

FOR SERVICE TECHNICIAN'S USE ONLY

NOTE: This sheet contains important Technical Service Data.

W11624280B

Tech Sheet

Do Not Remove or Destroy

⚠ DANGER



Electrical Shock Hazard

Only authorized technicians should perform diagnostic voltage measurements.

After performing voltage measurements, disconnect power before servicing.

Failure to follow these instructions can result in death or electrical shock.

⚠ WARNING



Electrical Shock Hazard

Disconnect power before servicing.

Replace all parts and panels before operating.

Failure to do so can result in death or electrical shock.

Voltage Measurement Safety Information

When performing live voltage measurements, you must do the following:

- Verify the controls are in the off position so that the appliance does not start when energized.
- Allow enough space to perform the voltage measurements without obstructions.
- Keep other people a safe distance away from the appliance to prevent potential injury.
- Always use the proper testing equipment.
- After voltage measurements, always disconnect power before servicing.

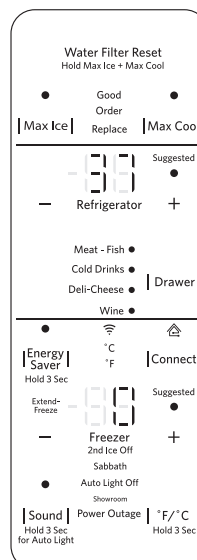
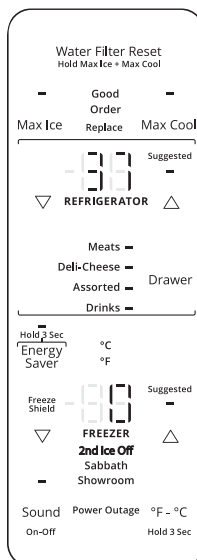
Component Specifications

Component	Specifications all parts 115 VAC/60 HZ unless noted @ 4500 RPM ASHRAE
Cooling	
Compressor VEMX11C+	Capacity.....911 BTU/H (266.9 W) Watt155 W Current lock rotor2.1 A Current full load2.1 A Resistance run windings9.3 Ω

Electric damper control	Maximum closing time 16 seconds Temperature rating -11°F/110°F RPM..... 3
Condenser fan motor	RotationClockwise (facing end opposite shaft) RPM 1330 RPM Watt2.3 W
Refrigerator evaporator fan motor	Rotation Counterclockwise (facing end opposite shaft) RPM 3450 RPM Watt4.2 W
Freezer evaporator fan motor	Rotation Counterclockwise (facing end opposite shaft) RPM 3450 RPM Watt4.2 W
Icebox fan motor	Rotation Counterclockwise (facing end opposite shaft) RPM 3450 RPM Watt4.2 W
Freezer evaporator heater	Volt..... 115 VAC Watt FC: 300 ± 5% W
Refrigerator evaporator heater	Volt..... 115 VAC Watt 170 ± 5% W

Control Board Troubleshooting

Accessing Service Mode



- Keep both “—” and “—” buttons pressed for 3 seconds or [▼] and [▼] buttons.
- Countdown will display and a chime will play upon entry into Service mode.

To Enter Service Diagnostics Mode:

Service mode requirement	Button on Main UI
Enter Service Key Combination	“—” and “—” temperature buttons pressed for 3 seconds
Enter Key for Navigation	“Drawer” button
Increment Key for Navigation	“+” button on the upper 7 segment display
Decrement Key for Navigation	“-” button on the upper 7 segment display
Back Key for Navigation	“Max Cool” button
Degree C LED Indicator	“°C” indicator
Degree F LED Indicator	“°F” indicator

To Exit Service diagnostics, use “Max Cool” Key to back out of functional test. Press and hold “-” and “-” temperature buttons simultaneously for 3 seconds.

NOTE: If a test or mode runs over “99” on the display, the User Interface will flash digit 1 for one second, and then display digit 2.

The number will display, i.e. “100” will display “1” first for one second, then display “00”. “101” will display “1” first for one second, and then display “01”, etc.

