

⚠ WARNING Electrical Shock Hazard

Death or serious injury can result from failure to follow these instructions.

- Service by a qualified service technician only.
- Disconnect power before servicing this product.
- Reconnect all grounding devices after service.
- Replace all parts and panels before operating.

Technical Data

⚠ WARNING Service Technicians Only

Service Diagnostic Functions

Entering Service Diagnostics

Capacitive Touch....For Autofill Units: Water, Ice, Autofill....For Kcup Units: Water, Ice, Light

Non-dispenser enter with Icemaker + Lock Controls

All other models enter with Water + Crushed + Cubed

The display will show 00 in the FZ temperature display and 00 in the FF temperature display.

All the components will turn off. 3-way valve will go home, dampers will go to closed position and temperature display shows 00 in each

in each of the FZ and FF displays. LCD Display: Use the up and down buttons on the right to increment the 1's place to select the desired test.

Press any key other than the temp adjust keys to run test. The test mode must be selected within 5 minutes of entering the diagnostic mode or it will time-out, normal refrigerator operation will resume. Once a test mode is selected, the display will show the results of the mode selected.

Run test 0016 to exit diagnostics and return to normal operation. The control will reset to normal operation if power is cycled.

Sabbath mode (to enter and exit):

Internal Water Models... simultaneously press: Door Alarm and Ice Maker buttons for 3 seconds

Capacitive Touch models... simultaneously press: Lock and Light for 3 seconds

Single Serve Capacitive Touch Models... simultaneously press: Door Alarm and Light for 3 seconds

LCD Models... simultaneously press: Lock Controls and Light for 3 seconds

Demo Mode (to enter and exit):

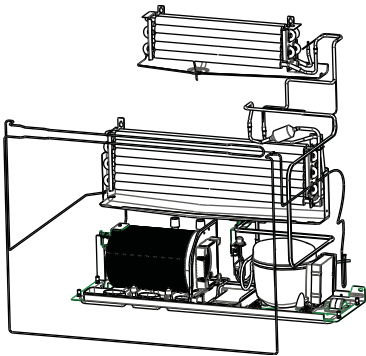
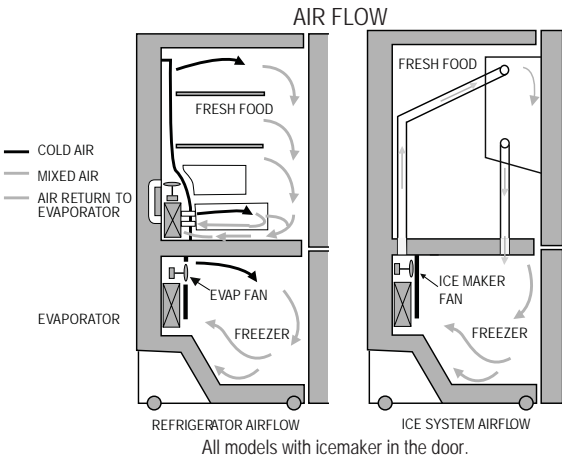
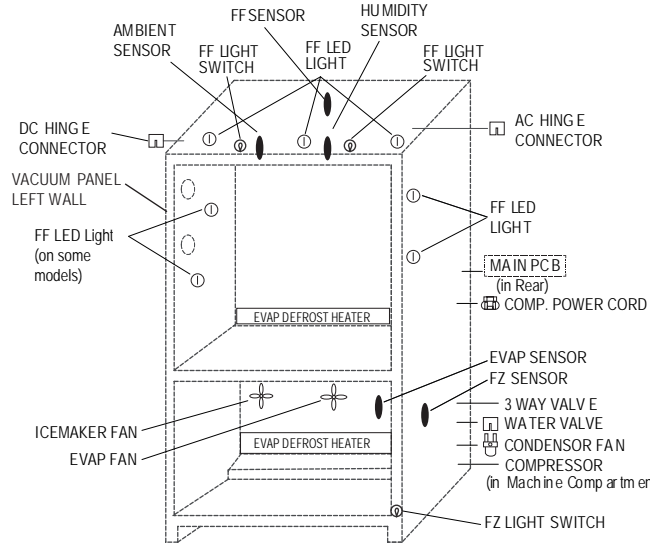
Internal Water Models... Enter: simultaneously press: Control Lock and Reset Filter for 3 seconds... Exit: Unplug and reset unit

Capacitive Touch... simultaneously press: Freezer, Fridge, and Crushed or Freezer, Fridge, and Autofill for 3 seconds

