

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

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 + Cabed
The display will show 00 in the F2 temperature display and 00 in the FF temperature display.

WARNING Service Technicians Only

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 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.

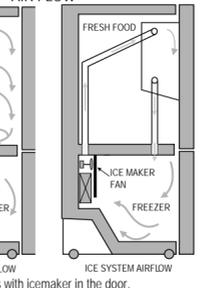
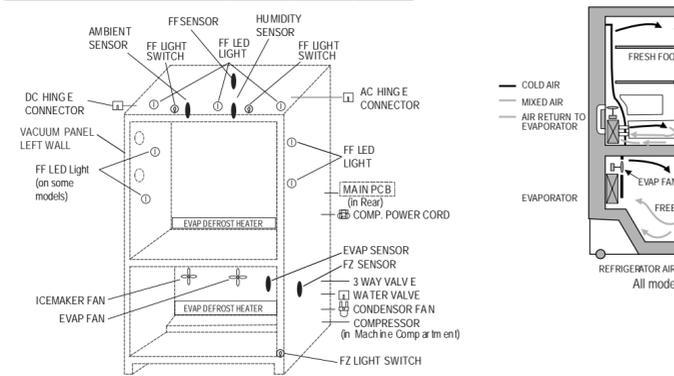
Sabbath mode (to enter and exit):

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/	DPE29/	GYE22/	GNE29/	GFE26/	CWE23/	CYE22	PWE23/
	PFD28	GFE29	PYE22/	GNE26	DPE28/	GFE28/		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					



