

Domestic Microwave—Technical Information

Over-The-Range Convection Microwave Models

AMV4204AAB/W/Q

MMV4205AAB/W/Q/S

- 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 16023056 for detailed installation, operating, testing, troubleshooting, and disassembly instructions.



CAUTION

All safety information must be followed as provided in Service Manual 16023056.



WARNING

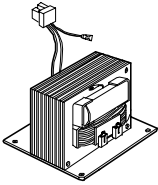
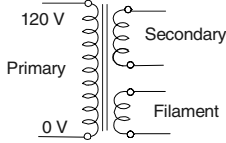
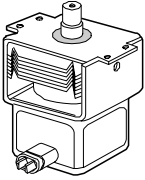
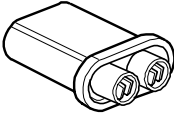
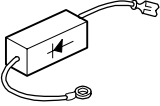
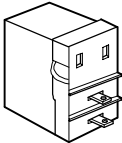
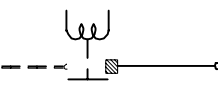
To avoid risk of electrical shock, personal injury or death; disconnect power to oven before servicing, unless testing requires power.

Power Source	AMV4204AA*	MMV4205AA*
Voltage AC	120 VAC	120 VAC
Amperage	20 A	20 A
Frequency	60 Hz	60 Hz
Single Phase, 3 wire grounded	Yes	Yes
Power Output		
Nominal microwave energy (IEC705)	1150 Watts	1150 Watts
Operating frequency	2450 MHz	2450 MHz
Power Consumption		
Microwave, lamp and vent fan	1700 Watts	1700 Watts
Dimensions, Exterior (Cabinet)		
Width	29 15/16" 76 cm	29 15/16" 76 cm
Height	16 7/16" 42 cm	16 7/16" 42 cm
Depth	15 3/8" 39 cm	15 3/8" 39 cm
Dimensions, Interior (Cavity)		
Width	23 1/2" 60 cm	23 1/2" 60 cm
Height	10 3/16 " 26 cm	10 3/16 " 26 cm
Depth	14 1/2" 37 cm	14 1/2" 37 cm
Weight (approx.)		
Uncrated	60 lbs 28 kg	60 lbs 28 kg
Crated	68 lbs 30 kg	68 lbs 30 kg

Component Testing Procedures

⚠ WARNING

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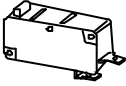
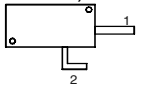
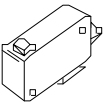

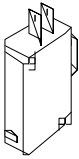
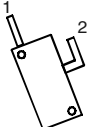


