ICB BI Series Electronic Control Pocketbook Pocket Manual

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.

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)
 - Press Colder or WARMER key to toggle.
 NOTE: Mode will end 10 seconds after last keystroke.

- 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.
 - Press desired WARMER & POWER keys simultaneously NOTE: To return to normal operation, repeat steps above.
- Manual Defrost
 - Press & hold ICE key for 5 seconds.

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

PAGE 6



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.

- 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 | | | |
| r | Refrigerator Compartment | | | |
| r E | r E Refrigerator Evaporator | | | |
| F | Freezer Compartment | | | |
| FE | E Freezer Evaporator | | | |
| dr | Refrigerator Drawers (Not Active) | | | |
| [ח | Condenser (Not Active) | | | |
| Ą | Ambient | | | |

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.

- 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) | | | | |
|--|-------|-------------------------|----|----------------------------------|
| LIGHTS ICE MAKER MAXICE COLDER WARMER DE COLDER WARMER PURE AR ALARM POWER | | | | |
| | | | | |
| 10 Thermistor Faults | 0 | Misc | 00 | Open |
| 15 Relay Faults | 1 | Refrigerator | 01 | Short/Closed |
| 20 Defrost Heater Faults | 2 | Freezer | 02 | Unstable |
| 30 Ice/Water/Accessory Faults | 3 | Condenser | 05 | Miswire normal temps |
| 35 Fan Faults | 4 | Defrost System | 06 | Miswire overheat |
| 40 Runtime Faults | 5 | Control System | 07 | Bad Ohms |
| 44 Glass Heater Faults | 6 | Compressors | 09 | Too Warm/Large Temp Differential |
| 45 Lighting Faults | 7 | Ambient | 10 | Second Device Open |
| 50 Flow Meter | 8 | Icemaker | 11 | Second Device Short/Closed |
| 60 Load/Component Faults | 9 | Dispenser | 12 | Second Device Unstable |
| 90 Control Faults | Α | Air Purifier | 20 | Third Device Open |
| 95 Diagnostics | d | TC Drawer | 21 | Third Device Short/Closed |
| 98 Power Faults | F | Freezer Evaporator | 22 | Third Device Unstable |
| | н | High Voltage System | 25 | Diagnostics Failure |
| | L | Lighting | 30 | Valve Enabled Too Long |
| | r | Refrigerator Evaporator | 33 | Speed Setting too Low |
| | U | Water Systems | 34 | Speed Setting too High |
| | | | 35 | Fan speed error |
| | | | 36 | Fan current too low |
| NOTE: These Columns a | re re | peated on next page | 37 | Fan current too high |
| | | | 38 | Fan Power Output Fault |
| | | | 39 | DC Fan Output Fault |
| | | | | Excessive runtime |
| | | | | Primary Heater Fault |
| | | | | Secondary Heater Fault |
| | | | | Door Heater Output Fault |
| | | | 45 | Burned out Light |
| | | | 46 | No Position/State Detect |
| | | | | |

NOTE: This Column is continued on next page

| 10 Thermistor Faults 0 Misc 50 Open Heater 15 Relay Faults 1 Refrigerator 55 Triac Open 20 Defrost Heater Faults 2 Freezer 56 Triac Short 30 Ice/Water/Accessory Faults 3 Condenser 60 No Load/Load Open 31 Ice/Water/Accessory Faults 3 Condenser 60 No Load/Load Open 35 Fan Faults 5 Control System 65 Stuck at Dispenser Water Valve Out 44 Glass Heater Faults 6 Compressors 70 Bad Flash Mrite 36 Flow Meter 72 Flash Initialized 8 37 Arabient 73 Invalid Loaf Pault Checksum 38 Power Faults A Ar Purifier 74 Invalid Loa Fault Checksum 38 Power Faults A Ar Purifier 74 Invalid Model E2 Checksum 39 Ontrol Faults A Ar Purifier 81 Demantication 41 High Voltage System 81 Dormunication 42 Partial Communication 81 Partial Communication 44 High Voltage System 81 Doslow 81 Doslow | FAULT CODE TABLE WITH LCD CORRELATION DIAGRAM (PAGE 2 of 2) | | | | |
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| 10 Thermistor Faults 0 Misc 50 Open Heater 15 Relay Faults 1 Refrigerator 56 Triac Open 20 Defrost Heater Faults 2 Freezer 56 Triac Open 30 Ice/Water/Accessory Faults 3 Condenser 60 No Load/Load Open 31 Fan Faults 4 Defrost System 65 Stuck at Dispenser Water Valve Out 40 Rutime Faults 6 Compressors 71 Iread Flash Write 41 Class Heater Faults 7 Armbient 71 Iriad Eash Write 42 Lighting Faults 7 Armbient 71 Iriad Log Fault Checksum 90 Dispenser 7 Invalid Log Fault Checksum 7 90 Ontor Taults 9 Dispenser 7 Invalid Eac Checksum 90 Control Faults A Ar Purifier 74 Invalid Eac Checksum 91 Diagnostics 0 To Drawer 75 Invalid Sc Checksum 92 Power Faults 1 Lighting 81 Communication 93 Power Faults 1 Lighting 81 B ad Minco Communication 94 Micr | | . 112 | | COL | |
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| 40 Runtime Faults 5 Control System 66 Stuck at Ice Water Valve Out 44 Glass Heater Faults 6 Compressors 70 Bad Flash Write 45 Lighting Faults 7 Ambient 71 Flash Memory Bad 50 Flow Meter 8 Icemaker 72 Flash Memory Bad 50 Logd/Component Faults 9 Dispenser 73 Invalid Log Fault Checksum 90 Control Faults 4 Ari Purifier 74 Invalid Log Fault Checksum 95 Diagnostics 4 Ari Purifier 74 Invalid Log Fault Checksum 98 Power Faults F Freezer Evaporator 80 No Communication 1 High Voltage System 81 Communications 1 Communications 1 Refrigerator Evaporator 83 Bad Micro Communication 83 Bad Micro Initialization 1 Water Systems 81 Communication 81 Communication 1 Water Systems | 35 Fan Faults | 4 | Defrost System | 65 | Stuck at Dispenser Water Valve Out |
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| 98 Power Faults F Freezer Evaporator 80 No Communication H High Voltage System 81 Communications mo-out L Lighting 82 Partial Communications V Water Systems 83 Bad Micro Communication NOTE: These Columns are repeated from last page 86 Too Slow 90 Framing Errors 92 Excessive Collisions 93 Data Overun 94 Collibration or Low Signal Error 97 Quantur SPI 98 Brownout | 95 Diagnostics | d | TC Drawer | 75 | Invalid Model E2 Checksum |
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| U Water Systems 84 Micro Initialization NOTE: These Columns are repeated from last page 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 98 Brownout 90 Othere | | r | Refrigerator Evaporator | 83 | Bad Micro Communication |
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| 98 Brownout | | | | | Quantum SPI |
| LOO U Other | | | | 98 | Brownout |
| | | | | 99 | Other |