Service Test - 00 Exit Service Mode:

- This step is an alternative method to exit service mode and return to Normal Operation.

Service Test - 01 RC Thermistor

- Read RC compartment Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 02 FC Thermistor

- Read FC compartment Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 03 RC Evaporator Thermistor

- Read Refrigerator Evaporator Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 04 First FC Evaporator Thermistor

- Read Freezer Evaporator Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 05 Pantry Thermistor

- Read Pantry compartment Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 14 Door Ice Box Thermistor

- Read RC compartment Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 16 Door Ice Maker Tray Thermistor

- Read Icemaker Tray C Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 17 Freezer Ice Maker Tray Thermistor

- Read Freezer Icemaker Tray Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 18 Second FC Evaporator Thermistor

- Read Freezer Evaporator Temperature. SH indicates “shorted” thermistor, OP indicates “open” thermistor.

Service Test - 23 RC Maximum Temperature; Service Test - 24 FC Maximum Temperature; Service Test - 25 Pantry Maximum Temperature; Service Test - 26 Ice Box Maximum Temperature

- Maximum temperature reached during the last 6 hours of operation. Temperature is saved every hour, keeping the last 6 hours for analysis. The maximum is displayed on the UI screen from the last six saved values.

Service Test - 28 RC Average Temperature; Service Test - 29 FC Average Temperature; Service Test - 30 Pantry Average Temperature; Service Test - 31 Ice Box Average Temperature

- Average temperature during the last 6 hours of operation. Average is calculated using a running average filter.

Service Test - 33 RC Minimum Temperature; Service Test - 34 FC Minimum Temperature; Service Test - 35 Pantry Minimum Temperature; Service Test - 36 Ice Box Minimum Temperature

- Minimum temperature reached during the last 6 hours of operation. Temperature is saved every hour, keeping the last 6 hours for analysis. The minimum is displayed on the UI screen from the last 6 saved values.

Service Test - 38 Compressor Speed Change without Ramp

- Control the compressor speed. When entering service test, the compressor goes off if it was previously on.
- Change the compressor duty cycle between 0 and the maximum compressor speed by pressing “+” to increment and “-” to decrease the speed.
- For Linear Compressors there is a compressor protection against shutting the compressor off for 2½ minutes after changing to the ON state. Therefore the compressor will run for 2½ minutes after changing the speed.

Service Test - 39 Compressor Speed Change with Ramp

- Control the Compressor Speed. When entering service test the compressor goes off if it was previously on.
- Select the power from 0 W to 160 W by pressing “-” or “+.” After pressing “Enter” the compressor will ramp up to the selected power.
- After changing the power button to 0 W, the compressor will shut off after 2.5 minutes.

Service Test - 40 Compressor and Compartment Freezing Cooling Test

- When entering the service test, compressor runs at max power.
- There will be a delay of 3 seconds before start of routine “01”.
 - “01” – Dual Evap Valve will be open for both compartments for 4 minutes.
 - “02” – Will close both RC and FC Dual Evap Valve (1 minute)
 - “03” – Compressor turns on (1 minute)
 - “04” – Compressor keeps on, Dual Evap Valve will be in RC position and RC Fan ON. (2 minutes)
 - “05” – Compressor keeps on, Dual Evap Valve will be in FC position and FC Fan ON. (Run until technician presses BACK or Increment/Decrement key.)

Service Test - 42 Main Pantry Air Baffle State

- When entering service test, the damper continuously turns, showing the state in the numeric display.
- Possible position readings: 00 – Air baffle in open position, 02 – Air baffle in closed position.

Service Test - 44 RC Compartment Lighting

- When entering service test, the Refrigerator Compartment Lights turn On. The display shows “ON.”
- When leaving service test the Refrigerator Compartment lights turn off.

Service Test - 45 FC Compartment Lighting

- When entering service test, the Freezer Compartment Lights turn on. The display shows “ON.”
- When leaving service test, the Freezer Compartment Lights turn off.

