

Controls and Operation

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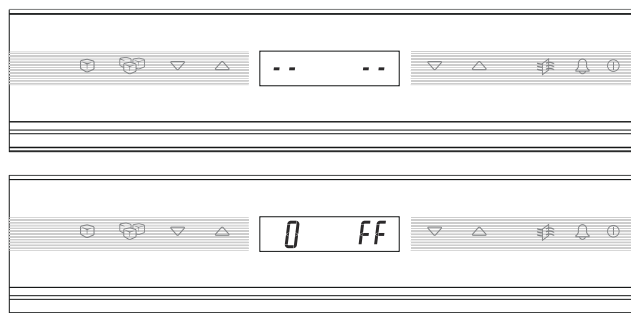
CONTROL PANEL

Perform input operations, including temperature regulation, user options, and settings; view possible issues; and enter service functions for the electronic control system through the control panel.

BUILT-IN BOOT-UP SCREEN

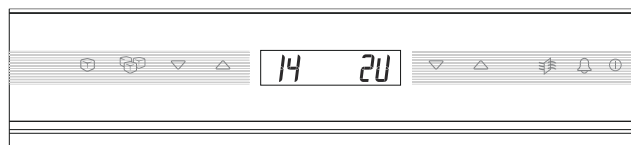
The boot-up screen appears after supplying power to the unit for the first time.

The lights turn on, and double dashes appear. Then the lights shut off, and OFF appears.

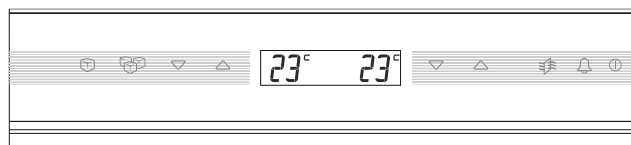


BUILT-IN POWER SCREEN

With the unit plugged in and OFF shown on the display, tap ①. The unit begins a self-diagnostic test during which the display shows the model configuration.



When the unit completes self-diagnosis, the current temperature inside the unit appears.



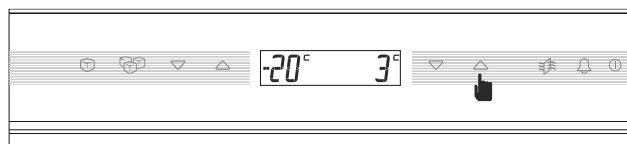
ICB BUILT-IN TEMPERATURE SETPOINT ADJUSTMENT

The average compartment temperature is shown on the display. To adjust the temperature setpoint, tap Δ or ∇ for the appropriate compartment on the control panel until the desired setpoint is reached. Each tap is a one-degree change in temperature and is accompanied by an audible beep.

When the unit reaches the setpoint, the setpoint flashes on and off in two-second intervals for 10 seconds. The current average zone temperature is shown.

TIP:

- The temperature range in the freezer zone is -23°C to -15°C .
- The temperature range in the refrigerator zone is 1°C to 7°C .
- During initial pull-down, the real-time compartment temperature is shown. Once the setpoint temperature is achieved, the temperature shown on the display cannot change by more than one degree per minute.



ICB BUILT-IN DOOR AJAR ALARM

To enable the door ajar alarm, tap bell on the control panel. The bell icon appears on the display, indicating the door ajar alarm is enabled.

If the door ajar alarm is enabled, bell flashes and an audible alarm chimes at two-second intervals whenever a door or drawer is open for more than 60 seconds.

To disable the door ajar alarm, tap bell again, and bell disappears from the display.



ICB BUILT-IN AIR PURIFICATION FEATURE

The air purification feature has two main parts: a replaceable cartridge consisting of an ultraviolet light with a filter medium and a DC voltage fan that moves refrigerator air through the cartridge.

The air purification feature removes bacteria and ethylene gas, turning them into water vapor and carbon dioxide. This helps preserve food longer.



Controls and Operation

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ICB BUILT-IN AIR PURIFICATION FEATURE (continued)

After approximately 8,000 hours of use,  flashes, indicating it is time to change the air purification cartridge. If the light bulb in the air purification cartridge fails,  flashes and logs a fault code.

To enable the air purification feature, tap  on the control panel, and  appears on the display, indicating the air purification feature is enabled. When the air purification feature is enabled, the ultraviolet light and fan are activated 100% of the time, unless the door is opened or the unit is in Showroom mode.

To clear the flashing icon and reset the air purification cartridge timer, touch and hold  for five seconds.



ICB BUILT-IN ICE MAKER

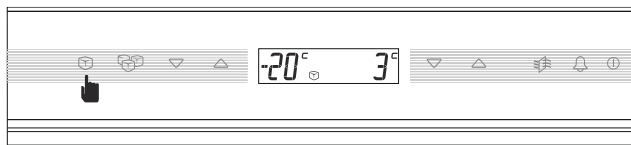
To enable the ice maker in normal production, tap  on the control panel. The  icon appears on the display, indicating the ice maker is enabled. To turn the ice maker off, tap  on the control panel. The  icon disappears from the display.

Power to the freezer lights is monitored. If the freezer door or drawer opens, power to the ice maker is interrupted unless the ice maker is filling with water. After the door or drawer closes, power is not restored to the ice maker for three minutes unless the Maximum Ice feature is on.

