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.
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, waveguide 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 service manual before the oven is released to the owner.

e. A microwave leakage check to verify compliance with the CSA 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.
Diagnostics

IMPORTANT: Before powering MWO magnetron, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity. Unplug oven or disconnect power before performing the following checks:

- A potential cause of a control not functioning is corrosion on connections. Observe connections and check for continuity with an ohmmeter.
- All tests/checks should be made with a VOM or DVM having a sensitivity of 20,000Ω per volt DC or greater.
- Check all connections before replacing components, looking for broken or loose wires, failed terminals, or wires not pressed into connectors far enough. Damaged harness must be entirely replaced. Do not rework a harness.
- Resistance checks must be made with power cord unplugged from outlet, and with wiring harness or connectors disconnected.

IMPORTANT: Do not replace the control if there is no evidence of any failure.

To Enter Diagnostics Mode:

Before proceeding with any corrective action, perform the following steps to enter the Diagnostics Mode.

1. Enter Diagnostics Mode by pressing LOWER OVEN>LOWER LIGHT>OVEN CANCEL (repeat two more times)
   TIP: You can also swipe your finger from left to right over the buttons 3 times.
   NOTE: You do not need to wait for any audible or visual feedback from the control between keypad presses.
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.
   Exit Diagnostics

General Procedure: Error Codes

NOTE: All failures are stored in the failure history. To check if the error code is still present, start a cooking function and wait 1 minute to check if the error appears.
1. Plug in oven or connect power.
2. Enter Diagnostics Mode.
3. Touch or scroll to “Error Diagnostics” in the Diagnostics menu, and then touch “OK.”
4. To clear error codes, touch “Clear History.”
5. If no failures are listed, the message “No Error” will appear on the screen.

General Procedure: Component Activation

1. Plug in oven or connect power.
2. Enter Diagnostics Mode.
3. Touch or scroll to “Component Activation” in the Diagnostics menu, and then touch “OK.”
4. Touching the following selections will activate/deactivate corresponding relay.
### General Procedure: Sensors & Switches

**NOTE:** This procedure is to view the current status of oven switches and sensor readings.

<table>
<thead>
<tr>
<th>Selection</th>
<th>Relay</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW Light</td>
<td>MW Light Relay</td>
</tr>
<tr>
<td>MW Turntable</td>
<td>MW Turntable Relay</td>
</tr>
<tr>
<td>MW Cooling Fan</td>
<td>MW Cooling Fan Relay</td>
</tr>
<tr>
<td>MW Grill</td>
<td>MW Broil Element Relay</td>
</tr>
<tr>
<td>MW Convection Element</td>
<td>MW Convection Element Relay</td>
</tr>
<tr>
<td>MW Convection Fan</td>
<td>MW Convection Fan Relay</td>
</tr>
<tr>
<td>MW Magnetron/Cooling Fan</td>
<td>MW Magnetron and MW Cooling Fan Relay</td>
</tr>
<tr>
<td>Oven Bake Element</td>
<td>Oven Bake Element Relay</td>
</tr>
<tr>
<td>Oven Broil Element</td>
<td>Oven Broil Element Relay</td>
</tr>
<tr>
<td>Convection Element - Up</td>
<td>Upper Convection Element Relay</td>
</tr>
<tr>
<td>Convection Element - Low</td>
<td>Lower Convection Element Relay</td>
</tr>
<tr>
<td>Convection Fan HS - Up</td>
<td>Upper High Speed Convection Fan Relay</td>
</tr>
<tr>
<td>Convection Fan LS - Up</td>
<td>Upper Low Speed Convection Fan Relay</td>
</tr>
<tr>
<td>Convection Fan HS - Low</td>
<td>Lower High Speed Convection Fan Relay</td>
</tr>
<tr>
<td>Convection Fan LS - Low</td>
<td>Lower Low Speed Convection Fan Relay</td>
</tr>
<tr>
<td>Oven Cooling Fan High Speed</td>
<td>Oven Cooling Fan High Speed Relay</td>
</tr>
<tr>
<td>Oven Cooling Fan Low Speed</td>
<td>Oven Cooling Fan Low Speed Triac</td>
</tr>
<tr>
<td>Oven Light</td>
<td>Oven Light Triac</td>
</tr>
<tr>
<td>Oven Door Latch Motor</td>
<td>Oven Door Latch Motor Relay</td>
</tr>
</tbody>
</table>

### General Procedure: System Information

**NOTE:** This procedure is to view the following system information:

<table>
<thead>
<tr>
<th>System Information</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model #</td>
<td>Model Information</td>
</tr>
<tr>
<td>Serial #</td>
<td>Product Serial Number</td>
</tr>
<tr>
<td>UI Serial #</td>
<td>User Interface Serial Number</td>
</tr>
<tr>
<td>Oven ACU Serial #</td>
<td>Appliance Control Unit Serial Number</td>
</tr>
<tr>
<td>UI Version</td>
<td>User Interface Software Version</td>
</tr>
<tr>
<td>HMI Central SW</td>
<td>HMI Central Board Software Version</td>
</tr>
<tr>
<td>HMI Left SW</td>
<td>HMI Left Keyboard Software Version</td>
</tr>
<tr>
<td>HMI Left EE</td>
<td>HMI Left Keyboard EEPROM Version</td>
</tr>
<tr>
<td>HMI Right SW</td>
<td>HMI Right Keyboard Software Version</td>
</tr>
<tr>
<td>HMI Right EE</td>
<td>HMI Right Keyboard EEPROM Version</td>
</tr>
<tr>
<td>Kernel Version</td>
<td>HMI Central Board Software Version</td>
</tr>
<tr>
<td>Touch Calibration Version</td>
<td>LCD/TP FPC Tail Software Version</td>
</tr>
<tr>
<td>Database Version</td>
<td>HMI Central Board Database Structure</td>
</tr>
<tr>
<td>Audio Version</td>
<td>HMI Central Board Software Version</td>
</tr>
<tr>
<td>Oven ACU SW</td>
<td>Oven Appliance Control Unit Software Version</td>
</tr>
<tr>
<td>MWO ACU SW</td>
<td>Microwave Oven Appliance Control Unit Software Version</td>
</tr>
</tbody>
</table>

| Diagnostics Entries                | Number of times Diagnostic Menu has been entered                      |

1. Plug in oven or connect power.
2. Enter Diagnostics Mode.
3. Touch or scroll to “System Information” in the Diagnostics menu, and then touch “OK.”
4. Touch or scroll through the System Information menu to view the desired status.

