

SYSTEM DIAGNOSTIC MODE

Activate:		Hold + and - for 10 seconds. Navigate tests using + and - buttons. Automatically deactivates after 10 minutes of no activity.		
Deactivate:				
Display Code	Test	Activation/deactivation	Display	Passing result
---	First Screen	---	Turn on all LEDs on main UI, ATD UI, and external dispenser UI	---
	Second Screen		Turn off all LEDs on main UI, ATD UI, and external dispenser UI	
2	FRZ Defrost	Press FREEZE BOOST to change status of load	Heater on when display reads On , off when oF	Defrost heater shows temp increase before 5 min have passed or reaches 45°C cutout
8	Main Water Valve		Main valve activates when On , stops when oF	Valve is able to turn on and off
11	Cube/Crush Solenoid		Solenoid activates when On , deactivates when oF	Solenoid is able to turn on and off
12	Condenser Fan		Fan on when On , deactivates when oF	Fan motor is activated successfully
53	Water Valve Dispenser + Main Valve		Water dispenses when On , stops when oF	Water is dispensed successfully at dispenser
56	FF IM Water Valve + Main Valve		Remove ice tray to collect water into a container to measure water fill. If collecting water into ice tray, perform test 50 first to empty tray. Water flows in the tray when On , test is correspondent to ice tray water fill setting; automatically goes to oF state once configured time has elapsed.	Water is dispensed at ice tray for configured time setting
72	FF IM Defrost Heater		Heater on when display reads On , off when oF	Defrost heater shows temp increase before 5 min have passed or reaches 45°C cutout
82	FRZ IM Water Valve + Main Valve		Remove ice tray to collect water into a container to measure water fill. If collecting water into ice tray, perform test 50 first to empty tray. Water flows in the tray when On , test is correspondent to ice tray water fill setting; automatically goes to oF state once configured time has elapsed.	Water is dispensed at ice tray for configured time setting
10	Auger Motor		Auger activates when On , deactivates when oF	Auger motor is successfully activated
13	FF Light		Fresh Food lights come on when On ; lights turn off when oF	All FF lights turn on
15	FRZ Evaporator Fan Motor		Fan runs at 3 speeds: Max speed On , Medium speed MI , Stopped oF Locked rotor will show Lc No PWM signal will show nS when fan is stopped (oF) No 12V signal or ground will show nP when fan is On or MI	Fan will cycle through all 3 speeds and Lc or nS or nP is not displayed
20	FZR Light		FRZ light comes on when On ; lights turn off when oF	FRZ light turns on
38	VCC Compressor		Compressor runs at max speed when On , stops when oF	Compressor successfully turns on
47	Ice Chute Heater		Chute heater activates when On , deactivates when oF	Heater turns on successfully and difference in temperature is felt around dispenser ice chute
62	FF IM Evaporator Fan Motor		Evap fan motor activates when On , deactivates when oF	FF IM evap fan turns on successfully
63	Flipper Mullion DC Heater	Flipper mullion heater activates when On , deactivates when oF	Heater turns on successfully and difference in temperature is felt along flipper mullion	
66	Dispenser Light	Dispenser pocket light turns on when On , deactivates when oF	Dispenser pocket light turns on successfully	
67	FF Fill Tube Heater	FF fill tube heater activates when On , deactivates when oF	Fill tube heater is successfully turned on and off. Temperature increases is noted in fill tube area	
94	FRZ Fill Tube Heater	FRZ fill tube heater activates when On , deactivates when oF		
22	FF Damper Motor	FRZ Evap Fan will turn on at max speed Damper is open when OP , closed when CL Check for air flow when damper is fully open (OP) and no air flow when fully closed (CL) Screen will blink 1 during damper movement Any FRZ evap fan motor errors will display alternatively of damper status during test	Damper opens and closes successfully and no air flow is felt when damper is in closed (CL) position	
36	Ice Chute Door/ Flapper Motor	Flapper is closed when CL , open when OP	Flapper door opens and closes successfully; Er does not show on display	
50	FF IM Twist Tray Harvest Test	Remove ice bucket in order to see rotation of tray. Display will show Go when tray is in home position (horizontal). during rotation, screen will blink 1. In case of failure at end of twisting operation, screen will show Er	Tray twists successfully and Er is not displayed at the end of the cycle	
78	FFIM Bail Arm/ Ice Level Bucket	Remove ice bucket in order to see status of IM bail arm. Allow bail arm to drop freely; Em (empty) shows when tray returns home. Hold bail arm up by hand; Fu (full) shows when tray returns home In case of failure at end of twisting operation, Er shows. Screen blinks 1 during rotation.	Bail arm successfully completes test and Er is not displayed at the end of each cycle	
88	FRZ IM Twist Tray Harvest Test	Remove ice bucket in order to see rotation of tray. Display shows Go when tray is in home position (horizontal). During rotation, screen blinks 1. In case of failure at end of twisting operation, screen shows Er	Tray twists successfully and Er is not displayed at the end of the cycle	
86	FRZ IM Bail Arm/ Ice Level Bucket	Remove ice bucket in order to see status of IM bail arm. Allow bail arm to drop freely; Em (empty) shows when tray returns home. Hold bail arm up by hand; Fu (full) shows when tray returns home In case of failure at end of twisting operation, Er shows. Screen blinks 1 during rotation.	Bail arm successfully completes test and Er is not displayed at the end of each cycle	
23	FF Door Switch	Open/Close FF doors	Display shows CL when door is closed, OP when open	Temperature is displayed and does not show OP or SH
24	FRZ Door Switch	Open/Close FRZ door	Display reads correctly when door is opened/closed	
27	FRZ IM Switch	Toggle switch on/off	Switch is closed when display reads On , open when oF	
28	Dispenser Paddle	Press paddle	Display shows oF when paddle is pressed, On when paddle is released or not pressed	
29	FF Temp Sensor	Activates automatically	Display shows compartment temperature in either C or F depending on mode Display reads OP if open circuit, SH if short circuit	
30	FRZ Temp Sensor			
32	ATD Temp Sensor			
34	UI Ambient Temp Sensor			
39	FRZ Evaporator Temp Sensor			
45	FF IM Tray Temp Sensor			
68	FF IM Evaporator Temp Sensor			
64	Humidity Sensor			
87	FRZ IM Tray Temp Sensor			