Service Test - 47 Pantry, Air Filter, and Door in Door Lighting

- When entering service test, the Pantry, Air Filter, and Crisper Lights turn on. The display shows “ON.”
- When leaving service test, the Pantry, Air Filter, and Crisper Lights turn Off.

Service Test - 56 FC Fan Test

- When entering service test, the Freezer Fan turns on. The display shows “ON.”

- When leaving service test, the Freezer Fan turns off.

Service Test - 57 RC Fan Test

- When entering service test, the Refrigerator Fan turns on. The display shows “ON.”

- When leaving service test, the Refrigerator Fan turns off.

Service Test - 58 Condenser Fan Test

- When entering service test, the Condenser Fan turns on. The display shows “ON.”

- When leaving service test, the Condenser Fan turns off.

Service Test - 59 Ice Box Fan Test

- When entering service test, the Ice Box Fan turns on. The display shows “ON.”

- When leaving service test, the Ice Box Fan turns off.

Service Test - 63 Vertical Mullion Heater Test

- When entering service test, the Vertical Mullion Heater turns on. The display shows “ON.”

- When leaving service test, the Vertical Mullion Heater turns off.

Service Test - 64 Door Duct Heater Test

- When entering service test, the Ice Box Duct Heater turns on. The display shows “ON.”

- When leaving service test, the Ice Box Duct Heater turns off.

Service Test - 65 Ice Box Duct Heater Test

- When entering service test, the Ice Box Duct Heater turns on. The display shows “ON.”

- When leaving service test, the Ice Box Duct Heater turns off.

Service Test - 66 Door Ice Maker Fill Tube Heater Test

- When entering service test, the Door Ice Maker Fill Tube Heater turns on. The display shows “ON.”

- When leaving service test, the Door Ice Maker Fill Tube Heater turns off.

Service Test - 67 Freezer Ice Maker Fill Tube Heater Test

- When entering service test, the Freezer Ice Maker Fill Tube Heater turns on. The display shows "ON."
- When leaving service test, the Freezer Ice Maker Fill Tube Heater turns off.

Service Test - 68 Door in Door Heater Test

- When entering service test, the Door in Door heater turns on. The display shows "ON."

Service Test - 70 Dispenser Heater Test

- When entering service test, the Dispenser Heater turns on. The display shows "ON."
- When leaving service test, the Dispenser Heater turns off.

Service Test - 71 Beverage Chiller Heater Test

- When entering service test, the Beverage Chiller heater turns on. The display shows "ON."

Service Test - 72 Filter Heater Test

- When entering service test, the Filter heater turns on. The display shows "ON."

Service Test - 73 Right RC Door Switch State

- "00" Identifies door open and "01" identifies door closed.

Service Test - 74 Left RC Door Switch State

- "00" Identifies door open and "01" identifies door closed.

Service Test - 75 FC Door Switch State

- "00" Identifies door open and "01" identifies door closed.

Service Test - 79 Ice Bin Switch State

- "00" Identifies bin missing, "01" identifies bin present."

Service Test - 85 Vertical Mullion Heater Activation Mode

- When entering service test, the numeric display shows the current Heater Activation mode.
- "00" indicates mullion heater controlled by measured humidity.
- "01" indicates mullion heater always on.
- To advance between control mode use "+" or "-" key. Once desired setting is selected, push "Drawer" key to activate, then "Max Cool" to exit this mode.

Service Test - 87 Dispenser Heater Activation Mode

- When entering service test, the numeric display shows the current Heater Activation mode.
- "00" indicates dispenser heater controlled by measured humidity.
- "01" indicates dispenser heater always ON.
- To advance between control mode, use "+" or "-" key. Once desired setting is selected, push "Drawer" key to activate then "Max Cool" to exit this mode.

Service Test - 88 Ice Box Air Duct Heater Activation Mode

- When entering service test, the numeric display shows the current Heater Activation mode.
- "00" indicates dispenser heater controlled by cooling performance.
- "01" indicates dispenser heater always ON.
- To advance between control mode use "+" or "-" key. Once desired setting is selected, push "Drawer" key to activate then "Max Cool" to exit this mode.