The ice maker continues to make ice even if the ice bin is not in place. The ice maker harvests up to 20 times between two door or drawer openings.

To allow the ice to freeze fully and to reduce the effects of low water pressure, power is not supplied to the ice maker for 45 minutes after each water fill. The 45-minute delay can be cleared by turning the ice maker off, then back on.

TIP: Sabbath mode disables the ice maker.



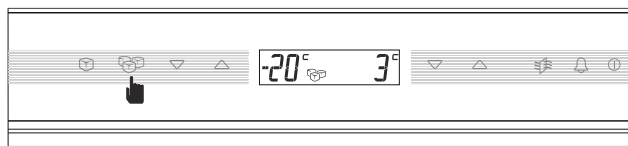
ICB BUILT-IN ICE MAKER MAX ICE

To enable Maximum (Max) Ice feature, tap  on the control panel. The  icon appears on the display, indicating Max Ice is enabled. To turn the ice maker off, tap  on the control panel. The  icon disappears from the display. Max Ice boosts ice production up to 40%. It automatically changes the freezer temperature to -23°C for 24 hours and runs the freezer evaporator fan 100% of the time unless the door or drawer opens. After 24 hours, the freezer temperature returns to the last set temperature, the freezer evaporator fan returns to normal operation, and  changes to .

Power to the freezer lights is monitored. If the freezer door or drawer opens, power is interrupted to the ice maker unless the ice maker is filling with water. After the door or drawer is closed, power is not restored to the ice maker for three minutes unless the Max Ice feature is on.

Max Ice does not have a 45-minute delay after the water fill.

TIP: Sabbath mode disables the ice maker.



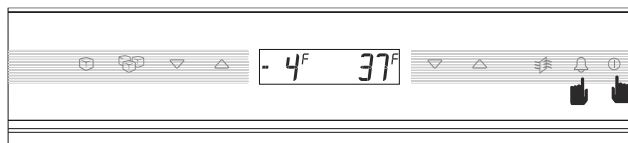
ICB BUILT-IN TEMPERATURE UNITS SELECTION MODE

Temperature units selection mode must be initiated within the first minute after switching the unit on. After one minute, temperature units selection mode cannot be entered. Turn the unit off and back on to access temperature units selection mode.

The display shows the unit of measure next to the compartment temperature, either Fahrenheit (F) or Celsius (C). To change between units of measure, touch and hold  and  simultaneously for five seconds, then release the icons.

The temperatures convert to the new unit of measure, and the new unit of measure appears on the display.

To exit the mode, wait 10 seconds after the last icon is touched, or tap .



Controls and Operation

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ICB BUILT-IN CONTRAST ADJUST MODE

Contrast adjust mode can be accessed only after the unit has been on for one minute. The contrast adjust mode has five levels. The factory setting level is three.

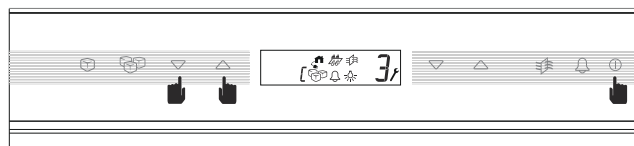
To access the display contrast mode, touch and hold either set of $\triangle$ and ∇ , then Ⓢ . Then release the icons.

"C" appears in the small digit location on the display, indicating the unit is now in contrast adjust mode, and a number from one to five appears on the right side of the display, indicating the current contrast level setting.

Tap ∇ to reduce the contrast level, and tap $\triangle$ to increase the contrast level.

TIP: Adjusting the contrast changes the angle of the line segments. It is possible that persons of differing heights see different contrast levels for the same setting.

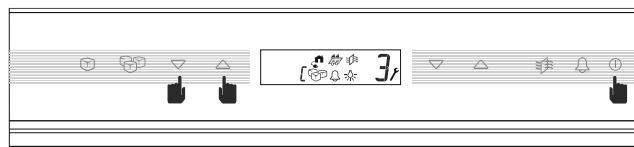
To exit the mode, wait 10 seconds after the last icon is touched, or tap Ⓢ .



ICB BUILT-IN TONE ADJUST MODE

Tone adjust mode can be accessed after the unit has been on for one minute and is entered through the contrast adjust mode. The tone adjust mode has three levels. The factory setting level is "normal."

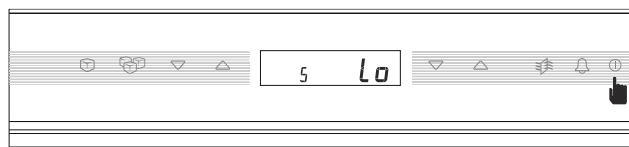
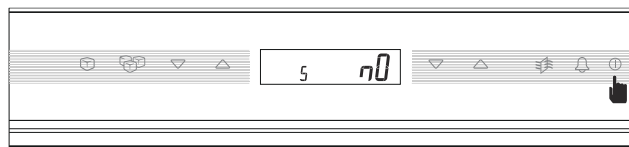
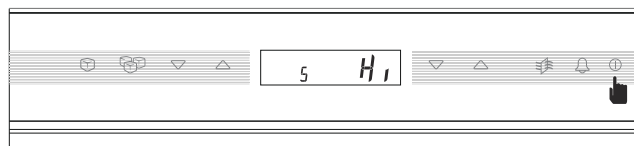
To enter the display contrast mode, touch and hold either set of $\triangle$ and ∇ , then Ⓢ . Then release the icons.