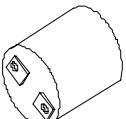
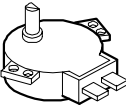
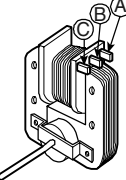
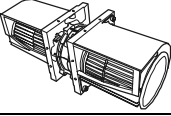
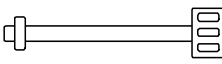
Illustration	Component	Test Procedure	Results																																	
	<p>High voltage transformer</p> 	<p>Discharge Capacitor Disconnect connector and measure continuity with meter on R x 1 scale:</p> <p>Secondary Filament..... Primary (High & Low).....</p> <p>(Measure at room temperature, or 70° F/ 22°C)</p> <p>Measure continuity with meter on "High" scale: Primary winding to ground Filament winding to ground.....</p>	<p>Approximately 50-120 Ω Less than 1 Ω Less than 1 Ω</p> <p>Infinite Ω Infinite Ω</p>																																	
	Magnetron	<p>Discharge Capacitor</p> <p>Remove wires from magnetron and connect ohmmeter to terminals. Also check between each terminal and ground.</p>	<p>Between Terminals: Less than 1 Ω Each terminal to ground: Infinite resistance. Note: This test is not conclusive. If oven does not heat and all other components test good replace the magnetron and retest.</p>																																	
	High Voltage Capacitor	<p>Discharge Capacitor</p> <p>Remove wires from capacitor terminals and connect ohmmeter, set on highest resistance scale to terminals.</p> <p>Also check between each terminal and capacitor case.</p>	<p>Between Terminals: Meter should momentarily indicate several ohms, then return to infinity. If no deflection occurs, or if continuous deflection occurs, replace capacitor. Terminal to Case: Infinite resistance</p>																																	
	High Voltage Diode	<p>Discharge Capacitor</p> <p>Remove diode lead from capacitor and connect ohmmeter.</p> <p>Reverse leads for second test.</p>	<p>Infinite resistance should be measured in one direction and continuity in the opposite direction. NOTE: Ohmmeter must contain a battery of 6 volts minimum.</p>																																	
	Relay 7	<p>Disconnect the leads. Place water in the oven and select power levels 1 through 10. Check continuity between the terminals of the relays.</p> 	<table border="1"> <thead> <tr> <th>Power Level</th> <th>Cycle On (Continuity)</th> <th>Cycle Off (Open)</th> </tr> </thead> <tbody> <tr><td>1</td><td>4 sec</td><td>18 sec</td></tr> <tr><td>2</td><td>6 sec</td><td>16 sec</td></tr> <tr><td>3</td><td>8 sec</td><td>14 sec</td></tr> <tr><td>4</td><td>10 sec</td><td>12 sec</td></tr> <tr><td>5</td><td>12 sec</td><td>10 sec</td></tr> <tr><td>6</td><td>14 sec</td><td>8 sec</td></tr> <tr><td>7</td><td>16 sec</td><td>6 sec</td></tr> <tr><td>8</td><td>18 sec</td><td>4 sec</td></tr> <tr><td>9</td><td>20 sec</td><td>2 sec</td></tr> <tr><td>10</td><td>22 sec</td><td>0 sec</td></tr> </tbody> </table>	Power Level	Cycle On (Continuity)	Cycle Off (Open)	1	4 sec	18 sec	2	6 sec	16 sec	3	8 sec	14 sec	4	10 sec	12 sec	5	12 sec	10 sec	6	14 sec	8 sec	7	16 sec	6 sec	8	18 sec	4 sec	9	20 sec	2 sec	10	22 sec	0 sec
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Component Testing Procedures



WARNING

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Illustration	Component	Test Procedure	Results
	Primary Interlock Switch Test (Top Switch) 	Measure resistance between terminals 1 and 2: Door Open Door Closed.....	Open Continuity
	Secondary Interlock Switch Test (Bottom Switch) 	Measure resistance between terminals 1 and 2: Door Open Door Closed.....	Open Continuity
	Interlock Monitor Switch Test (Middle Switch) 	Measure resistance between terminals 1 and 2: Door Open Door Closed.....	Continuity Open
	Magnetron Thermal Cut-Out (Thermostat)	Disconnect all wires from TCO. Measure resistance across terminals. Magnetron TCO	Open at 302°F (150°C) and closed at 32°F (0°C)
	Oven Thermal Cut-Out (Thermostat)	Disconnect all wires from TCO. Measure resistance across terminals. Oven TCO.....	Open at 230°F (110°C) Closed at 0°F (32°C)
	Lamp receptacle	Test continuity of receptacle terminals.....	Indicates continuity if bulb is good and installed.
	Turntable Drive Motor (Synchronous motor)	Measure voltage across terminals Measure resistance across terminals.....	Approximately 120 VAC Approximately 2-4 Ω
	Fan motor	Remove all wires from motor. Measure resistance	(All measurements approximate) Across terminals A & C: 35-50 Ω Across terminals A & B: 5-15 Ω Infinite or several, motor is defective.
	Ventilation Motor	Remove all wires Measure resistance across terminals.....	High Speed: Approximately 49-69 Ω Low Speed: Approximately 97-117 Ω
	Thermistor	Remove connector from circuit board. Measure resistance across pins 1 & 3	Approximately 250-360 KΩ (70°F, 20°C ± 35°F, 2°C)
Refer to Parts Manual for proper power cord part number.	Power cord	Measure resistance of wires	Continuity on each wire. Verify polarity and grounding.