**NOTE:** Touching “Back” will return the display to the main Diagnostics menu.

### General Procedure: Model Selection

**NOTE:** When a new User Interface is installed, you will be prompted to select a new model number upon power up. To change the model number on an existing UI, follow the steps below.

1. Plug in oven or connect power.
2. Enter Diagnostics Mode.
3. Touch or scroll to “System Information” in the Diagnostics menu, and then touch “OK.”
4. Touch or scroll through the System Information menu to view the desired status.

**NOTE:** Touching “Back” will return the display to the main Diagnostics menu.

5. Touch or scroll to the correct model number in the list, and then touch “Select.”
**SUGGESTED CORRECTIVE ACTION PROCEDURE**

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

1. Unplug oven or disconnect power.
2. Remove plastic cover from UI. Check connection from display to UI.
3. Check wiring from main line to SMPS (CONN 7).
4. Check the wiring harness connection at UI (J15).
5. Check proper voltage input at J15-2 (GND) to J15-4 (14 VDC) on the UI by completing the following steps:
   - Connect voltage measurement equipment to J15-2 and J15-4 on UI.
   - Plug in oven or reconnect power.
   - Measure voltage and confirm voltage reading is 14 VDC. If voltage is correct, unplug oven or disconnect power.
6. Confirm the control panel assembly is grounded to the oven chassis. If it is, go to Step 6. If it is not, fix the connection.
7. Check for control board display. If still no display, unregister or disconnect power.
8. If error persists, unplug oven or disconnect power.
9. Reassemble all parts and panels before operating.
10. Unplug oven or disconnect power. Replace the SMPS.
11. Reassemble all parts and panels before operating.
12. Check for control board display. If still no display, unregister or disconnect power.
13. Replace HMI-Central/UI board.
14. Reassemble all parts and panels before operating.
15. Replace HMI-Central/UI board at J8. If speaker is firmly connected, reconnect and proceed to Step 5.
16. Verify operation is normal. If problem persists, replace the Control Panel Assembly and repeat steps 14 through 16.

**User Interface not reacting to touch**

**SUGGESTED CORRECTIVE ACTION PROCEDURE**

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

1. Enter the Diagnostic Menu, and then touch POWER.
2. To reset Touch Calibration: unplug oven or disconnect power, wait 10 seconds, and then plug in oven or reconnect power. If still no response, go to Step 3.
3. Unplug oven or disconnect power.
4. Replace Control Panel Assembly.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. Verify operation is normal.

**SUGGESTED CORRECTIVE ACTION PROCEDURE**

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and power On).

1. Verify sound is enabled. Touch the Tools menu, and then scroll to the Sound Menu. Confirm Key Press, Timer & Alert, and Power On & Off actions are all turned on and set to the desired volume.
2. Unplug oven or disconnect power.
3. Confirm the speaker is firmly connected to the HMI-Central/UI board at J8. If speaker is firmly connected, go to the Step 4. If speaker connection is loose, reconnect and proceed to Step 5.
4. Replace speaker.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. Confirm operation of the speaker. If problem persists, unplug oven or disconnect power, replace Control Panel Assembly, and repeat steps 5 through 7.

**Failure/Error Display Codes**

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E0</td>
<td>Oven User Interface (UI) Failure</td>
</tr>
</tbody>
</table>

**SUGGESTED CORRECTIVE ACTION PROCEDURE**

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

1. Verify sound is enabled. Touch the Tools menu, and then scroll to the Sound Menu. Confirm Key Press, Timer & Alert, and Power On & Off actions are all turned on and set to the desired volume.
2. Unplug oven or disconnect power.
3. Confirm the speaker is firmly connected to the HMI-Central/UI board at J8. If speaker is firmly connected, go to the Step 4. If speaker connection is loose, reconnect and proceed to Step 5.
4. Replace speaker.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. Confirm operation of the speaker. If problem persists, unplug oven or disconnect power, replace Control Panel Assembly, and repeat steps 5 through 7.

**FAILURE** | **ERROR** | **LIKELY FAILURE CONDITION**
---|---|---
E0 | Oven User Interface (UI) Failure |
### FOR SERVICE TECHNICIAN’S USE ONLY

#### SUGGESTED CORRECTIVE ACTION PROCEDURE

<table>
<thead>
<tr>
<th>FAILURE</th>
<th>ERROR</th>
<th>LIKELY FAILURE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>E4</td>
<td>Microwave Oven Relay 4903 Error</td>
</tr>
</tbody>
</table>

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). 

**PROCEDURE:** Before proceeding, verify the error code by entering the Diagnostics Menu and selecting “Error Diagnostics.”

**NOTE:** If other error codes are stored, troubleshoot those other error codes first.

1. Unplug oven or disconnect power.
2. Replace Copernicus Appliance Manager.
3. Reassemble all parts and panels before operating.
4. Plug in oven or reconnect power.
5. If error persists after Copernicus Appliance Manager is replaced, unplug oven or disconnect power, and then go to Step 6. If not, go to Step 10.
6. Replace Control Panel Assembly.
7. Reassemble all parts and panels before operating.
8. Plug in oven or reconnect power.
9. Follow the on-screen prompts to select the model number
10. Verify operation is normal. Enter Diagnostics Mode, select “Error Diagnostics,” and clear the history. If the Control Panel Assembly was replaced, there is no need to clear the error history.

<table>
<thead>
<tr>
<th>FAILURE</th>
<th>ERROR</th>
<th>LIKELY FAILURE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>E5</td>
<td>Microwave Oven Inverter Error</td>
</tr>
</tbody>
</table>

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function. Wait 1 minute, and then verify that the failure happens again.

1. Make sure that all interlock switches works properly: when door is open, microwave light is on; when door is closed, microwave light is off.
2. Unplug oven or disconnect power.
3. Check the following connections on Microwave Appliance Manager:
   a. Relay 4903.
   b. Connector P8.
   c. CN701.
   d. CN702.
   e. CN703.
4. Check the following connections on the Inverter board:
   a. CN701.
   b. CN702.
   c. CN703.
5. If the door works properly and all connections are okay, replace the Microwave Inverter Board.
6. Reassemble all parts and panels before operating.
7. Plug in oven or reconnect power.
8. To check if the error code is still present, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Wait 1 minute to check if the error appears. If error remains, then go to Step 9. If not, go to Step 17.
9. Unplug oven or disconnect power.
10. Replace the Magnetron.
11. Reassemble all parts and panels before operating.
12. Plug in oven or reconnect power.
13. To check if the error code is still present, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Wait 1 minute to check if the error appears. If error remains, then go to Step 14. If not, go to Step 17.
14. Unplug oven or disconnect power and replace the Microwave ACU.
15. Reassemble all parts and panels before operating.
16. Plug in oven or reconnect power.
17. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.
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SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function. Wait 1 minute, and then verify that the failure happens again.