NOTE: This Column is <u>continued</u> from last page

- **Temperature Log Recall Mode** (Observe Average Temp Data)
 - 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 thermistor.
 - 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.

- 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 COLD-ER keys are pressed during Model Configuration Mode, mode is exited.
 - > Model code sequence is as shown in tables on next page.



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.

- 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.
 - Press and hold desired zone's COLDER key for 10 seconds. (Chosen zone's components can 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.
 - >"-84^F" or "-64^C" will appear in place of temperature if thermistor 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 🚓 FF# | OFF Displayed; All Lights OFF | | | |
| 2 | Ref Compressor ON | 30'%%r " | Zone Temp & r Displayed; Actual temps will vary | | | |
| 3 | Ref Evaporator Fan ON (Comp stays ON) | 28'%**rEx 38'%**rEx | 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'&%"(de | Zone Temp & Cd Displayed; Actual temps will vary | | | |
| 5 | Drawer Fan(s) ON (Comp/Evap/Cond fan switch OFF) | -84°&*\$\$dr= 28°&*\$rE= | 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 🖉 🖓 FF 🖉 | OFF Displayed; All Lights ON | | | |
| 7 | Air Purifier Light & Fan ON | Ar Ś₫\$Ft≈ | Ar & Ft Displayed | | | |
| 8 | Everything OFF (Light relay ON/Lights OFF) | [] 袭‡‡FF₂ | OFF Displayed; All Lights OFF | | | |
| 9 | Main Lights ON | L5 😂 🖓 🛛 n= | LS & On Displayed; Main Lights ON; All else OFF | | | |
| 10 | Accent/Display Lights ON | <i>₽[*‰*\$L</i> Ŀ. | AC & Lt Displayed; All Lights ON | | | |
| EXIT | Normal ON Mode | Of 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 🚓 🕫 F F 🖕 | OFF Displayed; All Lights OFF | | | |
| 2 | Fre Compressor ON | °≈°\$F ≋ | Zone Temp & F Displayed; Actual temps will vary | | | |
| 3 | Fre Evap Fan ON (Comp stays ON) | - 10°≫°\$\$FE _≅ | Alternate Evap Temp & FE / Zone Temp & FC Display | | | |
| | , | °≈°°,°F[| at 5 second intervals; Actual temps will vary | | | |
| 4 | Condenser Fan ON (Comp/Evap fan stays ON) | 0°&**(d_ | Zone Temp & Cd Displayed; Actual temps will vary | | | |
| 5 | Defrost Heater ON | - 10°≦°\$\$Et∍ | Evap Temp & Et Displayed; Actual temps will vary | | | |
| 6 | Defrost Heater ON; Evap Fan ON | · ID⁵ॐॐ¢dE≋ | Evap Temp & dE Displayed; Actual temps will vary | | | |
| 7 | All Components OFF; All Lights OFF | [] ∽**FF _≅ | OFF Displayed; All Lights OFF | | | |
| 8 | All Lights ON | L5 🗟 🗱 🛙 n= | LS & On Displayed; All Lights ON | | | |
| EXIT | Normal ON Mode | 0° 30' | Press POWER to exit, or let time out | | | |

Service Input Operations

- Self-Test Mode (Forced E-Control Cycling)
 - 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.