Amana Electric Wall Oven—Technical Information

AOES3030 P1132347N, P1132354N, P1132374N, P1132379N

AOCS3040 P1132348N, P1132353N, P1132372N, P1132375N, P1132378N

- 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 16021875 for detailed installation, operating, testing, troubleshooting, and disassembly instructions.
- This technical sheet replaces RT2520001 Rev. 2.

⚠ CAUTION

All safety information must be followed as provided in Service Manual 16021875.

⚠ WARNING

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

Models	AOES3030	AOCS3040
Power Source		
Electrical rating	240 VAC 5.2 kW 120/208 VAC 3.95 KW	240 VAC 5.2 kW 120/208 VAC 3.95 KW
Amperage	30 Amp max.	30 Amp max.
Frequency	60 Hz	60 Hz
Oven Wattage @ 240 V		
Convection		2,200 / 1650
Bake	2,000 / 1733	2,000 / 1733
Broil	3,000 / 2253	3,000 / 2253
Oven Interior Dimensions in. (cm)		
Height	16 (41)	16 (41)
Width	23 (58)	23 (58)
Depth	18 (45.6)	16 1/2 (41.9)
Product Exterior Dimensions in. (cm)		
Height	27 1/4 (69)	27 1/4 (69)
Width of trim frame	29 3/4 (72)	29 3/4 (72)
Depth oven door closed with handle	26 1/2 (67)	26 1/2 (67)
Clearance oven door	20 (50.8)	20 (50.8)
Weight lbs. (kg)		
Approximately shipping weight	160 (72.5)	170 (77.1)
Unit Features		
Touchmatic® electronic oven control	X	X
Pivotal control panel	X	X
Exclusive Insta-Broil™ broiling system	X	X
Concealed bake element	X	X
Spillsaver™ oven bottom	X	X
Removable counterbalanced glass oven door with extra-large viewing window	X	X
Interior oven light	X	X
Automatic oven door latch	X	X
Porcelain broiler pan and grid	X	X
Heavy duty oven racks with six positions	Two racks	Four racks
Slo-Cook™ Rack	—	X
Convection broiling rack	—	X
Multi-Mode™ convection cooking system	—	X

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Component Testing Procedures

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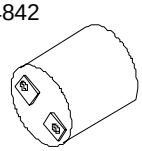
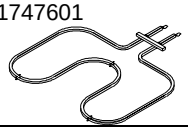
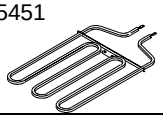
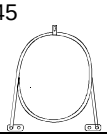
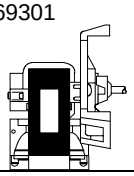
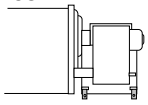
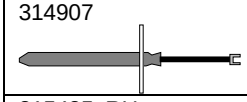
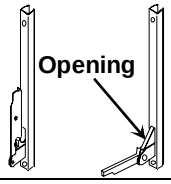
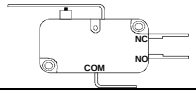
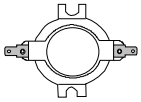
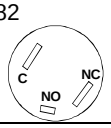
Illustration	Component	Test Procedure	Results
314842 	Oven light socket	Test continuity of receptacle terminals. Measure voltage at oven light.	Indicates continuity with bulb screwed in. 120 VAC, see wiring diagram for terminal identification. If no voltage is present at oven light check wiring.
31747601 	Bake element	Test continuity of terminals. Test voltage to terminals.	Indicates continuity. 240 / 208 VAC
315451 	Broil element	Test continuity of terminals. Test voltage to terminals.	Indicates continuity. 240 / 208 VAC
305245 	Convection element	Test continuity of terminals. Test voltage to terminals.	Indicates continuity. 240 / 208 VAC
31769301 	Convection motor fan	Verify supply voltage. Check continuity of terminals, and verify terminals are not shorted to chassis.	120 VAC Continuity **Convection fan will stay ON, when oven door is opened.**
315453 	Blower motor	Verify supply voltage. Check continuity of terminals, and verify terminals are not shorted to chassis.	120 VAC Continuity
314907 	Temperature sensor	Measure resistance.	Approximately 1100 Ω at room temperature 75◦F.
315425–RH 315426–LH 	Hinge	Carefully open the hinge fully, and insert a wooden dowel or screwdriver bit into opening. Remove top and bottom screws securing hinge. Slide hinge top towards rear of unit and guide hinge out through frame opening or storage drawer.	**⚠ CAUTION** Do not place hands in hinge area when oven door is removed. Hinge can snap closed and pinch hands or fingers.
309430 	Door lock switch	Switch connection in following positions: Unlocked Locked	 COM-NO=Open, COM-NC=Closed COM-NO=Closed, COM-NC=Open
	Controls	Verify proper operation. 31–308417–02–0 Fan control 31–31933001–0 Fan control 31–31751801–0 Control limit	 Open at 115°F, Closes at 155°F Open at 260°F, Closes at 220°F
316882 	Door plunger switch	Remove switch from unit and measure the following points: C-NC C NO	 Plunger in infinite, Plunger out continuity. Plunger in continuity, Plunger out infinite.