1. Make sure that all interlock switches work properly: when door is open, microwave light is on; when door is closed, microwave light is off.
2. Unplug oven or disconnect power.
3. Check the following connections on Microwave Appliance Manager:
   a. Relay 4903.
   b. Line Fuse 20A.
   c. Primary Interlock Switch.
4. If the door works properly and all connections are okay, replace the Magnetron.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. To check if the error code is still present, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Wait 1 minute to check if the error appears. If error remains, then go to Step 8. If not, go to Step 16.
8. Unplug oven or disconnect power and replace the Inverter Board.
9. Reassemble all parts and panels before operating.
10. Plug in oven or reconnect power.
11. To check if the error code is still present, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Wait 1 minute to check if the error appears. If error remains, then go to Step 12. If not, go to Step 16.
12. Unplug oven or disconnect power.
13. Replace the Microwave ACU.
14. Reassemble all parts and panels before operating.
15. Plug in oven or reconnect power.
16. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.

F1 Error Failure Condition
F1 E6 Microwave Generation Error

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function. Wait 1 minute, and then verify that the failure happens again.

1. Make sure that all interlock switches work properly: when door is open, microwave light is on; when door is closed, microwave light is off.
2. Unplug oven or disconnect power.
3. Check the following connections on Microwave Appliance Manager:
   a. Relay 4903.
4. If the door works properly and all connections are okay, replace the Magnetron.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. To check if the error code is still present, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Wait 1 minute to check if the error appears. If error remains, then go to Step 12. If not, go to Step 16.
8. Unplug oven or disconnect power.
9. Reassemble all parts and panels before operating.
10. Plug in oven or reconnect power.
11. To check if the error code is still present, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Wait 1 minute to check if the error appears. If error remains, then go to Step 12. If not, go to Step 16.
12. Unplug oven or disconnect power.
13. Replace the Microwave ACU.
14. Reassemble all parts and panels before operating.
15. Plug in oven or reconnect power.
16. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.

F2 Keypad
F2 E0 Keypad disconnected

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function. Wait 1 minute to check if the error appears. If error remains, then go to Step 8. If not, go to Step 6.

1. Unplug oven or disconnect power.
2. Check that connectors J4, J5, J6, and J7 are firmly connected. If they are not, go to Step 3. If they are, go to Step 6.
3. Reconnect any loose connectors.
4. Reassemble all parts and panels before operating.
5. Plug in oven or reconnect power. If the failure is gone, go to Step 9. If the failure is still present, unplug oven or disconnect power.
6. Replace the Control Panel Assembly.
7. Reassemble all parts and panels before operating.
8. Follow the on-screen prompts to select the model number
9. Verify operation is normal. Enter Diagnostics Mode, select “Error Diagnostics,” and clear the history. If the Control Panel Assembly was replaced, there is no need to clear the error history.

F3 Sensors
F3 E0 Main oven sensor open or shorted

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Wait 1 minute to check if the error appears. If error remains, then go to Step 12. If not, go to Step 16.

1. Unplug oven or disconnect power.
2. Disconnect connector P3 from Oven Appliance Manager, and measure the resistance of the sensor between P3-1 and P3-2. Test for 1000Ω to 1200Ω at 77°F (25°C). Check sensor for short to ground. If checks on sensor are not correct, replace sensor and repeat the checks.

3. Reassemble all parts and panels and plug in oven or reconnect power.
4. Enter the Diagnostics Menu and select “Sensors & Switches” to verify if the temperature shown in the Cavity Temp display is correct (ambient temperature). If it is, go to Step 8. If it is not, unplug oven or disconnect power.
   NOTE: On the status screen, the unit of measurement is Celsius.
5. Replace the Copernicus Appliance Manager board.
6. Reassemble all parts and panels before operating.
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<table>
<thead>
<tr>
<th>FAILURE</th>
<th>ERROR</th>
<th>LIKELY FAILURE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td></td>
<td>Plug in oven or reconnect power.</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td>Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.</td>
</tr>
</tbody>
</table>

**F3 Sensors E3 Meat Probe Connector Jack or Meat Probe Shorted**

**SUGGESTED CORRECTIVE ACTION PROCEDURE**

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function that uses the temperature sensor, such as a Convec cycle. Wait 1 minute, and then verify that the failure happens again.

1. Unplug oven or disconnect power.
2. Check that the P22 connection of the Microwave Appliance Manager is firmly connected. If it is, go to Step 3. If it is not, reconnect and go to Step 5.
3. Disconnect connector P22 from the Microwave Appliance Manager, and measure the resistance of the thermistor. It should be (approximately) 230kΩ at 77°F ± 10°F (25°C ± 10°C).
4. Check thermistor for short to ground. If check on thermistor is not correct, replace the thermistor. If thermistor check is correct, replace the Microwave Appliance Manager.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.

**SUGGESTED CORRECTIVE ACTION PROCEDURE**

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function. Wait 1 minute, and then verify that the failure happens again.

1. Unplug oven or disconnect power.
2. Check that the P21 connection of the Microwave Appliance Manager is firmly connected. If it is, go to Step 3. If it is not, reconnect and go to Step 5.
3. Disconnect connector P21 from the Microwave Appliance Manager. Measure the resistance of the thermistor. It should be (approximately) 10kΩ at 77°F ± 10°F (25°C ± 10°C).
4. Check thermistor for short to ground. If check on thermistor is not correct, replace the thermistor. If thermistor check is correct, replace the Microwave Appliance Manager.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.

---

**FAILURE** | **ERROR** | **LIKELY FAILURE CONDITION**
---|---|---
F4 | E2 | Magnetron Temperature Sensor Error

**SUGGESTED CORRECTIVE ACTION PROCEDURE**

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function. Wait 1 minute, and then verify that the failure happens again.