SERVICE DATA SHEET

A20431002

ICE & WATER - AUTOMATIC DEFROST BOTTOM FREEZER - R600a

IMPORTANT: PLEASE RETURN THIS SHEET TO ITS ORIGINAL LOCATION.

This concludes the hardware tests. The following tests correspond to firmware versions. Before each firmware version is displayed -- will appear on screen followed by each 8-digit string representing firmware version. After the string has been displayed, -- will appear again before automatically proceeded to the next 8-digit string. Press **+** to advance to the next string at any time

--	Software Version	Runs automatically scrolling through all digits Press + button to skip to next test	Displays digit sequence related to software loaded onto main power board; 8 digit sequence	Software version is able to be recorded from display
	Main Board Firmware Version		Displays digit sequence related to firmware loaded onto main power board; 8 digit sequence	Firmware version is able to be recorded from display
	In-Door UI Firmware Version		Displays digit sequence related to firmware loaded onto Jade UI (inside door UI); 8 digit sequence	
	ATD UI Firmware Version		Displays digit sequence related to firmware loaded onto Jade UI (inside door UI); 8 digit sequence	
	Dispenser UI Firmware Version		Displays digit sequence related to firmware loaded onto external 4 button dispenser UI; 8 digit sequence	
	Lifetime		Press + button to advance to next digit	Displays number of days the appliance has been powered up, even not consecutively Range is from 0-9999

After Lifetime is displayed, last display is a 1-second counting up timer (0, 1, 2, 3...) this communicates that Service Mode has come to an end

PERFORMANCE DATA NO LOAD & NO DOOR OPENINGS AT 37°/0° CONTROL SETTING				
	CD NON-DISP/INTERNAL WATER		SD NON-DISP/INTERNAL WATER	
Type A with Run / Start Capacitor	55°F (13°C) Ambient	90°F (32°C) Ambient	55°F (13°C) Ambient	90°F (32°C) Ambient
Operating Time	65 to 75%	100%	55 to 65%	100%
Freezer Temp	-8° to +6°F (-22° to -14°C)			
Refrigerator Temp	33°F to 43°F (0° to 6°C)			
ATD Temp	33°F to 36°F (0° to 2°C)			
Low Side Pressure	-6.4 to -5.7 psig (55 to 60 kPa)	5.8 to -5.2 psig (59 to 63 kPa)	-6.4 to -5.7 psig (55 to 60 kPa)	5.8 to -5.2 psig (59 to 63 kPa)
High Side Pressure	25 to 28 psig (270 to 290 kPa)	57 to 61 psig (490 to 520 kPa)	25 to 28 psig (270 to 290 kPa)	57 to 61 psig (490 to 520 kPa)
Wattage	30 to 40	50 to 60	50 to 55	60 to 65
Amps (running)	0.4 to 0.5	0.6 to 0.7		0.8 to 0.9
Base Voltage	115 vac (103 to 127 vac)			

