**NOTICE**

Read this manual before programming this thermostat. Use this thermostat only as described in this manual.

---

**CONTROLS**

506920-01

09/12

Supersedes 05/12

---

**icomfort™-Enabled Units**

- G71MPP-03 or later
- SLP98-01 or later
- SL280-03 or later
- EL296V-01 or later
- CBX40UHV-02 or later
- CBX32MV-06 or later
- XC17-02 or later
- XP17-02 or later
- XP19-06 or later
- XC21-05 or later
- XP21-01 or later

---

**Shipping and Packing List**

- 1 - icomfort Wi-Fi™ thermostat
- 4 - Mounting Screws
- 4 - Wall Anchors
- 1 - Installation Quick-Start Guide
- 1 - Installer’s System Setup Guide
- 1 - Homeowner’s Manual
- 1 - Warranty card
Table of Contents

Technical Description/Features ........................................ 3
Installation and Setup ................................................ 4
System Settings screen ................................................ 4
Change settings (dealer info, daylight savings, fan circulate) .................. 5
Table 1. System settings defaults and ranges .......................... 6
Set Time and Date ....................................................... 7
Add or Remove Non-communicating equipment ......................... 9
  Maintenance Timers .................................................. 9
  Outdoor Unit ....................................................... 10
  Humidifier .......................................................... 11
  Dehumidifier ...................................................... 12
Adjust a setting screen ................................................ 13
  Configure Humidifier .............................................. 15
  Configure Dehumidifier (Humiditrol®/Aux. Dehum. installed) ......... 16
  Configure Dehumidification (no dehumidifier installed) ............... 17
  Humidification and Dehumidification Modes—how they work .......... 18
Use the Test Features ................................................ 19
Set up Equipment Parameters ......................................... 20
Use the Diagnostic Features ........................................... 21
View and Clear Alerts .................................................. 22
Enable Wi-Fi from User Home Screen ................................ 24
Register the icomfort Wi-Fi thermostat ................................ 26
Personal Computer account registration to icomfort Wi-Fi® server .... 26
PC Welcome screen, interactive demo, Gelaskins ......................... 27
Access Installer Program from User Home Screen ...................... 28
Reconfigure a System .................................................. 29
Stage Delay Timers & Differentials ................................... 30
Smooth Setback Recovery (SSR) ..................................... 31
Heat Pump, Dual Fuel and Balance Points ................................ 32
Gas Heat Control Mode ............................................... 34
Table 2. Variable Capacity Furnace Operation ......................... 35
Table 3. Adjustable Parameters (Installer) ............................ 37
Table 4. Adjustable Parameters (User) ................................ 43
Table 5. Alert Codes and Troubleshooting ............................ 45
  Homeowner Service Codes ....................................... 54
Table 6. Troubleshooting Tips ......................................... 55
Wiring Diagrams ....................................................... 59
Thermostat wire termination in communicating system ............... 63
Table 7. Replacement Controls ....................................... 72

Setting up typical icomfort™ systems

<table>
<thead>
<tr>
<th>Indoor Unit</th>
<th>Outdoor Unit</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>icomfort-enabled furnace</td>
<td>icomfort enabled AC</td>
<td>65</td>
</tr>
<tr>
<td>non-communicating furnace</td>
<td></td>
<td>66</td>
</tr>
<tr>
<td>icomfort-enabled furnace (dual fuel)</td>
<td>icomfort enabled HP</td>
<td>67</td>
</tr>
<tr>
<td>non-communicating HP</td>
<td></td>
<td>not supported</td>
</tr>
<tr>
<td>icomfort-enabled air handler</td>
<td>icomfort enabled AC</td>
<td>68</td>
</tr>
<tr>
<td>non-communicating AC</td>
<td></td>
<td>69</td>
</tr>
<tr>
<td>icomfort-enabled air handler</td>
<td>icomfort enabled HP</td>
<td>70</td>
</tr>
<tr>
<td>non-communicating HP</td>
<td></td>
<td>71</td>
</tr>
</tbody>
</table>

CAUTION

This is a 24VAC Class 2 thermostat. Do not install on voltages higher than 30VAC.

WARNING

Electric shock hazard.

Always turn off power at the main power source by switching the circuit breaker to the OFF position before installing or removing this thermostat.

All wiring must conform to local and national building and electrical codes and ordinances.
The 24VAC icomfort Wi-Fi™ thermostat (figure 1) is an electronic communicating, color display touchscreen, 7-day programmable thermostat. It stores system parameters and settings in nonvolatile memory (i.e., it retains data when electrical power fails or is turned off). It is designed for 4-wire connection to other communication devices as listed in figure 1.

The icomfort Wi-Fi™ thermostat can connect to online services via the internet through the homeowner’s Wi-Fi access point. After online registration is completed, the system may then be accessed by the homeowner from anywhere using a remote internet connection via computer or personal communicating device.

BEST PRACTICES! Keep all communication wiring as far away from house electrical wiring and large electrical appliances as possible (15’ [5m] recommended).

The thermostat also:
- supports three languages (English, French, Spanish),
- supports air conditioning units or heat pump units with up to four stages of heat / two stages of compressor operation (2 stages of heat pump heating, 2 stages of auxiliary back-up heating, 2 stages of emergency heating),
- supports Indoor Air Quality with time-based notification of consumables including media filters, UVC bulbs, humidifier pads, and Pure-Air™ system catalyst service / replacement,
- supports variable-capacity / multi-stage heat/cool, universal compatibility (gas/electric/heat pump/ac), and is dual fuel capable (icomfort-enabled HP only) with two balance points.

Important
Connections to non-communicating outdoor units and accessories are described in the Quick-Start Installation guide. (Wiring diagrams are also shown beginning on Page 59 of this manual.)

Supports
- Humidification Measurement and Control,
- Dew Point Adjustment Control
- Dehumidification Measurement and Control
- Humiditrol® Enhanced Dehumidification Accessory (EDA)
- Multi-Stage HVAC Systems
- Equipment Maintenance Reminders
- Autochangeover Mode -- Permits control of heating, cooling, humidification, and dehumidification without user involvement.

Outdoor Temperature Sensor (option)

Communicating outdoor units contain a built-in outdoor temperature sensor.
Installation and Setup

IMPORTANT! Make sure the router is capable of, and set to operate in wireless network “b” mode. Check router utility program or contact service provider for help. When determining the location for the Wi-Fi thermostat, be sure it is in an area near enough to the homeowner’s Wi-Fi router to ensure good communications signal between the thermostat and the router. (Hint: use a smart phone with Wi-Fi to find and determine signal strength.)

Refer to the Quick Start Guide for information about installing the thermostat on a wall and for wiring diagrams for field wiring the thermostat to the system using one of a number of possible configurations. (Wiring diagrams are also shown beginning on Page 59 of this manual.)

NOTE - If electric heat strips are used with an icomfort “C0116-enabled air handler, the strips MUST be configured on the air handler control (AHC) board before beginning the “discovery” sequence below.

After all wiring connections are made, apply power to the system. 24VAC will power up the thermostat.

After power is applied to the thermostat for the first time, the processor checks the system for installed communicating devices, the “So Simple. So Smart. So Comfortable” screen displays; followed by “Use this thermostat?” screen. Touch press here to continue. During the setup process, alerts may pop open to provide the installer with information that affects the setup. Correct the cause of any such alerts prior to continuing setup.

“System settings” (figure 2) appear first. As you use the up/down arrows to scroll through the settings, the right hand side will show the current value. For example, current value: 9:39 am Aug 15, 2012 shows the current date for Time and Date.

![Figure 2. “System settings” screen](image)
Change settings

If you want to change a setting, use one of the Settings change tools shown in figure 3. (Also, see Set time and date on Page 7.) After changes have been made, use save to store the changed data or cancel to exit the screen and return to the list of settings.

Dealer Number

Use the arrows to scroll to the Dealer Number setting. Press edit and use the typewriter tool (shown in figure 3) to enter your dealer number. Press save to store the identification.

Figure 3. Settings change tools

Figure 4. Entering “Dealer Number”
Circulate fan ON time setting

NOTE - If the circulate fan mode is on, a timer is set to measure all the time that the fan is blowing, regardless if it is running to deliver heating or cooling or just for circulation.

“Circulate” is enabled on the user’s home screen or system settings page. It keeps air circulating from 15% to 50% percent of time. The following settings approximate how long the fan will run at these typical settings:

- 15% (9 minutes fan run time per hour)
- 25% (15 minutes fan run time per hour)
- 35% (21 minutes fan run time per hour)
- 45% (27 minutes fan run time per hour).

Table 1 shows the range/condition and defaults for the system settings and indicates the tools used to make changes.

<table>
<thead>
<tr>
<th>system setting</th>
<th>range/condition</th>
<th>default</th>
<th>use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time and Date</td>
<td>see Page 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daylight Saving Time</td>
<td>Enabled/Disabled</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>Circulate Fan ON Time</td>
<td>15 to 50% (in 1% increments)</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>System Name</td>
<td>(alpha-numeric characters)</td>
<td>—</td>
<td>use keyboard tool to change</td>
</tr>
<tr>
<td>Dealer Name</td>
<td>****</td>
<td>Lennox</td>
<td></td>
</tr>
<tr>
<td>Dealer Address</td>
<td>—</td>
<td>1-800-9-LENNOX</td>
<td></td>
</tr>
<tr>
<td>Dealer Phone</td>
<td>—</td>
<td><a href="http://www.lennox.com">www.lennox.com</a></td>
<td></td>
</tr>
<tr>
<td>Dealer Email</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Dealer Website</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>
Set time and date

Use the arrows to select **Time and Date**; press **edit** (see figure 5) to proceed to the “Set current time and date” screen (figure 6).

When “Time and Date” screen (figure 6) appears, enter the correct date as follows:

- Use the left and right arrows to change the month and year.
- Touch a day of the month to select it.
- Press on the hour or minute; up down arrows appear to allow change.
- Touch the **am/pm** field to toggle it between am and pm.
- When the correct date and time is set, press **save** to save settings and return to previous settings screen.

Touch **next** to continue to next screen.

**Figure 5. View/edit time and date**

**Figure 6. Set current time and date**
Use “about” screen & access “Add or Remove Non-communicating equipment” screen

The “about” screen shows details of discovered installed equipment. From the “system devices” screen, use arrow buttons to scroll to a device; then press the about button. Use the up/down arrows to scroll through and view additional information about the selected device. When finished viewing, press the back button.

Press next to advance to the “Add or Remove Non-communicating equipment?” screen.

![Diagram showing the use of the "about" screen and access to the "Add or Remove Non-communicating equipment" screen]

Figure 7. Using the “about” screen and accessing “Add or Remove Non-communicating equipment” screen
Add or Remove Non-communicating equipment

Figure 7 (previous page) shows how to access the “Add or Remove Non-communicating equipment” screen.

Adding Non-Communicating Outdoor unit—See figure 8 for details for adding/Removing an outdoor unit.

Adding Humidifier—The procedures in figure 9 describe adding a non-communicating humidifier which will be controlled by the icomfort Wi-Fi™ thermostat through the “H” or “HUM” terminals on the furnace or air handler.

Adding Dehumidifier—The procedures in figure 10 describe adding a non-communicating dehumidifier controlled by the icomfort Wi-Fi™ thermostat through the “DH” output on the furnace or air handler.

HUMIDITY CONTROL TIPS

- The standard humidification mode is “Basic” (humidifier is energized during a call for heat, if there is a humidification demand).
- Sensed outdoor temperature, required for some features, is provided from one of the following sources:
  A downloaded via Wi-Fi when available (primary source),
  B sensor furnished with icomfort™-enabled outdoor units,
  C separate outdoor sensor connected to the furnace or air handler “outdoor sensor” connections.

NOTE - If no source for outdoor temperature is present, “Basic and Precision Dew Point Control” modes are not available.

- If you do not have the ability to select or adjust the Humidity RH set-point on the “Indoor Humidity” button, the control is set for “Display Only.” In the installer program, go the equipment button and select “System” and press the edit button. Select “Humidification Control Mode” and press edit. Choose “Basic,” “Precision,” “Basic Dew Point Control” or “Precision Dew Point Control” and press save.

Adding non-communicating accessories—Adding maintenance timer reminders to accessories is a simple process of “installing” the device, which effectively tells the thermostat to activate access to its service timers. Timers are available for two (2) filters, Humidifier pad, UV bulb maintenance and the PureAir™ Air Purification system.

NOTICE

For details about how the humidification and dehumidification modes operate and how to configure those modes, see additional information beginning on Page 18.
Add Non-Communicating Outdoor unit

To add (or remove) an outdoor unit that is not icomfort™-enabled, you must be at the “Add or Remove Non-communicating equipment?” screen.

1. Press the yes button on this screen (see 1).
2. In the “non-communicating device list” screen, use the arrows (2a) to highlight Outdoor Unit Type and press edit (2b).
3. Touch one of the radio buttons (3a) to select a 1-or 2-Stage AC Unit or a 1-or 2-Stage HP Unit; press save (3b).
4. Use arrows (4a) to highlight any red colored text in the device list (e.g. select Outdoor Unit Capacity; text turns white). Press edit (4b).
5. Use arrows (5a) to make changes; press save (5b). Change other red settings (if present) using a similar process.

NOTE - If the defaults are correct, you do not have to make any changes, but you must press save (5b). When all red text is gone, the back button will appear; press it to return to the “Add or Remove Non-communicating equipment?” screen (1).
Add (or Remove) Humidifier (skip if no humidifier is being used)

Before adding a humidifier, be sure that:

- the humidifier is wired to the furnace or air handler control as shown on the Optional Accessories wiring diagram (see Page 61),
- the entire system is wired, powered up, and the thermostat has detected the system’s installed communicating devices, and you are at the “Add or Remove Non-communicating equipment?” screen (see figure 7, Page 8).

NOTE - Adding humidity regulating non-communicating devices may be a 2-step procedure:

1st, the device must be installed (this page; after the humidifier is installed, the operation mode defaults to “Basic”).

2nd, (if you want another mode, i.e. Precision, Basic Dew Point, or Precision Dew Point, the device requires further configuration (see Page 15).