Single Serve Capacitive Touch Models... simultaneously press: Fridge, Ice, and Start Heating for 3 seconds

LCD models... simultaneously press: Lock Controls and Precise Fill for 3 seconds

ELECTRICAL SPECIFICATIONS	PFE28/ PFD28	DFE29/ GFE29	GYE22/ PYE22/ PYD22	GYE29/ GNE26	GFE26/ DFE28/ GFE28/ GFD28/ GFE27/	CYE28	CYE22	CWE23/ PWE23/ ZWE23
REFRIGERANT CHARGE (134a), oz	5.375	5.5	5.25	5.25	5.50	5.375	5.25	5.375
Thermistor kilo-ohm resistance @ 32 °F	16.3							
Over Temperature Thermostat	140 °F							
Adaptive Defrost Control Fresh Food	32 hrs							
Adaptive Defrost Control Freezer	96 hrs							
Electrical Rating: 115VAC, 60Hz	9.5 Amp	9.5 Amp	9.5 Amp	9.5 Amp	9.5 Amp	12 Amp	12 Amp	9.5 Amp
NO LOAD PERFORMANCE								
Control Position 37/0 and Ambient of 65°F to 90°F								
Run Time, % @ 65°F	30 to 55							
Run Time, % @ 90°F	55 to 95							
MODEL STATIC PRESSURES @, PSIG	55°F	70°F	90°F					
29/28/26/23/22 Single Speed	34.8	48.3	60.3					



Group	Display	Failure Code Definition
Thermistors (1 – 99)	0 0 0 1	FF Thermistor reading out of range
	0 0 0 2	N/A
	0 0 0 3	FZ Thermistor reading out of range
	0 0 0 4	FZ Evaporator Thermistor reading out of range
	0 0 0 5	Electronic Deli Pan Thermistor reading out of range
	0 0 0 6	FF Evaporator Thermistor reading out of range
	0 0 0 7	N/A
	0 0 0 8	Ambient Temperature Thermistor reading out of range
	0 0 0 9	Ambient Humidity Sensor reading out of range
	0 0 1 0	FZ Icemaker Thermistor reading out of range (if applicable)
	0 0 1 1	N/A
	0 0 1 2	N/A
Fans (100 – 199)	0 1 0 0	FZ Fan Feedback Missing when Fan is running
	0 1 0 1	FZ Fan Feedback Present when Fan is off.
	0 1 0 2	FZ Fan cannot reach target speed.
	0 1 0 3	Condenser Fan Feedback Missing when Fan is running.
	0 1 0 4	Condenser Fan Feedback Present when Fan is off.
	0 1 0 5	Condenser Fan cannot reach target speed.
	0 1 0 6	FF Fan Feedback Missing when Fan is running.
	0 1 0 7	FF Fan Feedback Present when Fan is off.
	0 1 0 8	FF Fan cannot reach target speed.
	0 1 0 9	Ice Box Fan Feedback Missing when Fan is running.
	0 1 1 0	Ice Box Fan Feedback Present when Fan is off.
	0 1 1 1	Ice Box Fan cannot reach target speed.
	0 1 1 2	Deli Pan Fan Feedback Missing when Fan is running.
	0 1 1 3	Deli Pan Fan Feedback Present when Fan is off.
	0 1 1 4	Deli Pan Fan cannot reach target speed.
Defrost System (200-299)	0 2 0 0	FZ Defrost Heater timed out (check FZ Evap thermistor fault code 0004)
	0 2 0 1	FF Defrost Heater timed out (check FF Evap thermistor fault code 0006)
	0 2 0 2	5 consecutive FZ extended defrosts.
	0 2 0 3	5 consecutive FF extended defrosts.
	0 2 0 4	5 consecutive FZ extended defrosts.
Sealed System (300-399)	0 3 0 0	N/A
	0 3 0 1	Temperature satisfied > 3 hours (no compressor operation)
	0 3 0 2	N/A
	0 3 0 3	FF Temp Exceeds > 55 F.
	0 3 0 4	FZ Temp Exceeds > 25 F.
	0 3 0 5	N/A
	0 3 0 6	N/A
	0 3 0 7	N/A
Main Board (400 - 499)	0 4 0 0	N/A
	0 4 0 1	N/A
	0 4 0 2	N/A
	0 4 0 3	Mainboard Software Fault
	0 4 0 4	N/A
Door Board Failure Codes (500-599)	0 5 0 0	Can't reach Target Hot Water Temp.
	0 5 0 1	Flow meter - no signal received during dispense.
	0 5 0 2	Flow meter signal received with no water dispensing.
	0 5 0 3	Paddle switch pressed > 7 minutes
	0 5 0 4	Hot water tank not full while heating
	0 5 0 5	N/A
	0 5 0 6	N/A
	0 5 0 7	Check Paddle switch and wiring
	0 5 0 8	Check Paddle switch and wiring
	0 5 0 9	Check Hot water T&P switch and wiring
	0 5 1 0	Check Hot water T&P switch and wiring
	0 5 1 1	FF IM Thermistor reading out of range.
	0 5 1 2	Ice Box Thermistor reading out of range.
	0 5 1 3	HotWater Thermistor reading out of range.
	0 5 1 4	HotWater Thermistor reading out of range.
	0 5 1 5	Door board Hardware fault
	0 5 1 6	Hot Water tank Fault
	0 5 1 7	Door board Hardware fault
	0 5 1 8	Low Flow Rate, Hot Water Disabled
	0 5 1 9	N/A
	0 5 2 0	HW Max Fill Time Out Hot water disabled
	0 5 2 1	HW Max Dispense Time Out Hot water disabled
	0 5 2 2	HW Max Purge Time Out Hot water disabled
	0 5 2 3	Feature Board communication error
	0 5 2 4	Dispense nozzle movement error
	0 5 2 5	Brew Module not detected during brew
	0 5 2 6	High flow during brewing
	0 5 2 7	Low flow during brewing
	0 5 2 8	Feature board hardware fault
	0 5 2 9	Feature board hardware fault

