SYSTEM DIAGNOSTIC MODE

Activate	Press and hold both digit displays simultaneously for 10 secs. Use Refrigerator digits display to advance through different loads and **Temp F-C** to go back to the previous load.			
Deactivate	Press and hold both digit displays simultaneously for 10 secs.			
Display	**Test**	**Activation/ Deactivation**	**Test Description**	**Passing result**
–––	First Screen	–––	Turns on all LEDs on main UI.	–––
	Second Screen	Press Refrigerator digits display to go to the next step	Turns off all LEDs on main UI.	
2	FZ Defrost	Press **Freezer digits display** to change the status of load	The heater is on when **On** and off when **oF**.	Defrost heater shows temp increase before 5 min have passed or reaches 45°C cutout.
8	Main Water Valve		The main valve activates when **On** and deactivates when **oF**.	Valve turns on and off.
53	Dispenser Water Valve		Dispenser valve activates when **On** and deactivates when **oF**.	
82	IM Water Valve + Main Valve		Remove the ice tray to collect water into a measuring container to measure the water fill. If collecting water into the ice tray, first perform Test 88 to empty the ice tray. Water flows in the tray when **On**, test is correspondent to Ice tray water fill setting. Once the fill time is reached, the valves will automatically go to **oF** state.	Water dispenses in ice tray for configured time setting.
13	FF Lights		The FF LEDs activate when **On** and deactivate when **oF**.	All FF lights turn on.
15	FZ Evaporator Fan Motor		Fan runs at 3 speeds: max speed **On**, medium speed **MI**, stopped **oF** If the signal is missing, the fan runs max speed all of the time. If GND/12V is missing, the fan will not run.	Pass when fan cycles through all 3 speeds: Fail when **Lc** or **nS** or **nP** is on display.
20	FZ Lights		FZ LEDs activate when **On** and deactivate when **oF**.	All FZ lights turn on.
38	VCC Compressor		The compressor runs at maximum speed when **ON** and off when **oF**.	Compressor successfully turns on.
94	FZ Fill Tube Heater		The heater activates when **On** and deactivate when **oF.**	Fill tube heater successfully turns on and off. Temperature increase is noted in fill tube area.
22	FF Damper Motor		The evaporator fan automatically turns on at maximum speed. When the damper is open it shows **OP** and when closed it shows **CL**. Check for air flow when the damper is fully open (**OP**) and for leaks when fully closed (**CL**). During the transition between states it blinks a **1.** Any FRZ evap fan motor errors display alternately of damper status during test.	Damper opens and closes successfully and no air flow is felt when damper closes (**CL**).
88	FZ IM Twist Tray Harvest Test		**Remove the ice bucket in order to see the rotation of the ice tray clearly.** On refrigerator display it shows **Go** when the tray is in the home (horizontal) position. During the rotation of the ice tray, **1** blinks on the display. In case of a failure, **Er** shows at the end of the twisting action.	Display reads correctly when door is opened/closed.
86	FZ IM Bail Arm/ Ice Level Bucket		**Remove the ice bucket in order to see the status of the ice tray bail arm clearly.** Allow the bail arm to drop freely. It shows **EN** (empty) when the tray returns to home position. Hold the bail arm up by hand. It shows **FU** when the tray returns to home position. In case of failure at the end of twisting operation, it shows **Er**. During the rotation of the ice tray, **1** blinks on the display.	Bail arm successfully completes test and Er is not displayed at the end of each cycle.
23	FF Door Switch	Open/close FF doors	The freezer display shows **OP** when the door is open and **CL** when the door is closed.	Display reads correctly when door is opened/closed.
24	FZ Door Switch	Open/close FZ door		
28	Paddle Switch	Don't/press the dispenser paddle	The freezer display shows **On** when the paddle is not pressed and **oF** when the paddle is pressed.	
29	FF Temperature Sensor	Activates automatically	The freezer display shows FF cabinet air temperature in either °C or °F depending on the mode. Shows **OP** if the circuit is open and **SH** if shorted.	Temperature displays and does not show **OP** or **SH**.
30	FZ Temperature Sensor		The freezer display shows FZ cabinet air temperature in either °C or °F depending on mode. Shows **OP** if the circuit is open and **SH** if shorted.	
33	Ambient Temperature Sensor		The freezer display shows ambient temperature in either °C or °F depending on mode. Shows **OP** if the circuit is open and **SH** if shorted.	
39	FZ Evaporator Temperature Sensor		The freezer display shows FZ evaporator temperature in either °C or °F depending on mode. Shows **OP** if the circuit is open and **SH** if shorted.	
87	FZ IM Tray Temperature Sensor		The freezer display shows FZ IM tray temperature in either C or F depending on mode. Shows **OP** if the circuit is open and **SH** if shorted.	