Component Testing Procedures



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Illustration	Component	Test Procedure	Results		
			Pad	Trace	Measurement
<p>FTP Connector TOP</p>	<p>Touch Pad/Control Panel Model MMV4205A**</p>	<p>Removal of Touch Pad/Control Panel is required to perform test. Check for continuity.</p> <p>When touched: Less than 400 Ω When not touched: More than 1 mega Ω</p>	1	8 & 1	Continuity
			2	8 & 2	Continuity
			3	8 & 3	Continuity
			4	8 & 4	Continuity
			5	8 & 5	Continuity
			6	8 & 6	Continuity
			7	8 & 7	Continuity
			8	13 & 5	Continuity
			9	13 & 6	Continuity
			0	13 & 7	Continuity
			Popcorn	11 & 1	Continuity
			Baked Potato	9 & 6	Continuity
			Beverage	9 & 7	Continuity
			Cook	11 & 2	Continuity
			Reheat	11 & 3	Continuity
			Poultry	10 & 4	Continuity
			Soften	10 & 6	Continuity
			Melt	10 & 7	Continuity
			Auto Defrost	11 & 4	Continuity
			Time Defrost	11 & 6	Continuity
			Rapid Defrost	11 & 7	Continuity
			Clock	12 & 5	Continuity
			Cook Time	9 & 2	Continuity
			Control Setup	12 & 1	Continuity
			Power Level	13 & 1	Continuity
			Add 30 Sec.	11 & 5	Continuity
			Hold Warm	12 & 2	Continuity
			Stop/Clear	13 & 3	Continuity
			Enter/Start	13 & 4	Continuity
			Custom Program	9 & 3	Continuity
			Kitchen Timer	12 & 4	Continuity
			Light Timer	9 & 5	Continuity
			Vent Hi/Lo/Off	10 & 1	Continuity
			Vent Auto Time Set	10 & 5	Continuity
			Turntable On/Off	12 & 3	Continuity
			Light Hi/Lo/Off	10 & 3	Continuity

Component Testing Procedures



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Power Test (Traditional Test Method)

Test equipment required is Amana power test kit R0157397 (Fahrenheit), or Menumaster power test kit M95D5 (Celsius).

1. Fill the plastic container to the 1000 ml. line with cool tap water.
2. Using the thermometer; stir the water, measure, and record the water temperature.

Initial water temperature should be approximately 60°F (16°C).

3. Place container on the center of the oven shelf and heat the water for
33 seconds for ovens with more than 1550 watts or 63 seconds for ovens with less than 1550 watts.

NOTE: Use a watch second hand, not the oven timer.

4. Stir the water, measure and record the temperature of the water after heating time is complete.
5. Subtract the starting water temperature (Step 2), from the ending water temperature (Step 4) to obtain the temperature rise (ΔT).
6. See the Traditional Power Test Temperature Chart below.

NOTES: •The IEC-705 test method requires precision measurements and equipment. It is not practical to perform the IEC test in the field. To convert the traditional power test results to the approximate IEC-705 rating, take the traditional power test results and add 100 watts per magnetron for the unit being tested.

Example: 1050 — watts output using the traditional power test
 + 100 — watts (1 magnetron X 100 watts)
 1150 — Approximate IEC-705 results

- Always perform power test three times for accuracy, changing the water after each test is performed.
- Variation or errors in the test procedure will cause a variance in the temperature rise. Additional power tests should be made if temperature rise appears marginal.
- Low line voltage will cause lower temperature rise.

Traditional Power Test Temperature Chart

SIXTY-THREE (63) SECONDS run time chart for units less than 1550 Watts cooking power