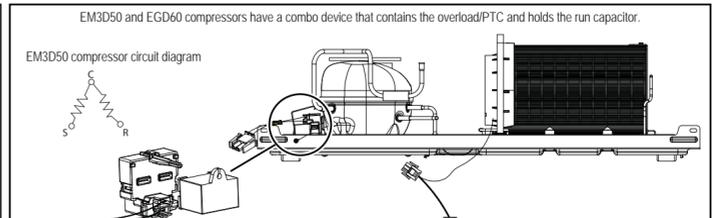
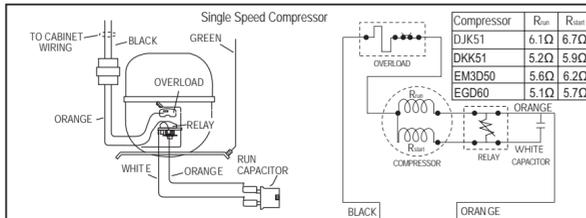
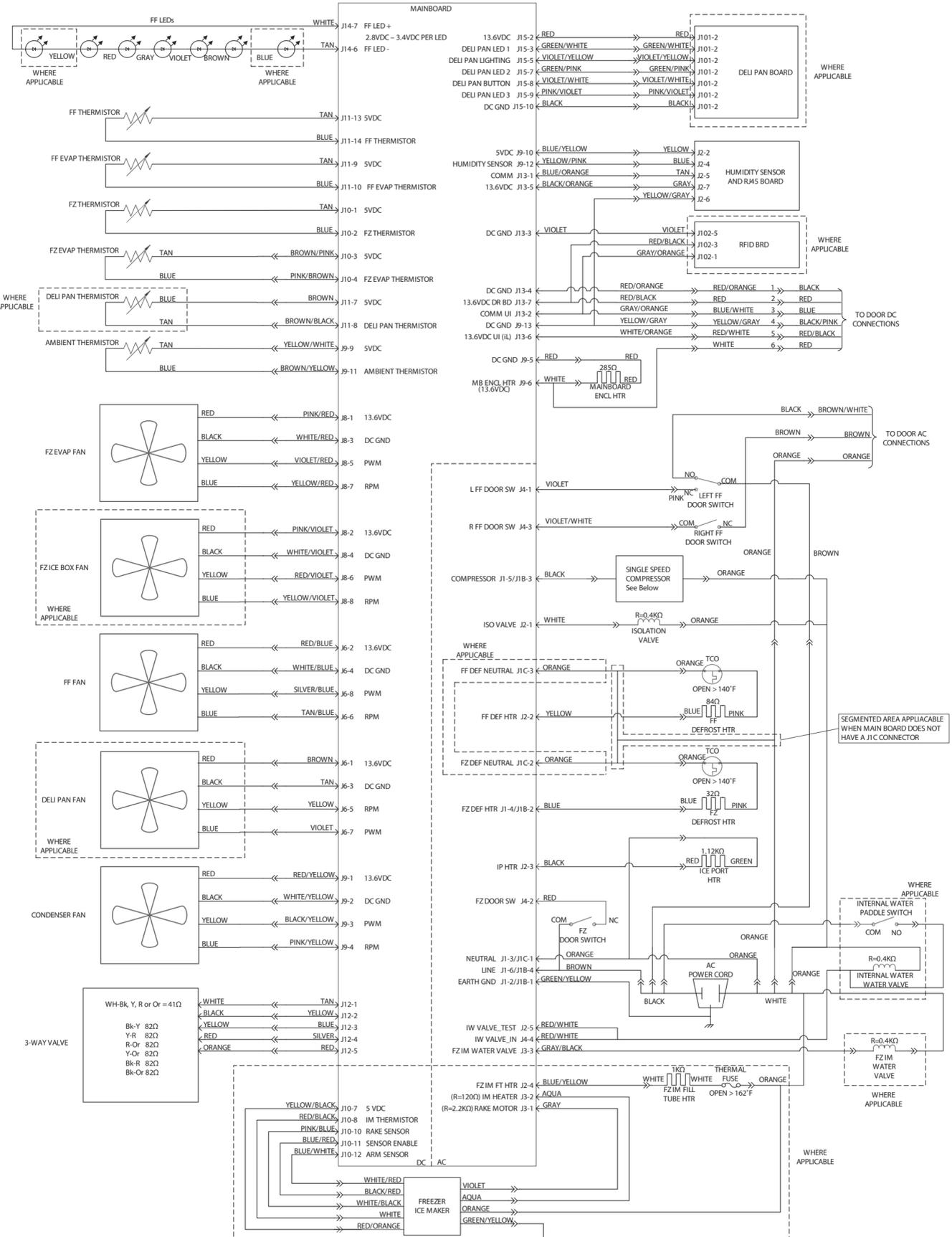
Group	Display	Failure Code Definition	
Thermistors (1-99)	00 01	FF Thermistor reading out of range	
	00 02	N/A	
	00 03	FZ Thermistor reading out of range	
	00 04	FZ Evaporator Thermistor reading out of range	
	00 05	Electronic Deli Pan Thermistor reading out of range	
	00 06	FF Evaporator Thermistor reading out of range	
	00 07	N/A	
	00 08	Ambient Temperature Thermistor reading out of range	
	00 09	Ambient Humidity Sensor reading out of range	
	00 10	FZ Ice Maker Thermistor reading out of range (if applicable)	
	00 11	N/A	
	00 12	N/A	
Fans (100-199)	01 00	FZ Fan Feedback Missing when Fan is running	
	01 01	FZ Fan Feedback Present when Fan is off.	
	01 02	FZ Fan cannot reach target speed	
	01 03	Condenser Fan Feedback Missing when Fan is running	
	01 04	Condenser Fan Feedback Present when Fan is off.	
	01 05	Condenser Fan cannot reach target speed.	
	01 06	FF Fan Feedback Missing when Fan is running.	
	01 07	FF Fan Feedback Present when Fan is off.	
	01 08	FF Fan cannot reach target speed.	
	01 09	Ice Box Fan Feedback Missing when Fan is running	
	01 10	Ice Box Fan Feedback Present when Fan is off.	
	01 11	Ice Box Fan cannot reach target speed.	
01 12	Deli Pan Fan Feedback Missing when Fan is running		
01 13	Deli Pan Fan Feedback Present when Fan is off.		
01 14	Deli Pan Fan cannot reach target speed.		
Defrost System (200-299)	02 00	FZ Defrost Heater timed out (check FZ Evap thermistor fault code 0004)	
	02 01	FF Defrost Heater timed out (check FF Evap thermistor fault code 0006)	
	02 02	5 consecutive FZ extended defrosts.	
	02 03	5 consecutive FF extended defrosts.	
	Scaled System (300-399)	03 00	N/A
		03 01	Temperature satisfied > 3 hours (no compressor operation)
		03 02	N/A
		03 03	FF Temp Exceeds > 55 F.
		03 04	FZ Temp Exceeds > 25 F.
		03 05	N/A
		03 06	N/A
		03 07	N/A
Main Board (400-499)		04 00	N/A
		04 01	N/A
		04 02	N/A
		04 03	Mainboard Software Fault
	Door Board (500-599)	05 00	Can't reach Target Hot Water Temp.
		05 01	Flow meter - no signal received during dispense.
		05 02	Flow meter signal received with no water dispensing.
		05 03	Paddle switch pressed > 7 minutes
		05 04	Hot water tank not full while heating
		05 05	N/A
		05 06	N/A
		05 07	Check Paddle switch and wiring
05 08		Check Paddle switch and wiring	
05 09		Check Hot water T&P switch and wiring	
05 10		Check Hot water T&P switch and wiring	
05 11		FF IM Thermistor reading out of range.	
05 12	Ice Box Thermistor reading out of range.		
05 13	Hot Water Thermistor reading out of range.		
05 14	Hot Water Thermistor reading out of range.		
05 15	Door board Hardware fault		
05 16	Hot Water tank Fault		
05 17	Door board Hardware fault		
05 18	Low Flow Rate, Hot Water Disabled		
05 19	N/A		
05 20	HW Max Fill Time Out Hot Water disabled		
05 21	HW Max Dispense Time Out Hot Water disabled		
05 22	HW Max Purge Time Out Hot Water disabled		
05 23	Feature Board communication error		
05 24	Dispense nozzle movement error		
05 25	Brew Module not detected during brew		
05 26	High flow during brewing		
05 27	Low flow during brewing		
05 71	Feature board hardware fault		