To enter the tone adjust mode from the contrast adjust mode, tap Ⓢ . "S" (sound) appears in the small digit location, and on the right side of the control, "Hi" (high), "nO" (normal), or "Lo" (low) appears, indicating the current tone setting.

Tap $\triangle$ to increase the pitch of the tone, or tap ∇ to decrease the pitch of the tone.

To exit the mode, wait 10 seconds after the last icon is touched, or tap Ⓢ .



ICB BUILT-IN SHOWROOM MODE

When the unit is in showroom mode, all cooling, defrosting, ice making, and dispensing functions are disabled. The door ajar alarm system and lighting system remain operational, and the display shows the setpoints.

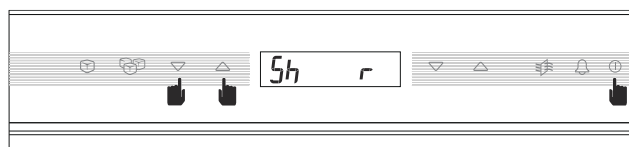
If the lights stay on for 90% of any 15-minute interval, a compartment thermistor reports a temperature 17°C above ambient temperature, or an evaporator thermistor reports a temperature 11°C above ambient temperature, the lights are disabled for 20 minutes.

To initiate showroom mode, turn off the unit by tapping Ⓢ . Touch and hold either set of $\triangle$ and ∇ , then Ⓢ . Release the icons. The unit beeps three times, and "Sh" and "r" appear on the display for five seconds. The unit is now in showroom mode. After the initial five seconds, setpoints appear in the display.

To exit showroom mode, repeat the above procedure.

TIP:

- To verify if the unit is in showroom mode, turn the unit off and then back on. "Sh" and "r" appear.
- The air purification system turns on for 30 seconds when the refrigerator door opens or when Ⓢ is tapped.



ICB BUILT-IN MANUAL ZONE DISABLE MODE

Manual zone disable mode allows a zone or compartment to be switched off for defrosting, interior cleaning, or diagnostic purposes, while allowing other zones to continue running.

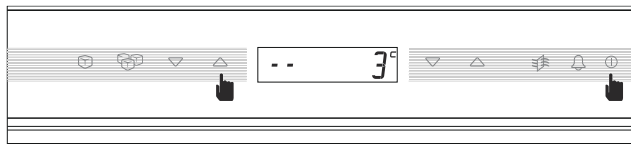
When a zone is disabled, it remains disabled, even after a power outage, until the zone is removed from the manual zone disable mode. The alarm system for the disabled zone is inactive while in manual zone disable mode.

Controls and Operation

ICB BUILT-IN MANUAL ZONE DISABLE MODE (continued)

To manually disable a zone, turn the unit off by tapping ①. Touch and hold the appropriate zone △, then ①. Release both icons.

To exit manual zone disable mode, repeat the above procedure.



ICB BUILT-IN SABBATH MODE

Sabbath mode helps with the observance of certain religious days. When Sabbath mode is initiated, the lighting systems, ice making system, dispensing system, alarm system, and air purification system are disabled. The letters "SA" and "b" appear in the display.

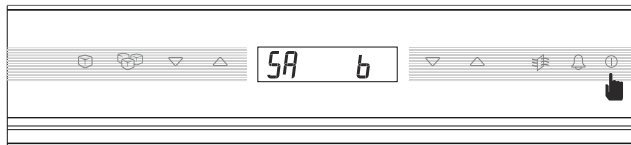
In accordance with Star-K requirements:

- Freezer defrosting functions convert to a fixed-time base sequence instead of adaptive defrosting, which is based on usage.
- The zone thermistors still detect high offset, which is the determining factor to start the cooling process, but a random 15- to 25-second delay occurs.
- The "SA" and "b" on the display remain on when the door is closed.

To enter Sabbath mode, turn the unit off by tapping ①. Then touch and hold ① for 10 seconds, at which point the unit chimes and "SA" and "b" appear in the display.

To exit Sabbath mode, tap ①. The lights turn on, accompanied by two beeps. The current zone temperatures appear in the display. The accent lights, door alarm, ice maker, and air purification systems return to the state prior to entering Sabbath mode.

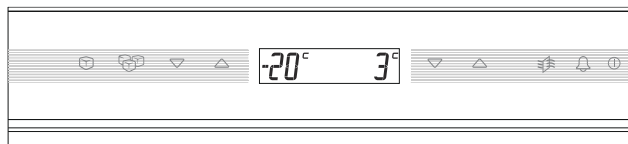
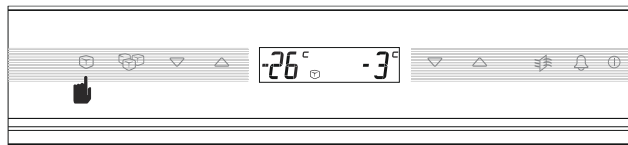
TIP: Setpoints cannot be changed and manual defrost cannot be initiated in Sabbath mode.