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Component Testing Information

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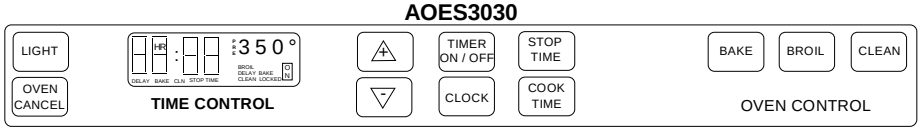
ERC mylar Touchmatic® system

AOES3030



AOCS3040

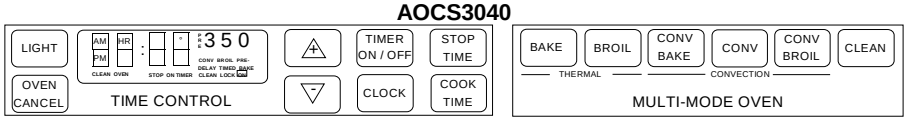


Illustration	Component	Test Procedure	Results
See illustrations above.	Touchmatic® system ERC4800	**F1** - Control malfunction. **F2** - Oven over temperature. **F3** - Open sensor or sensor circuit. **F4** - Shorted sensor or sensor circuit. **F7** - Shorted input key. **F9** - Door lock or door lock circuitry malfunction. **FF** - door lock circuitry malfunction at clean temperature. **DOOR** - Lock status is not sensed within 90 seconds of energizing door lock relay.	Replace ERC. Check sensor wiring, sensor, and temperature limiter. Check sensor resistance and wiring. Check sensor resistance and wiring. Verify mylar connection to ERC. Check latch switch, door frame switch. Check latch switch and door motor. Verify operation of door latch switches.
ERC4800 Controlled	Oven temperature adjustment	Press ***BAKE***. Press + slew pad until an oven temperature greater than 500° shows on display. Immediately press and hold ***BAKE*** until “00” appears in display, approximately 5 seconds. To decrease oven temperature (for a cooler oven), press - slew pad until negative numbers appear. Oven can be adjusted from -5 to -35 degrees lower. To avoid overadjusting oven move temperature -5 degrees each time. To increase oven temperature (for warmer oven), press + slew pad until positive numbers appear. Oven can be adjusted 5 to 35 degrees higher. To avoid overadjusting oven move temperature 5 degrees each time. Press ***OVEN CANCEL***. Temperature adjustment will be retained even through power failure.	While increasing or decreasing oven temperature, this does not affect self-cleaning temperature.
ERC4800 Controlled	Twelve hour off	Control will automatically cancel any cooking operation and remove all relay drives 12 hours after the last pad touch.	

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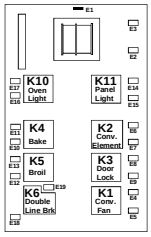
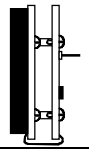
Illustration	Component	Test Procedure	Results
ERC4800 Controlled	Child lock out	This is a safety feature that can be used to prevent children from accidentally programming the oven. It disables the electronic oven control. Press and hold ***Bake*** and ***Cook Time*** for 10 seconds. **"OFF"** will display where the temperature normally appears. To reactivate the control, press and hold ***Bake*** and ***Cook Time*** for 10 seconds. Child lockout features must be reset after a power failure.	
309305 	Transformer relay board	Listen for relay to actuate. Verify input and output power.	If relay does not actuate, verify power to relay.
	ERC/p.c. board assembly	**F1** - Control malfunction.	Replace ERC.

"Quick Test" Mode for Electronic Range Control

Follow procedure below to use the quick test mode. Entries must be made within 32 seconds of each other or the control will exit the quick test mode. The quick test mode cannot be reactivated until power is disconnected from oven, and must be accessed within 5 minutes of powering up.

NOTE: To enter Quick Test mode, this **must** be the first key pad entered after power is applied.