1. Unplug oven or disconnect power.
2. Check that the P21 connection of the Microwave Appliance Manager is firmly connected. If it is, go to Step 3. If it is not, reconnect and go to Step 5.
3. Disconnect connector P21 from the Microwave Appliance Manager. Measure the resistance of the thermistor. It should be (approximately) 10kΩ at 77°F ± 10°F (25°C ± 10°C).
4. Check thermistor for short to ground. If check on thermistor is not correct, replace the thermistor. If thermistor check is correct, replace the Microwave Appliance Manager.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.
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<table>
<thead>
<tr>
<th>FAILURE</th>
<th>ERROR</th>
<th>LIKELY FAILURE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4 Inputs</td>
<td>E4</td>
<td>Microwave Oven Humidity Sensor Error</td>
</tr>
</tbody>
</table>

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function that uses the humidity sensor, such as a Steam cycle. Wait 1 minute, and then verify that the failure happens again.

1. Unplug oven or disconnect power.
2. Check that the P23 connection of the Microwave Appliance Manager is firmly connected. If it is, go to Step 3. If it is not, reconnect and go to Step 5.
3. Disconnect connector P23 from Microwave Appliance Manager and measure the resistance of the sensor:
   - Between pins 3 and 1. It should be approximately 2800Ω at 77°F ± 10°F (25°C ± 10°C).
   - Between pins 3 and 2. It should be approximately 2800Ω at 77°F ± 10°F (25°C ± 10°C).
4. Check sensor for short to ground. If checks on sensor are not correct, replace the sensor. If sensor checks are correct, replace the Microwave Appliance Manager.
5. Reassemble all parts and panels before operating.
6. Plug in oven or reconnect power.
7. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function. Wait 1 minute, and then verify that the failure happens again.

1. Unplug oven or disconnect power.
2. Check the following:
   a. Cooling fan connection for any loose connectors.
   b. Oven installation and make sure there is no air blockage at the bottom vent.
3. Reassemble all parts and panels before operating.
4. Plug in oven or reconnect power.
5. To check if the cooling fan is stalled, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Make sure the fan is running. If it is not, unplug oven or disconnect power, replace the fan and go to Step 8. If it is, go to Step 6.
6. Unplug oven or disconnect power.
7. Replace the inverter board.
8. Reassemble all parts and panels before operating.
9. Plug in oven or reconnect power.
10. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.
**FOR SERVICE TECHNICIAN’S USE ONLY**

### SUGGESTED CORRECTIVE ACTION PROCEDURE

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On). After powering on, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a microwave cooking function. Wait 1 minute, and then verify that the failure happens again.

1. Unplug oven or disconnect power.
2. Check the following:
   a. Cooling fan connection for any loose connectors.
   b. Oven Installation and make sure there is no air blockage at the bottom vent.
3. Reassemble all parts and panels before operating.
4. Plug in oven or reconnect power.
5. To check if the cooling fan is stalled, be sure that a load, such as a microwave-safe cup of water, is present in the microwave oven cavity, and start a cooking function in the microwave oven. Make sure the fan is running. If it is not, unplug oven or disconnect power, replace the fan and go to Step 8. If it is, go to Step 6.
6. Unplug oven or disconnect power.
7. Replace the Magnetron and the inverter board.
8. Reassemble all parts and panels before operating.
9. Plug in oven or reconnect power.
10. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.

### FAILURE ERROR LIKELY FAILURE CONDITION

<table>
<thead>
<tr>
<th>FAILURE</th>
<th>ERROR</th>
<th>LIKELY FAILURE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4</td>
<td>E9</td>
<td>Inverter and Magnetron Over Temperature</td>
</tr>
</tbody>
</table>

### SUGGESTED CORRECTIVE ACTION PROCEDURE

**NOTE:** Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

**PROCEDURE:** Before proceeding, verify the error code by entering the Diagnostics Menu and selecting “Error Diagnostics.”

1. Enter the Diagnostics Menu and select “Component Activation.” Touch or scroll to “Door Latch Motor,” and then touch “OK.” Touch “Latch Door.” Wait at least 15 seconds, and then check if latch status changes on screen. If status does not change, unplug oven or disconnect power and go to Step 2. If status changes, unplug oven or disconnect power and go to Step 6.
2. If the oven door did not unlatch, unplug connector P3 and check for continuity (on the latch wire) between P3-5 and P3-7.
3. Disconnect J8 connector from Copernicus Appliance Manager.
4. Measure the resistance between connectors J8-2 and P5-1. It should be 500Ω to 3000Ω at 77°F (25°C).
5. If the resistance check is outside the range, replace the affected door latch assembly. Verify that the error is gone.
6. Reassemble all parts and panels.
7. Plug in oven or reconnect power.
8. Enter the Diagnostics Menu and select “Component Activation.” Check the door status on the screen by opening and closing the oven door.
9. If status does not change, unplug the oven or disconnect power.
10. Check for continuity with door open and closed at P3-5 to P3-6. Door open = infinite resistance. Door closed = zero resistance.
11. If continuity check is not correct, replace the door latch assembly. If all checks were correct, replace Copernicus Appliance Manager.
12. Reassemble all parts and panels before operating.
13. Plug in oven or reconnect power.
14. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.
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SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

PROCEDURE: Before proceeding, verify the error code by entering the Diagnostics Menu and selecting “Error Diagnostics.”

1. Enter the Diagnostics Menu and select “Component Activation.” Touch or scroll to “Door Latch Motor,” and then touch “OK.” Touch “Latch Door.” Wait at least 15 seconds, and then check if latch status changes on screen. If status does not change, go to Step 2. If status changes, unplug oven or disconnect power, replace Copernicus Appliance Manager and go to Step 6.

2. If latch status on screen is “open,” unplug oven or disconnect power and check for loose harness connection between motor latch switch and P3-5 and P3-7.

3. Disconnect connector J8 from Copernicus Appliance Manager.

4. Measure the resistance between connectors J8-2 and P5-1. It should be 500\(\Omega\) to 3000\(\Omega\) at 77°F (25°C).

5. If the resistance check is outside the range, replace the door latch assembly. Verify that the error is gone. If all checks were correct, replace Copernicus Appliance Manager.

6. Reassemble all parts and panels before operating.

7. Plug in oven or reconnect power.

8. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.
FOR SERVICE TECHNICIAN’S USE ONLY

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

PROCEDURE: Before proceeding, verify the error code by entering the Diagnostics Menu and selecting “Error Diagnostics.”

1. Unplug oven or disconnect power.

2. Check for elements shorted to ground. Check resistance of elements:
   a. PX4-2 and PX3-2 to check Broil element (13.2Ω to 14.6Ω).
   b. PX1-1 and PX3-2 to check Bake element (19Ω to 21Ω).
   c. PX1-3 and PX3-2 to check Upper Conv element (15.2Ω to 17.3Ω).
   d. PX2-4 and PX3-2 to check Lower Conv element (15.2Ω to 17.3Ω).