ICB BUILT-IN MANUAL FREEZER EVAPORATOR DEFOST

Manual freezer evaporator defrost was incorporated into the control board to allow a customer or service technician to rapidly defrost the freezer evaporator, and for the service technician to diagnose freezer defrost issues.

To initiate manual freezer evaporator defrost, the unit must be on. Touch and hold ① for five seconds. The evaporator temperatures appear for five seconds. Then the compartment temperatures appear.



ICB BUILT-IN DIAGNOSTIC MODE

To enter diagnostic mode, touch and hold a ▽, then touch ①. Release both icons.

If fault codes have been logged in the system, the control board enters fault code recall mode instead of diagnostic mode. Tap ① to return to diagnostic mode.

Initiate self-test mode. With the unit in diagnostic mode, touch and hold either zone △ and ▽, then ①. Release all icons. Self-test mode begins and lasts for approximately five seconds, during which the lights shut off. When the ambient thermistor reading appears on the display, the test is complete and the unit has returned to diagnostic mode.

TIP: When the unit exits self-test mode, the lights do not turn on. Tap ① to exit diagnostics, then re-enter diagnostics to turn the lights on.

When in diagnostic mode, tap ▽ or △ to scroll through the thermistor readings.

THERMISTOR LOCATION CODE TABLE	
Code	Location
r	Refrigerator Compartment
rE	Refrigerator Evaporator
F	Freezer Compartment
FE	Freezer Evaporator
dr	Refrigerator Drawers (not active)
Cn	Condenser (not active)
A	Ambient

TIP: Inactive thermistors show "EE."

To exit the mode, wait 10 seconds after the last icon is touched, or tap ①.

Controls and Operation

ICB BUILT-IN DIAGNOSTIC MODE (continued)



ICB BUILT-IN SELF-TEST MODE

Self-test mode forces the control board to cycle through all relays and triacs, switching components on and off and checking for the correct feedback information. If a relay or triac fails to function properly or if the wrong feedback is received, a fault code is logged.

To enter diagnostic mode, touch and hold a ▽, then touch ①. Release both icons.

If fault codes have been logged in the system, the control board enters fault code recall mode instead of diagnostic mode. Tap 🔔 to return to diagnostic mode.

Initiate self-test mode. With the unit in diagnostic mode, touch and hold either zone △ and ▽, then ①. Release all icons. Self-test mode begins and lasts for approximately five seconds, during which the lights shut off. When the ambient thermistor reading appears on the display, the test is complete and the unit has returned to diagnostic mode.

TIP: When the unit exits self-test mode, the lights do not turn on. Tap 🔔 to exit diagnostics, then re-enter diagnostics to turn the lights on.

To exit the mode, wait 10 seconds after the last icon is touched, or tap 🔔.



ICB BUILT-IN FAULT CODE RECALL MODE

If a fault code has been logged in the system, then when entering diagnostic mode, the unit enters fault code recall mode instead.

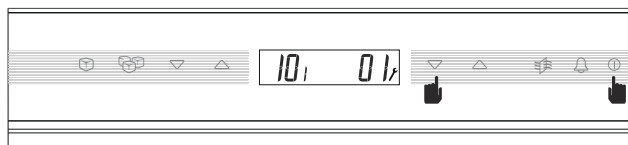
To enter diagnostic mode, touch and hold a ▽, then touch ①. Release both icons.

The unit enters diagnostic mode, then automatically enters fault code recall mode.

Tap △ or ▽ to scroll through the fault codes.

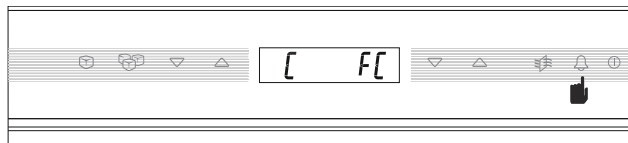
For information on the fault code and recommend action, see the fault code tables in the Troubleshooting section.

To exit the mode, wait 10 seconds after the last icon is touched, or tap 🔔.



ICB BUILT-IN FAULT CODE CLEARING

If the unit logs a fault code, the code must be manually cleared after correcting the problem causing the fault. If the fault code is not cleared, the highest priority fault indicator reappears on the display. To clear the fault codes, touch and hold 🔔 for 15 seconds. "C" and "FC," meaning "clear fault codes," appears on the display for five seconds.



ICB BUILT-IN TEMPERATURE LOG RECALL MODE

The control system logs the average temperature of each thermistor every 30 minutes, along with any event indicators. These 30-minute periods are called "indexes." Up to 240 indexes can be logged for each thermistor, which is five days of temperature history.

After 240 indexes are logged, each new index bumps the oldest, with index number 240 being the oldest.

To enter diagnostic mode, touch and hold a ▽, then touch ①. Release both icons.

If fault codes have been logged in the system, the control board enters fault code recall mode instead of diagnostic mode. Tap 🔔 to return to diagnostic mode.