FZ Display	FF Display	Mode	Comments
00	00	Show Fault Codes	
00	01	Clear Fault Codes	Clear all fault codes after repairs are completed.
00	02	Dispenser Self-Test Mode	Turns on all LEDs and 7 Segments on the Dispenser board for testing
00	06	COM Version	Return the Com Version (Only on LCD Models)
00	07	Degrees C Mode	Changes the System to be Degrees C
00	08	Degrees F Mode	Changes the System to be Degrees F
00	14	Force FF and FZ Defrost	Starts a FF and FZ Defrost
00	15	Exits all Defrost	Forces the Heated Defrost to the Idle State
00	16	EXIT SERVICE MODE	Resets all boards in the system
00	17	Door Board Version Test	Confirm UI communication this board
00	18	Dispenser Version Test	
00	19	Deli Pan Version Test	
00	20	Internal Temp Version Test	
00	21	Wifi Module Version Test	
00	22	AutoFill Version Test	
00	23	Mainboard Version Test	Display unfiltered thermistor temperature (display of 300 or -41 indicates open/shorted or not present) Example: 10 27 = 10.27 deg
00	24	FF1 Thermistor Test	
00	25	FF2 Thermistor Test	
00	26	FF Evaporator Thermistor Test	
00	27	FZ Cabinet Thermistor Test	
00	28	FZ Evaporator Thermistor Test	
00	29	Ambient Temp Test	Displays current humidity
00	30	Deli Pan Thermistor Test	
00	31	FZ Ice Mold Body Thermistor Test	
00	36	FF Door Ice Mold Body Thermistor Test	
00	37	FF Door Ice Cabinet Thermistor Test	
00	38	Hot Water 1 Thermistor Test	
00	39	Hot Water 2 Thermistor Test	Opens the Duct Door for 10 seconds and then closes it
00	40	Humidity Sensor Test	
00	43	Cycle Duct Door	
00	44	Cycle FF Damper	
00	46	Cycle Deli Damper	