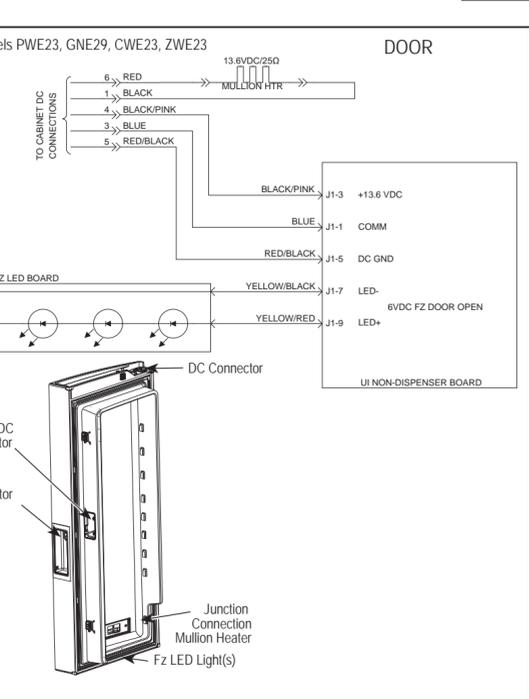
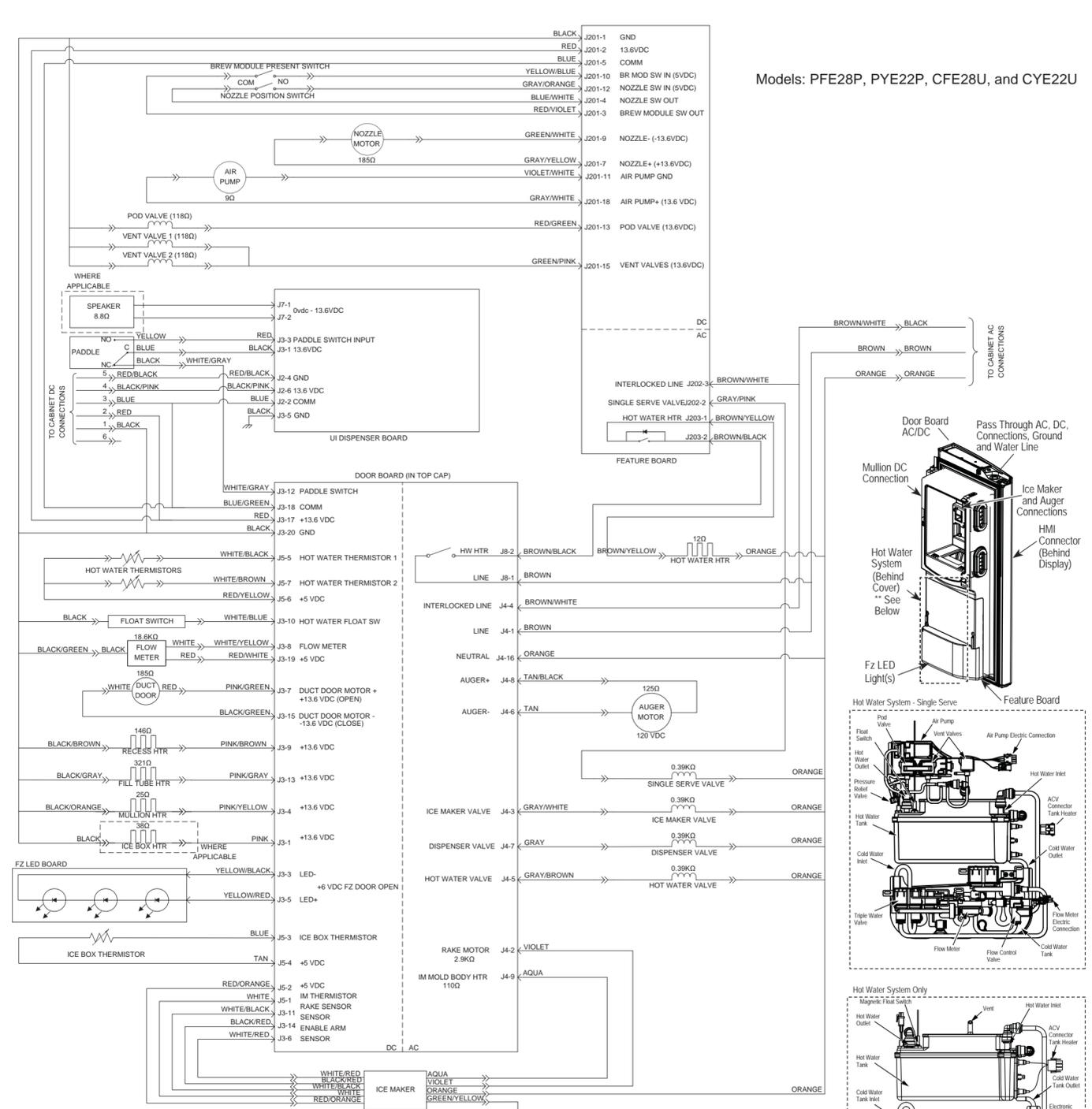
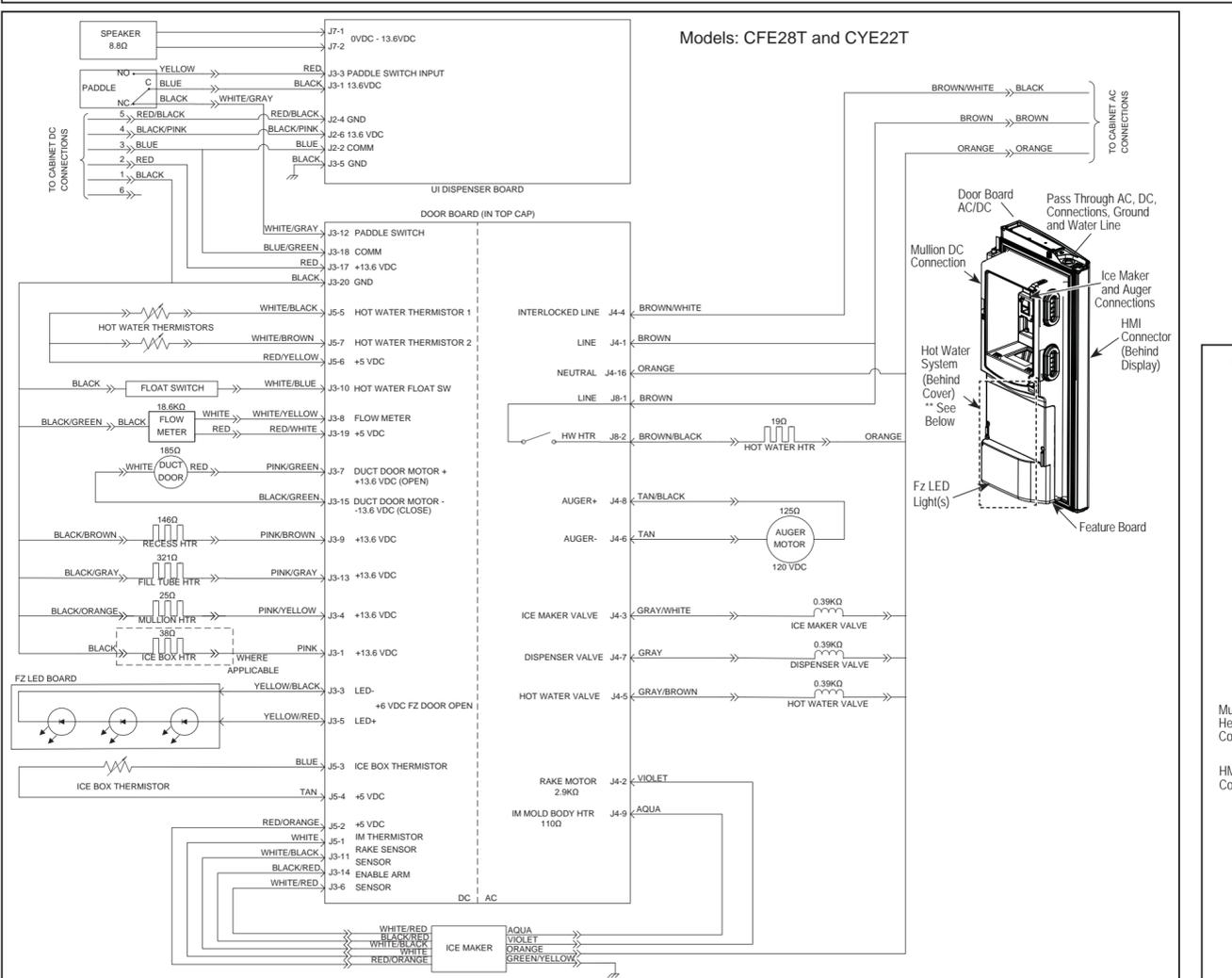
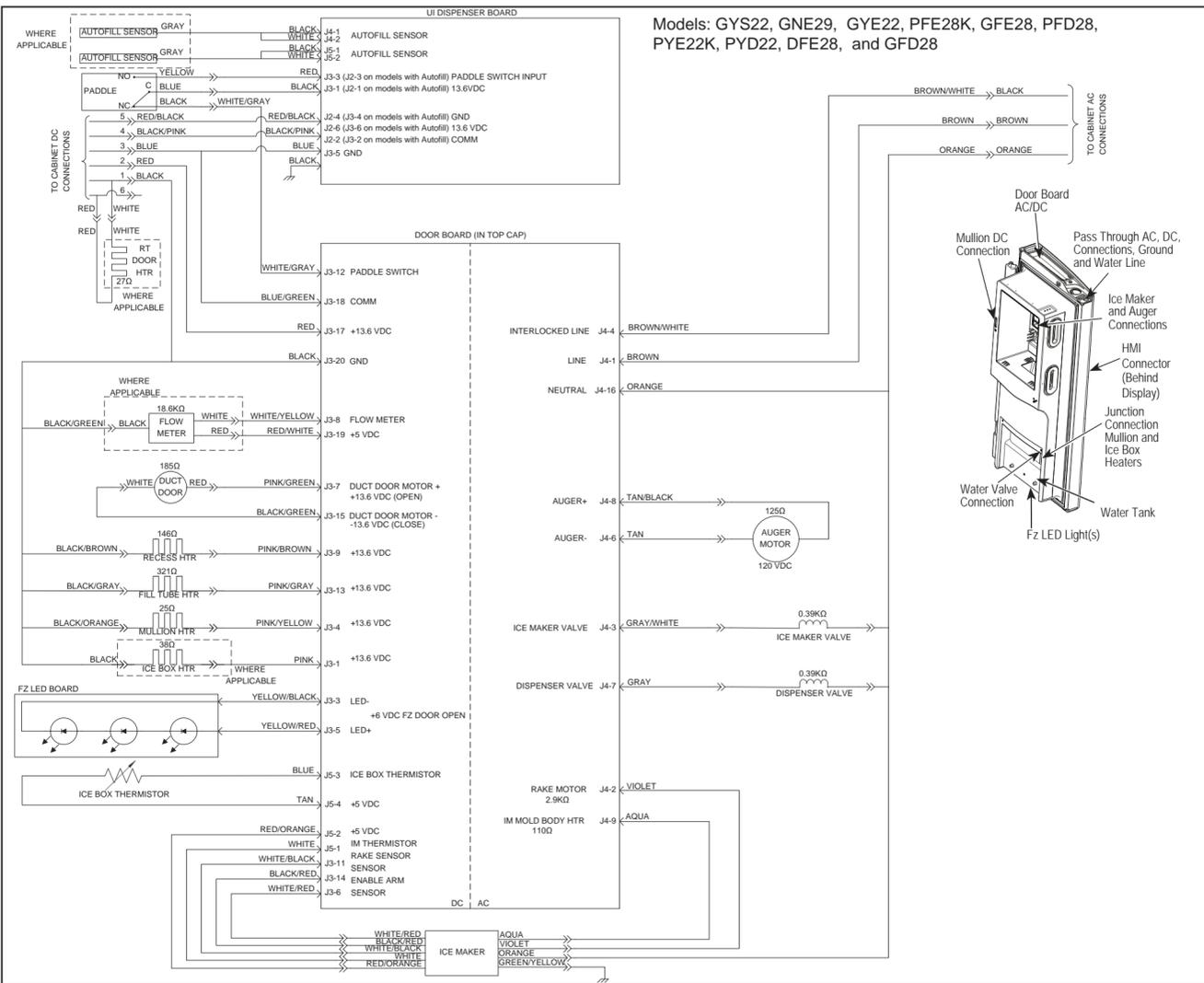
Group	Display	Failure Code Definition	
Ice Maker (600-699)	06 00	N/A	
	06 01	FF IM Harvest Extended > 10 mins.	
	06 02	FF IM Harvest Extended 3 out of 10 harvests	
	06 03	FF IM Harvest Not Completed after 30 mins.	
	06 04	FF IM No water supply detected	
	06 05	FF IM continues to sense bucket full after ice dispense.	
	06 06	FF IM Mold/Heater not heating	
	06 50	N/A	
	06 51	FZ IM Harvest Extended > 10 mins.	
	06 52	FZ IM Harvest Extended 3 out of 10 harvests	
	06 53	FZ IM Harvest Not Completed after 30 mins.	
	06 54	FZ IM No water supply detected	
06 55	FZ IM Mold/Heater not heating		
External Interaction (700 thru 999)	07 00	Slack keys on Dispenser Boards	
	07 01	Slack Keys on Internal Temp Board	
	07 02	Slack Keys on Deli Pan	
	07 03	Key Press on Temp Board while Door Closed	
	07 04	Key Pressed on Deli Pan Board while Door Closed	
	07 05	Dispenser Board AutoFill Error	
	07 06	Dispenser Board AutoFill Error	
	07 07	Dispenser Board Error	
	07 08	Dispenser Board Error	