Controls and Operation

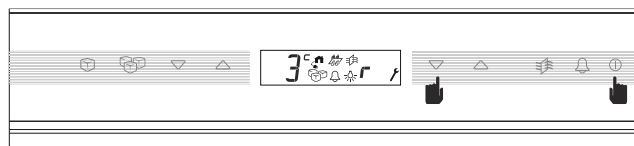
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ICB BUILT-IN TEMPERATURE LOG RECALL MODE (continued)

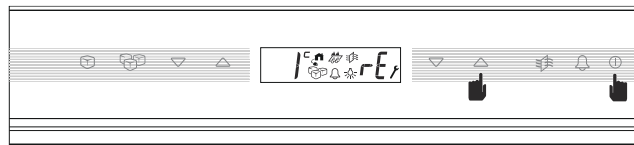
THERMISTOR LOCATION CODE TABLE

Code	Location
r	Refrigerator Compartment
rE	Refrigerator Evaporator
F	Freezer Compartment
FE	Freezer Evaporator
dr	Refrigerator Drawers (not active)
Cn	Condenser (not active)
A	Ambient

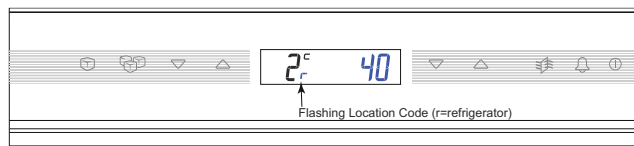
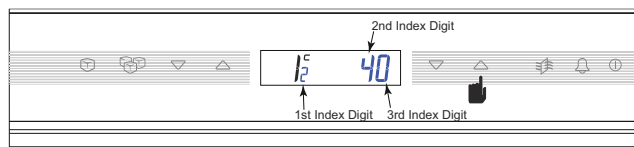
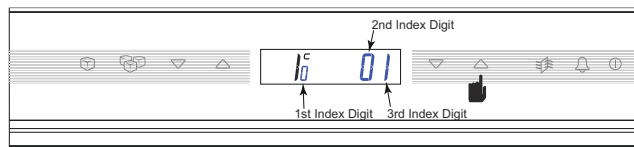
TIP: Inactive thermistors show "EE."



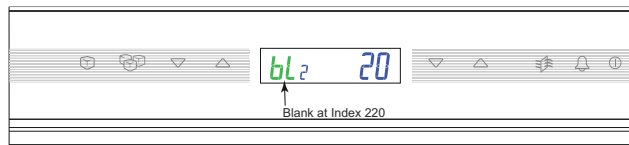
Scroll through the thermistors in diagnostic mode until the thermistor to be reviewed appears on the display. Scroll past "dr," "Cn," and "A," as no temperatures are logged for these thermistors. Touch and hold $\triangle$, then $\textcircled{1}$. Release both icons.



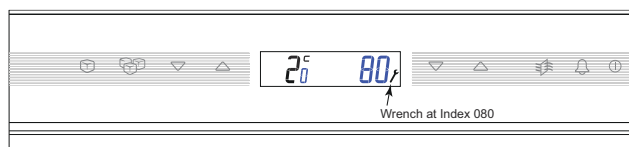
The unit enters temperature log recall mode. The average temperature for that 30-minute index appears, along with the index number and any event that may have occurred in the index. Every three seconds, the location flashes below the Celsius symbol: "F" for freezer, "F" then "E" for freezer evaporator, "r" for refrigerator, and "r" then "E" for refrigerator evaporator. Touch $\triangle$ to scroll up through the indexes or ∇ to scroll down.



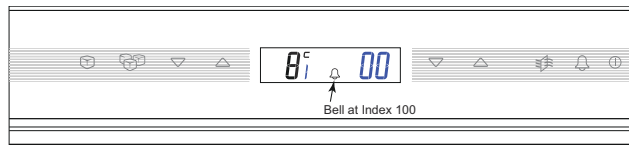
Temperature log recall mode can record three other events. If "bL," meaning "blank," appears on the left side of the display, an average temperature has not been recorded for the index. This can only happen on a unit less than five days old or on a unit with a new control board less than five days old.



If $\textcircled{1}$ is illuminated, it indicates that $\textcircled{1}$ was tapped, turning the unit off.



If $\textcircled{1}$ is illuminated, it indicates that power to the unit was interrupted.



TIP: If manual compartment disable mode or Showroom mode was activated during any of the indexes, the average temperature continues to be logged, but no event indicator appears with the indexes.

ICB BUILT-IN MANUAL COMPONENT ACTIVATION MODE

Manual component activation mode allows a service technician to operate various unit components or functions while viewing the corresponding functions on the display. This mode also allows for voltage checks at activated components without having to wait for the zone to call for cooling.

Components in the refrigerator zone and freezer zone cannot be activated at the same time. All temperatures shown while in manual component activation mode are real-time temperatures, not averages.

The chosen zone components are forced on for five minutes. Tapping any other icon than $\textcircled{1}$ or $\textcircled{1}$ restarts the five-minute timer.

Tapping $\textcircled{1}$ during this mode returns the unit to the diagnostic mode.

To access manual component activation mode, enter diagnostic mode.

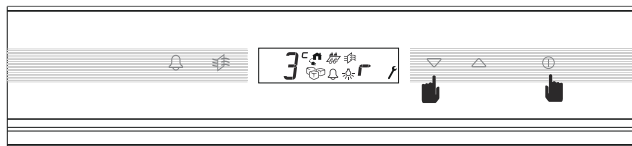
To enter diagnostic mode, touch and hold a ∇ , then touch $\textcircled{1}$. Release both icons.