1. Apply power to oven **press and hold** *COOK TIME* pad for 5 seconds.
2. Display will read the following:

Pad	Response
CLEAN	Double Line Break (DLB) on and door lock status code displayed
BAKE	DLB and Bake on
CONV. BAKE	DLB, Bake and Conv Fan on
CONVECTION	DLB, Conv. Element and Fan on
BROIL	DLB and Broil on
CONV. BROIL	DLB, Broil and Conv. Fan on
STOP TIME	Panel light and beeper on
COOK TIME	Displays manufactures code and sensor readings
TIMER	Displays dashes
CLOCK	All display segments illuminated
OVEN LIGHT	Oven light on
PANEL LIGHT	Panel light and beeper on
CANCEL	Exit Quicktest
SLEW	Sequences through display segments

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Component Testing Information

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Field Selectable Options

Standard: The standard setup is 8. This is a 12 hour type of clock, 60 Hz line frequency and an oven with a convection fan.

Clock Time Format 12 or 24 hour format

The time of day and the stop time can be displayed in either a 12 or 24 hour format. The control will come in a 12 hour format and can be changed to a 24 hour format from the front control panel.

Clock Time Base 60 or 50 Hz input line frequency

This is a time reference for the clock, timer, and internal timing of the control. The control will select the frequency automatically when the control is powered up.

Selecting Options

In order to select the field selectable options, Press and hold the ***CLOCK*** pad on power up of the control. To change the options press one of the slew pads until the desired option appears and in approximately 9 seconds the control will change to the normal operation or once selected press the ***CANCEL*** pad. The right time digit will indicate the current options selected as listed in the table below. (Standard setting is 8.)

Code Number	24 Hour Clock	50 Hz	No Convection Fan
8	—	—	—
9	X	—	—
H	—	X	—
r	X	X	—
o	—	—	X
d	X	—	X
_	—	X	X
Blank	X	X	X

X = indicates Selected — = indicates Not Selected

Element Conditions

Relay drive requirements are defined as a percentage of on time based on a 60 second cycle.

Bake .....First rise to temperature = 100% bake, 50% broil, then 100% bake, 25% broil
Broil.....100% broil, 0% bake
Clean .....100% broil, 25% bake
Convection .....First rise to temperature = 100% bake, 50% broil, then 100% Convection element
For convection bake or convection broil refer to bake and broil specifications

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Component Testing Procedures

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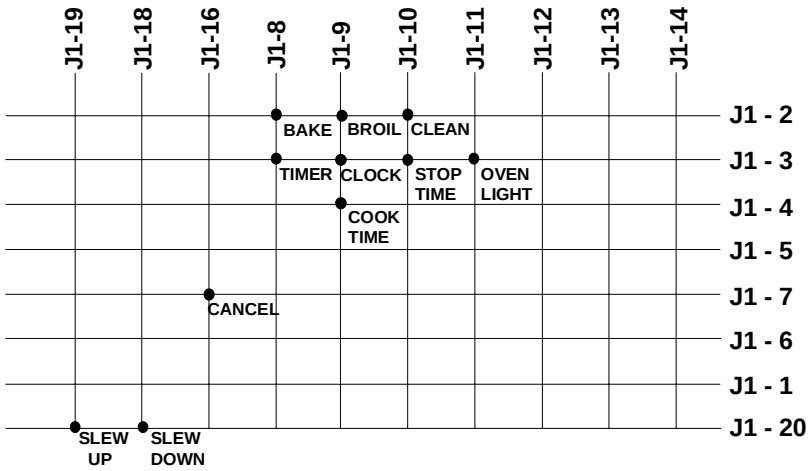
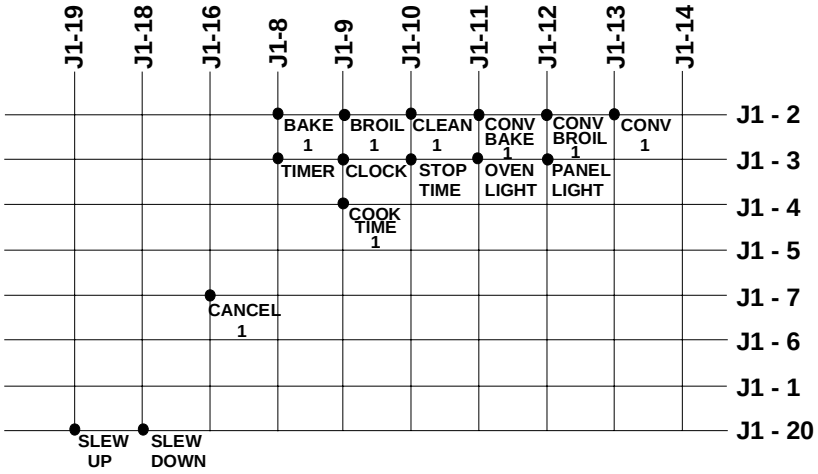
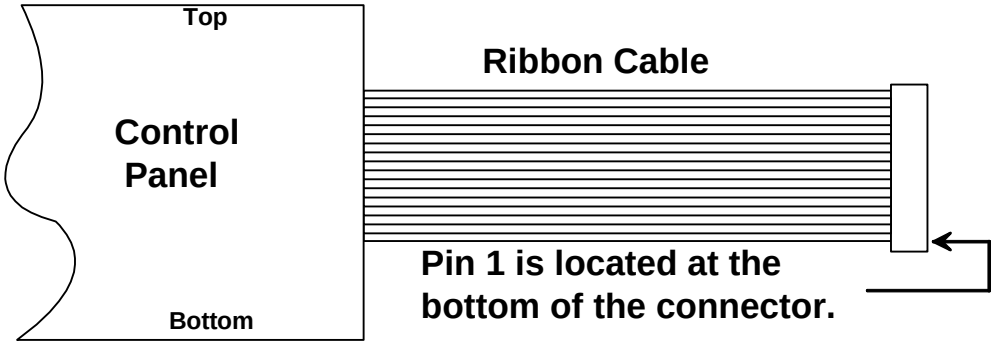
Continuity is indicated as 100Ω and below. Each pad must be pressed to perform the following test.