Group	Display	Failure Code Definition
Ice Maker (600-699)	0 6 0 0	N/A
	0 6 0 1	FF IM Harvest Extended >10 mins.
	0 6 0 2	FF IM Harvest Extended 3 out of 10 harvests
	0 6 0 3	FF IM Harvest Not Completed after 30 mins.
	0 6 0 4	FF IM No water supply detected
	0 6 0 5	FF IM continues to sense bucket full after ice dispense.
	0 6 0 6	FF IM Moldheater not heating
	0 6 0 7	N/A
	0 6 0 8	N/A
	0 6 0 9	FF IM Harvest Extended >10 mins.
	0 6 1 0	FF IM Harvest Extended 3 out of 10 harvests
	0 6 1 1	FF IM Harvest Not Completed after 30 mins.
	0 6 1 2	FF IM No water supply detected
	0 6 1 3	FF IM Moldheater not heating
	0 6 1 4	FF IM Moldheater not heating
	0 6 1 5	100 FF Left Door Openings in the last 24 hours.
	0 6 1 6	100 FF Right Door Openings in the last 24 hours.
	0 6 1 7	FZ Door open for 15 minutes continuously
External Interaction (700 thru 799)	0 7 0 0	Stuck keys on Dispenser Boards
	0 7 0 1	Stuck Keys on Internal Temp Board
	0 7 0 2	Stuck Keys on Deli Pan
	0 7 0 3	Key Press on Temp Board while Door Closed
	0 7 0 4	Key Pressed on Deli Pan Board while Door Closed
	0 7 0 5	Dispenser Board Auto Fill Error
	0 7 0 6	Dispenser Board Auto Fill Error
	0 7 0 7	Dispenser Board Error
	0 7 0 8	Dispenser Board Error
	0 7 0 9	Check Paddle switch and wiring
	0 7 1 0	Check Paddle switch and wiring
	0 7 1 1	Check Hot water T&P switch and wiring
	0 7 1 2	Check Hot water T&P switch and wiring
	0 7 1 3	FF Door open for 15 minutes continuously.
	0 7 1 4	FF Door open for 60 mins. total in the last 24 hours
	0 7 1 5	100 FF Left Door Openings in the last 24 hours.
	0 7 1 6	100 FF Right Door Openings in the last 24 hours.
	0 7 1 7	FZ Door open for 15 minutes continuously
RFID (800-899)	0 8 0 0	RFID board hardware failure/ check filter and filter orientation
	0 8 0 1	RFID board failed to respond to MB
	0 8 0 2	RFID board not detecting filter tag/ check filter and filter orientation
	0 8 0 3	RFID filter authentication failed / check filter and filter orientation

FZ Display	FF Display	Mode	Comments
00	47	FF Fan Test	Turns the Fan on 75% duty cycle and returns the RPM
00	48	FZ Fan Test	
00	49	Condenser Fan Test	
00	50	Ice Box Fan Test	
00	51	Deli Fan Test	Turns on the load.
00	53	FF Defrost Heater Test	
00	54	Deli pan/QC heater Test (30 sec max)	
00	55	Isolation Valve Test	
00	56	Ice Port Heater Test	
00	58	FZ Icemaker Water Valve Test	
00	59	FZ Icemaker Rake Motor Test	
00	60	FZ Defrost heater Test	
00	61	Compressor Relay Test	
00	64	FZ Icemaker Fill Tube Heater Test	
00	65	FF Door Icemaker Water Valve Test	Returns the Input Satus (0 = Closed, 1 = Open)
00	66	FF Door Icemaker Rake Motor Test	
00	67	FF Door Hot Water Valve Test	
00	68	FF Door Water Valve Test	
00	69	Hot Water heater Test (5 sec max) Note: Half power for single serve.	Returns the Input Status (0 = not home, 1 = home)
00	70	Read Left FF Door Status	
00	71	Read Right FF Door Status	
00	72	Read FZ Door Status	
00	73	Internal Dispense Switch Status	Returns the Input Status (0 = not Full, 1 = Full)
00	74	Read FZ Icemaker Rake Status	
00	75	Read FZ Icemaker Arm Status	
00	76	Read FF Door Icemaker Rake Status	
00	77	Read FF Door Icemaker Arm Status	Returns the Input Status (0 = not Full, 1 = Full)
00	78	Read FF Door Cold Water Cup Switch	
00	79	Read FF Door Hot Water Cup Switch	
00	80	Read FF Door Hot Water Level Switch 1	
00	81	Read FF Door Hot Water Level Switch 2	Returns the Input Status (0 = Not Full)
00	82	Read FF Door Over Current Flag 1	
00	83	Read FF Door Over Current Flag 2	
00	84	FF Door Icemaker Fill Tube Heater Test	
00	85	FF Door Recess Heater Test	Turns on the Load
00	86	Vertical Mullion Heater Test Frame Door Heater Test Mainboard Heater Test	
00	91	FF Lights Test	
00	92	FZ Lights Test	
00	93	FZ Defrost Heater Test with Feedback	Turns on FZ defrost heater displays FZ evap thermistor temperature
00	94	FF Defrost Heater Test with Feedback	
00	95	FF Cooling Test	
00	96	FZ Cooling Test	
00	97	FF Door Icemaker Heater Test	Turns on FF door IM Heater displays FF door IM mold thermistor temperature
00	98	FZ Icemaker Heater Test	
00	99	FF Door Icemaker Full Cycle Test	
01	00	FZ Icemaker Full Cycle Test	
01	01	RFID Board Version	Icemaker Full Cycle Test (similar to 3-arm press)
01	02	Feature Board Version	
01	03	Air Pump & Pod Valve Test	
01	04	Air Pump & Vent Valve Test	
01	05	Raise Dispenser Nozzle	Run motor at 100% duty cycle, raise nozzle, return pass/fail
01	06	Lower Dispenser Nozzle	
01	07	Brew Module Switch Test	
01	08	Turbo Heat Relay test	
01	09	Hot Water Bypass Valve Test	Turn on Hot Water Bypass Valve relay only