Controls and Operation

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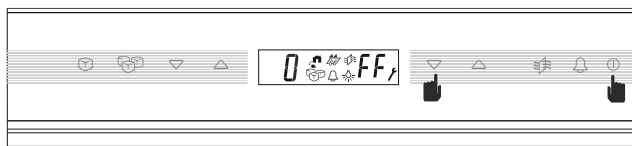
ICB BUILT-IN MANUAL COMPONENT ACTIVATION MODE (continued)

If fault codes have been logged in the system, the control board enters fault code recall mode instead of diagnostic mode. Tap to return to diagnostic mode.



From diagnostic mode, touch and hold of the zone to be activated, then touch . Hold both icons for 10 seconds.

When the unit enters manual component activation mode, all cooling functions stop. "O" and "FF" appear on the display, and all icons illuminate.



Tap of the zone being tested to move to the next test. Tap to move to the prior test.

TIP: -64°C or -84°F indicate the thermistor is not in use.

REFRIGERATOR ZONE MANUAL COMPONENT ACTIVATION TABLE

REFRIGERATOR ZONE MANUAL COMPONENT ACTIVATION TABLE			
Step	Functions/Components	Display	Comments
1	- All components off - All lights off		- OFF shown - All lights off
2	Refrigerator compressor on		Zone temperature and r shown
3	- Refrigerator evaporator fan on - Compressor on	 	- Evap temperature and rE shown five seconds - Then zone temperature and rC shown five seconds
4	- Condenser fan on - Compressor and evaporator fan on		-64 C condenser temperature and Cd shown
5	- Drawer fans off - No drawer fans in unit		- OFF shown - All lights off
6	- Air purification light on - Air purification fan on		Ar and Ft shown
7	- Everything off - Light relay on and lights off		- OFF shown - All lights off
8	Main lights on		- LS and On shown - Main lights on - Everything else off
9	Accent/display lights on		- AC and Lt shown - All lights on
Exit	Normal on mode		Tap to exit or let time out



Controls and Operation

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FREEZER ZONE MANUAL COMPONENT ACTIVATION TABLE

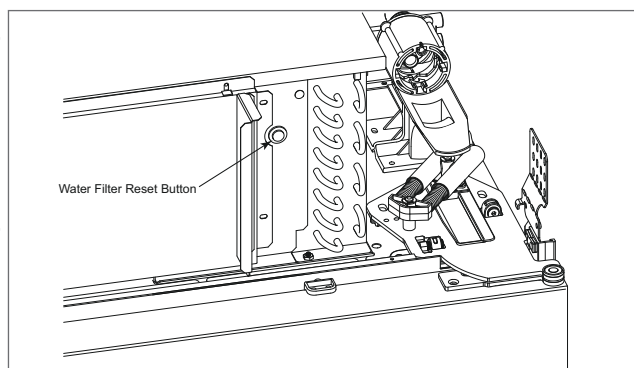
Step	Functions/Components	Display	Comments
1	- All components off - All lights off		- OFF shown - All lights off
2	Freezer compressor on		Zone temp and F shown
3	- Freezer evaporator fan on - Compressor on	 	- Evap temperature and FE shown five seconds - Then zone temperature and FC shown 5 seconds
4	- Condenser fan on - Compressor and evaporator fan on		-64 C Condenser temperature and Cd shown
5	Defrost heater on		Evaporator temperature and Et shown
6	- Defrost heater on - Evaporator fan on		Evaporator temperature and dE shown
7	- Evaporator fan, freezer compressor, condenser fan, and defrost heater off - All lights off		- OFF shown - All lights off
8	Main lights on		- LS and On shown - Main lights on - All else off
Exit	Normal on mode		Tap ① to exit or let time out

For the water dispenser, the control board holds the isolation valve and dispenser fill valve open as long as the water button is pressed.

The control board tracks the amount of water delivered to the water filter. When 890 liters pass through the filter, appears on the display. The also appears if 8,760 hours have elapsed since the last time the filter reset button was pressed.

To reset the , press and hold the water filter reset button for five seconds.

The water filter reset button is located behind the top grille to the left of the water filter on the face of the condenser.



ICB BUILT-IN WATER FILTER LIFE MONITOR

The water filter life monitor is active, even if the water filter is bypassed. The on the display means the water filter life has expired.

To deactivate the water filter life monitor, press the water filter reset button five times within seven seconds. A single beep confirms the water filter life monitor is deactivated. There is no visible indication that the water filter life monitor is deactivated unless the water filter life has expired, and appears on the display. If the water filter life has expired, then the water filter life monitor is deactivated and disappears.

To reactivate the water filter life monitor, press the water filter reset button five times within seven seconds. Two beeps confirm the water filter life monitor is activated. There is no visible confirmation, unless the water filter life had expired before the water filter life monitor was deactivated. In that case, appears on the display.

The water filter reset button is located behind the top grille to the left of the water filter on the face of the condenser.