This concludes the hardware tests. The following tests correspond to firmware versions. Before each firmware version displays **--** will appear on screen followed by each 8-digit string representing firmware version. After the string displays, **--** appears again before automatically proceeding to the next 8-digit string. Press **REFRIGERATOR digit** to advance to the next string at any time.

--	Parameter Version Main Board Firmware Version Obsidian UI Firmware Version	Runs automatically scrolling through all digits. Press **REFRIGERATOR digit** to skip to next test.	Displays digit sequence related to software loaded onto main power board; 8 digit sequence	Firmware version is able to be recorded from display.
	Lifetime	Press **REFRIGERATOR digit** to advance to next digit.	Displays number of days the appliance has been powered up, even not consecutively. Range is from 0-9999	Lifetime displays successfully on display.

After Lifetime is displayed, last display is a 1-second counting up timer (0, 1, 2, 3...) this communicates the Service Mode has come to an end. To return to normal operation, press and hold both digit displays for 10 seconds or plug/unplug the appliance.

SERVICE DATA SHEET

A27790301

ICE & WATER - AUTOMATIC DEFROST BOTTOM FREEZER MODELS - R600a

IMPORTANT: PLEASE RETURN THIS SHEET TO ITS ORIGINAL LOCATION.

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.

⚠ CAUTION

Shield all electrical parts and wiring from torch flame. DO NOT allow torch to touch insulation; it chars at 200°F and flash ignites (burns) at 500°F. Excessive heat distorts the plastic liner.

PERFORMANCE DATA NO LOAD & NO DOOR OPENINGS AT 37°/0° CONTROL SETTING

Type A with Run/Start Capacitor	90°F (32°C) Ambient
Operating Time	100%
Freezer Temperature	-4°F to 3.9°F (-20°C to -15.6°C)
Refrigerator Temperature	33°F to 41°F (1°C to 5°C)
Low Side Pressure	10 psi (69kPa)
High Side Pressure (Last ⅓ of cycle)	67 - 69 psi (472kPa)
Wattage (Last ⅓ of cycle)	42 to 45W
Amps (Running)	0.6 to 0.7W
Base Voltage	115 vac (127 vac max)
Refrigerant Charge	60g

DEFROST SPECIFICATIONS

Thermal Cutout	**Heater**		**Defrost Thermistor Termination**
Cutout	Watts	Ohms	Cutout
2 fuses, each fuse rated to open @ 72°C	215	60.1	10°C
Electronic Timer - (ADC) Defrost 30 minutes every 8 to 96 hours of compressor run time.			

SPECIAL MODES

Mode	**Display**	**Activate**	**Deactivate**
Manual Defrost	**dF**	Press and hold **Ice Maker** and **Air Filter** for 10 secs	–––
Demo/Showroom	**DEMO**	Press and hold **Refrigerator** and **Reset Water Filter** for 10 secs	
Sabbath Mode	**Sb**	Press and hold **Temp F-C** and **Refrigerator** for 5 secs	
System Diagnostics	Refer to System Diagnostics table	Press and hold **both digit displays** for 10 secs	
°F / °C Display	**F** or **C**	Press **Temp F-C**	
IM Fill Time Menu	Settings appear on UI refer to FZ IM Fill time adjustment mode	Press and hold **Ice Maker** and **Freezer Boost** for 10 secs	Automatically after 10 secs of no activity
Factory Reset	Turns off all illumination temporarily, and then fades in all illumination of the factory default settings.	Press and hold **Freezer** and **Reset Water Filter** for 10 secs	–––

ICE MAKER SPECIFICATIONS

Electrical	115 vac (127 vac max)	60 Hertz

ERROR CODES

Messages		**Interpretation**
1	2	
Er	t1	FZ Temp Sensor Open/Shorted
	t2	FZ Defrost Sensor Open/Shorted
	t3	FF Temp Sensor Open/Shorted
	t8	FZ Ice Maker Temp Sensor Open/Shorted
	CE	Communication Error UI to Main Board