DEFROST SPECIFICATIONS					
Cabinet Size: 23' CD/28' SD	FRZ	2 fuses, each fuse rated to open @ 72 +0/-4 C	Heater		Defrost Thermistor Termination
			Thermal Cutout	Watts	Ohms
			Cutout	360 W	36.7 +/- 5% Ω @ 25° C
FFIM	60 W	220 +/-7.5% Ω @ 25° C	64.4°F (18°C)		
Electronic Timer - (ADC) Defrost 35 minutes every 8-96 hours of compressor run time					

CONDENSER FAN MOTOR			
Watts	RPM	Amps	
3.1	1050 ± 50	130 CFM	39mA (@115VAC/20°C)
Max Input Power (W)	Speed (R/Min)	Air Flow in Free Air (@ 0 in H ₂ O)	

ERROR CODES		
Display	1st message	2nd message
Er	CE	Communication Error UI to Main Board
dl	SP	Chute Flapper Error - Flapper not Closed
Er	t1	FRZ Temp Sensor Open/Shorted
	t2	FRZ Defrost Sensor Open/Shorted
	t3	FF Temp Sensor Open/Shorted
	t5	ATD Temp Sensor Open/Shorted
	t6	FF IM Tray Open/Shorted
	t7	FF IM Defrost Sensor Open/Shorted
	t8	FRZ IM NTC

SPECIAL MODES			
Mode	Display	Activate	Deactivate
Manual Defrost	dF	Hold + and AIR FILTER for 10 secs	---
IM Fill Time Menu	Settings will appear on UI	Hold FREEZE BOOST and ICE MAKER for 10 secs	After 10 secs of no activity
Demo/ Showroom	Demo Light On	Hold - and WATER FILTER for 10 secs	
Sabbath	Sb	Hold - and Temp F-C for 5 secs	
System Diagnostics	Refer to Systems Diagnostics Table	Hold - and + for 10 secs	
°F/°C Display	°F or °C	Press Temp F-C to alternate between °F and °C	

FF AND FZ IM FILL TIME ADJUSTMENT MODE

NOTE: First consider water filter condition before adjusting fill time.

Activate: Press and hold **FREEZE BOOST** and **ICE MAKER** buttons for 10 secs. Adjustments can be made with the +/- buttons. The setting will time out after another 10 secs.

