


# International Commercial Microwave—Technical Information

<b>DEC18M</b>	<b>P2003838M</b>	<b>DEC18MC</b>	<b>P2003840M</b>
	<b>P2003874M</b>		<b>P2003876M</b>
<b>DEC18MU</b>	<b>P2003839M</b>	<b>DEC18MU1</b>	<b>P2003881M</b>
	<b>P2003875M</b>		<b>P2003882M</b>
<b>DEC18MCX</b>	<b>P2003841M</b>	<b>MDC18MT</b>	<b>P2003842M</b>
	<b>P2003877M</b>		<b>P2003878M</b>

Due to possibility of personal injury or property damage, always contact an authorized technician for servicing or repair of this unit.



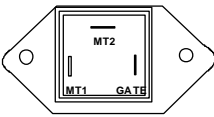
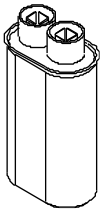

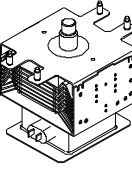
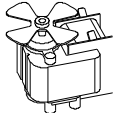
- Refer to Service Manual RS5320013 for detailed installation, operating, testing, troubleshooting, and disassembly instructions.

 **CAUTION**  
 All safety information must be followed as provided in Service Manual

 **WARNING**  
 To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

Models	DEC18M	DEC18MC	DEC18MU(1)	DEC18MCX	MDC18MT
<b>Power Source</b>					
Voltage AC	230/240V	220/240V	230/240V	220/240V	220V
Amperage (single unit)	16A	16A	13A	16A	20A
Frequency	50HZ	50HZ	50HZ	50HZ	60hz
Single phase, 3 wire, gnd	Yes	Yes	Yes	Yes	Yes
Plug					
<b>Power Output</b>					
Nominal energy (IEC705)	1900W	2000W	1900W	2000W	1900W
Minimum temp rise (ΔT)					
Operating frequency	2450 MHz	2450 MHz	2450 MHz	2450 MHz	2450 MHz
<b>Power Consumption</b>					
Cook condition microwave	2900W	3100W	3100W	3100W	3100W
<b>Dimensions</b>					
<b>Cabinet</b>					
Width	419 cm (16.5 in)	419 cm (16.5 in)	419 cm (16.5 in)	419 cm (16.5 in)	419 cm (16.5 in)
Height	343 cm (13.5 in)	343 cm (13.5 in)	343 cm (13.5 in)	343 cm (13.5 in)	343 cm (13.5 in)
Depth (incl handle)	549 cm (21.63 in)	549 cm (21.63 in)	549 cm (21.63 in)	549 cm (21.63 in)	549 cm (21.63 in)
<b>Oven Interior</b>					
Width	330 cm (13 in)	330 cm (13 in)	330 cm (13 in)	330 cm (13 in)	330 cm (13 in)
Height	171 cm (6.75 in)	171 cm (6.75 in)	171 cm (6.75 in)	171 cm (6.75 in)	171 cm (6.75 in)
Depth	305 cm (12 in)	305 cm (12 in)	305 cm (12 in)	305 cm (12 in)	305 cm (12 in)
<b>Weight</b>					
Crated	34 kg (74 lbs)	34 kg (74 lbs)	34 kg (74 lbs)	34 kg (74 lbs)	34 kg (74 lbs)
Uncrated	31 kg (68 lbs)	31 kg (68 lbs)	31 kg (68 lbs)	31 kg (68 lbs)	31 kg (68 lbs)

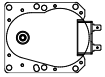
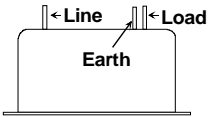
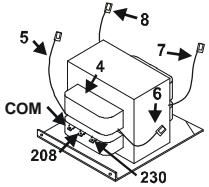
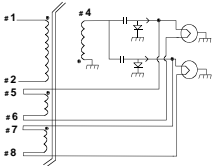
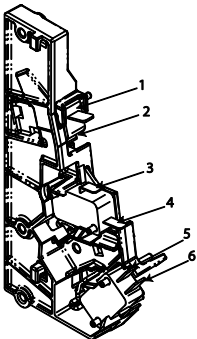
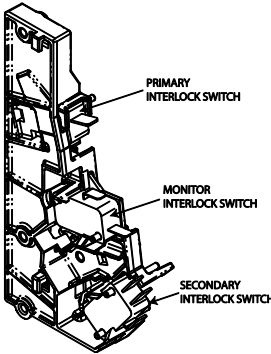
# Component Specifications