Service Test - 89 Run FC Defrost Heater

- When entering this service test, defrost heater turns on and stays on for 5 minutes or until the evaporator thermistor goes above 60°F.
- "ON" will be displayed while the operation is executed.

Service Test - 90 Run RC Defrost Heater

- When entering this service test, defrost heater turns on and stays on for 5 minutes or until the evaporator thermistor goes above 60°F.
- "ON" will be displayed while the operation is executed.

Service Test - 91 Run a Forced Defrost

- Activates the forced defrost.
- When "ON" is selected and exiting Service mode, defrost will be executed.
- When "OFF" is selected and exiting Service mode, defrost will NOT be executed. To advance between control mode "ON" or "OFF" Use "+" or "-" key. Once desired setting is selected, push "Drawer" key to activate then "Max Cool" to exit this mode.

Service Test - 92 Turn All UI LEDs ON

- When entering service test all indicators and buttons will light up in the two UIs.
- The icons automatically turn off after 30 seconds.

Service Test - 93 UI Button and Pad/Paddle Test

- When inside service test, the numeric display shows "00" for no key press and "01" for key or pad pressing.

Service Test - 96 Water Valve General Test

- When entering service test, the Water Dispenser Valve turns on for 7 seconds.

Service Test - 97 Door Ice Maker Valve General Test

- When entering service test, the Door Ice Maker Water Valve turns on for 7 seconds.

Service Test - 98 Freezer Ice Maker Valve General Test

- When entering service test, the Door Ice Maker Water Valve turns on for 7 seconds.

Service Test - 100 Display Water Filter Gallons Remaining

- Displays the remaining gallons of water left on the water filter.

Service Test - 101 Display Water Filter Days Remaining

- Displays the remaining days left on the water filter.

Service Test - 102 Display Days since Last Water Filter Reset

- Displays the total amount of days since the last water filter reset.

Service Test - 103 Display Number of Water Filter Resets

- Displays the total amount of water filter resets that have occurred over the life of the product.

Service Test - 104 Read Humidity Measurement

- Displays measured humidity as a percentage.

Service Test - 105 Air Filter Usage

- Displays the total amount of days since the last air filter reset.

Service Test - 106 Wi-Fi Link Connection Self Test

- While the test is in progress, the display will show: "00" – Link Test in Progress.
- Following the completion of the Link Test, the display will transition to the following code designation: "01" – Not able to link with AP or WISE. "02" – Not able to link with WISE. "03" – Connected to AP and WISE.

Service Test - 108 Wi-Fi Antenna 1 Signal Strength

- Display the measured value as a percentage of possible range. The possible range to the technician is 0 % to 100%.

Service Test - 110 Display Current Smart Grid Mode

- Display "0" for Smart Grid mode not active, "1" for delay ice making Smart Grid mode active, "2" for delay ice making and cooling Smart Grid mode active.

Service Test - 111 Smart Grid Mode 1 Counter

- Displays the number of times the unit has entered Smart Grid mode 1. Allowable range is from 0 to 999 instances.

Service Test - 112 Smart Grid Mode 2 Counter

- Displays the number of times the unit has entered Smart Grid mode 2. Allowable range is from 0 to 999 instances.