To add (or remove) a humidifier:

1. Press the yes button on this screen (see 1).
2. In the “non-communicating device list” screen, use the arrows (2a) to highlight Humidifier (note the current value, Not Installed) and press edit (2b).
3. Touch one of the radio buttons (3a) to select the type of humidifier (or select Not Installed, if removing humidifier); press save (3b).
4. The previous screen returns, but the current value now shows your selection (4a). Press the back (4b) button.
5. The “Add or Remove...” screen reappears with your addition shown in the system devices list (5a). At this point, you may add more equipment (press yes) or if finished, press the next (5b) button to advance to the “Adjust a setting...” screen (see page 15).
6. (If you want other than the default “Basic” mode of operation) Configure the humidifier as described on Page 15.

Figure 9. Add or remove non-communicating device—HUMIDIFIER
Add (or Remove) Humiditrol® or Auxiliary Dehumidifier (skip if no dehumidifying device is being used)

Before adding a dehumidifier, be sure that:
- the dehumidifier is wired to the furnace or air handler control as shown on the Option-
al Accessories wiring diagram (see Page 61),
- the entire system is wired, powered up, and the thermostat has detected the sys-
   tem’s installed communicating devices, and you are at the “Add or Remove Non-
   communicating equipment?” screen (see figure 7, Page 8).

NOTE - Adding humidity regulating non-communicating devices may be a 2-step procedure:
  1st, the device must be installed (this page; after the dehumidifier is installed, the opera-
  tion mode defaults to “Basic”).
  2nd, set Humiditrol® comfort adjust overcooling and the min/max dehumidification set-
  points if desired (see Page 16).

To add (or remove) a dehumidifier, you must be at the “Add or Remove Non-communicating
   equipment?” screen.

1. Press the yes button on this screen (see 1).
2. In the “non-communicating device list” screen, use the arrows (2a) to highlight
   Dehumidifier and press edit (2b). Note the current value (e.g. Not Installed).
3. Touch one of the radio buttons (3a) to select the type of dehumidifier (or select Not
   Installed, if removing dehumidifier); press save (3b).
4. When you scroll to the Dehumidifier device (4a), (Note the current value, e.g. Humiditrol.) Click back (4b) to return to the “Add or Remove…” screen (1).
5. The “Add or Remove…” screen reappears with your addition shown in the system
devices list (5a). At this point, you may add more equipment (press yes) or if
finished, press the next button (5b) to advance to the “Adjust a setting…” screen
(see Page 13).

Humiditrol® Note—By default, the Humiditrol Comfort Adjust (HCA) is configured for max-
imum overcooling and minimum dehumidification setpoint of 40% RH. If these settings are
satisfactory, no further configuration is necessary. If another setting is needed, change HCA
and setpoint as described on Page 16.
Adjust a setting screen (communicating devices)

Use arrows to select a device from the “system devices” list; then use the about button to view information (shown on Page 8) about communicating devices (information about other devices is not available).

Use resetAll button to un-install all non-communicating devices that were added through “Add or Remove...” screen and to reset any device settings made through this “Adjust a setting...” screen to the factory defaults. (While editing a communicating device, the reset button is limited to only the selected device. You are asked to confirm (shown in figure 11) before resetting all.

Use this screen to access communicating devices’ settings (pressing buttons numbered from 1 to 6 in figure 11 for an example of changing heating airflow; more examples are shown on the next page). Use back to return to the previous screen or next to go on. A complete list of parameters, their defaults and setting ranges, begins on page 37.

Figure 11. Adjust communicating device screens
Use the up/down arrows to scroll through the device’s settings. The current setting will be displayed on the right-hand side of the screen (figure 12). For example, **current value: disabled**. Press **edit** if you want to modify that setting, or press **back** to return to the previous screen.

Available settings for the devices depend on the installed components. Shown below is an example of enabling and changing the balance point control from default (Disabled) to Enabled. After selecting **Enabled**, press **save** to save the changes and return to the previous screen.

The returning screen may appear with the message in red “please view and save all red settings.” In the example in figure 13, note that two additional items are listed in red. Use the arrows to scroll and highlight each item appearing in red. Press **edit**, make any desired changes, and press **save**.

When all affected settings have been edited/saved, the red message disappears. Press back to return to the “To adjust a setting...” screen. If no more adjustments are necessary, press **next** to advance to the “select tests to run” screen (see Page 19).

---

**G71MPP or SLP98 Furnace Note:**

If your icomfort Wi-Fi™ thermostat is being used with a G71MPP or SLP98 furnace and is set to variable-capacity mode of operation (the icomfort™ default with these units), the thermostat’s settings for stage timers are ignored (even if shown enabled in the thermostat). The stage timer will be used on the cooling side. The furnace software sets and controls the firing rates. The only other controlling factor is the stage temperature differentials. In Load-Tracking Variable Capacity (default for these furnaces), both stage timers and temperature differentials are ignored.
Adjust a setting... Configure Humidifier (skip if no humidifier is being used or if humidifier is being used and default “Basic” humidification mode is desired)

Pre-adjustment REQUIREMENTS:
1st, the device has been installed (see Page 11).
2nd, you pressed next at the “Add or Remove...” screen (see Page 11).

Configure the device as follows:
1. In the “system devices” list, use the arrows (1a) to highlight System. Press edit (1b).
2. In the “System” list, use the arrows (2a) to highlight Humidification Control Mode. The current value defaults to Basic mode. Press edit (2b).
3. Touch one of the radio buttons (3a) to highlight any red colored text in the list (e.g. select Max Humidification Setpoint). Press save (3b). (After saving, check that the current value now shows the new selection).
4. Use arrows (4a) to highlight any red colored text in the list (e.g. select Max Humidification Setpoint). Press edit (4b).
5. Use arrows (5a) to make changes; press save (5b). Repeat for other red settings. You will not be able to advance to the next step until all red settings have been removed.
6. Press the back button to return to “Adjust a setting...” screen.

NOTE - If the defaults for the settings shown in red, you are not required to make any changes, but you must go into the edit tool, and press save (5b). When all red text is gone, the back button will appear; press it to return to the “Adjust a setting...” screen.

Figure 14. Adjust a non-communicating device setting—HUMIDIFIER
Adjust a setting... Configure Humiditrol® or Auxiliary Dehumidifier

Pre-adjustment REQUIREMENTS:
1st, the device has been installed (see Page 12).
2nd, from the “Add or Remove Non-communicating equipment?”, press next.
3rd, in the “Adjust a setting...” screen, configure the device as follows:

1. In the “system devices” list, use the arrows (1a) to highlight System. Press edit (1b).
2. Humiditrol® only—in the “System” list, use the arrows (2a) to highlight Humiditrol Comfort Adjust. The current value defaults to Maximum Overcooling. Press edit (2b).
3. Humiditrol® only—Touch one of the radio buttons (3a) to select the overcooling level; press save (3b). (After saving, check that the current value now shows the new selection).
4. Use arrows (4a) to highlight Min Dehumidification Setpoint; press edit (4b). Note the current value (e.g. 45).
5. Use arrows (5a) to make changes; press save (5b). (After saving, check that the current value now shows the new selection).
6. Press the back button to return to “Adjust a setting...” screen.

Humiditrol Comfort Adjust settings are only available on units equipped with a Humiditrol® dehumidification device. See Page 18 for description of Min/Mid/Max overcooling.

Figure 15. Adjust a non-communicating device setting—DEHUMIDIFIER
Adjust a setting... Configure Dehumidification (no dehumidifying device installed) (skip if default “Basic” dehumidification mode is desired)

Pre-adjustment REQUIREMENTS:
1. NO physical dehumidification device has been installed.
2. configure the thermostat for dehumidification as follows:
   1. In the “system devices” list, use the arrows (1a) to highlight System. Press edit (1b).
   2. In the “System” list, use the arrows (2a) to highlight Dehumidification Control Mode. The current value defaults to Display Only. Press edit (2b).
   3. Touch one of the radio buttons (3a) to select the mode of dehumidification control; press save (3b).
   4. Use arrows (4a) to highlight any red colored text in the list (e.g. select Min Dehumidification Setpoint). Press edit (4b).
   5. Use arrows (5a) to make changes; press save (5b). Change other red settings (e.g. Auto Changeover − Humidif. Deadband) using a similar process.
   6. Press the back button to return to “Adjust a setting...” screen.

NOTE - If the defaults are correct, you do not have to make any changes, but you must press save (5b). When all red text is gone, the back button will appear; press it to return to the “Add or Remove Non-communicating equipment?” screen.

Figure 16. Adjust dehumidification when not using Humiditrol or an auxiliary dehumidifier
Humidification and Dehumidification Modes—how they work

**HUMIDIFICATION modes**

**BASIC & PRECISION**—These modes allow user control of RH between 15 and 45%. These conditions must be met for either mode to operate:
- humidification mode has been enabled, and
- the unit is in HEAT mode, and
- humidification demand exists (24V present at H), and
**BASIC** mode also requires presence of heating demand [Y for HP heat, or W for gas heat (W may be energized with G de-energized)].

**DEW POINT**—(Available only if Wi-Fi is operational or outdoor sensor is attached)

- **Basic Dew Point Control**—Basic Dew Point Control adjustment mode will change the humidification setpoint based on the outdoor temperature and a user-defined dew point adjustment setting.
- **Precision Dew Point Control**—Precision Dew Point Control adjustment mode will operate when these conditions are met:
  - humidification mode has been enabled, and
  - the unit is in HEAT mode, and
  - humidification demand exists (24V present at H).

**DEHUMIDIFICATION modes**

**NOTE** - Basic and Precision dehumidification modes are functions of the HVAC system with NO external dehumidification devices installed. Humiditrol and Auxiliary Dehumidifiers do not use these modes.

In **BASIC** mode, dehumidification occurs if these conditions are met and signals are present at specific terminals:
- dehumidification has been enabled on installer settings, and
- the unit is in COOL mode, and
- dehumidification demand exists (RH above setpoint), and
- cooling demand exists (Y1 energized). In **PRECISION** mode, dehumidification occurs if all BASIC conditions are true, except cooling demand may or may not be present. Also note that:
- **Maximum overcool from cooling setpoint is 2°F.**
- **Deadband** temperature is limited to a minimum of 5°F (instead of 3°F in BASIC or DISPLAY ONLY mode) because of 2°F overcooling.

**Humiditrol® or Auxiliary Dehumidifier** mode requires:

- Wi-Fi is operational or outdoor sensor is installed and set up
- dehumidification has been enabled on installer settings, and
- the unit is in COOL mode, and
- dehumidification demand exists (RH above setpoint), and
- outdoor temp. below 95°F; indoor temp. above 65°F, and
- for **HUMIDITROL**, adjust Humiditrol® comfort parameters as follows:
  - **MAX adj.** - Indoor temp > 2°F above heating setpoint
  - **MID adj.** - Indoor temp > \( \frac{\text{HEAT Setpoint} + \text{COOL Setpoint}}{2} \)
  - **MIN adj.** - Indoor temp > 2°F below cooling setpoint

**Auxiliary Dehumidifier (stand alone dehumidifier)**

When this option is selected, dehumidification will be allowed under the following conditions, provided there is NO call for humidification:
- In the absence of heating or cooling calls, or
- Simultaneous with blower only calls.

If the blower is required to operate while the auxiliary dehumidifier is running, a separate wire must be installed from the auxiliary dehumidifier to the indoor unit’s G thermostat input that will energize G when the auxiliary dehumidifier is running (see wiring diagram on Page 61).

Auxiliary dehumidification is controlled by the thermostat dehumidification demand.

**NOTE** - Refer to HCWH Dehumidifier Installation Instructions for installation recommendations.
Use the Tests / Diagnostics features

NOTE - Test mode lasts for 30 minutes (with the temperature updating every 30 seconds) except for the defrost test, which lasts 30 seconds. Tests feature provides the technician time to manually verify the equipment operation.

The tests feature is available after setup has been completed once. After you press next in the final setup screen, the “select tests to run” screen (figure 18) will appear. (If you want you may skip tests; press skip tests.)

If you re-select the tests button from the full option screen (figure 17), a message to “press Start button below to begin system testing” appears. Press start. The resulting screen will be identical to figure 18.

To run all of the tests, press select all. All boxes in the list of tests will be checked. Or, touch box(es) next to test(s) to run certain tests.

After the tests have been started, the screen will describe which test is running and shows a diagnostic summary of each test (see figure 19). After reviewing the results and concluding that no further tests are needed, press next to proceed to next test. The technician must verify that the test procedure is producing the desired result at the equipment.
After pressing **next** after the final test, the “Testing finished” screen will appear (figure 20). At this point, use the **EXIT** button (if you have completed the required setup), or use **diagnostics** button (to analyze the system), or use **equipment** button (if you wish to make any changes to device details).

---

**Figure 20. Testing finished screen**

**Equipment, Alerts, Diagnostics**

Press **equipment** if you need to set up equipment parameters and edit details of devices in the system (see Page 20).

Press **alerts** if you need to run to see any alerts that may present or to view alerts that have been cleared (see Page 22).

Press **diagnostics** if you need to run to analyze the system (see Page 21).

---

**Set up Equipment parameters**

Press **equipment** to set up equipment parameters and edit details of devices in the system without having to re-run the setup program. When the “press start...” screen (figure 21A) appears, press **start**. The “Equipment parameters” screen (figure 21B) will open. You may view information about or modify communicating devices as described earlier in the setup pages, beginning on page 14. Use the arrows to select a device and press **edit**. Use the arrows to highlight a setting and then press **edit** (figure 22A). In the example, the low heating airflow is changed from the default (400) to 325 (figure 22B). After changing, press **save**. (note the current value has changed; figure 22C). Some changes may affect other settings and, if so, those affected will appear in red and require changing/saving to clear the red settings.

---

**Figure 21. Equipment parameters screen**
When finished, press back; equipment parameters screen (figure 21B returns); then press next. “Select tests to run screen appears” (Page 19); either run tests as before or press skip tests.

The “Testing process screen” (see figure 20) again appears; use the EXIT button (if you have completed the required setup), or use diagnostics button (to analyze the system; see Page 21), or use equipment button again (if you want to make any further changes to device details).

The “Testing process screen” (see figure 20) again appears; use the EXIT button (if you have completed the required setup), or use diagnostics button (to analyze the system; see Page 21), or use equipment button again (if you want to make any further changes to device details).