	07 09	Check Paddle switch and wiring	
	07 10	Check Paddle switch and wiring	
	07 11	Check Hot water T&P switch and wiring	
07 12	Check Hot water T&P switch and wiring		
07 13	FF Door open for 15 minutes continuously		
07 14	FF Door open for 60 mins. total in the last 24 hours		
07 15	100 FF Left Door Openings in the last 24 hours.		
07 16	100 FF Right Door Openings in the last 24 hours.		
07 17	FZ Door open for 15 minutes continuously		
07 18	FZ Door open for 60 mins. total in the last 24 hrs.		
07 19	100 FZ Door Openings in the last 24 hours.		
07 20	N/A		
07 21	Upper AutoFill Sensor Error (Clean sensors)		
07 22	Display Board Error		
RFID (800-899)	08 00	RFID board hardware failure/ check filter and filter orientation	
	08 01	RFID board failed to respond to MB	
	08 02	RFID board not detecting filter tag/ check filter and filter orientation	
	08 03	RFID filter authentication failed/ check filter and filter orientation	
	Main Board (900-999)	09 00	FF IM Harvest Extended > 10 mins.
		09 01	FF IM Harvest Extended 3 out of 10 harvests
		09 02	FF IM Harvest Not Completed after 30 mins.
		09 03	FF IM No water supply detected