3. If any element is shorted to ground, replace the element.

4. Check for shorted relays.
   Disconnect PX1, PX2 and PX4 connectors and check for shorts between:
   a. PX1-1 and PX1-2 (Bake relay).
   b. PX1-3 and PX1-4 (Up Convect relay).
   c. PX4-1 and PX4-2 (Broil relay).
   d. PX2-3 and PX2-4 (Low Convect relay).

5. If there is a shorted relay, replace the Copernicus Appliance Manager. Go to Step 9.

6. If everything is correct, disconnect connector P3 from Copernicus Appliance Manager.

7. Measure the resistance of the oven sensor. It should be 1000Ω to 1200Ω at 77°F (25°C).

8. Check sensor for short to ground. If checks on sensor are not correct, replace sensor and repeat the checks.

9. Reassemble all parts and panels before operating.

10. Plug in oven or reconnect power.

11. Enter the Diagnostic Menu and select “Sensors & Switches” to verify that the corresponding oven temperature displayed is correct (ambient temperature). If not, unplug oven or disconnect power, and replace the Copernicus Appliance Manager board.

   NOTE: On the status screen, the unit of measurement is Celsius.

12. Reassemble all parts and panels before operating.

13. Plug in oven or reconnect power.

14. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

PROCEDURE: Before proceeding, verify the error code by entering the Diagnostics Menu and selecting “Error Diagnostics.”

1. Unplug oven or disconnect power.

2. Replace Copernicus Appliance Manager.

3. Reassemble all parts and panels before operating.

4. Plug in oven or reconnect power.

5. Cycle power. If error persists after the Copernicus Appliance Manager is replaced, unplug oven or disconnect power. Go to Step 7.

6. If the error is gone, go to Step 10.

7. Replace the HMI-Central/UI board.

8. Reassemble parts and panels before operating.

9. Plug in oven or reconnect power, and follow the on-screen prompts for model selection.

10. Verify operation is normal. If operation is normal, go to Step 14. If error still exists, go to Step 11.

11. Unplug oven or disconnect power.

12. Replace the control panel assembly.

13. Plug in oven or reconnect power.

14. Follow the on-screen prompts for model selection.

15. Verify operation is normal. Enter Diagnostics Mode, select “Error Diagnostics,” and clear the history.
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<table>
<thead>
<tr>
<th>FAILURE</th>
<th>ERROR</th>
<th>LIKELY FAILURE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>F6</td>
<td>E8</td>
<td>Lost communications with Microwave Oven Appliance Manager</td>
</tr>
</tbody>
</table>

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

PROCEDURE: Before proceeding, verify the error code by entering the Diagnostics Menu and selecting “Error Diagnostics.”

1. Make sure the oven is plugged in. Open microwave door to check if light comes on.
2. Ensure the Sabbath mode is disabled.
3. Unplug oven or disconnect power.
4. Check the connection between User Interface J15-2 (yellow) and J15-3 (orange) and Microwave Appliance Manager P26-3 (orange) and P26-4 (yellow).
5. If harness is correct, replace the Microwave Appliance Manager.
6. Reassemble all parts and panels before operating.
7. Plug in oven or reconnect power.
8. If the error appears again, unplug or disconnect power and replace HMI-Central/UI board.
9. Reassemble all parts and panels before operating.
10. Plug in oven or reconnect power.
11. Follow the on-screen prompts to select the model number if the UI was replaced.
12. Verify operation is normal. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.

<table>
<thead>
<tr>
<th>FAILURE</th>
<th>ERROR</th>
<th>LIKELY FAILURE CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>F9</td>
<td>E0</td>
<td>Product not wired correctly</td>
</tr>
</tbody>
</table>

SUGGESTED CORRECTIVE ACTION PROCEDURE

NOTE: Before starting any test, cycle power to the oven (power Off, wait 10 seconds, and then power On).

PROCEDURE: Before proceeding, verify the error code by entering the Diagnostics Menu and selecting “Error Diagnostics.”

1. Unplug oven or disconnect power.
2. Access the electrical wiring from the house power supply to the oven.
3. Check house wiring to the product. Check to see if the neutral connection is switched with L1 or L2 (refer to the Installation Instructions for product wiring).
4. Reassemble all parts and panels before operating.
5. Plug in oven or reconnect power.
6. Verify operation is normal by running a cooking function. Enter the Diagnostics Menu, select “Error Diagnostics,” and clear the history.
Microwave Oven Components

Component Locations

Upper Microwave Oven

- A. Convect motor
- B. Convect thermostat (behind cover)
- C. Convect element
- D. Line filter
- E. Humidity sensor
- F. Magnetron fan motor
- G. Copernicus appliance manager (lower oven)
- H. Switch mode power supply (SMPS)
- I. Secondary interlock switch
- J. Turntable motor
- K. Broil element
- L. Microwave appliance manager
- M. Cavity halogen lamp
- N. Primary interlock switch
- O. Monitor interlock switch
- P. Magnetron thermistor
- Q. Magnetron
- R. Microwave light transformer
- S. Microwave inverter
- T. Cavity temperature sensor
- U. Grill thermostat
- V. Cavity thermostat

**Not shown:** Monitor fuse, 20A line fuse
A. HMI-Central/UI board
B. Cooling fan
C. Oven temperature sensor
D. Convection assembly
E. Temperature limiter
F. Light assembly
G. Bake element (hidden)
H. Broil element
I. Door lock assembly
J. Control panel assembly
K. WiFi antenna
### Cooling Fan Relay Logic

<table>
<thead>
<tr>
<th>Mode</th>
<th>Bake</th>
<th>Broil</th>
<th>Upper Convect Ring</th>
<th>Lower Convect Ring</th>
<th>Upper Convec Fan</th>
<th>Lower Convec Fan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conveot Frozen Pizza</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>O</td>
<td>O</td>
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<tr>
<td>Converse Pastry</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
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<tr>
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<td>C</td>
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<td>C</td>
<td>O</td>
<td>O</td>
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<td>Conveot Slow Roast 8 hrs</td>
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<td>C</td>
<td>C</td>
<td>C</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Conveot Slow Roast 4 hrs</td>
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<td>C</td>
<td>C</td>
<td>C</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Conveot Roast</td>
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<td>C</td>
<td>C</td>
<td>C</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Conveot Broil</td>
<td>-</td>
<td>C</td>
<td>-</td>
<td>-</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Conveot Bake</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Conveot Bake- Rapid Preheat</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Bake</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Broil</td>
<td>-</td>
<td>C</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Keep Warm</td>
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<td>C</td>
<td>-</td>
<td>-</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Rapid Proof</td>
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<td>C</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Proof</td>
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<td>C</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>No Preheat</td>
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<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
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<tr>
<td>True Convec</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Self Clean</td>
<td>C</td>
<td>C</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### LEGEND