Illustration	Component	Testing	Results
	Thermal Cutout	Disconnect all wires from TCO. Measure resistance across terminals. Cavity Thermal Fuse ..... Magnetron TCO .....	Open at 104° C (219° F).  Open at 138° C (280° F) and closed at 82° C (180° F).
	Diodes	<b>Discharge Capacitors</b>  Remove diode lead from capacitor and connect ohmmeter.  Reverse leads for second test.	Infinite resistance should be measured in one direction and 50KΩ or more in the opposite direction.  <b>NOTE:</b> Analog meter must contain a battery of 6 volts minimum.
	Triac	Disconnect wires to triac.  Measure resistance from: MT1 to MT2..... MT1 to Gate ..... MT2 to Gate ..... All terminals to ground .....	<b>Caution - Do not operate oven with wire to terminal MT2 removed.</b>  Infinite.  Approximately 60 Ω or more.  Infinite.  Infinite.
	Capacitor	<b>Discharge Capacitors</b>  Remove wires from capacitor terminals and connect ohmmeter, set on highest resistance scale to terminals.  Also check between each terminal and capacitor case.	<b>Between Terminals:</b> Meter should momentarily deflect towards zero then return to over 5 MΩ. If no deflection occurs, or if continuous deflection occurs, replace capacitor.  <b>Terminal to Case:</b> Infinite resistance.  <b>ALWAYS USE CORRECT SIZE</b>
	Snubber Assembly	Disconnect wires to snubber.  Measure resistance across terminals...	Infinite.
	Magnetron	<b>Discharge Capacitors</b>  Remove wires from magnetron and connect ohmmeter to terminals. Also check between each terminal and ground.	<b>Between Terminals:</b> Less than 1 Ω.  Each terminal to ground measures Infinite resistance. <b>NOTE:</b> This test is not conclusive. If oven does not heat and all other components test good replace the magnetron and retest.
	Blower Motor	Remove all wires from motor.  Measure resistance across coil.....	Approximately 30 Ω.

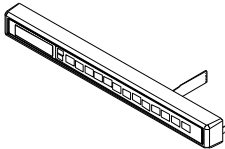
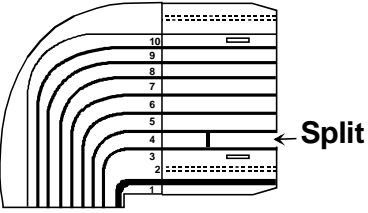
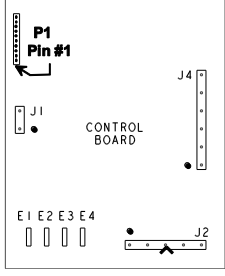

# Component Specifications

## ! WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

	<p>Stirrer Motor</p>	<p>Remove all wires from motor.</p> <p>Measure resistance across coil.....</p>	<p>Approximately 25k Ω.</p>
	<p>Line Filter</p>	<p>Line to Line.....</p> <p>Load to Load.....</p> <p>Line to Load.....</p> <p>Any terminal to Earth.....</p>	<p>.8 M Ω</p> <p>.8 M Ω</p> <p>Continuity</p> <p>Infinite</p>
	<p>Transformer</p> 	<p>Discharge Capacitor</p> <p>Remove all wires from terminals, and measure resistance from:</p> <p>230 to Common.....</p> <p>Terminal 5 to 6.....</p> <p>Terminal 7 to 8.....</p> <p>Terminal 4 to Earth screw on transformer.....</p> <p>Terminal 4 to any other terminal.....</p>	<p>1 Ω.</p> <p>&lt;1 Ω.</p> <p>&lt;1 Ω.</p> <p>38 Ω.</p> <p>Infinite</p>
	<p>Interlock switch assembly</p> 	<p>Disconnect wires to switch.</p> <p>With door open measure resistance from:</p> <p>Monitor – Terminals 3 - 4.....</p> <p>Primary – Terminals 1 - 2.....</p> <p>Secondary – Terminals 5 - 6.....</p> <p>With door closed measure resistance from:</p> <p>Monitor – Terminals 3 - 4.....</p> <p>Primary – Terminals 1 - 2.....</p> <p>Secondary – Terminals 5 - 6.....</p> <p><b>After verifying or replacing the module, re-connect wires to switch and check operation of monitor circuit before operating the oven.</b></p>	<p>Indicates continuity</p> <p>Infinite Ω</p> <p>Infinite Ω</p> <p>Infinite Ω</p> <p>Indicates continuity</p> <p>Indicates continuity</p>

