

ICB BI Series Electronic Control Pocketbook Pocket Manual

BUILT-IN SERIES

Basic Input Operations

- **Unit ON/OFF**
 - Press POWER key.
- **Adjusting Set-Point** (*Temperature Adjust*)
 - Press COLDER or WARMER key of desired compartment
NOTE: *Actual temperature is displayed 10 seconds after last keystroke.*
- **Icemaker System ON/OFF**
 - Press ICE key.
- **Maximum Ice Production Feature ON/OFF**
 - Press MAX ICE key.
NOTE: *Automatically converts to normal operation after 24 hours.*
- **Door Ajar Alarm ON/OFF**
 - Press ALARM key.
- **Air Purification Feature ON/OFF**
 - Press PURE AIR key.
- **Accent Lighting System ON/OFF**
 - Press LIGHTS key.

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Unique Input Operations

- **Temperature Units Selection Mode** (*°F or °C Display*)
 - Within first minute of switching unit on, press ALARM key and POWER key simultaneously for 5 seconds.
NOTE: *Mode will end 10 seconds after last keystroke.*
- **Contrast Adjust Mode** (*LCD Contrast Level*)
 1. Within first minute of switching unit on, press COLDER, WARMER and POWER keys simultaneously for 5 seconds. (“c” appears at small digit, with “1”, “2”, “3”, “4” or “5” at right)
 2. Press Colder or WARMER key to toggle
NOTE: *Mode will end 10 seconds after last keystroke.*
- **Tone Adjust Mode** (*Audible Chime Tone*)
 1. Within first minute of switching unit on, press COLDER, WARMER and POWER keys simultaneously for 5 seconds
 2. Press POWER key. (“s” appears at small digit, with “HI” or “nO” or “Lo” at right)
 3. Press Colder or WARMER key to toggle.
NOTE: *Mode will end 10 seconds after last keystroke.*

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- **Showroom Mode** (*Disables all cooling functions*)
 1. Switch unit off with POWER key.
 2. Press COLDER, WARMER & POWER keys simultaneously
NOTE: *To return to normal operation, repeat steps above.*
- **Sabbath Mode** (*Disables all but cooling functions*)
 1. Switch unit off with POWER key.
 2. Press POWER key for 10 seconds.
NOTE: *To exit Sabbath Mode, press POWER key.*
- **Zone Disable Mode** (*Disables cooling functions in 1 zone*)
 1. Switch unit off with POWER key.
 2. Press desired WARMER & POWER keys simultaneously
NOTE: *To return to normal operation, repeat steps above.*
- **Manual Defrost**
 - Press & hold ICE key for 5 seconds.

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Possible Instruction & Fault Indicators

NOTE: *Temperatures shown are for reference only, actual temperatures may vary.*



Replace Air Filter

NOTE: *Press PURE AIR Key for 5 seconds to reset timer.*



Replace Water Filter

NOTE: *Press filter reset button for 5 seconds to reset counters.*



Freezer Compartment Thermistor Fault



Refrigerator Compartment Thermistor Fault

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Icemaker System Problem; Icemaker System Disabled



Minor Fault Code Logged



Major Fault Code Logged



(Flashing w/Alarm Beeping)

Major Fault Code Logged Needing Immediate Attention

NOTES:

- > *All Fault Codes will reappear after repairs unless ALARM key is pressed for 15 seconds.*
- > *To suspend a Fault Code for 24 hours, press and hold ALARM then POWER keys simultaneously for less than 5 seconds.*

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Service Input Operations

- **Diagnostic Mode** (*Observe Current Thermistor Temperatures*)
NOTE: *Keystrokes for Diagnostic Mode and Fault Code Recall Mode are the same.*
 1. Press COLDER and POWER simultaneously, then release.
If no Fault codes observed, temperature appears at left with location code at right.
 2. Press Colder or WARMER key to toggle.

| THERMISTOR LOCATION CODE TABLE | |
|---------------------------------------|--|
| CODE | LOCATION |
| <i>r</i> | Refrigerator Compartment |
| <i>rE</i> | Refrigerator Evaporator |
| <i>F</i> | Freezer Compartment |
| <i>FE</i> | Freezer Evaporator |
| <i>dr</i> | Refrigerator Drawers (Not Active) |
| <i>[n</i> | Condenser (Not Active) |
| <i>A</i> | Ambient |

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DIAGNOSTIC MODE NOTES:

- > *Mode will end 20 seconds after last keystroke.*
- > *Pressing and holding COLDER and POWER keys for 10 seconds will initiate Manual Zone Disable Mode.*
- > *If “Sh” and “r” appear when initiating Diagnostic Mode, unit is in Showroom Mode.*
- > *If “EE” appears when in Diagnostic Mode, thermistor in that location is defective.*
- > *There is no thermistor in the drawers, so “EE” will appear at left of the “dr”.*
- > *There is no thermistors on the condenser, so “EE” will appear at left of the “Cn”.*
- > *The ambient thermistor is part of the control board. It is not a separate component.*

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Service Input Operations

- **Fault Code Recall Mode** (*Observe Stored Fault Codes*)

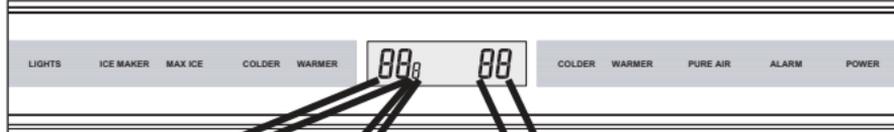
NOTE: *Keystrokes for Fault Code Recall Mode and Diagnostic Mode are the same.*

1. Press COLDER and POWER simultaneously, then release.
2. Press Colder or WARMER key to toggle.

NOTES:

- > *Mode will end 10 seconds after last keystroke.*
- > *Pressing and holding COLDER and POWER keys for 10 seconds will initiate Manual Zone Disable Mode.*
- > *If “Sh” and “r” appear when initiating Fault Code Recall Mode, unit is in Showroom Mode.*
- > *To clear fault codes, press ALARM key for 15 seconds.*
- > *If Fault Codes are present but the desire is to view current temperature readings from thermistors (Diagnostic Mode), then press ALARM key; this will shift electronic control system into Diagnostic Mode.*

FAULT CODE TABLE WITH LCD CORRELATION DIAGRAM (PAGE 1 of 2)



| | |
|----|----------------------------|
| 10 | Thermistor Faults |
| 15 | Relay Faults |
| 20 | Defrost Heater Faults |
| 30 | Ice/Water/Accessory Faults |
| 35 | Fan Faults |
| 40 | Runtime Faults |
| 44 | Glass Heater Faults |
| 45 | Lighting Faults |
| 50 | Flow Meter |
| 60 | Load/Component Faults |
| 90 | Control Faults |
| 95 | Diagnostics |
| 98 | Power Faults |

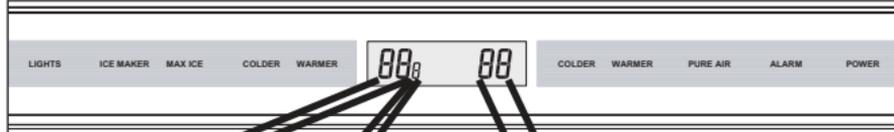
| | |
|---|-------------------------|
| 0 | Misc |
| 1 | Refrigerator |
| 2 | Freezer |
| 3 | Condenser |
| 4 | Defrost System |
| 5 | Control System |
| 6 | Compressors |
| 7 | Ambient |
| 8 | Icemaker |
| 9 | Dispenser |
| A | Air Purifier |
| d | TC Drawer |
| F | Freezer Evaporator |
| H | High Voltage System |
| L | Lighting |
| r | Refrigerator Evaporator |
| U | Water Systems |

| | |
|----|----------------------------------|
| 00 | Open |
| 01 | Short/Closed |
| 02 | Unstable |
| 05 | Miswire normal temps |
| 06 | Miswire overheat |
| 07 | Bad Ohms |
| 09 | Too Warm/Large Temp Differential |
| 10 | Second Device Open |
| 11 | Second Device Short/Closed |
| 12 | Second Device Unstable |
| 20 | Third Device Open |
| 21 | Third Device Short/Closed |
| 22 | Third Device Unstable |
| 25 | Diagnostics Failure |
| 30 | Valve Enabled Too Long |
| 33 | Speed Setting too Low |
| 34 | Speed Setting too High |
| 35 | Fan speed error |
| 36 | Fan current too low |
| 37 | Fan current too high |
| 38 | Fan Power Output Fault |
| 39 | DC Fan Output Fault |
| 40 | Excessive runtime |
| 42 | Primary Heater Fault |
| 43 | Secondary Heater Fault |
| 44 | Door Heater Output Fault |
| 45 | Burned out Light |
| 46 | No Position/State Detect |