**Cold**  
Cavity Temperature is less than 212°F (100°C)

**Warm**  
Cavity Temperature is between 212°F and 599°F (100°C and 315°C)

**Hot**  
Cavity Temperature is greater than 599°F (315°C)

### Relay Logic Table

<table>
<thead>
<tr>
<th>Relay Off</th>
<th>Relay Cycles</th>
<th>Relay On</th>
<th>Not Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>C</td>
<td>O</td>
<td>NA</td>
</tr>
</tbody>
</table>
To properly check for voltage, complete the following steps:

1. Unplug oven or disconnect power.
2. Connect voltage measurement equipment to check points.
3. Plug in oven or reconnect power and confirm voltage reading.
4. Unplug oven or disconnect power.

<table>
<thead>
<tr>
<th>Component Serviceable Side</th>
<th>Check Points</th>
<th>Copernicus</th>
<th>Results-Resistance</th>
<th>Results-Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lights Front</td>
<td>P7-1 to L1 (J8-1)</td>
<td>0-40Ω</td>
<td>120V</td>
<td></td>
</tr>
<tr>
<td>Latch Switch Front</td>
<td>P3-7 to P3-5</td>
<td>Open circuit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Door Switch Front</td>
<td>P3-6 to P3-5</td>
<td>Closed circuit with oven door closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latch Motor Front</td>
<td>P5-1 to N (J8-2)</td>
<td>500 to 3000Ω</td>
<td>120V motor running</td>
<td></td>
</tr>
<tr>
<td>Oven Temperature Sensor Front</td>
<td>P3-1 to P3-2</td>
<td>1075Ω at 68°F (20°C)</td>
<td>DLB</td>
<td></td>
</tr>
<tr>
<td>Meat Probe Side</td>
<td>P3-3 to P3-4</td>
<td>9876-10075Ω</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blower Motor - High Speed Rear</td>
<td>PX2-2 to L1 (J8-1)</td>
<td>15Ω to 23Ω</td>
<td>120V motor running</td>
<td></td>
</tr>
<tr>
<td>Blower Motor - Low Speed Rear</td>
<td>P7-2 to L1 (J8-1)</td>
<td>15Ω to 23Ω</td>
<td>120V motor running</td>
<td></td>
</tr>
<tr>
<td>Thermal Limiter Rear</td>
<td>PX3-1 to L2 (Main line)</td>
<td>Closed circuit</td>
<td>0V closed, N/A open</td>
<td></td>
</tr>
<tr>
<td>Thermal Fuse (only for single/double) Front</td>
<td>J8-1 to L1</td>
<td>Closed circuit</td>
<td>0V closed, N/A open</td>
<td></td>
</tr>
<tr>
<td>Upper Convection Fan - High Speed Rear</td>
<td>P5-3 to N (J8-2)</td>
<td>15 to 22Ω</td>
<td>120VAC motor running</td>
<td></td>
</tr>
<tr>
<td>Upper Convection Fan - Low Speed Rear</td>
<td>P5-2 to N (J8-2)</td>
<td>17 to 25Ω</td>
<td>120VAC motor running</td>
<td></td>
</tr>
<tr>
<td>Lower Convection Fan - High Speed Rear</td>
<td>P5-5 to N (J8-2)</td>
<td>15 to 22Ω</td>
<td>120VAC motor running</td>
<td></td>
</tr>
<tr>
<td>Lower Convection Fan - Low Speed Rear</td>
<td>P5-4 to N (J8-2)</td>
<td>17 to 25Ω</td>
<td>120VAC motor running</td>
<td></td>
</tr>
<tr>
<td>Upper Convection Element Front</td>
<td>PX1-3 to PX3-2</td>
<td>15.2 to 17.3Ω</td>
<td>240 VAC Convection cycle operating</td>
<td></td>
</tr>
<tr>
<td>Lower Convection Element Front</td>
<td>PX2-4 to PX3-2</td>
<td>15.2 to 17.3Ω</td>
<td>240 VAC Convection cycle operating</td>
<td></td>
</tr>
<tr>
<td>Bake Element Rear</td>
<td>PX1-1 to PX3-2</td>
<td>19.0 to 21.6Ω</td>
<td>240V Bake cycle operating</td>
<td></td>
</tr>
<tr>
<td>Broil Element Front</td>
<td>PX4-2 to PX3-2</td>
<td>13.5 to 14.9Ω</td>
<td>240V Broil cycle operating</td>
<td></td>
</tr>
<tr>
<td>User Interface Board Front</td>
<td>J15-2 to J15-4</td>
<td>N/A</td>
<td>14 VDC</td>
<td></td>
</tr>
<tr>
<td>Copernicus Appliance Manager Side (Combo)</td>
<td>P1-2 to P1-5</td>
<td>N/A</td>
<td>14 VDC</td>
<td></td>
</tr>
</tbody>
</table>
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NOTES:
- Disconnect the harness from the board before performing measurements.
- See the following table for connector pin identification.

<table>
<thead>
<tr>
<th>Copernicus Appliance Manager</th>
<th>Harness Connector Pin</th>
<th>Copernicus Appliance Manager Pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>PX1-1</td>
<td>J12</td>
<td></td>
</tr>
<tr>
<td>PX1-2</td>
<td>J16</td>
<td></td>
</tr>
<tr>
<td>PX1-3</td>
<td>J13</td>
<td></td>
</tr>
<tr>
<td>PX1-4</td>
<td>J17</td>
<td></td>
</tr>
<tr>
<td>PX2-1</td>
<td>J19</td>
<td></td>
</tr>
<tr>
<td>PX2-2</td>
<td>J15</td>
<td></td>
</tr>
<tr>
<td>PX2-3</td>
<td>J18</td>
<td></td>
</tr>
<tr>
<td>PX2-4</td>
<td>J14</td>
<td></td>
</tr>
</tbody>
</table>