Fahrenheit

Celsius

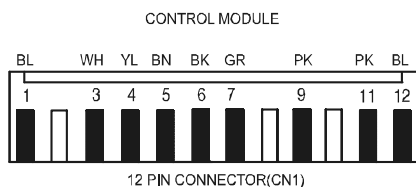
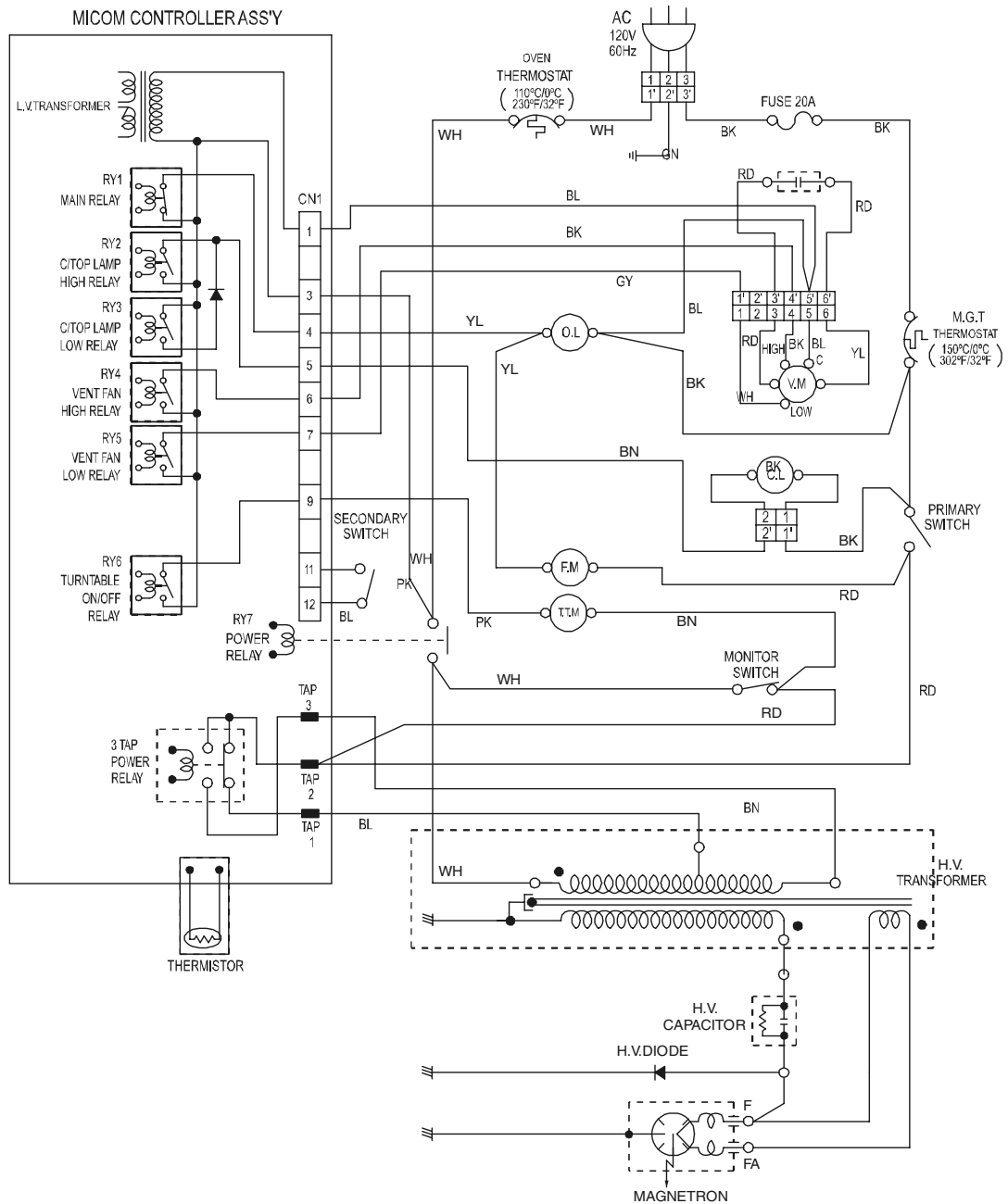
ΔT (°F)	Cooking Power Output	ΔT (°F)	Cooking Power Output	ΔT (°C)	Cooking Power Output	ΔT (°C)	Cooking Power Output
16	620	23	891	7	490	15	1050
17	659	24	930	8	560	16	1120
18	697	25	969	9	630	17	1190
19	736	26	1007	10	700	18	1260
20	775	27	1046	11	770	19	1330
21	814	28	1085	12	840	20	1400
22	852	29	1124	13	910	21	1470
				14	980	22	1540