Service Test - 115 Control Ice Door Motor Using Ice Pads

- The display will follow the door position during this test using the following designation:
- "01" – Closed
- "02" – Opening
- "03" – Open
- "04" – Closing

Service Test - 120 Door Ice Maker Self Diagnostics

- The display shall show the following transitions as they occur.
 - "00" – Stopped
 - "01" – Moving Counterclockwise to Ice Break Position
 - "02" – Moving Clockwise to End of Harvest Location
 - If Ice Bin Is Full Jump To Step 04
 - If Timeout Occurs (60 seconds) Execute Step 04
 - "03" – Reached End of Harvest Location
 - "04" – Moving Counterclockwise Back To Homing Location
 - If Timeout Occurs (60 seconds) End Test
- The display shall show the error codes following the execution of the test.
 - "PA" – All Steps Successfully Passed
 - "bF" – Ice Bin Is Full
 - "E1" – Cannot Find Ice Break Position
 - "E2" – Cannot Find End of Harvest Location
 - "E3" – Cannot Find Home
 - "E4" – Multiple Failures

Service Test - 121 Freezer Ice Maker Self Diagnostics

- The display shall show the following transitions as they occur.
 - "00" – Stopped
 - "01" – Moving Counterclockwise to Ice Break Position
 - "02" – Moving Clockwise to End of Harvest Location
 - If Ice Bin Is Full Jump To Step 04
 - If Timeout Occurs (60 seconds) Execute Step 04
 - "03" – Reached End of Harvest Location
 - "04" – Moving Counterclockwise Back To Homing Location
 - If Timeout Occurs (60 seconds) End Test
- The display shall show to the error codes following the execution of the test.
 - "PA" – All Steps Successfully Passed
 - "bF" – Ice Bin Is Full
 - "E1" – Cannot Find Ice Break Position
 - "E2" – Cannot Find End of Harvest Location
 - "E3" – Cannot Find Home
 - "E4" – Multiple Failures

Service Test - 126 Change Defrost Type

- Displays the current Defrost mode. (01 Default)
- Engineer will then choose between the 2 available modes. Pressing the ENTER key will save the selection.
- The display will then return to Service Test Screen where the selected duty cycle will be displayed. Available defrost modes:
 “01” – Global Defrost Routine ON
 “02” – Basic Mode ON (8 hour timer)

Service Test - 127 GF2 Main Control Board SW**Version Number – XX.YY.ZZ**

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep blank when complete

Service Test - 128 GF2 Main Control Board Flashmap Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep Blank When Complete

Service Test - 129 Door UI SW Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep Blank When Complete

Service Test - 130 Door UI Flashmap Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep Blank When Complete

Service Test - 132 Orion Isolated Micro SW Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep Blank When Complete

Service Test - 133 Orion Isolated Flashmap Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep Blank When Complete

Service Test - 134 Main UI SW Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep Blank When Complete

Service Test - 135 Main UI Flashmap Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep Blank When Complete

Service Test - 137 Wi-Fi SW Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep blank when complete

Service Test - 138 Orion Non-Isolated SW Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep blank when complete

Service Test - 139 Orion Non-Isolated Flashmap Version Number

- Show XX for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show YY for 1 second (version format XX YY ZZ)
- Blank for 0.5 second
- Show ZZ for 1 second (version format XX YY ZZ)
- Keep blank when complete

Service Test - 148 Proximity Sensor State

- When entering Service Test, the numeric display shows the current Proximity Sensor Activation mode.
- “00” indicates no movement.
- “01” indicates movement of object/person.
- To advance between control mode use “+” or “-” key. Once desired setting is selected, push “Drawer” key to activate then “Max Cool” to exit this mode.

Service Test - 149 Door in Door Heater Activation Mode

- When entering Service Test, the numeric display shows the current Heater Activation mode.
- “00” indicates heater controlled by measured humidity.
- “01” indicates heater always on.
- To advance between control mode use “+” or “-” key. Once desired setting is selected, push “Drawer” key to activate then “Max Cool” to exit this mode.