BUILT-IN WATER FLOW AND WATER FILTER USAGE

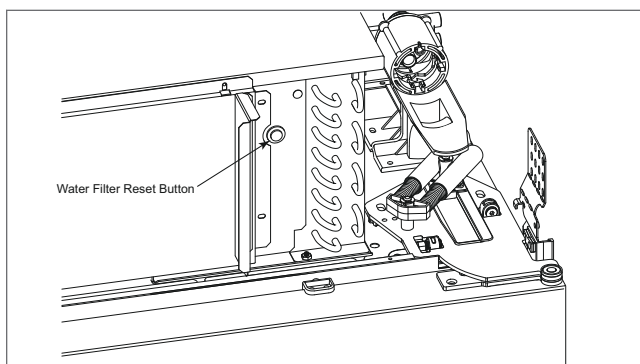
Water flow is monitored by the flow meter on the isolation valve inlet. During the ice maker fill, the control board holds the isolation valve and ice maker fill valve open until the flow meter measures approximately 105 ml. The time the valves are open varies depending on the water pressure supplied to the unit.



Controls and Operation

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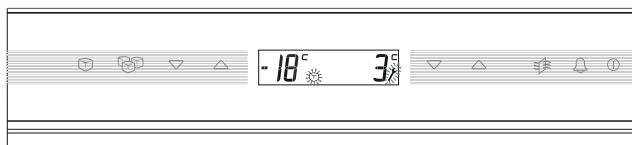
ICB BUILT-IN WATER FILTER LIFE MONITOR (continued)



ICB BUILT-IN SERVICE ICE FAULT

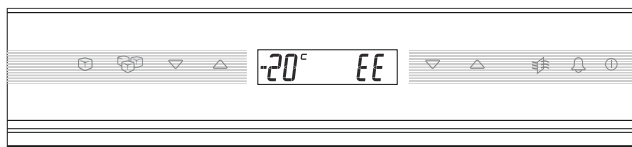
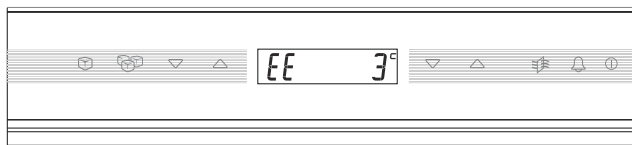
During ice production, the control board monitors the time that the ice maker water valve solenoid is energized. If the ice maker water valve solenoid is energized for more than 35 seconds, the control board disables the power to the ice maker for 24 hours and logs a fault code.

If this fault happens five consecutive times,  and  flash on the display. The ice maker system is disabled until the problem is corrected and the fault code is cleared.



ICB BUILT-IN EE DISPLAY

If the control board senses an open or short in either cabinet thermistor, "EE" appears on the display. If the "EE" is on the freezer side of the display, the freezer cabinet thermistor is suspect. If the "EE" is on the refrigerator side of the display, the refrigerator cabinet thermistor is suspect.

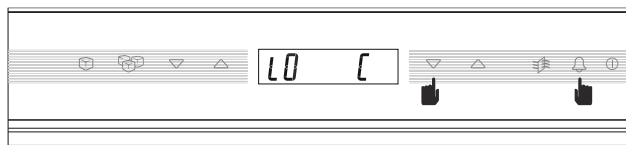


ICB BUILT-IN LOC DISPLAY

If the control board determines the display icons have been tapped while the door is closed, it locks the control panel. "LO" and "C" appear on the display.

To unlock the control panel, correct the problem causing the error, disconnect power to the unit, and reconnect it.

Within five minutes after power is restored, touch and hold , and tap either  twice.

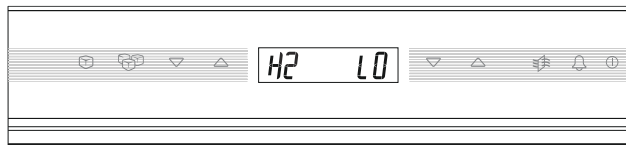


BUILT-IN DISPENSER H2LO FAULT

If the control board on a Built-In dispenser model senses that 3.8 liters of water have been dispensed in 15 minutes, or that the dispenser water valve has been energized 150 seconds, "H2" and "LO" appear on the display for five seconds, and three chimes sound when the water dispense button is pushed. Water dispensing is interrupted for 45 minutes.

To bypass the 45-minute dispensing interruption on external dispensers, touch and hold the dispenser light key for five seconds. The dispenser chimes twice.

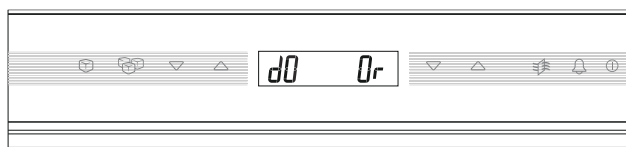
To bypass the 45-minute dispensing interruption on internal dispensers, press the water paddle five times in 20 seconds. The dispenser chimes twice.



BUILT-IN FRENCH DOOR INTERNAL DISPENSER D00R FAULT

If the door is left open on a Built-In French door model with an internal dispenser for more than five minutes when  is off, "D0" and "0r" appear on the display and the alarm chimes.

When the door closes, the alarm stops. The display is disabled for five minutes after the door closes.



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BUILT-IN DRAWER/DOOR SWITCH OPERATION

Opening the door or drawer closes the switch, completing a circuit to the control board. If the unit is on and not in Sabbath mode, the control board:

- Enables appropriate lights and internal dispenser operation.
- Disables the evaporator fan, ice maker, and air purification fan.
- Monitors how long the door switch is closed to control the door ajar alarm.