Wiring Diagram and Schematic



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WIRE COLORS

SYMBOL	COLOR
WH	WHITE
BK	BLACK
RD	RED
YL	YELLOW
PK	PINK
BL	BLUE
BN	BROWN
GN	GREEN
GY	GRAY

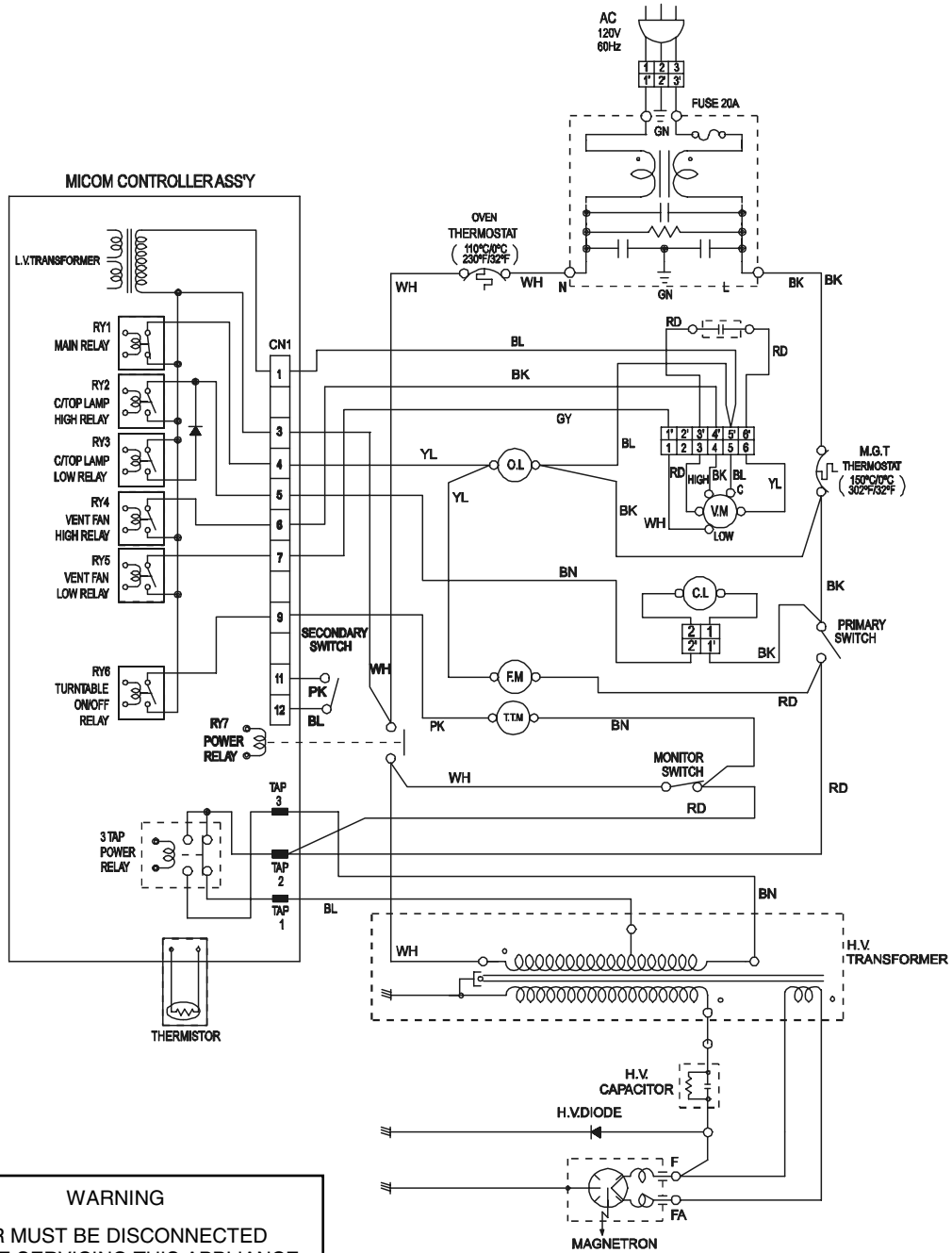
AMV4204AAB/W/Q, MMV4205AAB/W/Q/S Schematic Diagram, Series 10