Table 3 on (Page 37) shows a list of Editable Parameters for the currently available devices designed to communicate in this system. Other devices and additional parameters may be added at a later time. Check the unit installation manuals (i.e. furnace, air handler, heat pump, ac unit) for current information and default parameters.

Run Diagnostics

NOTE - To run diagnostics and insure the system works properly, the system should be running—set the thermostat so that it will initiate a demand for cooling, heating, dehumidification, humidification, or continuous fan operation.

If you need to run diagnostics to analyze the system, press the diagnostics button. The “select a device” list (figure 23A) will open.

Use the arrow buttons to scroll through the list of items found on the left of the screen. The right side of the screen shows which item is selected. Use start to begin the process. A “waiting” message displays while the diagnostics are being conducted, followed by a screen similar to figure 23B.

Use the arrow buttons to scroll through the information and take note of any found to be out of operating range.
Press **done** when finished with the information. Select another device to
diagnose or use **EXIT** (to close and go to user Home screen) if finished.

From the user’s home screen, press and hold the “Lennox” logo in the bottom
right corner of the thermostat to access the installer program. Press **yes**
when asked if you want to proceed. The installer screen opens at the “sys-
tem and device alerts” screen (figure 24A).

The left side of the “system and device alerts” screen shows a list of each
communicating device discovered in the system and check boxes for select-
ing each device. Or, you may use buttons to the right of the System Devices
list to **select all** (or **deselect all**). After something has been selected; use **view active** to list all active alerts for selected devices. If there are no alerts,
the display will show “There are no new alerts that require service”. If there
are alerts, these are stored for recall but only one alert will appear in the box
at a time (see figure 24B). Use the **next** button to advance through all the
alerts. If only one alert is present, the **next** button will not appear.

Alerts may pop up on the screen during setup. Details of all active alerts can
only be accessed through the installer’s screens. To view all alerts present at
any time, press the **alerts** button. “System setup / Diagnostics is complete”
(figure 24B) appears; close it and the “Select devices to view alerts screen
(figure 24A) appears.

Use **view cleared** alerts to list previously active alerts that were cleared by
the device or installer. Until at least one alert has been cleared by the device
or the installer, the message “There are no new alerts that require service”
will be displayed.

The first alert will be displayed in the alert screen (figure 24B), in order of:

1. ⚠️ red alert icon
2. ⚠️ yellow alert icon (service)

*A red alert icon* identifies a system or device issue that can prevent the sys-
tem from working properly or at all, and if allowed to run, could cause dam-
age to the system. **The issue raised by the alert must be addressed and
corrected before clearing the alert!**

Press **clear** (figure 24B) to clear a red alert. The alert will be stored in the
“cleared alerts” file. If an alert cannot be cleared, revisit the alert issue and
make repairs accordingly.

---

**NOTE - Service alerts** remind users to service filters, humidifier pad, UV light and
PureAir ™ Air Purification system and are not shown in the installer’s menu.
After all active alerts have been cleared, only the back button remains and the alerts box shows “No Alerts” (Figure 25).

Press back to return to the system and device alert screen (figure 24A, Page 23).

**Figure 24. Selecting and viewing alerts**

**View cleared alerts**

A history of cleared alerts allows the installer to review cleared alerts. This information can help diagnose problems. Use the arrows to select either select all or check an item from the list and then press view cleared alerts. Then, scroll through the alerts using the next button.

Press back to return to the alerts screen (figure 24A, Page 23).

**Figure 25. Cleared alert confirmation**

**Figure 26. Cleared alerts screen**
Enable the thermostat’s Wi-Fi feature from the Home screen

1. Press and release “Wi-Fi” in the lower left corner of the HOME screen (see START HERE). The screen changes from the Home Screen to the WI−FI SETTINGS screen.

2. Press the Wi-Fi enable button.

3. Press next as necessary; then press accept after reading the User Agreement.

4. Press NETWORK SETTINGS; this screen shows a graphical view of buttons representing Wi-Fi options OPEN and SECURE wireless networks and a button for creating a new access point (AP).

5. Decide which of the following buttons you need to select:
   - 5.0—OPEN Wi-Fi Port (no password required).
   - 5.1—SECURE Ports (requires router password).
   - 5.2—Create new AP (Access Point).
   - 5.2a—When creating a new AP, you have the option of selecting a security level (default is none; choose from WEP, WPA, WPA2, depending on the security defined in the homeowner’s router); the password field appears.

6. When you touch in one of the input fields (press here to enter...), the keyboard tool appears. Enter password (if simply logging into an existing network) or enter the network name if creating a new AP. If you mistype the password or if you cannot access the selected network, a message will alert you to retry.

7. Press connect to complete the connection. Note that “Wi-Fi enable” button on the Wi-Fi SETTINGS screen changes to “Wi-Fi disable”.

Secure Connection Recommended!
Make sure the router is capable of, and set to operate in wireless network “b” mode. Check router utility program or contact service provider for help. A secure wireless network is recommended over an open (unsecured) network. You will need the homeowner’s approval and router password to enable Wi-Fi in a secured connection.

Enable Wi-Fi—To enable the Wi-Fi feature to communicate with a wireless router:

1. Press and release “Wi-Fi” in the lower left corner of the HOME screen (see START HERE). The screen changes from the Home Screen to the WI−FI SETTINGS screen.

2. Press the Wi-Fi enable button.

3. Press next as necessary; then press accept after reading the User Agreement.

4. Press NETWORK SETTINGS; this screen shows a graphical view of buttons representing Wi-Fi options OPEN and SECURE wireless networks and a button for creating a new access point (AP).

5. Decide which of the following buttons you need to select:
   - 5.0—OPEN Wi-Fi Port (no password required).
   - 5.1—SECURE Ports (requires router password).
   - 5.2—Create new AP (Access Point).
   - 5.2a—When creating a new AP, you have the option of selecting a security level (default is none; choose from WEP, WPA, WPA2, depending on the security defined in the homeowner’s router); the password field appears.

6. When you touch in one of the input fields (press here to enter...), the keyboard tool appears. Enter password (if simply logging into an existing network) or enter the network name if creating a new AP. If you mistype the password or if you cannot access the selected network, a message will alert you to retry.

7. Press connect to complete the connection. Note that “Wi-Fi enable” button on the Wi-Fi SETTINGS screen changes to “Wi-Fi disable”.

Figure 27. Wi-Fi setup
Registering the icomfort Wi-Fi™ thermostat

From NETWORK SETTINGS screen, you can change to the desired network as shown in figure 28. Enter security key or passphrase. "X" back to the WI-FI SETTINGS screen.

NOTE NETWORK's marked with * - Selecting one of these wireless networks may result in an unreliable connection to your thermostat. Press help "?” for tips on improving signal strength.

Figure 28. Change Networks

Registration for online access

From the WI-FI SETTINGS screen, press the "thermostat not registered" button (see figure 29).

Enter homeowner email address twice and press the register button.

A pop up screen then appears to notify the user to check their home computer for instructions to complete the registration. After the server sends the email with the network link, registration and account creation must be completed on the homeowner’s personal computer (see Page 26).

NOTE - Time from pushing the registration button on the thermostat and receiving the consumer portal register link from your email on your computer is from 5 to 15 minutes.

After registration has been completed, any available firmware downloads will immediately start downloading to the thermostat.

A pop up screen then appears to notify the user to check their home computer for instructions to complete the registration. After the server sends the email with the network link, registration and account creation must be completed on the homeowner’s personal computer (see Page 26).

NOTE - If any downloads are available for the thermostat they will start downloading right away. When new firmware is being downloaded or when Gelaskins are being installed, the thermostat screen will temporarily go blank and running units may cease operation while the system is being reset to accommodate the new changes. This is normal and can last a couple minutes.

Figure 29. Registering the system for online access

For any issues with Wi-Fi connections, refer to Wi-Fi Troubleshooting Checklist 507037-01.
Personal Computer account registration for icomfort Wi-Fi™ server

NOTE - This following information is customer setup instructions and is shown here to allow the installer to help walk the customer through the setup process.

After registering through your icomfort Wi-Fi™ thermostat interface, go to the homeowner’s computer and locate the email sent from the server:

Dear Customer,

Congratulations on your purchase of a Lennox icomfort thermostat! You are only a few steps away from total control of your Lennox icomfort system. Registering your thermostat will allow you to remotely access it from anywhere in the world on any device with an internet connection. Please complete your Lennox icomfort registration by clicking the link below:

Register

NOTE - if the customer has already setup an account, click the “Click Here” button to access that account.

Click on the Register link; the screen (to the left) will appear. Fill in the User Name and Password fields and check the agree to terms and conditions box. Click Create User button. A series of pages and prompts follows to provide guidance through profile setup and user preference definitions.

Figure 30. icomfort Wi-Fi™ Registration screen
Welcome home.

Access all the great Wi-Fi enabled features on your icomfort® thermostat from our secure web portal. After signing in, you’ll be able to view your icomfort system settings, adjust the temperature and view reminders and alerts – just as you would on your icomfort Wi-Fi™ thermostat at home. With a familiar look and settings this simple, you should feel right at home. Don’t forget to check out the available Apps and customizable skins using the links on the right side of the page. From the welcome page, you may also click on links to launch an interactive demo or learn more about icomfort Wi-Fi™.

**How Do I Turn on Skins on the icomfort Wi-Fi™ Thermostat?**

From the thermostat Home screen, press then display setting then power save buttons. From the pop-up menu, select skins. The skin picture will appear after 30 seconds of inactivity.

**How Do I Upload a Skin?**

Skins should be ordered from www.gelaskins.com/lennoxicomfort. After ordering the skin, Gelaskins will email the image file (.jpg) to the homeowner. This “.jpg” has been altered to display correctly on the icomfort Wi-Fi™ Thermostat. Images can be uploaded to the icomfort Wi-Fi™ thermostat from the consumer portal site (www.myicomfort.com) under the tab "skins".
Access installer program from Home screen

To access the installer program after the unit has been placed in operation and the user home screen is displayed, press the “Lennox” logo and hold for 5 seconds (see figure 32). The system will access the installer screens.

A message screen stating “Qualified Lennox equipment installer warning” screen appears (Figure 33). Press yes to proceed (no returns to the home screen).

**WARNING!**

The following screens are intended for use by qualified Lennox equipment installers only.

Do you want to proceed?

[yes] [no]

Figure 33. Qualified Lennox equipment installer warning

When you press yes, the thermostat’s processor will search for communicating devices in the system. The next display will be a summary of all alerts detected (see figure 34A).

After initial installation, if an alert is present when you are making changes to settings, no action on the alert is mandatory.
Reconfigure a system

If any component of the HVAC system has been changed, e.g. replacing an outdoor sensor, reconfiguring the system will be required. To begin reconfiguring a system (after you have accessed the program from the Lennox logo [previous page]), press the setup button (1, figure 34A). The “Start system configuration” screen (fig. 34B) will appear. Press start (2, figure 34B) to proceed. The “Re-configure confirmation” screen (fig. 34C) will appear. This reminder notes that system configuration may affect some existing device settings and prompts to confirm or cancel the configuration process.

Press confirm (3, figure 34C) to continue system configuration; the screen will change to the system discovery screen. At this point, the program goes through the same setup as the initial setup process which begins on Page 4.

NOTE - “Compatible device found” screen (shown below) appears only when a device has been removed and replaced with a compatible device.

---

Figure 34. Re-configuration process
Stage Delay & Differential Settings (Installer settings)

1st Stage Differential—Stage 1 differential is used in all thermostats. The default is 1.0°F but can be programmed between 0.5° and 3.0°F in 0.5°F increments.

From the equipment button, use the arrows to select 1st Stage Differential. Press edit. Use the up/down arrows to adjust to the desired setting and press save.

2nd Stage Differential (where applicable)—The default is 1.0°F but can be programmed between 0.5° and 8.0°F in 0.5°F increments.

3rd Stage Differential through 6th Stage Differential (where applicable)—The default is 0.5°F but can be programmed between 0.5°F and 8.0°F in 0.5°F increments.

NOTE - Each stage’s differential is based on the previous stage’s differential endpoint. For example, in cooling mode, if stage 1 differential is set to 1.0°F, then the system comes on 0.5°F above setpoint and the 2nd differential starts at the 0.5°F stage 1 endpoint and extends to 2nd stage differential endpoint.

NOTE - In normal operation, the end of the cooling demand is at the setpoint -0.5°F and the end of the heating demand is at the setpoint +0.5°F.

Staged Delay Timers—default Enabled. When ON, all stage delay timers (stages 2 through 6) are enabled and will serve to bring on additional stage(s) of cooling or heating on a timed basis (default 20 minutes) in cases when the previous stage of heating or cooling will not raise or lower the room temperature to the setpoint in a given time.

When Disabled is selected all stage delay timers are disabled. This means stages are changed based on the temperature and not their timer delays. NOTE - The 2nd Stage Delay Timer (when Staged Delay Timers is Enabled) is used for both HEATING and COOLING. However, if the system has a variable capacity furnace, 2nd Stage Delay Timer will only be used for COOLING (not for heating, as the variable capacity algorithm ignores delay timers).

2nd thru 6th Stage Delay timer (where applicable)—If Staged Delay Timers are Enabled, the default delay is 20 minutes but can be programmed from 5 to 120 minutes in 5-minute increments. If first stage fails to advance the ambient temperature toward the setpoint by 1.0°F in the programmed delay time, then the second stage is activated.

Heat Cool Stages Locked In—default Disabled (heat/cool stages are turned off separately). If changed to Enabled, heat/cool stages are turned off together. Scroll to Heat Cool Stages Locked In; press edit. Use arrows to select between Disabled or Enabled. Press save.

Lock In 2nd stage HP by Outdoor Temp—default Off (heat pump stage 2 operates normally). Use this setting to lock in the 2nd stage compressor when the outdoor temperature is at or less than the LOCK TEMP setpoint. Scroll to Lock In 2nd stage HP by Outdoor Temp; press edit. Use arrows to select a temperature between 40 and 55°F. Press save.
**Smooth Setback Recovery (SSR)**

SSR is an algorithm designed to “smoothly” reach a occupied program schedule setpoint. The algorithm looks 2 hours ahead for the occupied program schedule period’s setpoint. If the occupied setpoint requires the system to turn on (present temperature below the heat setpoint or above the cool setpoint), then SSR will calculate a new setpoint. Once initiated, SSR monitors the change in room temperature and calculates a new setpoint every 30 seconds. Then SSR provides this new setpoint for the heating and cooling algorithms; the new setpoint will be displayed on the User Interface.