		09 04	FF IM continues to sense bucket full after ice dispense.
		09 05	FF IM Mold/Heater not heating
		09 50	N/A
		09 51	FZ IM Harvest Extended > 10 mins.
09 52		FZ IM Harvest Extended 3 out of 10 harvests	
09 53		FZ IM Harvest Not Completed after 30 mins.	
09 54		FZ IM No water supply detected	
09 55		FZ IM continues to sense bucket full after ice dispense.	
09 56	FF IM Mold/Heater not heating		
09 57	N/A		
09 58	FZ IM Harvest Extended > 10 mins.		
09 59	FZ IM Harvest Extended 3 out of 10 harvests		
09 60	FZ IM Harvest Not Completed after 30 mins.		
09 61	FZ IM No water supply detected		
09 62	FZ IM continues to sense bucket full after ice dispense.		
09 63	FF IM Mold/Heater not heating		
09 64	N/A		
09 65	FF Door Icemaker Rake Motor Test		
09 66	FF Door Icemaker Rake Motor Test		
09 67	FF Door Hot Water Valve Test		
09 68	FF Door Water Valve Test		
09 69	Hot Water heater Test (5 sec max) Note: Half power for single serve.		
09 70	Read Left FF Door Status		
09 71	Read Right FF Door Status		
09 72	Read FZ Door Status		
09 73	Internal Dispense Switch Status		
09 74	Read FZ Icemaker Rake Status		
09 75	Read FZ Icemaker Arm Status		