Wiring Diagram and Schematic

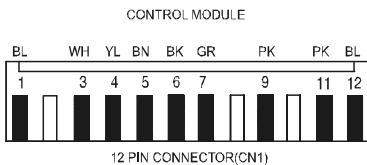


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WARNING
POWER MUST BE DISCONNECTED
BEFORE SERVICING THIS APPLIANCE



WIRE COLORS

SYMBOL	COLOR
WH	WHITE
BK	BLACK
RD	RED
YL	YELLOW
PK	PINK
BL	BLUE
BN	BROWN
GN	GREEN
GY	GRAY

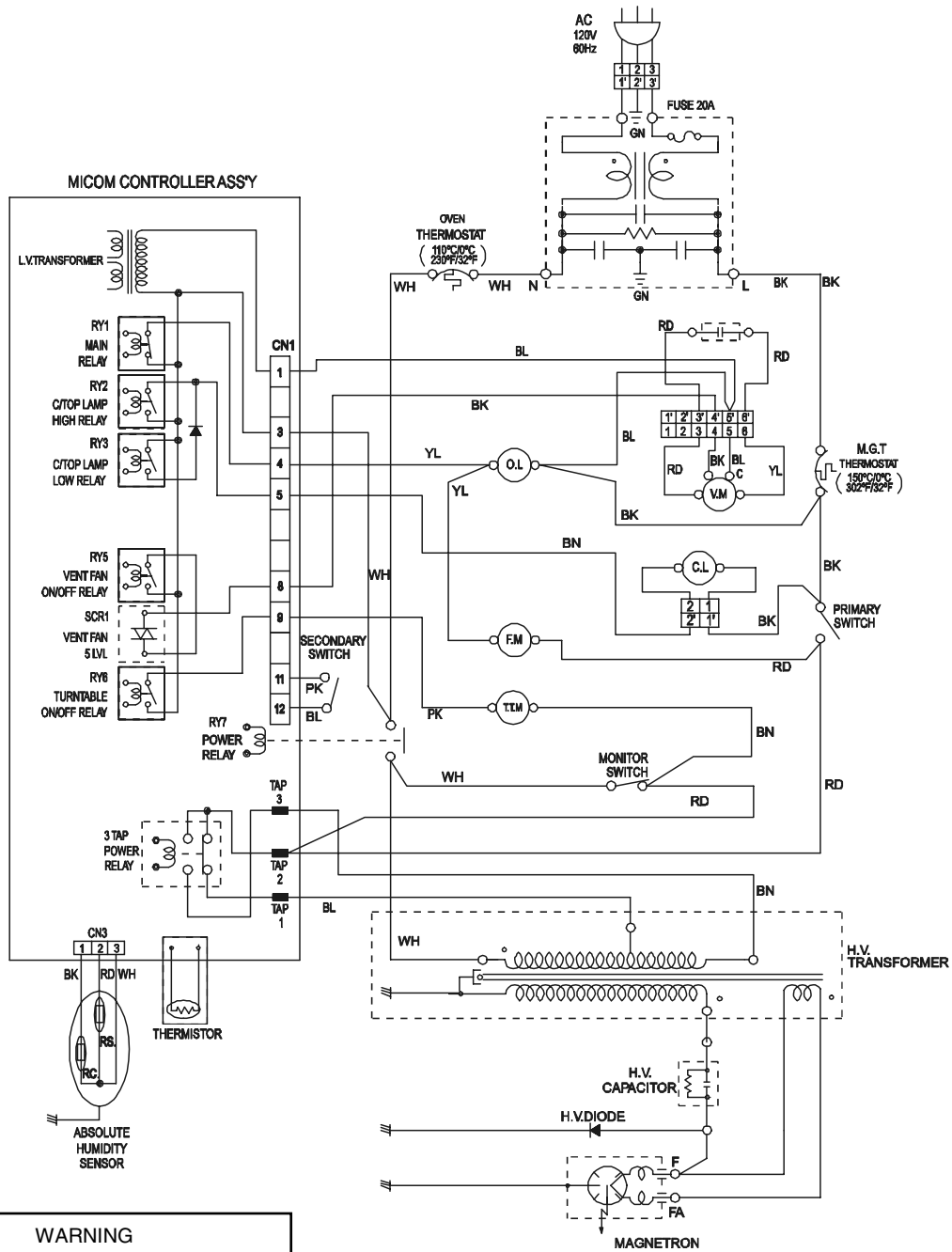
AMV4204AAB/W/Q Schematic Diagram, Series 11

Wiring Diagram and Schematic



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WARNING
POWER MUST BE DISCONNECTED BEFORE SERVICING THIS APPLIANCE

CONTROL MODULE

12 PIN CONNECTOR (CN1)

3 PIN (CN3) CONNECTOR (FOR SENSOR)

WIRE COLORS

SYMBOL	COLOR
WH	WHITE
BK	BLACK
RD	RED
YL	YELLOW
PK	PINK
BL	BLUE
BN	BROWN
GN	GREEN
GY	GRAY

MMV4205AAB/W/Q/S Schematic Diagram, Series 11