**Rules for SSR:**

1. SSR is enabled when “Smooth Setback Recovery” is set to **enabled** and the program schedule is turned on.
2. When SSR is enabled, then it will check for a new setpoint every 30 seconds.
3. The SSR Target Program Schedule setpoint is always 2 hours ahead.
4. When SSR starts, then the Current SSR setpoint will equal the current program schedule setpoint.
5. When a new program schedule period starts, then the New SSR setpoint will equal the new program schedule period’s setpoint, unless there are two or more program periods within the 2 hour window. In this case, SSR will track the highest heat setpoint or the lowest cool setpoint found in the 2 hour window.
6. SSR will NOT run during a program schedule HOLD.
7. SSR does NOT look at the current temperature.
8. If the target program heat setpoint is lower than the Current SSR heat setpoint, then the New SSR Heat Setpoint will equal the Current SSR Setpoint.
9. If the target program cool setpoint is higher than the Current SSR cool setpoint, then the New SSR Cool Setpoint will equal the Current SSR Setpoint.
10. The New SSR Setpoint will be displayed on the User Interface.
11. SSR does NOT control the equipment.
12. SSR does NOT turn off Stage Delay Timers.
13. SSR does NOT round the newly rounded setpoint, but the setpoint shown on the user interface is rounded.
14. SSR will NOT change the Temperature Dead band.
15. SSR will not adjust a setpoint to violate the Temperature Dead band.
16. SSR will not overshoot the Target Setpoint.
Heat Pump, Dual Fuel and Balance Points

**IMPORTANT -** The Balance Points feature requires that a sensed outdoor temperature is provided to the thermostat. This can be either a connection to Wi-Fi (for local temperature information) or a connection to an outdoor sensor (included in all communicating icomfort™-enabled heat pumps; optional outdoor temperature sensor X2658 for non-communicating heat pumps).

**Heat Pump Balance Points**

The LOW and HIGH setpoints may be controlled by the icomfort Wi-Fi™ thermostat using the LOW and HIGH Balance Points feature. To enable the Balance Points feature, go to the installer section equipment button. Scroll down to the System screen, select edit and scroll down to Balance Points Controls. Use arrows to select Enabled and then press save. See the flowchart (Page 33) for a simplified explanation of how balance points control system operation.

**Low Balance Point**

If the outside temperature is below the programmed low balance point (set by default at 25°F), compressor operation is not allowed. Since the heat pump is not as effective at a lower outdoor temperatures, it may be more comfortable to use the auxiliary electric heat or the furnace (in dual fuel systems, it may be more economical) to satisfy a demand for heat. The low balance point options are from -20°F to the high balance point temperature. The setpoint can be adjusted in 1.0°F steps.

**High Balance Point**

If the outside temperature is above the programmed high balance point (set by default at 50°F), auxiliary electric heat operation or furnace operation (in dual fuel system) is not allowed. This ensures that the lower cost heat pump operation will satisfy the heating demand, rather that the more expensive auxiliary electric heat. The high and low balance points will not lock out both compressor heat and auxiliary heat/furnace at the same time.

**Dual Fuel Applications (Communicating Systems Only)**

Dual fuel applications, which include both a Heat Pump and a gas furnace, will provide multiple stages of heating. For example, a two-stage heat pump would deliver two stages of heat. The gas furnace can add two to four more stages of heat. Figure 35 flow chart illustrates Dual Fuel operation with Balance Points.
Abbreviations:
FURN = auxiliary heat provided by gas furnace
HP = compressor heat
LBP = Low Balance Point
HBP = High Balance Point
T'stat = thermostat

NOTE 1 - Each Heat Pump and Furnace Heat stage will operate until it meets the demand or until its stage timer lapses (20 minutes by default). If the timer lapses before the demand is met, the system brings on the next stage in order of: HP-stg-1, HP-stg-2, FURN-stg-1, FURN-stg-2.

NOTE 2 - The chart below illustrates how the balance points control whether HP or FURN will operate to provide heat.

NOTE 3 - If emergency heat is selected, Furnace is used.
Gas Heat Control Mode

**Figure 36. Variable Capacity Operation Flow Chart**
Variable Capacity Control of Gas Heat Mode (G71MPP and SLP98V)
The thermostat includes a feature that provides variable capacity control of the gas heat mode. The purpose of variable capacity control is to keep the room temperature at, or near, the desired setpoint with minimum system cycling. The thermostat bases its “decisions” for furnace operation control using the following inputs:

- Room temperature,
- History of cycle times (how long does it typically take to bring the room temperature to the desired setpoint),
- Target setpoint, and
- Differential temperature settings between 1st - 4th stage.

The thermostat uses this information to vary the heating capacity to efficiently satisfy the heating demand. The full range of the furnace heating capacity (low end is a percent of the 1st stage capacity; high range is 100% of full capacity) is used. When in variable capacity gas heat mode, the furnace operation includes longer run times at lower heat stages.

Table 2 details the variable capacity furnace operation.

Staged operation
Some furnaces can be configured to provide up to four stages of gas heat operation. When staged heating is chosen, the icomfort thermostat allows you to choose between 1, 2, 3 and 4 stages of heat.

**Single-stage heat:** 1st stage provides 100% of full capacity.

**Two-stage heat:** 1st stage provides 70% of full capacity; 2nd stage provides 100% of full capacity.

**Three-stage heat:** 1st stage provides 60% of full capacity; 2nd stage provides 80% of full capacity; 3rd stage provides 100% of full capacity.

**Four-stage heat:** 1st stage provides 35 or 40% of full capacity; 2nd stage provides 60% of full capacity; 3rd stage provides 80% of full capacity; 4th stage provides 100% of full capacity.

SLP98 variable capacity furnaces BTU’s firing rates can be incremented by as little as 1% (35% to 100% range available) as the thermostat may dictate.

The thermostat monitors room temperature, previous heat cycle times, and target setpoint to determine the starting firing rate, and any required firing rate increases or decreases during the thermostat demand.

During a heat demand, the icomfort thermostat monitors the differential between setpoint and room temp. As this differential increases and reaches field adjustable levels (stages), the thermostat will increase firing rate accordingly to maintain room temperature and ultimately satisfy the heat demand. On the next heat cycle, the icomfort stat will calculate a new starting firing rate (in 1% increments) with the goal of maintaining room temperature at, or near, thermostat setpoint with a minimum of system cycling. The principles of operation are described in figure 36 and table 2.

**Table 2. Variable Capacity Furnace Operation**

<table>
<thead>
<tr>
<th>T’stat Demands</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Furnace is off</td>
</tr>
<tr>
<td>First level heat demand</td>
<td>1. Furnace BTU rate is calculated by the icomfort integrating algorithm.</td>
</tr>
<tr>
<td></td>
<td>2. Furnace firing rate will continue at current heating rate until first stage demand is satisfied or an additional thermostat demand is received.</td>
</tr>
<tr>
<td>Second level heat demand added</td>
<td>1. Thermostat will immediately increase variable capacity furnace firing rate to the calculated BTU percentage representing the second stage thermostat demand.</td>
</tr>
<tr>
<td></td>
<td>2. Furnace firing rate will increase by 5% every 5 minutes (up to 100% if second stage thermostat is not satisfied.) If thermostat second stage demand is satisfied the current firing rate will continue until all thermostat demands are satisfied.</td>
</tr>
<tr>
<td>Third level heat demand added</td>
<td>1. Thermostat will immediately increase variable capacity furnace firing rate to the calculated BTU percentage representing the third stage thermostat demand.</td>
</tr>
<tr>
<td></td>
<td>2. Thermostat will increase the firing rate by 5% every 5 minutes (up to 100% if third stage thermostat is not satisfied.) If thermostat third stage demand is satisfied the current firing rate will continue until all thermostat demands are satisfied.</td>
</tr>
<tr>
<td>Fourth level heat demand added</td>
<td>Icomfort thermostat will immediately set variable capacity furnace firing rate to 100% until all thermostat demands are satisfied.</td>
</tr>
</tbody>
</table>
Load-tracking Variable Capacity FAQs (SLP98V only)

What is Load-tracking Variable Capacity? When an SLP98 Furnace is connected to an icomfort Wi-Fi thermostat, the thermostat takes complete charge of the variable capacity staging of the furnace. Load-tracking Variable Capacity is only available with icomfort Wi-Fi thermostats.

How is Load-tracking Variable Capacity different from Variable Capacity? Load-tracking Variable Capacity will smoothly track the load (sensible temperature changes) up and down and adjust the furnace heating rate both ways. Variable capacity only tracks the load upward (rising temperature). Variable capacity uses the thermostats stage differentials but not stage timers. LVC disregards both stage differentials and stage timers.

What makes Load-tracking Variable Capacity work? With icomfort™ Load-tracking Variable Capacity, the thermostat uses a Proportional Integral Algorithm (PIA) to control firing rates of the furnace. The algorithm in the Load-tracking Variable Capacity provides much more precise control over the furnace than the Variable Capacity algorithm.

Interesting points about the Proportional Integral Algorithm (PIA):

- The further temperature is from the current set point, the higher PIA sets the heating rate.
- The longer away from a programmed set point, the higher the heating rate.
- If needed, PIA will turn heating on and off in short cycles when there is a heat demand that is lower than the lowest the furnace can provide.
- If the heat demand is higher than the minimum the furnace can provide, the furnace will run without shutting off.
- As the room temperature rises nearer the set point, the heating rate will decrease.
- As the room temperature falls further away from the set point, the heating rate will increase.
- The stage differentials have no effect when running the PIA.
- The second stage timers have no effect when running the PIA.
<table>
<thead>
<tr>
<th>Parameter Name:</th>
<th>Default</th>
<th>Parameter Value Setting</th>
<th>Increment</th>
<th>Installer entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Name</td>
<td>—</td>
<td>(keyboard input screen)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Filter 1 Timer Selection</td>
<td>Calendar Time</td>
<td>Calendar Time, Run Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Filter 2 Timer Selection</td>
<td>Calendar Time</td>
<td>Calendar Time, Run Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>UV Bulb Timer Selection</td>
<td>Calendar Time</td>
<td>Calendar Time, Run Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Humidifier Pad Timer Selection</td>
<td>Calendar Time</td>
<td>Calendar Time, Run Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>PureAir™ Timer Selection</td>
<td>Calendar Time</td>
<td>Calendar Time, Run Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Smooth Setback Recovery</td>
<td>Enabled</td>
<td>Enabled, Disabled</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Auto Changeover - Temp Deadband</td>
<td>5°F</td>
<td>3 to 9°F</td>
<td>1°F</td>
<td></td>
</tr>
<tr>
<td>Electric Heat Control Mode</td>
<td>Standard</td>
<td>Standard, Even Heat</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Gas Heat Control Mode: (SLP98, G71MPP) (SL280, EL296)</td>
<td>Load Tracking Staged</td>
<td>Load Tracking Variable Capacity, Variable Capacity, Staged</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Max Heat Setpoint</td>
<td>90°F</td>
<td>40 to 90°F</td>
<td>1°F</td>
<td></td>
</tr>
<tr>
<td>Min Cool Setpoint</td>
<td>60°F</td>
<td>60 to 99°F</td>
<td>1°F</td>
<td></td>
</tr>
<tr>
<td>Heat Cool Stages Locked In</td>
<td>Disabled</td>
<td>Enabled, Disabled</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>*1st Stage Differential</td>
<td>1.0°F</td>
<td>0.5 to 3°F</td>
<td>0.5°F</td>
<td></td>
</tr>
<tr>
<td>*2nd Stage Differential</td>
<td>1.0°F</td>
<td>0.5 to 8°F</td>
<td>0.5°F</td>
<td></td>
</tr>
<tr>
<td>*3rd Stage Differential</td>
<td>0.5°F</td>
<td>0.5 to 8°F</td>
<td>0.5°F</td>
<td></td>
</tr>
<tr>
<td>*4th Stage Differential</td>
<td>0.5°F</td>
<td>0.5 to 8°F</td>
<td>0.5°F</td>
<td></td>
</tr>
<tr>
<td>*5th Stage Differential</td>
<td>0.5°F</td>
<td>0.5 to 8°F</td>
<td>0.5°F</td>
<td></td>
</tr>
<tr>
<td>*6th Stage Differential</td>
<td>0.5°F</td>
<td>0.5 to 8°F</td>
<td>0.5°F</td>
<td></td>
</tr>
<tr>
<td>Stage Delay Timers</td>
<td>Enabled</td>
<td>Enabled, Disabled</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>*2nd Stage Delay</td>
<td>20 Minutes</td>
<td>5 to 120 Minutes</td>
<td>5 Min</td>
<td></td>
</tr>
<tr>
<td>*3rd Stage Delay</td>
<td>20 Minutes</td>
<td>5 to 120 Minutes</td>
<td>5 Min</td>
<td></td>
</tr>
<tr>
<td>*4th Stage Delay</td>
<td>20 Minutes</td>
<td>5 to 120 Minutes</td>
<td>5 Min</td>
<td></td>
</tr>
<tr>
<td>*5th Stage Delay</td>
<td>20 Minutes</td>
<td>5 to 120 Minutes</td>
<td>5 Min</td>
<td></td>
</tr>
<tr>
<td>*6th Stage Delay</td>
<td>20 Minutes</td>
<td>5 to 120 Minutes</td>
<td>5 Min</td>
<td></td>
</tr>
</tbody>
</table>

*Number of stages shown in thermostat is dependent on equipment that is installed. Electric heat will bring on 2 elements at a time if available.