09 76	Read FF Door Icemaker Rake Status		
09 77	Read FF Door Icemaker Arm Status		
09 78	Read FF Door Cold Water Cup Switch		
09 79	Read FF Door Hot Water Cup Switch		
09 80	Read FF Door Hot Water Level Switch 1		
09 81	Read FF Door Hot Water Level Switch 2		
09 82	Read FF Door Over Current Flag 1		
09 83	Read FF Door Over Current Flag 2		
09 84	FF Door Icemaker Fill Tube Heater Test		
09 85	FF Door Recess Heater Test		
09 86	Vertical Mullion Heater Test		
09 87	Frame Door Heater Test		
09 88	Mainboard Heater Test		
09 91	FF Lights Test		
09 92	FZ Lights Test		
09 93	FZ Defrost Heater Test with Feedback		
09 94	FF Defrost Heater Test with Feedback		
09 95	FF Cooling Test		
09 96	FZ Cooling Test		
09 97	FF Door Icemaker Heater Test		
09 98	FZ Icemaker Heater Test		
09 99	FF Door Icemaker Full Cycle Test		
01 00	FZ Icemaker Full Cycle Test		
01 01	RFID Board Version		
01 02	Feature Board Version		
01 03	Air Pump & Pod Valve Test		
01 04	Air Pump & Vent Valve Test		
01 05	Raise Dispenser Nozzle		
01 06	Lower Dispenser Nozzle		
01 07	Brew Module Switch Test		
01 08	Turbo Heat Relay Test		
01 09	Hot Water Bypass Valve Test		