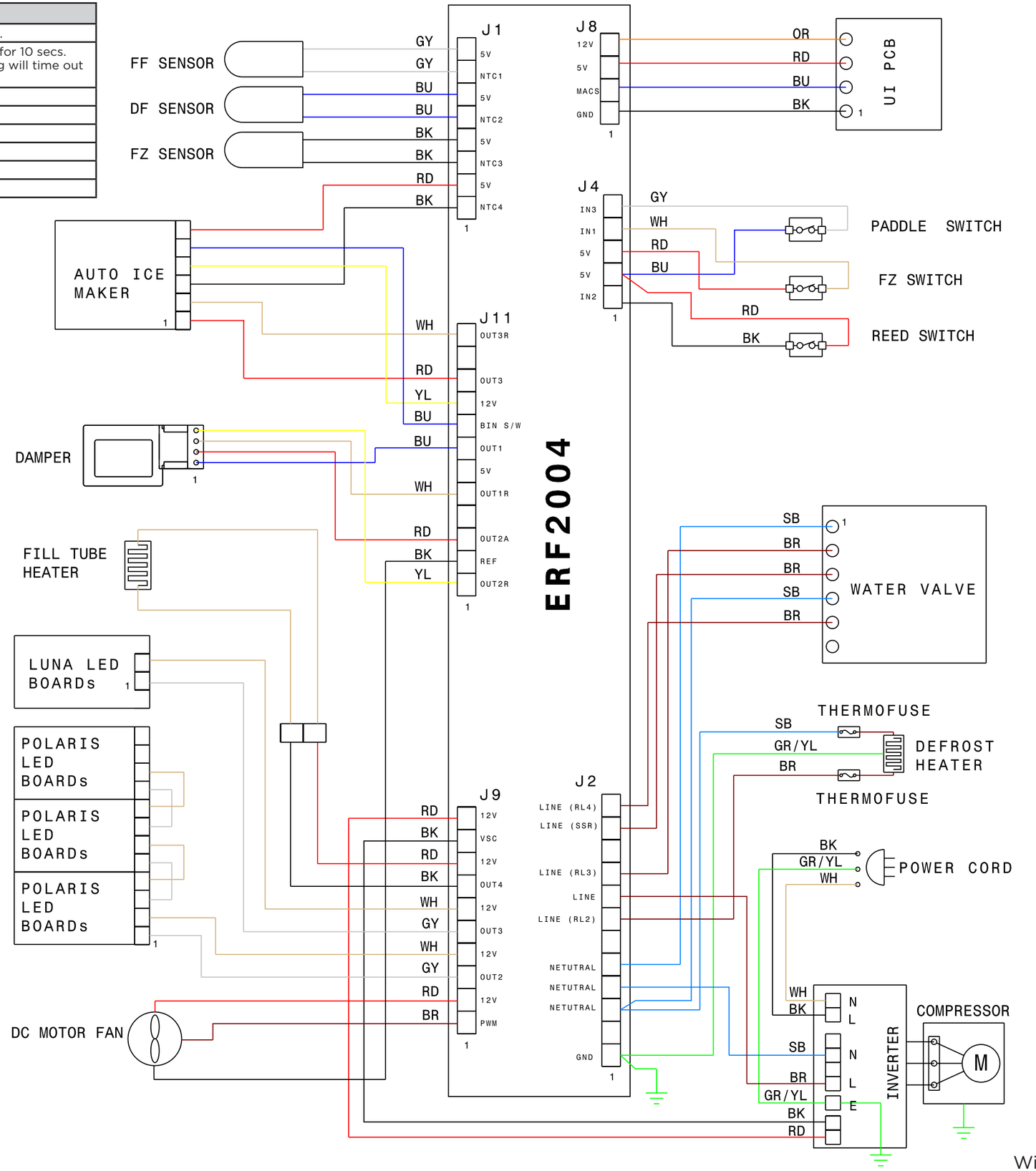
FZ IM FILL TIME ADJUSTMENT MODE

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 Freezer digit button. 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
4	Extremely Low (less than 20 psi)	7.2 secs



Wiring Diagram A25787401 Rev C Option B