*Table continued on next page*
<table>
<thead>
<tr>
<th>Parameter Name:</th>
<th>Default</th>
<th>Parameter Value Setting</th>
<th>Increment</th>
<th>Installer entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock in 2nd stage HP by Outdoor Temp</td>
<td>Off</td>
<td>Off, 40ºF (4ºC), 45ºF (7ºC), 50ºF (10ºC), 55ºF (13ºC)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Balance Point Control</td>
<td>Disabled</td>
<td>Enabled, Disabled</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Humiditrol Comfort Adjust</td>
<td>Maximum</td>
<td>Maximum, Midpoint, Minimum Overcooling</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>High Balance Point</td>
<td>50ºF</td>
<td>-17ºF to 75ºF</td>
<td>1ºF</td>
<td></td>
</tr>
<tr>
<td>Low Balance Point Control</td>
<td>25ºF</td>
<td>-20ºF to 72ºF</td>
<td>1ºF</td>
<td></td>
</tr>
<tr>
<td>Defrost Target Discharge Temp</td>
<td>55ºF</td>
<td>50ºF to 60ºF</td>
<td>1ºF</td>
<td></td>
</tr>
<tr>
<td>Dehumidification Control Mode</td>
<td>Display Only</td>
<td>Display Only, Basic, Precision (only available when NO dehumidifier is installed)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Humidification Control Mode</td>
<td>Display Only</td>
<td>Display Only, Basic, Precision, Basic Dew Point Control, Precision Dew Point Control</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Autochangeover Humidification Deadband</td>
<td>5%</td>
<td>5% to 10%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Max Humidification Setpoint</td>
<td>45%</td>
<td>15% to 45%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Min Dehumidification Setpoint</td>
<td>40%</td>
<td>40% to 60%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Max Dehumidification Setpoint</td>
<td>40%</td>
<td>40% to 60%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>OK/Humid Boundary</td>
<td>50%</td>
<td>45% to 60%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Outdoor Temperature Reading Calibration</td>
<td>0</td>
<td>-10ºF to 10ºF</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

**OUTDOOR EQUIPMENT (Go to EQUIPMENT button and scroll to HEAT PUMP or AIR CONDITIONER.)**

<table>
<thead>
<tr>
<th>Parameter Name:</th>
<th>Default</th>
<th>Parameter Value Setting</th>
<th>Increment</th>
<th>Installer entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment Name (HP &amp; AC)</td>
<td>Outdoor Unit</td>
<td>(keyboard input screen = up to 35 characters in string)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Compressor Short Cycle Delay (HP and AC)</td>
<td>300 Seconds</td>
<td>60 to 300 Seconds</td>
<td>60 Sec</td>
<td></td>
</tr>
<tr>
<td>Compressor Shift Delay On/Off (HP only)</td>
<td>On</td>
<td>On, Off</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Defrost Termination Temp (HP only)</td>
<td>50ºF</td>
<td>50ºF to 100ºF</td>
<td>10ºF</td>
<td></td>
</tr>
</tbody>
</table>

*table continued on next page*
### Table 3. Adjustable Parameters Table (Installer)

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Default</th>
<th>Parameter Value Setting</th>
<th>Increment</th>
<th>Installer entry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AIR HANDLER</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Name</td>
<td>Air Handler</td>
<td>(keyboard input screen)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric Heating Airflow</td>
<td>nnnn CFM</td>
<td>NOTE: CFM Default and Values Settings are dependent on the tonnage of the unit</td>
<td>5CFM</td>
<td></td>
</tr>
<tr>
<td>Low Cooling Airflow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Cooling Airflow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling Airflow Profile</td>
<td>1</td>
<td>1: No Delays,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2: ON: No delays; OFF: 45 sec delay</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3: ON: 82%/7.5min; OFF: No delays</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4: ON: 50%/30s, 82%/7.5min; OFF: 50%/30s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Heating Airflow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Heating Airflow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous Indoor Blower Airflow</td>
<td>nnnn CFM</td>
<td>NOTE: CFM Default and Values Settings are dependent on the tonnage of the unit</td>
<td>10CFM</td>
<td></td>
</tr>
<tr>
<td>Humidification Airflow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dehumidification Airflow</td>
<td>70%</td>
<td>60 to 80% (percentage of reduction of High Cooling Airflow)</td>
<td></td>
<td>1%</td>
</tr>
<tr>
<td>Delays:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating Indoor Blower OFF</td>
<td>10 sec</td>
<td>0 to 10 Seconds</td>
<td>1 sec</td>
<td></td>
</tr>
<tr>
<td>Heating Indoor Blower ON</td>
<td>0 sec</td>
<td>0 to 5 Seconds</td>
<td>1 sec</td>
<td></td>
</tr>
<tr>
<td>Cooling Indoor Blower OFF</td>
<td>0 sec</td>
<td>0 to 30 Seconds</td>
<td>2 sec</td>
<td></td>
</tr>
<tr>
<td>Cooling Indoor Blower ON</td>
<td>2 sec</td>
<td>0 to 10 Seconds</td>
<td>1 sec</td>
<td></td>
</tr>
<tr>
<td>HP Indoor Blower OFF</td>
<td>45 sec</td>
<td>0 to 60 Seconds</td>
<td>5 sec</td>
<td></td>
</tr>
<tr>
<td>HP Indoor Blower ON</td>
<td>0 sec</td>
<td>0 to 30 Seconds</td>
<td>5 sec</td>
<td></td>
</tr>
<tr>
<td>Parameter Name</td>
<td>Default</td>
<td>Min.</td>
<td>Max.</td>
<td>Incr.</td>
</tr>
<tr>
<td>----------------</td>
<td>---------</td>
<td>------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>Installer entry</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FURNACE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating indoor blower OFF delay</td>
<td>DIP SW</td>
<td>60</td>
<td>180</td>
<td>10</td>
</tr>
<tr>
<td>Heating indoor blower ON delay</td>
<td>45 sec</td>
<td>15</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>Cooling indoor blower OFF delay</td>
<td>0 sec</td>
<td>0</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Cooling indoor Blower ON Delay</td>
<td>2 sec</td>
<td>0</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Heat pump indoor blower OFF delay</td>
<td>45 sec</td>
<td>0</td>
<td>60</td>
<td>5</td>
</tr>
<tr>
<td>Heat pump indoor blower ON delay</td>
<td>0 sec</td>
<td>0</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td><strong>Gas Heat Airflow Settings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating Airflow Control Type (variable capacity furnaces only)</td>
<td>0 – Fixed CFM</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Low Heating Airflow (CFM @ min. heat)</td>
<td>DIP SW</td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>High Heating Airflow (CFM @ 100% heat)</td>
<td>DIP SW</td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Low Heating Discharge Air Temperature (DAT @ min heat) (variable capacity furnaces only)</td>
<td>DIP SW*</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>High Heating Discharge Air Temperature (DAT @ 100% heat) (variable capacity furnaces only)</td>
<td>DIP SW*</td>
<td></td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

* - Default DAT value is rounded to the closest number on 5 deg F resolution and limited by Minimum and Maximum value.

*table continued on next page*
Table 3. Adjustable Parameters Table (Installer)

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Default</th>
<th>Min CFM</th>
<th>Max CFM</th>
<th>Incr.</th>
<th>Dependency</th>
<th>Note</th>
<th>Installer entry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooling Airflow Settings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Cooling Airflow (CFM @ 100% cool)</td>
<td>OU tons 400CFM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Outdoor Unit present</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min CFM</td>
<td>Max CFM</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/2 HP blower</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 HP blower</td>
<td></td>
</tr>
<tr>
<td>Low Cooling Airflow (CFM @ lowest cool stage)</td>
<td>(See Note 1 at end of table)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2+ stage Outdoor Unit present</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min CFM</td>
<td>Max CFM</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/2 HP blower</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 HP blower</td>
<td></td>
</tr>
<tr>
<td>Airflow Profile - Cooling</td>
<td>DIP SW</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td></td>
<td>Outdoor Unit present</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0:ON:50%/30s,82% / 7.5min OFF:50%/30s</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1:B:ON:82% / 7.5min; OFF: No delays</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2:C:ON: No delays; OFF: No delays</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3:D:No delays)</td>
<td></td>
</tr>
<tr>
<td><strong>Heat Pump Airflow Settings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Heat Pump Airflow (CFM @ 100%)</td>
<td>OU tons 400CFM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Heat Pump present</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min CFM</td>
<td>Max CFM</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/2 HP blower</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 HP blower</td>
<td></td>
</tr>
<tr>
<td>Low Heat Pump Airflow (CFM @ lowest stage)</td>
<td>(See Note 2 at end of table)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2+ stage Heat Pump present</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min CFM</td>
<td>Max CFM</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/2 HP blower</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 HP blower</td>
<td></td>
</tr>
</tbody>
</table>

*table continued on next page*
<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Default</th>
<th>Min.</th>
<th>Max.</th>
<th>Incr.</th>
<th>Dependency</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other Parameters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Name</td>
<td>Furnace</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>None</td>
<td>Up to 35 characters</td>
</tr>
<tr>
<td>Continuous Indoor Blower Airflow</td>
<td>DIP SW (See Note 3 at end of table)</td>
<td>Min CFM</td>
<td>Max CFM</td>
<td>25</td>
<td>None</td>
<td>1/2 HP blower</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min CFM</td>
<td>Max CFM</td>
<td>25</td>
<td></td>
<td>1 HP blower</td>
</tr>
<tr>
<td>Humidification Airflow</td>
<td>Same as above</td>
<td>Min CFM</td>
<td>Max CFM</td>
<td>25</td>
<td>Humidifier present</td>
<td>1/2 HP blower</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min CFM</td>
<td>Max CFM</td>
<td>25</td>
<td></td>
<td>1 HP blower</td>
</tr>
<tr>
<td>Dehumidification Airflow Percentage</td>
<td>140 (=70%)</td>
<td>120 (=60%)</td>
<td>160 (=80%)</td>
<td>2 (=1%)</td>
<td>OU present and SC (Subnet Controller) algorithm support</td>
<td>Percent of High Cooling Airflow</td>
</tr>
</tbody>
</table>

Note 1: Minimum Outdoor Unit Cooling Stage as a percentage of High Cooling Airflow (value is rounded up to the closest number on 25 CFM resolution).
Note 2: Minimum Outdoor Unit Heating Stage as a percentage of High Heat Pump Airflow (value is rounded up to the closest number on 25 CFM resolution).
Note 3: All communicating Installer Parameters default CFM values based on DIP switch setting (non-communicating value) are calculated using the CFM conversion tables and rounded up to closest number on 25 CFM resolution.
Note 4: Parameter dependency - Certain parameters are dependent on others and may not be shown on the display.
Note 5: Default Values - Jumper/DIP switches impact the default value of some parameters.
<table>
<thead>
<tr>
<th>Parameter Name:</th>
<th>Default</th>
<th>Parameter Value Setting</th>
<th>Increment</th>
<th>Installer entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time and Date *</td>
<td>—</td>
<td>(Time/date elements screen)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Daylight Saving Time *</td>
<td>Enabled</td>
<td>Enabled, Disabled</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Fan</td>
<td>auto</td>
<td>auto, on, circulate</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>System Name</td>
<td>—</td>
<td>(keyboard input screen)</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

SERVICE INFORMATION

<table>
<thead>
<tr>
<th>Parameter Name:</th>
<th>Default</th>
<th>Parameter Value Setting</th>
<th>Increment</th>
<th>Installer entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dealer Number</td>
<td>****</td>
<td>(keyboard input screen)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Dealer Name</td>
<td>Lennox</td>
<td>(keyboard input screen)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Dealer Address</td>
<td>—</td>
<td>(keyboard input screen)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Dealer Phone</td>
<td>1-800-9-LENNOX</td>
<td>(keyboard input screen)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Dealer Email</td>
<td>—</td>
<td>(keyboard input screen)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Dealer Website</td>
<td><a href="http://www.lennox.com">www.lennox.com</a></td>
<td>(keyboard input screen)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Language Displayed</td>
<td>English</td>
<td>English, French, Spanish</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Temperature Display Scale **</td>
<td>(F)</td>
<td>(F) Fahrenheit, (C) Celsius</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Clock Format</td>
<td>12H</td>
<td>12 Hour, 24 Hour</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Screen Lock-out</td>
<td>Unlocked</td>
<td>Unlocked, Partially Locked, Fully Locked</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Backlight Setting</td>
<td>Always On</td>
<td>Power Save, Always On</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Backlight Intensity</td>
<td>100%</td>
<td>20 to 100%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Outdoor Temp Display</td>
<td>is OFF</td>
<td>is OFF, is ON</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Indoor Humidity Display</td>
<td>is OFF</td>
<td>is OFF, is ON</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Power Save</td>
<td>is ON</td>
<td>is OFF, is ON</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Background theme</td>
<td>cobalt</td>
<td>cobalt, cotton, carbon</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

* Entered during initial installer setup (during initial discovery); should be edited from user preferences.

** When Celsius mode is chosen, Celsius is only changed on home screen; all calculations and other setting are in Fahrenheit.

*table continued on next page*
<table>
<thead>
<tr>
<th>Parameter Name:</th>
<th>Default</th>
<th>Parameter Value Setting</th>
<th>Increment</th>
<th>Installer entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter 1 Timer</td>
<td>Disabled</td>
<td>Disabled, 3 Months, 6 Months, 12 Months, 24 Months, Custom Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Filter 1 Timer</td>
<td>Disabled</td>
<td>Disabled, 3 Months, 6 Months, 12 Months, 24 Months, Custom Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Humidifier Pad Timer</td>
<td>Disabled</td>
<td>Disabled, 3 Months, 6 Months, 12 Months, 24 Months, Custom Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>UV Bulb Timer</td>
<td>Disabled</td>
<td>Disabled, 3 Months, 6 Months, 12 Months, 24 Months, Custom Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Maintenance Timer</td>
<td>Disabled</td>
<td>Disabled, 3 Months, 6 Months, 12 Months, 24 Months, Custom Time</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>PureAir Timer</td>
<td>Disabled</td>
<td>Disabled, 3 Months, 6 Months, 12 Months, 24 Months, Custom Time</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

**THERMOSTAT** (Go to equipment button and scroll to Thermostat.)

**NOTE** - These settings apply to the thermostat's internal sensors.

<table>
<thead>
<tr>
<th>Equipment Name</th>
<th>—</th>
<th>(keyboard input screen)</th>
<th>—</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp Reading Calibration</td>
<td>0°F</td>
<td>-5°F to 5°F</td>
<td>1°F</td>
</tr>
<tr>
<td>Humidity Reading Calibration</td>
<td>0%</td>
<td>-10 to 10%</td>
<td>1%RH</td>
</tr>
</tbody>
</table>
Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Minor and Moderate alerts are found only in the Installer alert button.