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	
00	18	Dispenser Version Test	
00	19	Deli Pan Version Test	
00	20	Internal Temp Version Test	Confirm UI communication this board
00	21	WiFi Module Version Test	
00	22	AutoFill Version Test	
00	23	Mainboard Version Test	
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	Display unfiltered thermistor temperature (display of 300 or -41 indicates open/shorted or not present) Example: 10.27 = 10.27 deg
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	
00	40	Humidity Sensor Test	Displays current humidity
00	43	Cycle Duct Door	Opens the Duct Door for 10 seconds and then closes it
00	44	Cycle FF Damper	Opens the Damper for 30 seconds and then closes it
00	46	Cycle Deli Damper	
00	47	FF Fan Test	
00	48	FZ Fan Test	
00	49	Condenser Fan Test	Turns the Fan on 75% duty cycle and returns the RPM
00	50	Ice Box Fan Test	
00	51	Deli Fan Test	
00	53	FF Defrost Heater Test	
00	54	Deli pan/OC heater Test (30 sec max)	
00	55	Isolation Valve Test	
00	56	Ice Part Heater Test	
00	58	FZ Icemaker Water Valve Test	
00	59	FZ Icemaker Rake Motor Test	Turns on the load.
00	60	FZ Defrost heater Test	
00	64	FZ Icemaker Fill Tube Heater Test	
00	65	FF Door Icemaker Water Valve Test	
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.	
00	70	Read Left FF Door Status	
00	71	Read Right FF Door Status	
00	72	Read FZ Door Status	Returns the Input Status (0 = Closed, 1 = Open)
00	73	Internal Dispense Switch Status	
00	74	Read FZ Icemaker Rake Status	Returns the Input Status (0 = not home, 1 = home)
00	75	Read FZ Icemaker Arm Status	Returns the Input Status (0 = not Full, 1 = Full)
00	76	Read FF Door Icemaker Rake Status	Returns the Input Status (0 = not home, 1 = home)
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	Returns the Input Status (0 = Not Pressed)
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	Returns the Input Status (0 - Not Tripped)
00	84	FF Door Icemaker Fill Tube Heater Test	
00	85	FF Door Recess Heater Test	
00	86	Vertical Mullion Heater Test	Turns on the Load
00	87	Frame Door Heater Test	
00	88	Mainboard Heater Test	
00	91	FF Lights Test	Turns the lights on at 100% Duty Cycle
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	Turns on FF defrost heater displays FF evap thermistor temperature
00	95	FF Cooling Test	Compressor (on) 3-way valve FF/ FZ - Condenser fan (high) - FF evap fan (low) - display FF evap thermistor temperature
00	96	FZ Cooling Test	Compressor (on) 3-way valve FZ - Condenser fan (high) - FZ evap fan (low) - display FZ evap thermistor temperature
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	Turns on FZ IM Heater displays FZ door IM mold thermistor temperature
00	99	FF Door Icemaker Full Cycle Test	Icemaker Full Cycle Test (similar to 3-arm press)
01	00	FZ Icemaker Full Cycle Test	
01	01	RFID Board Version	Confirm UI communication this board
01	02	Feature Board Version	Confirm UI communication this board
01	03	Air Pump & Pod Valve Test	Run air pump at 100% duty cycle and pod valve open
01	04	Air Pump & Vent Valve Test	Run air pump at 100% duty cycle and vent valve open
01	05	Raise Dispenser Nozzle	Run motor at 100% duty cycle, raise nozzle, return pass/fail
01	06	Lower Dispenser Nozzle	Run motor at 100% duty cycle, lower nozzle, return pass/fail
01	07	Brew Module Switch Test	Return brew module switch status
01	08	Turbo Heat Relay Test	Turn on Turbo Heat (Relay only)
01	09	Hot Water Bypass Valve Test	Turn on Hot Water Bypass Valve relay only