If the unit is in Sabbath mode, the control board:

- Does not register the change in door switch position.
- Does not disable the evaporator fan or air purification system when the door or drawer opens.
- Does not alter the ice maker because it is disabled.

BUILT-IN CONDENSER FAN OPERATION

The control board monitors the power output to the compressor(s). If power is supplied to either compressor, the condenser fan relay on the control board receives a signal to close, supplying power to the condenser fan motor. If both compressors are off, the condenser fan is off.

EVAPORATOR FAN OPERATION

Evaporator fans are brushless direct current (BLDC) motors. When the unit is on, the evaporator fan supply is 12 VDC at all times. The control board monitors revolutions per minute (RPM). On some models, the evaporator fan always runs at high speed. On other models, the speed command drops to low speed after 30 seconds.

Operation of the refrigerator and freezer evaporator fans differ during compartment defrost. See Freezer Adaptive Defrost for freezer fan operation and Fan-Assisted Off-Cycle Defrost for refrigerator fan operation.

EVAPORATOR FAN ACTIONS	
Control Board Detects	Action
High offset temperature	Control board sends high speed signal to evaporator fan.
Compartment temperature above high offset on models where evaporator fan speed lowers	Evaporator fan continues to run at high speed until temperature drops below high offset.
Compartment low offset temperature	▪ Door/drawer switch closes. ▪ Control board sends zero speed command to evaporator fan. ▪ Evaporator fan stops.
Open door/drawer when evaporator fan is running	▪ Door/drawer switch closes. ▪ Control board sends zero speed command to evaporator fan. ▪ Evaporator fan stops.
Open door/drawer when unit is in Sabbath mode	▪ Door/drawer switch closes. ▪ Control board does not change fan speed.
Max Ice feature on	Freezer evaporator fan: ▪ Runs 100% of the time. ▪ Runs at high speed when freezer compressor is on. ▪ Runs at low speed when compressor is off.



Controls and Operation

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BUILT-IN FAN-ASSISTED OFF-CYCLE DEFROST

If the refrigerator compartment temperature reaches high offset before the refrigerator evaporator temperature rises to 3°C - 6°C, the refrigerator compressor does not receive power. The control board sends a high-speed run signal to the refrigerator evaporator fan. This sends warm air across the refrigerator evaporator, causing the evaporator temperature to rise. Once the refrigerator evaporator temperature rises to 3°C - 6°C, the control board turns on the refrigerator compressor.

- If the control board senses that the refrigerator compartment temperature is below 2°C, it extends the defrost time before starting the evaporator fan.
- If the refrigerator compartment thermistor is shorted or open, EE appears on the display,  flashes, and a fault code is logged. The refrigerator compressor defaults to 20 minutes on and 40 minutes off.
- If the refrigerator evaporator thermistor is shorted or open, EE appears in diagnostic mode, the  flashes, and a fault code is logged. The refrigerator compressor does not start until the refrigerator compartment thermistor reads 3°C above high offset.
- In Sabbath mode, the refrigerator compartment thermistor still controls the refrigerator compressor, except a random 15- to 25-second delay occurs before the cooling cycle starts.

FREEZER ADAPTIVE DEFROST

With adaptive defrost, the control board monitors the length of time the defrost heater stays on to open the defrost terminator. Initially, the freezer compressor runs for six hours. Then the compressor and evaporator fan switch off, and the control board defrost relay closes, supplying power to the defrost system. After the initial pull-down, the control board uses the length of time needed to open the defrost terminator to calculate the number of hours before the next defrost interval. During adaptive defrost, the control board prevents the freezer temperature shown on the display from changing.

- A five-minute delay follows all defrosts before allowing the compressor to be energized.
- If the heater energizes for a shorter time period than the control board estimates based on predetermined algorithms, the control board increases the next defrost interval.
- If the heater energizes for a longer time period, the control board decreases the next defrost interval.
- Adaptive defrost is an ongoing process where the defrost heater on-time and the defrost interval vary by unit use.
- Minimum defrost interval is six hours of compressor run time.
- Maximum defrost interval is 80 hours of compressor run time.
- Maximum defrost duration is 30 minutes, plus a five-minute delay time.
- If the defrost sensing line is open,  flashes, a fault code is logged, and the control board defrosts the unit for 25 minutes after every six hours of freezer compressor run time.

EXCESSIVE COMPRESSOR RUN

The control board monitors the position of the compressor relays to determine the amount of time the compressor runs.



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EXCESSIVE COMPRESSOR RUN (continued)

COMPRESSOR RUN		
Compartment	If	Then
Refrigerator	Compressor runs four hours, five consecutive times	- Fault code logged - Fan-Assisted Off Cycle Defrost initiated - Service wrench flashes
Freezer	Compressor runs six hours, five consecutive times	- Fault code logged - Defrost initiated - Service wrench flashes
Refrigerator or Freezer Compressor	24 hours of 100% run - And compartment temperature still higher than the average of setpoint and low offset temperature - And the door/drawer is not opened during last run period	- Fault code logged - Defrost initiated - Service wrench flashes - Alarmed is sounded
Refrigerator or Freezer Compressor	Compressor unit is shut off	Compressor does not start for at least three minutes to protect the compressor and its electricals