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Critical</td>
<td>(Stat) The thermostat has found an unknown device on the system.</td>
<td>An unknown device is seen on the subnet in or outside of configuration mode. Clear by reconfiguring the system. Press the setup tab, press start, and press confirm. If problem persists, then check all DEVICE connections to make sure they are icomfort-compatible.</td>
</tr>
<tr>
<td>11</td>
<td>Critical</td>
<td>(Stat) The thermostat cannot find a previously installed unit.</td>
<td>Check all connections and cycle system power. If problem persists, clear by reconfiguring the system. Press the setup tab, press start, and press confirm. If problem persists, then check all DEVICE connections to make sure they are icomfort-compatible.</td>
</tr>
<tr>
<td>12</td>
<td>Critical</td>
<td>(Stat) The thermostat cannot find an icomfort-enabled indoor unit.</td>
<td>Thermostat did not find an Indoor Unit. Make sure there is an icomfort indoor unit on the system. Check R, i+, i− and C connections, ohm wires and cycle power. Replace indoor unit control board if there is no response.</td>
</tr>
<tr>
<td>14</td>
<td>Critical</td>
<td>(Stat) The thermostat found more than one thermostat, more than one indoor unit, or more than one outdoor unit on the system.</td>
<td>Check wiring and remove duplicate equipment. Reconfigure system.</td>
</tr>
<tr>
<td>18</td>
<td>Minor</td>
<td>(Stat) The outside temperature is below the level where the heat pump is programmed to heat the home. The system will not use the heat pump to warm your home.</td>
<td>Notification only − Outdoor Temp is below the Low Balance Point. Heat Pump will not be used to service a heating demand.</td>
</tr>
<tr>
<td>19</td>
<td>Minor</td>
<td>(Stat) The outside temperature is higher than the level where the furnace or electric heat is programmed to work. The system will only use the heat pump to warm your home.</td>
<td>Notification only − Outdoor Temp is above the High Balance Point. Indoor Unit (furnace or air-handler) will not be used to service a heating demand.</td>
</tr>
<tr>
<td>29</td>
<td>Critical</td>
<td>(Stat) The thermostat is reading an indoor temperature that is higher than 99°F. The thermostat will not allow any heating operation to begin until it senses a temperature lower than 99°F.</td>
<td>Indoor temperature rose above 99°F during a heating or cooling demand. Heating operation is not allowed. Check to ensure that Heating Equipment is not stuck ON (reversing valve, etc.). Check the accuracy of the thermostat temperature sensor. Select cooling system mode to cool the indoor space.</td>
</tr>
<tr>
<td>30</td>
<td>Moderate</td>
<td>(Stat) The thermostat is reading an indoor temperature that is lower than 40°F. The thermostat will not allow any cooling operation to begin until it senses a temperature higher than 40°F.</td>
<td>Indoor Temp fell below 40°F. Cooling operation is not allowed. Check to ensure that cooling equipment is not stuck ON. Check accuracy of the thermostat temperature sensor. Select heating system mode to heat the indoor space to above 40°F.</td>
</tr>
<tr>
<td>31</td>
<td>Critical</td>
<td>(Stat) The thermostat has lost communication with the (furnace, air-handler or outdoor unit) for more than 3 minutes.</td>
<td>[Indicated unit] has not communicated with thermostat for more than 3 minutes. Check connections. Ohm wires. If fault persists, then cycle power. Fault clears after communication is restored.</td>
</tr>
<tr>
<td>32</td>
<td>Moderate</td>
<td>(Stat) The (furnace, air-handler or outdoor unit) is resetting itself.</td>
<td>[Indicated unit] is resetting itself. This event may occur during a power outage or power fluctuation in the system. If persistent or if it coincides with the system operation then proceed with the following steps. Check the power connections, check the amp draw at the transformer (the transformer maybe overloaded) and check 24VAC voltage at the DEVICE. The alarm is only cleared by pressing the clear button on the Installer Alerts Tab. If the fault persists after checking the connections, replace the unit’s control board.</td>
</tr>
</tbody>
</table>
Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Minor and Moderate alerts are found only in the Installer alert button.

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Critical</td>
<td>(Stat) The thermostat does not know the capacity (tonnage) of the (furnace, air-handler or outdoor unit). Please program the correct capacity of the (furnace, air-handler or outdoor unit).</td>
<td>[Indicated unit] is missing the programmed unit capacity. Go to [Indicated unit] and program the unit capacity manually. See the unit IOM for programming instructions. Remove power to thermostat before programming the unit control board. Once programming is complete, reconnect thermostat wires and reconfigure system.</td>
</tr>
</tbody>
</table>
| 36 | Critical | (Stat) The system has been heating for at least 15 minutes, without a demand for heating. | Run the system in diagnostic mode and verify that it matches actual equipment operation. Check for other alarms/codes that may be preventing the system from operating as expected.  
Step 1: Check all heating equipment to determine cause of heating demand.  
Step 2: Recycle power.  
System will clear code when it detects condition has cleared. |
| 37 | Critical | (Stat) The system has been cooling for at least 15 minutes, without a demand for cooling. | Run the system in diagnostic mode and verify that it matches actual equipment operation. Check for other alarms/codes that may be preventing the system from operating as expected.  
Step 1: Check all cooling equipment to determine cause of cooling demand.  
Step 2: Recycle power.  
System will clear code when it detects condition has cleared. |
| 38 | Critical | (Stat) The system has not been able to turn on the heating for more than 45 minutes. The system will go offline for 60 minutes and try again. | Run the system in diagnostic mode and verify that it matches actual equipment operation. Check for other alarms/codes that may be preventing the system from operating as expected.  
Step 1: Check all heating equipment to determine cause.  
Step 2: Recycle power.  
System will clear code when it detects condition has cleared. |
| 39 | Critical | (Stat) The system has not been able to turn on the cooling for more than 45 minutes. The system will go offline for 60 minutes and try again. | Run the system in diagnostic mode and verify that it matches actual equipment operation. Check for other alarms/codes that may be preventing the system from operating as expected.  
Step 1: Check all cooling equipment to determine cause.  
Step 2: Recycle power.  
System will clear code when it detects condition has cleared. |
| 105 | Critical | (Stat / Furnace / Air Handler / Outdoor Unit) The (stat, furnace, air-handler or outdoor unit) has lost communication with the rest of the system. | Equipment is unable to communicate. This may indicate the existence of other alarms/codes. In most cases errors are related to electrical noise. Make sure high voltage power is separated from RSBus. Check for mis-wired and/or loose connections between the stat, indoor unit and outdoor unit. Check for a high voltage source of noise close to the system. Generally, this is a self-recoverable error. |
| 110 | Critical | (Furnace) The line voltage is too low. | This alarm/code may appear during a brownout. Line voltage is below its designed operating value. Check and correct the power line voltage. |
| 111 | Critical | (Furnace) The line power voltage wiring is reversed. | The unit is reporting that its power line and neutral are reversed. Turn off the power to the system and correct the line power voltage wiring. System resumes normal operation 5 seconds after fault recovered. |
| 112 | Critical | (Furnace) The reporting device cannot find earth ground. The thermostat will shut down the system. | Provide proper earth ground to the equipment. System resumes normal operation 5 seconds after fault recovered. |
### Table 5. Alert Codes and Troubleshooting

Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Minor and Moderate alerts are found only in the Installer alert button.

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>113</td>
<td>Critical</td>
<td>(Furnace) The line voltage is too high.</td>
<td>Line voltage high (voltage higher than nameplate rating). Provide power voltage within proper range. System resumes normal operation 5 seconds after fault recovered.</td>
</tr>
<tr>
<td>114</td>
<td>Critical</td>
<td>(Furnace / Air Handler) There is a frequency/distortion problem with the power to the (furnace or air-handler).</td>
<td>This alarm/code may indicate transformer overloading. Check the voltage and line power frequency. Check the generator operating frequency, if the system is running on back-up power. Correct voltage and frequency problems. System resumes normal operation 5 seconds after fault recovered.</td>
</tr>
<tr>
<td>115</td>
<td>Critical</td>
<td>(Furnace / Air Handler) The 24VAC to the (furnace or air-handler control board) is lower than the required range of 18 to 30VAC.</td>
<td>24-Volt Power Low (Range is 18 to 30 volts). Check and correct voltage. Check for additional power-robbing equipment connected to system. This alarm/code may require the installation of an additional or larger VA transformer.</td>
</tr>
<tr>
<td>117</td>
<td>Minor</td>
<td>(Furnace) The reporting unit has poor earth grounding.</td>
<td>Provide proper grounding for the unit. Check for proper earth ground to the system. The alarm/code will clear 30 seconds after it is corrected.</td>
</tr>
<tr>
<td>120</td>
<td>Moderate</td>
<td>(Stat / Furnace / Air Handler / Outdoor Unit) There is a delay in the (stat, furnace, air-handler or outdoor unit) responding to the system.</td>
<td>Typically, this alarm/code does not cause any issues and will clear on its own. The alarm/code is usually caused by a delay in the outdoor unit responding to the thermostat. Check all wiring connections. Cleared after unresponsive device responds to any inquiry.</td>
</tr>
<tr>
<td>124</td>
<td>Critical</td>
<td>(Stat / Furnace / Air Handler / Outdoor Unit) The thermostat has lost communication with the (furnace, air-handler or outdoor unit) for more than 3 minutes.</td>
<td>Equipment lost communication with the thermostat. Check the wiring connections, ohm wires and cycle power. The alarm stops all associated HVAC operations and waits for a heartbeat message from the unit that’s not communicating. The alarm/fault clears after communication is re-established.</td>
</tr>
<tr>
<td>125</td>
<td>Critical</td>
<td>(Stat / Furnace / Outdoor Unit) There is a hardware problem on either the (stat, furnace control board, air-handler control board or outdoor unit control board).</td>
<td>There is a control hardware problem. Replace the control if the problem prevents operation and is persistent. The alarm/fault is cleared 300 seconds after the fault recovers.</td>
</tr>
<tr>
<td>126</td>
<td>Critical</td>
<td>(Furnace / Outdoor Unit) There is an internal communication problem with the (furnace control board, air-handler control board or outdoor unit control board).</td>
<td>There is an internal hardware problem on the control. Typically the control will re-set itself. Replace the control if the problem prevents operation and is persistent. The alarm/fault is cleared 300 seconds after the fault recovers.</td>
</tr>
<tr>
<td>130</td>
<td>Moderate</td>
<td>(Air Handler) An air-handler configuration jumper is missing.</td>
<td>Configuration jumper(s) missing on control (applicable in non-communicating applications only). Replace the jumper or put wire between terminals on control. Cleared after jumper is connected.</td>
</tr>
<tr>
<td>131</td>
<td>Critical</td>
<td>(Stat / Furnace / Air Handler / Outdoor Unit) The (stat, furnace, air-handler or outdoor unit) control parameters are corrupted.</td>
<td>Reconfigure the system. Replace the control if heating or cooling is not available.</td>
</tr>
<tr>
<td>132</td>
<td>Critical</td>
<td>(Air Handler) The air handler control software is corrupted.</td>
<td>Recycle power. If failure re-occurs, replace the control. System reset is required to recover.</td>
</tr>
</tbody>
</table>

*table continued on next page*
Table 5. Alert Codes and Troubleshooting

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
<td>Critical</td>
<td>(Furnace / Air Handler / Outdoor Unit) The thermostat has found a problem with the (furnace, air-handler or outdoor unit) outdoor sensor.</td>
<td>In normal operation after control recognizes sensors, the alarm will be sent if valid temperature reading is lost. Compare outdoor sensor resistance to temperature/resistance charts in unit installation instructions. Replace sensor pack if necessary. At the beginning of (any) configuration, furnace or air-handler control will detect the presence of the sensor(s). If detected (reading in range), appropriate feature will be set as 'installed' and shown in the ‘About’ screen. The alarm/fault will clear upon configuration, or sensing normal values.</td>
</tr>
<tr>
<td>200</td>
<td>Critical</td>
<td>(Furnace) The furnace rollout limit switch is open.</td>
<td>Correct the cause of rollout trip. Reset rollout switch. Reset power to clear. Test the furnace operation. The alarm/fault clears after the furnace rollout switch is closed.</td>
</tr>
<tr>
<td>201</td>
<td>Critical</td>
<td>(Furnace / Air Handler) The system has lost communication with the (furnace or air-handler) indoor blower motor.</td>
<td>Lost communication with indoor blower motor. Possible causes include: power outage, brown-out, motor not powered, loose wiring, condensation on air handler control without cover on breaker. Problem may be on control or motor side. Cleared after communication is restored.</td>
</tr>
<tr>
<td>202</td>
<td>Critical</td>
<td>(Furnace / Air Handler) The unit size code for the (furnace or air-handler) and the size of blower motor do not match.</td>
<td>Incorrect appliance unit size code selected. Check for proper configuring under Unit Size Codes for Furnace/Air Handler on configuration guide or in installation instructions. The alarm/fault clears after the correct match is detected following a reset. Remove the thermostat from the system while applying power and reprogramming.</td>
</tr>
<tr>
<td>203</td>
<td>Critical</td>
<td>(Furnace / Air Handler) The unit size code for the (furnace or air-handler) has not been selected.</td>
<td>No appliance unit size code selected. Check for proper configuring under: Unit Size Codes for Furnace/Air Handler on configuration guide or in installation instructions. Critical Alert. The alarm/fault clears after the correct match is detected following a reset. Remove the thermostat from the system while applying power and reprogramming.</td>
</tr>
<tr>
<td>204</td>
<td>Critical</td>
<td>(Furnace) There is a problem with the furnace gas valve.</td>
<td>Check gas valve operation and wiring. The alarm/fault clears after the issue is corrected.</td>
</tr>
<tr>
<td>205</td>
<td>Critical</td>
<td>(Furnace) The furnace gas valve relay contact is closed.</td>
<td>Check wiring on control and gas valve. The alarm/fault clears after the issue is corrected.</td>
</tr>
<tr>
<td>206</td>
<td>Critical</td>
<td>(Furnace) The furnace gas valve 2nd stage relay is faulty.</td>
<td>Furnace will operate on 1st stage for the remainder of the heating demand. The alarm/fault will clear after the issue is corrected. If unable to operate 2nd stage, replace control.</td>
</tr>
<tr>
<td>207</td>
<td>Critical</td>
<td>(Furnace) The furnace hot surface igniter is open.</td>
<td>Measure the resistance of hot surface igniter. Replace the it if it is not within the specified range found in IOM. The alarm/fault clears after the issue is corrected.</td>
</tr>
<tr>
<td>223</td>
<td>Critical</td>
<td>(Furnace) The furnace low pressure switch is open.</td>
<td>Check pressure (inches w.c.) of low pressure switch closing during a heat call. Measure operating pressure (inches w.c.). Inspect vent and combustion air inducer for correct operation and restriction. The alarm/fault clears after the issue is corrected.</td>
</tr>
<tr>
<td>224</td>
<td>Critical</td>
<td>(Furnace) The furnace low pressure switch is stuck closed.</td>
<td>Check operation of low pressure switch to see if it is stuck closed for longer than 150 seconds during a heat call. Measure operating pressure (inches w.c.). Inspect vent and combustion air inducer for correct operation and restriction. The alarm/fault clears after the issue is corrected.</td>
</tr>
<tr>
<td>225</td>
<td>Critical</td>
<td>(Furnace) The furnace high pressure switch is failing to close.</td>
<td>Check pressure (inches w.c.) of high pressure switch closing during a heat call. Measure operating pressure (inches w.c.). Inspect vent and combustion air inducer for correct operation and restriction. The alarm/fault clears after the issue is corrected.</td>
</tr>
</tbody>
</table>
Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Minor and Moderate alerts are found only in the Installer alert button.