Single Speed Models: PWE23, CWE23, ZWE23, GYS22, GNE29, GYE22, PFE28, GFE28, PFD28, PYE22, PYD22, DFE28, GFD28, CFE28, and CYE22

CABINET NOTE: DOORS CLOSED





Temp F	Temp C	K-Ohms
-13	-25	65 kΩ
-4	-20	48.4 kΩ
5	-15	36.4 kΩ
14	-10	27.6 kΩ
23	-5	21 kΩ
32	0	16.3 kΩ
41	5	12.7 kΩ
50	10	10 kΩ
59	15	7.8 kΩ
68	20	6.2 kΩ
77	25	5.2 kΩ
86	30	4.4 kΩ
95	35	3.2 kΩ
104	40	2.6 kΩ

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

Temp F	Temp C	K-Ohms
32	0	32.7 kΩ
41	5	25.4 kΩ
77	25	10 kΩ
95	35	6.5 kΩ
122	50	3.6 kΩ
149	70	2.1 kΩ
167	75	1.5 kΩ
185	85	1.07 kΩ

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

ALL FANS (except Dell-Pan Fan)

- RED 13.6 VDC
- BLACK GND
- YELLOW PWM (speed)
- BLUE RPM Feedback

RED to BLACK - 13.6 VDC CONSTANTLY
 YELLOW to BLACK - 2 to 3 VDC / FAN ON
 BLUE to BLACK - 2 to 4 VDC / FAN ON