![Diagram of Copernicus Appliance Manager with pinouts indicated]
<table>
<thead>
<tr>
<th>Component Side</th>
<th>Component Name</th>
<th>Procedure</th>
<th>Results - Resistance</th>
<th>Component Location</th>
</tr>
</thead>
</table>
| Top           | Appliance Manager               | Check wiring to MW microwave appliance manager:  
1. Unplug the microwave oven or disconnect power.  
2. Visually inspect connectors on the microwave appliance manager, P1, P2, P8, P21, P22, P23, P26, P354, P355 and the top connectors (relays 4903, 4904 and 4905) to see whether there are signs of overheating or any signs of failure due to loose wires, bad crimping, etc.  
3. Reassemble all parts and panels before operating.  
4. Plug in microwave oven or reconnect power. | G                                |                                   |
| Top           | Cavity Thermostat               | 1. Unplug microwave oven or disconnect power.  
2. Remove wire leads.  
3. Measure resistance.  
4. Replace wire leads.  
5. Reassemble all parts and panels before operating.  
6. Plug in microwave oven or reconnect power. | Normal = Continuity Abnormal = Infinite | V                                |
| Top           | Magnetron Fan Motor             | 1. Unplug microwave oven or disconnect power.  
2. Remove wire leads.  
3. Measure resistance (ohmmeter scale: Rx1).  
4. Replace wire leads.  
5. Reassemble all parts and panels before operating.  
6. Plug in microwave oven or reconnect power. | Normal = 15Ω Abnormal = Infinite | F                                |
| Bottom        | Turntable Motor                 | 1. Unplug microwave oven or disconnect power.  
2. Remove wire leads.  
3. Measure resistance (ohmmeter scale: Rx1).  
4. Replace wire leads.  
5. Reassemble all parts and panels before operating.  
6. Plug in microwave oven or reconnect power. | Normal = 2500Ω (approximately) Abnormal = Infinite | J                                |
| Top           | Monitor Fuse                    | 1. Unplug microwave oven or disconnect power.  
2. Remove wire leads.  
3. Measure resistance.  
4. Replace wire leads.  
5. Reassemble all parts and panels before operating.  
6. Plug in microwave oven or reconnect power. | Normal = Continuity Abnormal = Infinite | Not shown |
| Top           | MW Light Transformer            | 1. Unplug microwave oven or disconnect power.  
2. Remove wire leads.  
3. Measure resistance (ohmmeter scale: Rx1).  
4. Replace wire leads.  
5. Reassemble all parts and panels before operating.  
6. Plug in microwave oven or reconnect power. | Primary Winding = 40Ω (approximately) Secondary Winding = 0.4Ω (approximately) | R                                |
| Top           | Line Fuse                       | 1. Unplug microwave oven or disconnect power.  
2. Remove wire leads.  
3. Measure resistance.  
4. Replace wire leads.  
5. Reassemble all parts and panels before operating.  
6. Plug in microwave oven or reconnect power. | Normal = Continuity Abnormal = Infinite | Not shown |
### Primary Interlock Switch

**Top**

- **Procedure**
  1. Unplug microwave oven or disconnect power.
  2. Disconnect the wires at the Primary Interlock Switch.
  3. Check from the common terminal (brown wire) to the normally open terminal (yellow wire).
  4. Reconnect the wires at the Primary Interlock Switch.
  5. Reassemble all parts and panels before operating.
  6. Plug in microwave oven or reconnect power.

- **Results - Resistance**
  - Test 1: Door Open = Infinite.
  - Door Closed = Continuity.

### Secondary Interlock Switch

**Top**

- **Procedure**
  1. Unplug microwave oven or disconnect power.
  2. Disconnect the wires at the Secondary Interlock Switch.
  3. Check from the common terminal (blue wire) to the normally open terminal (white wire).
  4. Reconnect the wires at the Secondary Interlock Switch.
  5. Reassemble all parts and panels before operating.
  6. Plug in microwave oven or reconnect power.

- **Results - Resistance**
  - Test 1: Door Open = Continuity.
  - Door Closed = Infinite.

### Monitor Interlock Switch

**Top**

- **Procedure**
  1. Unplug microwave oven or disconnect power.
  2. Disconnect the wires at the Monitor Interlock Switch.
  3. Check from the common terminal (yellow wire) to the normally closed terminal (blue wire).
  4. Reconnect the wires at the Monitor Interlock Switch.
  5. Reassemble all parts and panels before operating.
  6. Plug in microwave oven or reconnect power.

- **Results - Resistance**
  - Door Open = Continuity.
  - Door Closed = Infinite.

### Halogen Light

**Top**

- **Procedure**
  1. Unplug microwave oven or disconnect power.
  2. Remove wire leads.
  3. Measure resistance.
  4. Replace wire leads.
  5. Reassemble all parts and panels before operating.
  6. Plug in microwave oven or reconnect power.