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>226</td>
<td>Critical</td>
<td>(Furnace) The furnace high pressure switch is stuck closed.</td>
<td>Check operation of high pressure switch closing during a heat call. Measure operating pressure (inches w.c.). Inspect vent and combustion air inducer for correct operation and restriction. The alarm/fault clears after the issue is corrected.</td>
</tr>
<tr>
<td>227</td>
<td>Moderate</td>
<td>(Furnace) The furnace low pressure switch is open in run mode.</td>
<td>Check pressure (inches w.c.) of low pressure switch closing during a heat call. Measure operating pressure (inches w.c.). Inspect vent and combustion air inducer for correct operation and restriction. The alarm/fault clears after the issue is corrected.</td>
</tr>
<tr>
<td>228</td>
<td>Moderate</td>
<td>(Furnace) The furnace control is not able to calibrate the pressure switch.</td>
<td>Unable to perform pressure switch calibration. Check vent system and pressure switch wiring connections. Check the drain trap for blockage. The alarm/fault clears after a successful calibration.</td>
</tr>
<tr>
<td>229</td>
<td>Minor</td>
<td>(Furnace) The furnace control has switched to high fire ignition because the low fire pressure switch did not close in the allowed time.</td>
<td>IFC switched to high fire ignition because low fire pressure switch did not close in allowed time. No action is needed.</td>
</tr>
<tr>
<td>240</td>
<td>Moderate</td>
<td>(Furnace) The furnace flame current is low.</td>
<td>Check micro-ampere readings of the flame sensor using thermostat diagnostics. Clean or replace the flame sensor. Measure voltage of neutral to ground to ensure good unit ground. The alarm clears after a proper micro-amp reading has been sensed.</td>
</tr>
<tr>
<td>241</td>
<td>Critical</td>
<td>(Furnace) The furnace flame is going out while the furnace is heating.</td>
<td>Shut off gas. Check for a gas valve leak. Replace the gas valve if needed. The alarm/fault will clear when a heat call ends successfully.</td>
</tr>
<tr>
<td>250</td>
<td>Moderate</td>
<td>(Furnace) The furnace primary limit switch is open.</td>
<td>Check for proper firing rate on furnace. Ensure there is no blockage in the furnace and the ductwork. Check for proper air flow. If limit switch is not closed within 3 minutes, the unit will go into 1-hour Watchguard mode. The alarm/fault will clear when a heat call ends successfully.</td>
</tr>
<tr>
<td>252</td>
<td>Moderate</td>
<td>(Furnace) The furnace discharge air-temperature is high.</td>
<td>Check temperature rise, air flow and input rate. Check for dirty filters. The alarm/fault will clear when a heat call ends successfully.</td>
</tr>
<tr>
<td>270</td>
<td>Critical</td>
<td>(Furnace) The furnace is in Watchguard mode. The furnace igniter cannot turn on the flame.</td>
<td>Check for proper gas flow. Ensure that igniter is lighting burner. Check flame sensor current. Check for dirty filters. The alarm/fault will clear on successful ignition.</td>
</tr>
<tr>
<td>271</td>
<td>Critical</td>
<td>(Furnace) The furnace is in Watchguard mode. The furnace low pressure switch is open.</td>
<td>Check pressure (inches w.c.) of low pressure switch closing during a heat call. Measure operating pressure (inches w.c.). Inspect vent and combustion air inducer for correct operation and restriction. The alarm/fault will clear on successful ignition.</td>
</tr>
<tr>
<td>272</td>
<td>Critical</td>
<td>(Furnace) The furnace is in Watchguard mode. The furnace low pressure switch is open during run mode.</td>
<td>Check operation of low pressure switch to see if it is stuck open during a heat call. Measure operating pressure (inches w.c.). Inspect vent and combustion air inducer for correct operation and restriction. The alarm/fault will clear when a heat call ends successfully.</td>
</tr>
<tr>
<td>273</td>
<td>Critical</td>
<td>(Furnace) The furnace is in Watchguard mode. The furnace flame is going off during a heating cycle.</td>
<td>Check micro-ampere readings of flame sensor using thermostat diagnostics. Clean or replace sensor. Measure voltage of neutral to ground to ensure good unit ground. The alarm/fault will clear when a heat call ends successfully.</td>
</tr>
<tr>
<td>274</td>
<td>Critical</td>
<td>(Furnace) The furnace limit switch has been open for more than 3 minutes.</td>
<td>The system will go into Watchguard mode. Check firing rate and air flow. Check for blockage. The alarm/fault will clear when a heat call ends successfully.</td>
</tr>
</tbody>
</table>

Table continued on next page
Table 5. Alert Codes and Troubleshooting

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>275</td>
<td>Critical</td>
<td>(Furnace) The furnace flame is out of sequence.</td>
<td>The system will go into Watchguard mode. Shut off gas. Check for gas valve leak. The alarm/fault will clear on next successful ignition.</td>
</tr>
<tr>
<td>276</td>
<td>Critical</td>
<td>(Furnace) The furnace is not able to calibrate or the high pressure switch opened or failed to close in run mode.</td>
<td>The system will go into Watchguard mode. Check vent system and pressure switch wiring connections. The fault/alarm will clear when the furnace calibrates itself successfully.</td>
</tr>
<tr>
<td>290</td>
<td>Critical</td>
<td>(Furnace) There is a problem with the furnace ignition circuit.</td>
<td>The system will go into Watchguard mode. Measure resistance of hot surface igniter. Replace the hot surface igniter if it is not within specifications. The alarm/fault will clear on next successful ignition.</td>
</tr>
<tr>
<td>291</td>
<td>Critical</td>
<td>(Furnace) The heating airflow is below the minimum required level.</td>
<td>The system will go into Watchguard mode. Check for dirty filters and other air flow restrictions. Check blower performance. The alarm/fault will clear when a heat call ends successfully.</td>
</tr>
<tr>
<td>292</td>
<td>Critical</td>
<td>(Furnace / Air Handler) The (furnace or air-handler) indoor blower motor will not start.</td>
<td>The system will go into Watchguard mode. Indoor blower motor unable to start. This could be due to seized bearing, stuck wheel, obstruction etc. Replace motor or wheel if assembly does not operate or meet performance standards. The alarm/fault clears after the indoor blower motor starts successfully.</td>
</tr>
<tr>
<td>294</td>
<td>Critical</td>
<td>(Furnace) There is over current in the furnace inducer motor.</td>
<td>The system will go into Watchguard mode. Check combustion blower bearings, wiring and amps. Replace if does not operate or does not meet performance standards. The alarm/fault clears after inducer current is sensed to be in-range after the ignition following the Watchguard mode or reset.</td>
</tr>
<tr>
<td>295</td>
<td>Minor</td>
<td>(Furnace) The indoor blower motor is over heating.</td>
<td>Indoor blower motor over temperature (motor tripped on internal protector). Check motor bearings and amps. Replace if necessary. The alarm/fault clears after blower demand is satisfied.</td>
</tr>
<tr>
<td>310</td>
<td>Critical</td>
<td>(Furnace / Air Handler) There is a problem with (furnace or air-handler) discharge air sensor.</td>
<td>Compare outdoor sensor resistance to temperature/resistance charts in installation instructions. Replace sensor if necessary. The alarm/fault is cleared 30 seconds after fault is detected as recovered.</td>
</tr>
<tr>
<td>311</td>
<td>Minor</td>
<td>(Furnace) The heat firing rate has been reduced to match available airflow (cutback mode).</td>
<td>Warning Only. Furnace blower in cutback mode due to restricted airflow. Reduce firing rate every 60 seconds to match available CFM. Check filter and duct system. To clear, replace filter if needed or repair/add duct. 2-stage controls will reduce firing rate to 1st stage. The alarm/fault clears when a heat call finishes successfully.</td>
</tr>
<tr>
<td>312</td>
<td>Minor</td>
<td>(Furnace / Air Handler) The blower cannot provide the requested CFM due to high static.</td>
<td>Warning Only. Restricted airflow - Indoor blower is running at a reduced CFM (Cutback Mode - The variable speed motor has pre-set speed and torque limiters to protect the motor from damage caused by operating outside of design parameters (0 to 0.8” e.g., total external static pressure). Check filter and duct system. To clear, replace filter if needed or repair/add duct. The alarm/fault is cleared after the current service demand is satisfied.</td>
</tr>
<tr>
<td>313</td>
<td>Minor</td>
<td>(Furnace / Air Handler) The indoor and outdoor unit capacities do not match.</td>
<td>Check for proper configuring in installation instructions. Alarm is just a warning. The system will operate, but might not meet efficiency and capacity parameters. The alarm will clear after commissioning is complete.</td>
</tr>
<tr>
<td>344</td>
<td>Critical</td>
<td>(Furnace) Relay Y1 Failure</td>
<td>Y1 relay failed; operation stopped. Alarm clears 300 seconds after Y1 input sensed OFF.</td>
</tr>
</tbody>
</table>
Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Minor and Moderate alerts are found only in the Installer alert button. 

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>345</td>
<td>Critical</td>
<td>(Air Handler) The “O” relay on the air-handler has failed. Either the pilot relay contacts did not close or the relay coil did not energize.</td>
<td>O relay / Stage 1 failed. Pilot relay contacts did not close or the relay coil did not energize. Replace control. Cleared after the fault recovered following reset.</td>
</tr>
<tr>
<td>346</td>
<td>Critical</td>
<td>(Air Handler) The heat pump jumper was not removed on the air-handler control board.</td>
<td>Configuration link(s) not removed on control. Cut O-R. Applicable with non communicating outdoor unit with communicating indoor system.</td>
</tr>
<tr>
<td>347</td>
<td>Critical</td>
<td>(Furnace / Air Handler) The “Y1” relay on the furnace / Air handler has failed. Either the pilot relay contacts did not close or the relay coil did not energize.</td>
<td>Operation stopped. Y1 relay / Stage 1 failed. (Pilot relay contacts did not close or the relay coil did not energize; no input back to IFC chip). Critical Alert. Cleared after reset and Y1 input sensed.</td>
</tr>
<tr>
<td>348</td>
<td>Critical</td>
<td>(Furnace / Air Handler) The “Y2” relay on the furnace / Air handler has failed. Either the pilot relay contacts did not close or the relay coil did not energize.</td>
<td>Y2 relay / Stage 2 failed. (Pilot relay contacts did not close or the relay coil did not energize; no input back to IFC chip). Critical Alert. Cleared after reset and Y1 input sensed.</td>
</tr>
<tr>
<td>349</td>
<td>Critical</td>
<td>(Furnace) The “O” to “R” jumper on the furnace needs to be restored.</td>
<td>Configuration link R to O needs to be restored. Replace link or hard-wire. Applicable in non communicating mode. Critical Alert.</td>
</tr>
<tr>
<td>350</td>
<td>Critical</td>
<td>(Air Handler) The air-handler’s electric heat is not configured.</td>
<td>Heat call with no configured or mis-configured electric heat. Check for proper configuring under Configuring Electric Heat Stages in the air handler installation instructions. Cleared after electrical heat detection is successful.</td>
</tr>
<tr>
<td>351</td>
<td>Critical</td>
<td>(Air Handler) There is a problem with the air-handler’s 1st stage electric heat. Either the pilot relay contacts did not close, or the relay coil in the electric heat section did not energize.</td>
<td>Heat section / Stage 1 failed. (Pilot relay contacts did not close, or the relay coil in the electric heat section did not energize.) Air handler will operate on 1st stage for reminder of the heat call. Will clear after fault recovered.</td>
</tr>
<tr>
<td>352</td>
<td>Critical</td>
<td>(Air Handler) There is a problem with the air-handler’s 2nd stage electric heat. Either the pilot relay contacts did not close, or the relay coil in the electric heat section did not energize. The air-handler will operate on 1st stage electric heat until the issue is resolved.</td>
<td>Heat section / Stage 2 failed (Same as Code 351).</td>
</tr>
<tr>
<td>353</td>
<td>Critical</td>
<td>(Air Handler) There is a problem with the air-handler’s 3rd stage electric heat. Either the pilot relay contacts did not close, or the relay coil in the electric heat section did not energize. The air-handler will operate on 1st stage electric heat until the issue is resolved.</td>
<td>Heat section / Stage 3 failed (Same as Code 351).</td>
</tr>
</tbody>
</table>

*table continued on next page*
Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Minor and Moderate alerts are found only in the Installer alert button.