Service Test - 152 Filter Heater Activation Mode

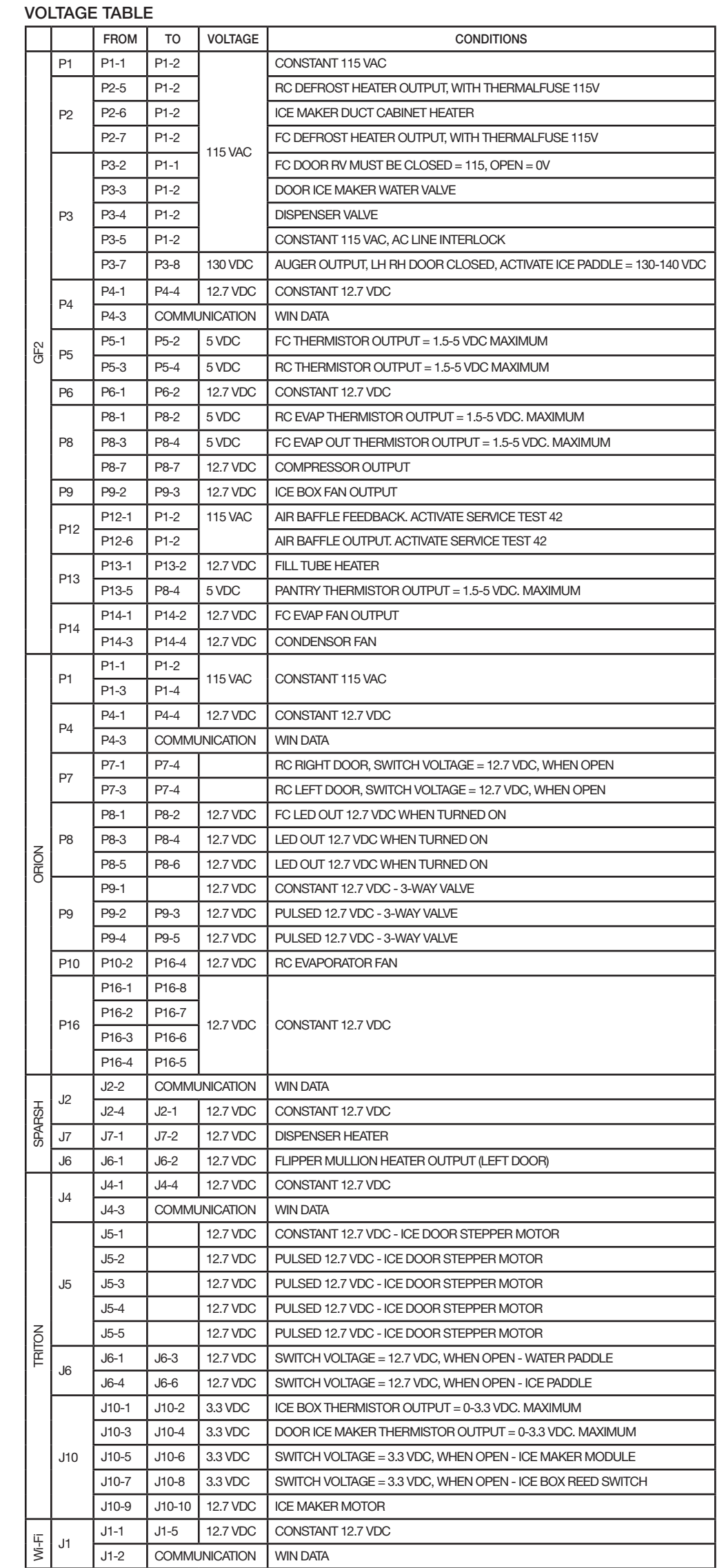
- When entering Service Test, the numeric display shows the current Heater Activation mode.
- “00” indicates heater controlled by measured humidity.
- “01” indicates heater always ON.
- To advance between control mode use “+” or “-” key. Once desired setting is selected, push “Drawer” key to activate then “Max Cool” to exit this mode.

Service Test - 153 Beverage Chiller Heater Activation Mode

- When entering Service Test, the numeric display shows the current Heater Activation mode.
- “00” indicates heater controlled by measured humidity.
- “01” indicates heater always ON.
- To advance between control mode use “+” or “-” key. Once desired setting is selected, push “Drawer” key to activate then “Max Cool” to exit this mode.

FOR SERVICE TECHNICIAN'S USE ONLY

Wiring Diagram



8/23