- **Results - Resistance**
  - Normal = approximately 3Ω
  - Abnormal = Infinite

---

**Component Serviceable Side**

- **Primary Interlock Switch**: Top
- **Secondary Interlock Switch**: Top
- **Monitor Interlock Switch**: Top
- **Halogen Light**: Top
<table>
<thead>
<tr>
<th>Component</th>
<th>Serviceable Side</th>
<th>Procedure</th>
<th>Results - Resistance</th>
<th>Component Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inverter</td>
<td>Top</td>
<td><strong>Check wiring to MW inverter:</strong>&lt;br&gt;1. Unplug the microwave oven or disconnect power.&lt;br&gt;2. Visually inspect 4 connectors on the MW inverter boards, CN701, CN702, CN703 and E701 to see whether there are signs of overheating or any signs of failure due to loose wires, bad crimping, etc.&lt;br&gt;3. Reassemble all parts and panels before operating.&lt;br&gt;4. Plug in microwave oven or reconnect power.</td>
<td>Filament Terminals&lt;br&gt;Normal = $&lt; 1\Omega$&lt;br&gt;Filament to Chassis&lt;br&gt;Normal = Infinite</td>
<td>S</td>
</tr>
<tr>
<td>Magnetron</td>
<td>Top</td>
<td><strong>Unplug microwave oven or disconnect power.</strong>&lt;br&gt;2. Remove wire leads. Check that the seal is in good condition.&lt;br&gt;3. Measure resistance.&lt;br&gt;4. Replace wire leads.&lt;br&gt;5. Reassemble all parts and panels before operating.&lt;br&gt;6. Plug in microwave oven or reconnect power.</td>
<td>P31 to P32, P33 to P34&lt;br&gt;Normal $\geq 300\Omega$&lt;br&gt;Abnormal $\leq 100\Omega$&lt;br&gt;P31 to P34, P32 to P33&lt;br&gt;Normal = 0\Ω&lt;br&gt;Abnormal $\geq 100\Omega$</td>
<td>Q</td>
</tr>
<tr>
<td>Line Filter</td>
<td>Top</td>
<td><strong>Unplug microwave oven or disconnect power.</strong>&lt;br&gt;2. Remove wire leads.&lt;br&gt;3. Measure resistance.&lt;br&gt;4. Replace wire leads.&lt;br&gt;5. Reassemble all parts and panels before operating.&lt;br&gt;6. Plug in microwave oven or reconnect power.</td>
<td>Normal = 2.8kΩ (approximately) at $77^\circ F \pm 10^\circ F$ ($25^\circ C \pm 10^\circ C$)&lt;br&gt;Abnormal = Infinite.</td>
<td>D</td>
</tr>
<tr>
<td>Humidity Sensor</td>
<td>Top</td>
<td><strong>Unplug microwave oven or disconnect power.</strong>&lt;br&gt;2. Remove the 3-pin connector from MW Appliance Manager.&lt;br&gt;3. Measure resistance across pins 1 and 3 and across pins 2 and 3.&lt;br&gt;4. Replace the 3-pin connector from MW Appliance Manager.&lt;br&gt;5. Reassemble all parts and panels before operating.&lt;br&gt;6. Plug in microwave oven or reconnect power.</td>
<td>Normal = 10kΩ (approximately) at $77^\circ F \pm 10^\circ F$ ($25^\circ C \pm 10^\circ C$)&lt;br&gt;Abnormal = Infinite.</td>
<td>E</td>
</tr>
<tr>
<td>Magnetron Thermistor</td>
<td>Top</td>
<td><strong>Unplug microwave oven or disconnect power.</strong>&lt;br&gt;2. Remove wire leads.&lt;br&gt;3. Measure resistance.&lt;br&gt;4. Replace wire leads.&lt;br&gt;5. Reassemble all parts and panels before operating.&lt;br&gt;6. Plug in microwave oven or reconnect power.</td>
<td>Normal = Continuity&lt;br&gt;Abnormal = Infinite</td>
<td>P</td>
</tr>
<tr>
<td>Grill Thermostat</td>
<td>Top</td>
<td><strong>Unplug microwave oven or disconnect power.</strong>&lt;br&gt;2. Remove wire leads.&lt;br&gt;3. Measure resistance.&lt;br&gt;4. Replace wire leads.&lt;br&gt;5. Reassemble all parts and panels before operating.&lt;br&gt;6. Plug in microwave oven or reconnect power.</td>
<td>Normal = Continuity&lt;br&gt;Abnormal = Infinite</td>
<td>U</td>
</tr>
<tr>
<td>Convect Thermostat</td>
<td>Rear</td>
<td><strong>Unplug microwave oven or disconnect power.</strong>&lt;br&gt;2. Remove wire leads.&lt;br&gt;3. Measure resistance.&lt;br&gt;4. Replace wire leads.&lt;br&gt;5. Reassemble all parts and panels before operating.&lt;br&gt;6. Plug in microwave oven or reconnect power.</td>
<td>Normal = Continuity&lt;br&gt;Abnormal = Infinite</td>
<td>B</td>
</tr>
<tr>
<td>Component</td>
<td>Serviceable Side</td>
<td>Procedure</td>
<td>Results - Resistance</td>
<td>Component Location</td>
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<td>-----------------</td>
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<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Broil Element</td>
<td>Rear</td>
<td>1. Unplug microwave oven or disconnect power.</td>
<td>Normal = 9Ω</td>
<td>K</td>
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<tr>
<td></td>
<td></td>
<td>2. Remove wire leads.</td>
<td>Abnormal = Infinite</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>3. Measure resistance.</td>
<td></td>
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<td></td>
<td></td>
<td>4. Replace wire leads.</td>
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<td></td>
<td></td>
<td>5. Reassemble all parts and panels before operating.</td>
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<td></td>
<td></td>
<td>6. Plug in microwave oven or reconnect power.</td>
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<tr>
<td>Convect Element</td>
<td>Rear</td>
<td>1. Unplug microwave oven or disconnect power.</td>
<td>Normal = 12Ω</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Remove wire leads.</td>
<td>Abnormal = Infinite</td>
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<tr>
<td></td>
<td></td>
<td>3. Measure resistance.</td>
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<td></td>
<td></td>
<td>4. Replace wire leads.</td>
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<tr>
<td></td>
<td></td>
<td>5. Reassemble all parts and panels before operating.</td>
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<td></td>
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<td>6. Plug in microwave oven or reconnect power.</td>
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<tr>
<td>Cavity Temp Sensor</td>
<td>Rear</td>
<td>1. Unplug microwave oven or disconnect power.</td>
<td>Normal = 230KΩ (approximately) at 77°F ±10°F</td>
<td>T</td>
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<td></td>
<td></td>
<td>2. Remove wire leads.</td>
<td>Abnormal = Infinite</td>
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<td></td>
<td></td>
<td>3. Measure resistance.</td>
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<td>4. Replace wire leads.</td>
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<td>5. Reassemble all parts and panels before operating.</td>
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<td></td>
<td></td>
<td>6. Plug in microwave oven or reconnect power.</td>
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</tr>
<tr>
<td>Convect Fan Motor</td>
<td>Rear</td>
<td>1. Unplug microwave oven or disconnect power.</td>
<td>Normal = 48Ω</td>
<td>A</td>
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<tr>
<td></td>
<td></td>
<td>2. Remove wire leads.</td>
<td>Abnormal = Infinite</td>
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<td>3. Measure resistance.</td>
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<td>4. Replace wire leads.</td>
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<td>5. Reassemble all parts and panels before operating.</td>
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<td>6. Plug in microwave oven or reconnect power.</td>
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</tbody>
</table>
NOTES:
■ End of line tester (EOL) is for manufacturing purposes only.
■ Dots indicate connections or splices.

- Circuit shown in STANDBY/OFF mode with oven door closed.
- All voltages in the wiring diagrams are designated as 120/240 VAC. If oven is connected to 120/208 VAC, replace 240V with 208V.

LEGEND

- Ground (Chassis)
- Plug With Female Connector
- Receptacle With Male Connector
- Light(s)
- AC Drive Motor
- Door Switch
- Relay Contact
- Heating Element

- Enclosed Thermistor
- Latch Switch
- Thermal Fuse (Non-Resettable)
- Temperature Limiter
- Thermoactuator
- Microwave Light Transformer
- Magnetron
- Fuse