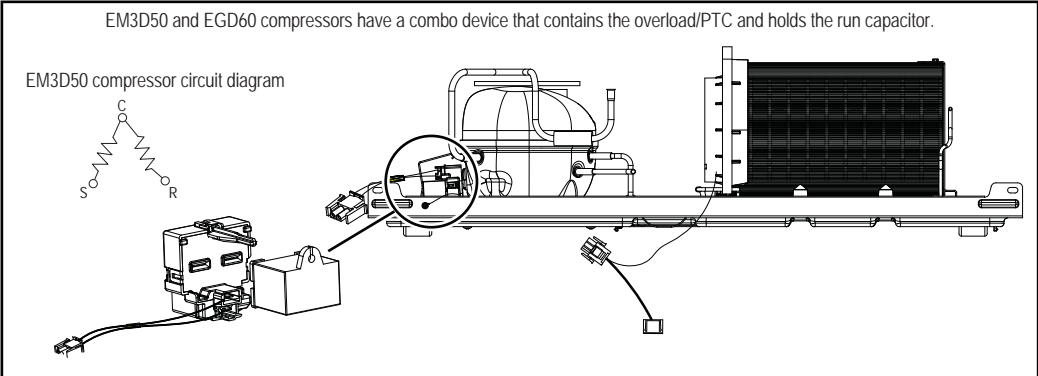
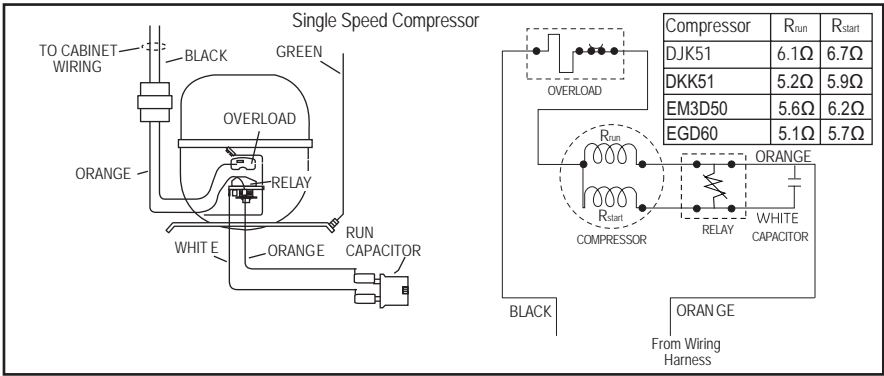
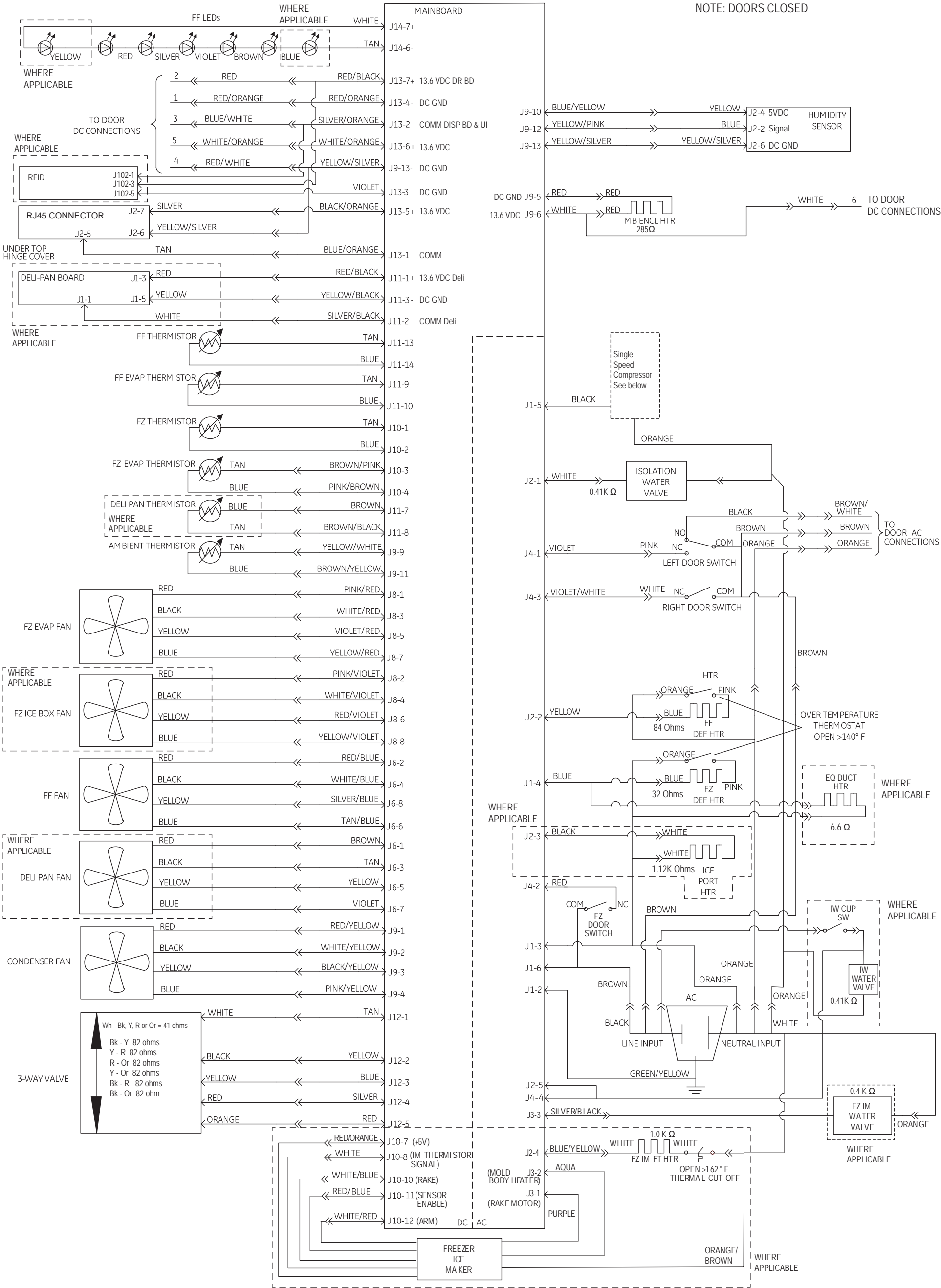
SERVICE PUB NO. 31-51962-1 GEA 07-17