# Component Specifications

	<p>Touch Panel Assembly</p>	<p>Continuity is indicated as 100 Ω and below.</p> <p>Pin 1: Ground.</p> 	<table border="1"> <thead> <tr> <th>Pad</th> <th>Traces</th> <th></th> </tr> </thead> <tbody> <tr><td>1</td><td>8 to 10</td><td>Continuity</td></tr> <tr><td>2</td><td>7 to 10</td><td>Continuity</td></tr> <tr><td>3</td><td>6 to 10</td><td>Continuity</td></tr> <tr><td>4</td><td>5 to 10</td><td>Continuity</td></tr> <tr><td>5</td><td>4 to 10</td><td>Continuity</td></tr> <tr><td>6</td><td>3 to 10</td><td>Continuity</td></tr> <tr><td>7</td><td>8 to 9</td><td>Continuity</td></tr> <tr><td>8</td><td>7 to 9</td><td>Continuity</td></tr> <tr><td>9</td><td>6 to 9</td><td>Continuity</td></tr> <tr><td>0</td><td>5 to 9</td><td>Continuity</td></tr> <tr><td>Start</td><td>4 to 9</td><td>Continuity</td></tr> <tr><td>Stop</td><td>4 to 8</td><td>Continuity</td></tr> <tr><td>Power Lvl</td><td>5 to 8</td><td>Continuity</td></tr> <tr><td>X 2</td><td>6 to 8</td><td></td></tr> <tr><td>Continuity</td><td></td><td></td></tr> <tr><td>Time Entry</td><td>7 to 8</td><td>Continuity</td></tr> </tbody> </table>	Pad	Traces		1	8 to 10	Continuity	2	7 to 10	Continuity	3	6 to 10	Continuity	4	5 to 10	Continuity	5	4 to 10	Continuity	6	3 to 10	Continuity	7	8 to 9	Continuity	8	7 to 9	Continuity	9	6 to 9	Continuity	0	5 to 9	Continuity	Start	4 to 9	Continuity	Stop	4 to 8	Continuity	Power Lvl	5 to 8	Continuity	X 2	6 to 8		Continuity			Time Entry	7 to 8	Continuity
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	<p>Controller board</p>  <p><b>P1 connector used for touch panel ribbon</b></p>	<p>Line voltage to control board J4-1 to J4-6.....</p> <p>Output drive voltage to triac Triac terminals..... Gate—T1.....</p> <p>Fan relay (controls blower motor, antenna motor(s), and oven light) Terminals J4-1—J2-2.....</p> <p>Cook relay Control board E1—E4.....</p>	<p>Line voltage (All Conditions)</p> <p>0 VAC (Idle and Standby) 0.9 VAC (Cook)</p> <p>Line voltage (Standby and Cook) 0 volts (Idle)</p> <p>Line voltage (Idle) 0 volts (Standby and Cook)</p>																																																			

## Usage Test

The Usage Test is used to access Magnetron Hours, Magnetron Cycles and Door Cycles. Use the following procedure to access the data:

1. Open door.
2. Press and hold pad **3** for five (5) seconds.  
**NOTE:** After five (5) seconds, SErv illuminates in the display.
3. Press pad **1** for Magnetron Hours.
4. Press pad **2** for Magnetron Cycles.
5. Press pad **3** for Door Cycles.

## Conditions

- Initial Power Up Condition:** Apply power to oven with door closed.
- Idle Condition:** Oven plugged in, display blank (no other components operating).
- Standby Condition:** Open oven door, light and motors operate.
- Cook Condition:** Food load in oven, cook cycle initiated.