NOTE: These Columns are repeated on next page

NOTE: This Column is continued on next page

FAULT CODE TABLE WITH LCD CORRELATION DIAGRAM (PAGE 2 of 2)



| | |
|----|----------------------------|
| 10 | Thermistor Faults |
| 15 | Relay Faults |
| 20 | Defrost Heater Faults |
| 30 | Ice/Water/Accessory Faults |
| 35 | Fan Faults |
| 40 | Runtime Faults |
| 44 | Glass Heater Faults |
| 45 | Lighting Faults |
| 50 | Flow Meter |
| 60 | Load/Component Faults |
| 90 | Control Faults |
| 95 | Diagnostics |
| 98 | Power Faults |

| | |
|---|-------------------------|
| 0 | Misc |
| 1 | Refrigerator |
| 2 | Freezer |
| 3 | Condenser |
| 4 | Defrost System |
| 5 | Control System |
| 6 | Compressors |
| 7 | Ambient |
| 8 | Icemaker |
| 9 | Dispenser |
| A | Air Purifier |
| d | TC Drawer |
| F | Freezer Evaporator |
| H | High Voltage System |
| L | Lighting |
| r | Refrigerator Evaporator |
| U | Water Systems |

| | |
|----|------------------------------------|
| 50 | Open Heater |
| 55 | Triac Open |
| 56 | Triac Short |
| 60 | No Load/Load Open |
| 65 | Stuck at Dispenser Water Valve Out |
| 66 | Stuck at Ice Water Valve Out |
| 70 | Bad Flash Write |
| 71 | Flash Initialized |
| 72 | Flash Memory Bad |
| 73 | Invalid Log Fault Checksum |
| 74 | Invalid E2 Checksum |
| 75 | Invalid Model E2 Checksum |
| 80 | No Communication |
| 81 | Communications Time-out |
| 82 | Partial Communications |
| 83 | Bad Micro Communication |
| 84 | Micro Initialization |
| 85 | Display Failure |
| 86 | Too Slow |
| 87 | No Flow |
| 90 | Framing Errors |
| 92 | Excessive Collisions |
| 93 | Data Overrun |
| 95 | FMEA Error |
| 96 | Calibration or Low Signal Error |
| 97 | Quantum SPI |
| 98 | Brownout |
| 99 | Other |

NOTE: These Columns are repeated from last page

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BUILT-IN SERIES

Service Input Operations

- **Temperature Log Recall Mode** (*Observe Average Temp Data*)
 1. Initiate Diagnostic Mode by pressing COLDER and POWER simultaneously, then release. If fault codes are observed, press ALARM key.
 2. Press COLDER or WARMER key to toggle to desired thermostat.
 3. Press and hold POWER key, then WARMER key, then release.
 - a. Temperature appears at left; index at right.
 - b. Location code will flash at 3 second intervals.

NOTES:

- > *Mode ends 20 seconds after the last key stroke.*
- > *“bL” at left = blank, no temperature data.*
- > *Service icon = POWER key pressed during that index.*
- > *Alarm bell icon = power failure during that index.*
- > *If Manual Compartment Disable Mode was activated, average temperatures will be logged, but no event indicator.*
- > *If unit was in Showroom Mode, average temperatures will be logged, but no event indicator.*
- > *If the unit was switched OFF, average temperatures will be logged and service indicator would be present.*

BUILT-IN SERIES

Service Input Operations

- **Model Configuration Mode** (*Apply Appropriate Model Batch Files to E-Control*)
 1. Initiate Diagnostic Mode by pressing COLDER and POWER simultaneously, then release. If fault codes are observed, press ALARM key.
 2. Press and hold POWER key for 10 seconds.
 3. Press COLDER or WARMER key to toggle through model codes; stop when appropriate code is displayed.
 4. Press POWER key, “Pr g” appears.
 5. Press POWER key again within 5 seconds.

NOTES:

- > *Second press of POWER key must occur w/in 5 seconds.*
- > *With no keys pressed, mode automatically ends 30 seconds after last key stroke.*
- > *If the ALARM key is pressed, or if WARMER and COLDER keys are pressed during Model Configuration Mode, mode is exited.*
- > *Model code sequence is as shown in tables on next page.*

BUILT-IN SERIES

MODEL CODE SEQUENCE TABLE

| | | | |
|--------------|--------------|---------------|---------------|
| 36 U | 42 S | 36 UI | 42 SI |
| 48 SD | 42 SD | 48 SDI | 42 SDI |
| 48 S | 36 S | 48 SI | 36 SI |
| 36 R | 36 UG | 36 RI | 36 UGI |
| 36 F | 36 RG | 36 FI | 36 RGI |
| 30 U | 30 UG | 30 UI | 30 UGI |

NOTE: The main control board is used in domestic and international units. An "I" at end of the model code indicates an International model code. Currently only 4 digits can be displayed, so if code is 5 digits long (Ex: 30UGI, 36UGI, 36RGI, 42SDI & 48SDI), 5th digit will not appear. Until this is addressed, stopping after the appropriate model code has been observed the second time (International only) should result in proper operation.