Switch Matrix for AOES3030



Switch Matrix for AOCS3040



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Wiring Diagram and Schematic

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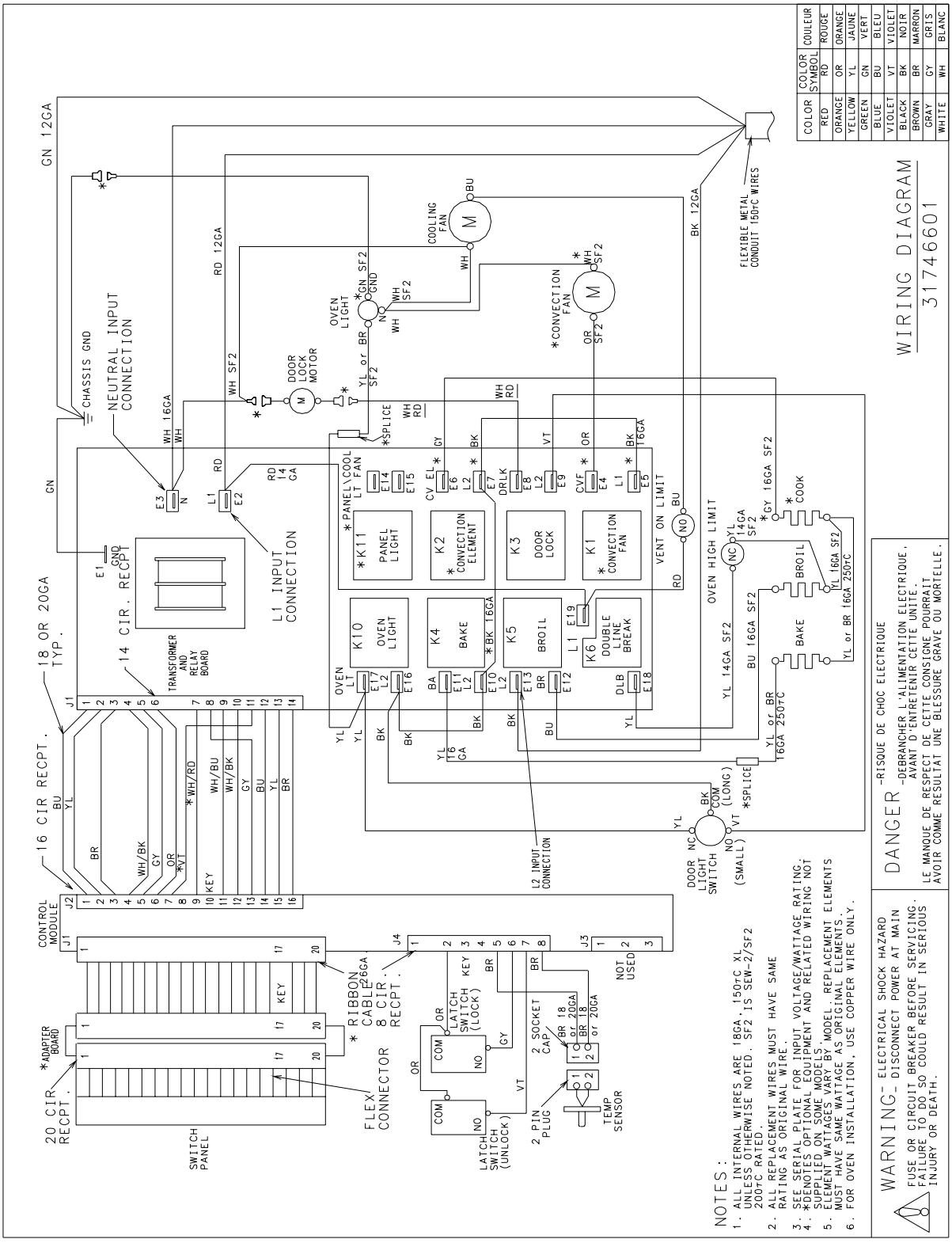