# Component Specifications



## WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitor before servicing, unless testing requires power.

Illustration	Component	Testing	Results
<p>The diagram shows a control board with several terminals. P1 is a connector for a touch panel ribbon. J1, J2, and J4 are other connectors. E1, E2, E3, and E4 are test points.</p>	<p>Controller board</p> <p><b>P1 connector used for touch panel ribbon</b></p>	<p>Line voltage to control board E1—E3.....</p> <p>Output drive voltage to triac Triac terminals .....</p> <p>Gate—T1 .....</p> <p>Fan relay (controls blower motor, antenna motor(s), and oven light) Control board .....</p> <p>Terminals J4-1—J4-2.....</p> <p>Cook relay Control board .....</p> <p>Terminals E1—E4 .....</p>	<p>Line voltage (All Conditions).</p> <p>0 VAC (Idle and Standby). 0.9 VAC (Cook).</p> <p>Line voltage (Idle). 0 VAC (Standby and Cook).</p> <p>Line voltage (Idle). 0 volts (Standby and Cook).</p>

### Error Code Table

Error Code	Corrective Action
F1	Replace HV/LV Board
F2	Replace HV/LV Board
F3	Replace HV/LV Board
F4	Replace HV/LV Board
F5	Replace Touch Panel
F6	Replace HV/LV Board

### Power Test

All Amana and Menumaster microwave oven power outputs are rated using the IEC705 standards. Using the IEC705 test method requires precision measurements and equipment that is not practical to be performed in the field. Using the test shown below will indicate if the oven performance is satisfactory.

#### Test equipment required:

- 1000 ml test container and thermometer (Amana power test kit Fahrenheit / Menumaster power test kit Celsius).
- Digital watch / watch with a second hand for use on ovens with electromechanical timers.

#### Important Notes:

- Low line voltage will cause low temperature rise / power output.
- Ovens must be on a dedicated circuit, properly grounded, and polarized. Other equipment on the same circuit may cause a low temperature rise / power output.
- This test and results are not a true IEC705 test procedure and are only intended to provide servicers with an easy means of determining if the microwave oven cooking output is correct.

# Component Specifications

## Procedure

1. Fill the test container to the 1000 ml line with cool tap water.

**NOTE:** Water temperature should be approximately 60° F / 16° C.

2. Using the thermometer, stir water for five to ten seconds; measure, and record the temperature (T1).
3. Place test container of water in the center of oven cavity and close door.
4. Heat the water for a 33-second full power cycle.

**NOTE:** Use a digital watch or a watch with a second hand for ovens with electromechanical timers.

1. At end of the cycle, remove test container. Using the thermometer, stir water for five to ten seconds and record temperature (T2).
2. Subtract the starting water temperature (T1), from the ending water temperature (T2) to obtain the temperature rise ( $\Delta T$ ).
3. If the temperature rise ( $\Delta T$ ) meets or exceeds the minimum, the test is complete. If the temperature rise ( $\Delta T$ ) fails to meet the minimum temperature rise, test the line voltage to verify it is correct. Then repeat steps 1-6 making sure to change the water. If the temperature rise ( $\Delta T$ ) fails to meet the minimum temperature rise again the oven will require service.

**Minimum Temperature Rise at Thirty-Three (33) Seconds Run Time**

$\Delta T$ (°F)	Cooking Power Output	$\Delta T$ (°F)	Cooking Power Output	$\Delta T$ (°C)	Cooking Power Output	$\Delta T$ (°C)	Cooking Power Output
10 .....	1000	20 .....	2000	5 .....	1000	11 .....	2000
11 .....	1100	21 .....	2100	5.5 .....	1100	11.5 .....	2100
12 .....	1200	22 .....	2200	6.5 .....	1200	12 .....	2200
14 .....	1400	24 .....	2400	7.5 .....	1400	13 .....	2400
17 .....	1700	25 .....	2500	9.5 .....	1700	13.5 .....	2500
18 .....	1800	27 .....	2700	10 .....	1800	15 .....	2700
19 .....	1900	30 .....	3000	10.5 .....	1900	16.5 .....	3000