CASE - Pub. No. 31-51971-1 GEA 07-17

Single Speed Models: CFE28, CWE23, CYE22, GYE22, PFE28, PWE23, PYE22, ZWE23, DFE28, DFE29, GFE26, GFE27, GFE28, GFE29, GNE26, GNE29, PFD28, PYD22, and GFD28

CABINET

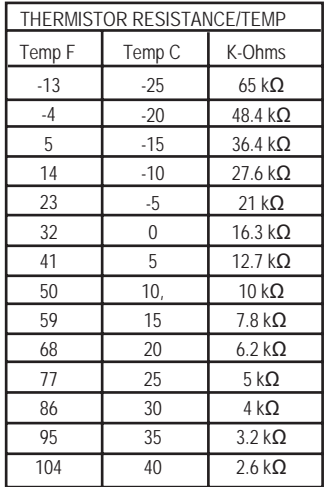
NOTE: DOORS CLOSED



DOOR



DOOR



ICE MAKER THERMISTOR RESISTANCE/TEMP		
Temp F	Temp C	K-Ohms
-40	-40	207 kΩ
35.6	2	25.37 kΩ
39.2	4	23.27 kΩ
50	10	18.07 kΩ
59	15	14.75 kΩ
68	20	12.11 kΩ
77	25	10 kΩ
176	80	1.67 kΩ

HOT WATER THERMISTOR RESISTANCE/TEMP		
Temp F	Temp C	K-Ohms
32	0	32.7 k Ω
41	5	25.4 k Ω
77	25	10 k Ω
95	35	6.5 k Ω
122	50	3.6 k Ω
149	70	2.1 k Ω
167	75	1.5 k Ω
185	85	1.07 k Ω

HUMIDITY CHART	
Humidity	Voltage
20%	1.6V
50%	2.4V
80%	3.1V

