-voltage capacitor
16. High-voltage diode
17. If the power supply components check out OK, check the connection between the magnetron and the high voltage transformer.
18. If all of the components check out OK, replace the magnetron.
19. Reconnect the high-voltage transformer primary windings.

ACU PIN VOLTAGE MATRIX

Check for proper voltage by completing the following steps:

1. Unplug microwave oven or disconnect power.
2. Connect voltage measurement equipment to the terminals listed below. (P1-3 and P2-3 are neutral.)
3. Plug in microwave oven or reconnect power, and confirm voltage reading.
4. Unplug microwave oven or disconnect power.

NOTE: For 50 V and over, the tolerance is +/-15 V. For 0 V, the tolerance is +/-3 V.

Abbreviations	CL - Cavity Light
HL - Hood Light	N - Neutral
FC - Forced Convection	HF - Hood Fan
L - Line Voltage	TT - Turntable Motor
NFS - Neutral for Switch	

NOTE: When checking voltage readings on ACU, connect the grounding test lead of voltmeter to ACU neutral wire. Use the positive test lead to probe connectors designated below.