BUILT-IN SERIES

Service Input Operations

- **Manual Component Activation Mode** (*Individual Component Activation*)
 1. Initiate Diagnostic Mode by pressing COLDER and POWER simultaneously, then release. If fault codes are observed, press ALARM key.
 2. Press and hold desired zone's COLDER key for 10 seconds. (Chosen zone's components can be forced to ON for five (5) minutes, or OFF using WARMER or COLDER keys)
 3. Press WARMER key to activate next component; press COLDER key to activate previous component.

NOTES:

- > *All temperatures displayed are current, without weighted averaging or offsets.*
- > *With no keys pressed, mode automatically ends 5 minutes after last key stroke.*
- > *Pressing any key (other than POWER or ALARM) during this mode restarts the 5 minute timer.*
- > *Pressing ALARM key during this mode will end the mode.*
- > *Pressing POWER key during this mode will force control into Diagnostic Mode.*
- > *“-84F” or “-64C” will appear in place of temperature if thermostat is open or missing.*

REFRIGERATOR ZONE MANUAL COMPONENT ACTIVATION TABLE

| STEP | FUNCTIONS / COMPONENT(S) | LCD VIEW | COMMENTS |
|------|--|-----------|--|
| 1 | All Components OFF; All Lights OFF | 0 | OFF Displayed; All Lights OFF |
| 2 | Ref Compressor ON | 38 | Zone Temp & r Displayed; Actual temps will vary |
| 3 | Ref Evaporator Fan ON (Comp stays ON) | 28 38 | Alternate Evap Temp & rE / Zone Temp & rC Display at 5 second intervals; Actual temps will vary |
| 4 | Condenser Fan ON (Comp/Evap fan stays ON) | 38 | Zone Temp & Cd Displayed; Actual temps will vary |
| 5 | Drawer Fan(s) ON (Comp/Evap/Cond fan switch OFF) | -84 28 | Alternate -84 (-64 if set Celsius) & dr / Evap Temp & rE Display at 5 second intervals; Actual temps will vary |
| 6 | Drawer Fan(s) OFF | 0 | OFF Displayed; All Lights ON |
| 7 | Air Purifier Light & Fan ON | Rr | Ar & Ft Displayed |
| 8 | Everything OFF (Light relay ON/Lights OFF) | 0 | OFF Displayed; All Lights OFF |
| 9 | Main Lights ON | LS | LS & On Displayed; Main Lights ON; All else OFF |
| 10 | Accent/Display Lights ON | RL | AC & Lt Displayed; All Lights ON |
| EXIT | Normal ON Mode | 0 38 | Press POWER to exit, or let time out |

FREEZER ZONE MANUAL COMPONENT ACTIVATION TABLE

| STEP | FUNCTIONS / COMPONENT(S) | LCD VIEW | COMMENTS |
|------|---|----------|---|
| 1 | All Components OFF; All Lights OFF | 0 | OFF Displayed; All Lights OFF |
| 2 | Fre Compressor ON | 0 | Zone Temp & F Displayed; Actual temps will vary |
| 3 | Fre Evap Fan ON (Comp stays ON) | -10 0 | Alternate Evap Temp & FE / Zone Temp & FC Display at 5 second intervals; Actual temps will vary |
| 4 | Condenser Fan ON (Comp/Evap fan stays ON) | 0 | Zone Temp & Cd Displayed; Actual temps will vary |
| 5 | Defrost Heater ON | -10 | Evap Temp & Et Displayed; Actual temps will vary |
| 6 | Defrost Heater ON; Evap Fan ON | -10 | Evap Temp & dE Displayed; Actual temps will vary |
| 7 | All Components OFF; All Lights OFF | 0 | OFF Displayed; All Lights OFF |
| 8 | All Lights ON | LS | LS & On Displayed; All Lights ON |
| EXIT | Normal ON Mode | 0 38 | Press POWER to exit, or let time out |

BUILT-IN SERIES

Service Input Operations

- **Self-Test Mode** (*Forced E-Control Cycling*)
 1. Initiate Diagnostic Mode by pressing COLDER and POWER simultaneously, then release. If fault codes are observed, press ALARM key.
 2. Press and hold COLDER, WARMER and POWER key, then release.

NOTES:

- > *Self-test lasts approximately 5 seconds.*
- > *After running Self Test Mode, Fault Code Recall Mode must be initiated to view any fault codes that may have been logged during the self test.*