Deactivate: Resets to Normal Operation after 10 secs

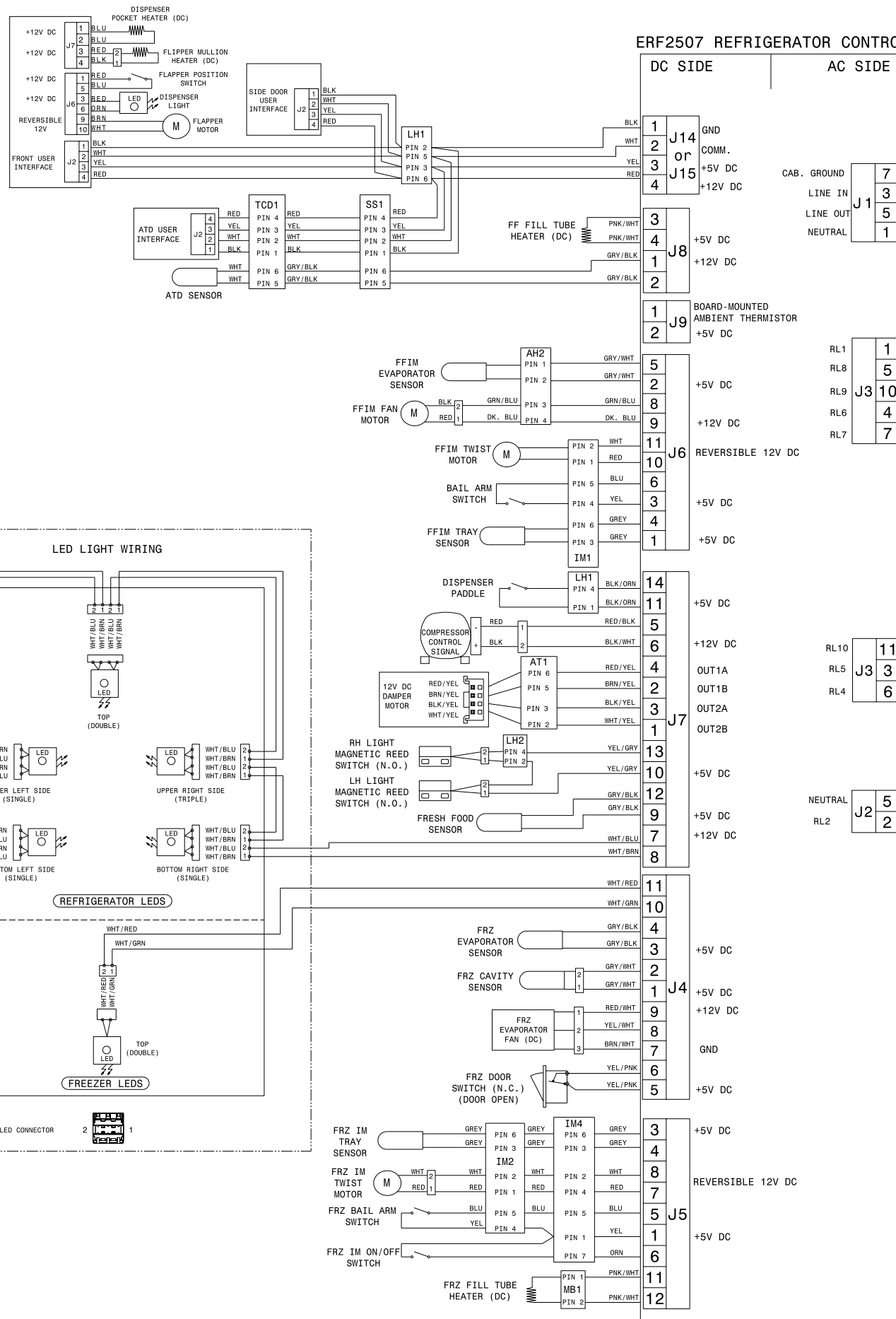
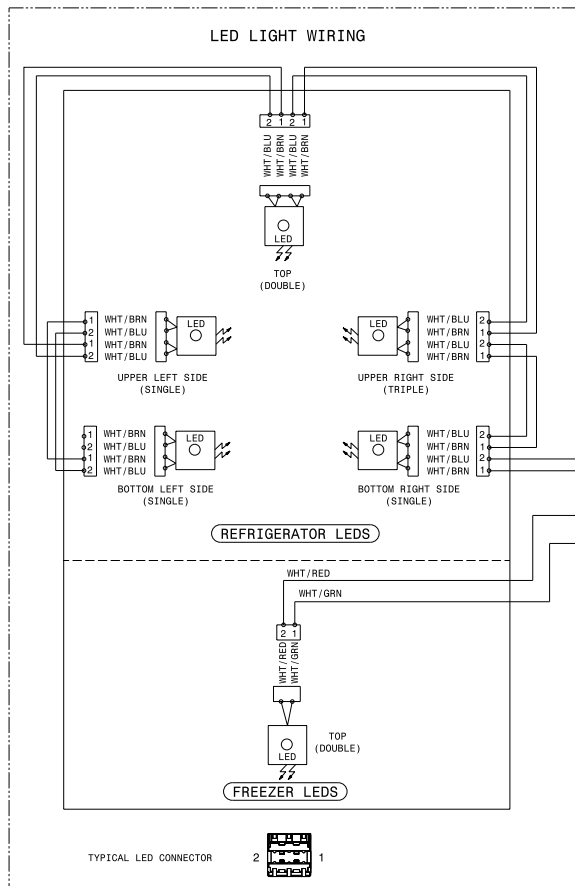
Setting #	Pressure Condition	Fill Time
1	Normal-High (more than 60 psi)	4.6 secs
2	Low (between 30 and 60 psi)	5.8 secs
3	Very Low (between 20 and 30 psi)	6.6 secs

IMPORTANT SAFETY NOTE

The information provided herein is designed to assist qualified repair personnel only. Untrained persons should not attempt to make repairs due to the possibility of electrical shock. Disconnect power cord before servicing this appliance.

IMPORTANT

If any green grounding wires are removed during servicing, they must be returned to their original position and properly secured.



BOARD VIEW