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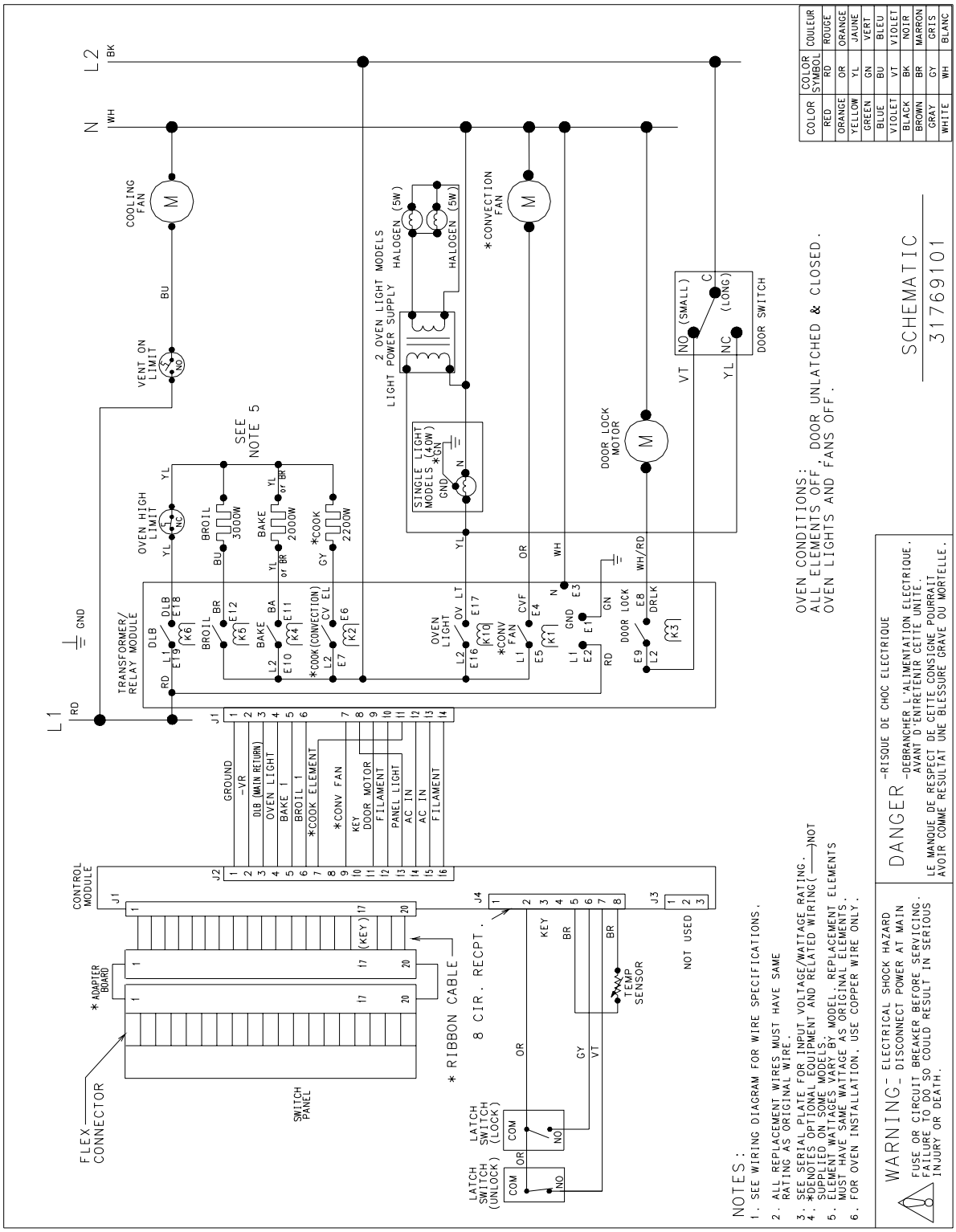

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