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>354</td>
<td>Critical</td>
<td>(Air Handler) There is a problem with the air-handler’s 4th stage electric heat. Either the pilot relay contacts did not close, or the relay coil in the electric heat section did not energize. The air-handler will operate on 1st stage electric heat until the issue is resolved.</td>
<td>Heat section / Stage 4 failed (Same as Code 351).</td>
</tr>
<tr>
<td>355</td>
<td>Critical</td>
<td>(Air Handler) There is a problem with the air-handler’s 5th stage electric heat. Either the pilot relay contacts did not close, or the relay coil in the electric heat section did not energize. The air-handler will operate on 1st stage electric heat until the issue is resolved.</td>
<td>Heat section / Stage 5 failed (Same as Code 351).</td>
</tr>
<tr>
<td>370</td>
<td>Critical</td>
<td>(Furnace) The furnace control board has not received 24VAC power for 2 minutes or more.</td>
<td>Control sees the loss of 24VAC for 2 minutes. Terminate all services and wait for interlock switch to close. The alarm will clear when 24VAC is continuously sensed on DS terminal for a minimum of 10 seconds or on a power reset. If 2 stage with float switch, the IPC control R-DS is open.</td>
</tr>
<tr>
<td>400</td>
<td>Critical</td>
<td>(Outdoor Unit) The compressor internal overload has tripped.</td>
<td>Thermostat demand Y1 is present; but, compressor is not running. Check power to unit. Clears the error after current is sensed in both RUN and START sensors for at least 2 seconds, or after service is removed, or after power reset.</td>
</tr>
<tr>
<td>401</td>
<td>Moderate</td>
<td>(Outdoor Unit) Either the compressor ran for more than 18 hours continuously trying to cool the home or the refrigerant pressure in the system is low.</td>
<td>Compressor ran more than 18 hours to satisfy a single thermostat demand. Will not lockout system. If 2 stage, units with blinking LED light controls, unit will run in low speed; units with 7-segment display will display code, but continue to run in high speed. If a Heat Pump, and if outdoor temp is less than 65 degrees, code is ignored. Clears the error after 30 consecutive normal run cycles or power reset. Also monitors low pressure switch trips.</td>
</tr>
<tr>
<td>402</td>
<td>Critical</td>
<td>(Outdoor Unit) Either the discharge or suction pressure level is out-of-limits, or the is compressor overloaded.</td>
<td>Discharge or suction pressure out-of-limits, or compressor overloaded. Clears the error after 4 consecutive normal compressor run cycles.</td>
</tr>
<tr>
<td>403</td>
<td>Moderate</td>
<td>(Outdoor Unit) The compressor ran for less than 3 minutes to satisfy a thermostat demand.</td>
<td>Compressor runs less than 3 minutes to satisfy a thermostat demand. Clears the error after 4 consecutive normal run cycles or power reset.</td>
</tr>
<tr>
<td>404</td>
<td>Critical</td>
<td>(Outdoor Unit) The compressor rotor is locked up. This could be due to a short circuiting of the run capacitor, seizing of the bearings or excessive liquid refrigerant etc.</td>
<td>Compressor rotor locked up due to run capacitor short, bearings are seized, excessive liquid refrigerant, etc. (NOTE: May need to install hard start kit). Clears the error after 4 consecutive normal run cycles or after power reset.</td>
</tr>
<tr>
<td>405</td>
<td>Critical</td>
<td>(Outdoor Unit) The compressor circuit is open. This could be due to a power disconnection, open fuse etc.</td>
<td>Compressor circuit open (due to power disconnection, open fuse, etc.) Clears the error after 1 normal compressor run cycle.</td>
</tr>
<tr>
<td>406</td>
<td>Critical</td>
<td>(Outdoor Unit) The required amount of current is not passing through the start current transformer.</td>
<td>Required amount of current is not passing through Start current transformer. Clears the error after current is sensed in START sensor, or after power reset.</td>
</tr>
</tbody>
</table>

*table continued on next page*
### Table 5. Alert Codes and Troubleshooting

Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Minor and Moderate alerts are found only in the Installer alert button.

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>407</td>
<td>Critical</td>
<td>(Outdoor Unit) The required amount of current is not passing through run current transformer.</td>
<td>Required amount of current is not passing through Run current transformer. Clears the error after current is sensed in RUN sensor, or 1 normal compressor run cycle, or after power reset.</td>
</tr>
<tr>
<td>408</td>
<td>Critical</td>
<td>(Outdoor Unit) The compressor is running continuously.</td>
<td>Compressor runs continuously. Clears the error after 1 normal compressor run cycle or after power reset.</td>
</tr>
<tr>
<td>409</td>
<td>Moderate</td>
<td>(Furnace / Air Handler / Outdoor Unit) The secondary voltage for the (furnace, air-handler or outdoor unit) has fallen below 18VAC. If this continues for 10 minutes, the thermostat will turn off the (furnace, air-handler or outdoor unit).</td>
<td>Secondary voltage is below 18VAC. After 10 minutes, operation is discontinued. Clears the code after voltage is higher than 20 VAC for 2 seconds or after power reset.</td>
</tr>
<tr>
<td>410</td>
<td>Moderate</td>
<td>(Outdoor Unit) The outdoor unit pressure is below the required limit.</td>
<td>Unit pressures are below the lower limit. Pressure switch opens at 40 psig (system shuts down) and closes at 90 psig (system restarts).</td>
</tr>
<tr>
<td>411</td>
<td>Critical</td>
<td>(Outdoor Unit) The low pressure switch has opened 5 times during one cooling cycle. As a result, the thermostat has shutdown the outdoor unit.</td>
<td>Open low pressure switch error count reached 5 strikes. Check system charge using approach and sub cooling temperatures. Reset by putting outdoor unit control in test mode or resetting low voltage power.</td>
</tr>
<tr>
<td>412</td>
<td>Moderate</td>
<td>(Outdoor Unit) The outdoor unit pressure is above the required limit. The system will shut down.</td>
<td>Unit pressure is above the upper limit. Pressure switch opens at 590 psig (system shuts down) and closes at 418 psig (system restarts).</td>
</tr>
<tr>
<td>413</td>
<td>Critical</td>
<td>(Outdoor Unit) The high pressure switch has opened 5 times during one cooling cycle. As a result, the thermostat has shutdown the outdoor unit.</td>
<td>Open high pressure switch error count reached 5 strikes. Check system charge using approach and sub cooling temperatures. Check outdoor fan operation. Check for dirt or debris blocking air flow to outdoor unit. Reset by putting outdoor unit control in test mode or resetting low voltage power.</td>
</tr>
<tr>
<td>414</td>
<td>Critical</td>
<td>(Outdoor Unit) The discharge line temperature is higher than the recommended upper limit of 279ºF.</td>
<td>Discharge line temperature is &gt; 279ºF. Make sure coil is clean and airflow unobstructed in and out of condenser. Check system operating pressures and compare to unit charging charts in installation manual. Clears after discharge temperature is &lt; 225ºF.</td>
</tr>
<tr>
<td>415</td>
<td>Critical</td>
<td>(Outdoor Unit) The discharge line temperature has been consistently higher than the recommended upper limit of 279ºF.</td>
<td>Discharge line high temperature error count reached 5 strikes. Make sure coil is clean and airflow unobstructed in and out of condenser. Reset by putting outdoor board in test mode or resetting low voltage power.</td>
</tr>
<tr>
<td>416</td>
<td>Critical</td>
<td>(Outdoor Unit) The outdoor coil sensor is either open, short-circuited or the temperature is out of sensor range. As a result the outdoor unit control will not perform any defrost tempering.</td>
<td>Sensor being detected open or shorted, or temperature is out of sensor range. Outdoor unit control will not perform demand or time/temperature defrost operation. (System will still heat or cool.) Clears when outdoor unit control detects proper sensor readings.</td>
</tr>
<tr>
<td>417</td>
<td>Critical</td>
<td>(Outdoor Unit) The outdoor unit sensor is either open, short-circuited or the temperature is out of sensor range. As a result the outdoor unit control will not perform any defrost tempering.</td>
<td>Outdoor unit control detects open or shorted sensor, or temperature that is out of sensor range. Critical Alert after 10 minutes. Reset by replacing sensor. This fault is detected by allowing the unit to run for 90 seconds before checking sensor resistance. If the sensor resistance is not within range after 90 seconds, the board will count one fault. After 5 faults, the board will lock out. Check for proper sensor reading and attachment to line. Replace if out-of-specifications.</td>
</tr>
</tbody>
</table>

*table continued on next page*
Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Minor and Moderate alerts are found only in the Installer alert button.

<table>
<thead>
<tr>
<th>Alert Code</th>
<th>Priority</th>
<th>Alert Text</th>
<th>Steps to clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>418</td>
<td>Moderate</td>
<td>(Outdoor Unit) There is a faulty “W” output circuit.</td>
<td>Faulty W output circuit.</td>
</tr>
<tr>
<td>419</td>
<td>Critical</td>
<td>(Outdoor Unit) The “W” output on the outdoor unit has reported more than 5 errors. As a result, the system has shutdown the outdoor unit.</td>
<td>W output hardware fault count reached 5 strikes.</td>
</tr>
<tr>
<td>420</td>
<td>Critical</td>
<td>(Air Handler) The heat pump defrost cycle has taken more than 20 minutes to complete.</td>
<td>Defrost cycle lasts longer than 20 minutes. Check heat pump operation. Cleared when W1 signal is removed. Applicable only in communicating mode with non-communicating heat pump.</td>
</tr>
<tr>
<td>421</td>
<td>Critical</td>
<td>(Outdoor Unit) The “W” output terminal on the outdoor unit is not wired correctly.</td>
<td>Voltage sensed on W output terminal when Y1 out is deactivated.</td>
</tr>
<tr>
<td>700</td>
<td>Moderate</td>
<td>(Stat) The temperature sensor in the thermostat is not working properly.</td>
<td>Recalibrate thermostat to clear. Replace thermostat if needed.</td>
</tr>
<tr>
<td>701</td>
<td>Moderate</td>
<td>(Stat) The thermostat is reading indoor temperatures above the pre-programmed limit.</td>
<td>Recalibrate thermostat to clear; cool thermostat; adjust setpoint. Replace thermostat, if needed.</td>
</tr>
<tr>
<td>702</td>
<td>Moderate</td>
<td>(Stat) The thermostat is reading indoor temperatures below the pre-programmed limit.</td>
<td>Recalibrate thermostat to clear; warm thermostat; adjust setpoint. Replace thermostat, if needed.</td>
</tr>
<tr>
<td>703</td>
<td>Moderate</td>
<td>(Stat) The humidity sensor in the thermostat is not working properly.</td>
<td>Recalibrate thermostat to clear; adjust setpoint. Replace thermostat, if needed.</td>
</tr>
<tr>
<td>704</td>
<td>Moderate</td>
<td>(Stat) The thermostat is reading indoor humidity levels above the pre-programmed limit.</td>
<td>Recalibrate thermostat to clear. Replace thermostat, if needed.</td>
</tr>
<tr>
<td>705</td>
<td>Moderate</td>
<td>(Stat) The thermostat is reading indoor humidity levels below the pre-programmed limit.</td>
<td>Recalibrate thermostat to clear. Replace thermostat, if needed.</td>
</tr>
<tr>
<td>Ohm Check</td>
<td>—</td>
<td>The ohm reading in the system is either too high or too low.</td>
<td>Ohm reading between i+ and i- anywhere on the RSBus with supply power off should be between 70 and 90 ohms. If above 90 ohms, check and repair wiring, splices or other wiring defects that may be causing the excessive resistance. If less than 70 ohms, check for shorted wires.</td>
</tr>
</tbody>
</table>

**Homeowner Service Alert Codes**

<table>
<thead>
<tr>
<th>Number</th>
<th>Value</th>
<th>Number</th>
<th>Value</th>
<th>Number</th>
<th>Value</th>
<th>Number</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000</td>
<td>Filter 1</td>
<td>3002</td>
<td>Humidifier Pad</td>
<td>3004</td>
<td>Maintenance</td>
<td>4000</td>
<td>User WiFi state change, disable</td>
</tr>
<tr>
<td>3001</td>
<td>Filter 2</td>
<td>3003</td>
<td>UV Light</td>
<td>3005</td>
<td>PureAir Maintenance</td>
<td>4001</td>
<td>Firmware download failed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6. Troubleshooting Tips

<table>
<thead>
<tr>
<th>No.</th>
<th>Issue / Problem</th>
<th>Possible Cause</th>
<th>Corrective Action / Comments</th>
</tr>
</thead>
</table>
| 1   | - No electric heat operation.  
  - The thermostat **system setting** does not offer a **emerg. heat** choice on an HP system.  
  - The thermostat does not offer any “heat” choice on an AC system with air handler with electric heat. | Electric heat was not manually configured configured at the Air Handler Control (AHC) before the icomfort Wi-Fi™ **system discovery** process at initial power-up. | - Manually configure to discover the electric heat section(s) on the air handling (see Page 64 or CBX32MV or CBX40UHV manual for details).  
  - Re-setup the icomfort system by selecting the **setup** button in the Installer program and press **start** to begin **system discovery**; then reconfigure the system. |
| 2   | Thermostat Displays **System Waiting** message and the furnace does respond to a heating demand (no red **critical alert** icon or alert messages are displayed on the thermostat). | The furnace is in “watchguard” mode (moderate alert) and will not display the red **critical alert** icon nor be displayed in the homeowner **alert** button. | - Go to the installer program **alert** button to view all alerts and details about those alerts.  
  - If the furnace is in “watchguard” mode, the furnace can be reset from the Home screen by setting the thermostat **system settings** to **off** for 20 sec, then back to **heat**. Then initiate a new heat demand. |
| 3   | Outdoor temperature is not displayed on the thermostat.                          | **Outdoor Temp Display** must be enabled to display the outdoor temperature on the home screen. | On the home screen, press the right arrow (↑) then press the **display settings** button. Click on **outdoor temp display** button to toggle ON. |
| 4   | A humidifier was added to the system as non-communicating equipment and the thermostat does not provide the ability to adjust the RH setpoint. | **Humidification Control Mode** is set for “Display only” which will not allow the icomfort system to control the humidifier. | - In the installer program, select the **equipment** button. Select “System” from the device list using the up/down arrows and press the **edit** button. Use up/down arrows to select **Humidification Control Mode** from the list. Select the desired humidifier control mode: **Basic**, **Precision**, or **Dew Point**. (Basic is the most popular) and press the **save** button. Follow the red instructions then exit the system.  
  - If **Humidification Control Mode** is not offered as a menu item choice, the Humidifier must be added to the icomfort system using the **Add or Remove Non-communicating equipment** screen under the thermostat installer program in the **setup** button. |
| 5   | The non-communicating outdoor unit is part of the system, but the thermostat does not display the outdoor unit. | The outdoor unit was not added as a non-communicating unit during initial system setup. | In the thermostat installer program select the **setup** button and follow the on screen instructions until you reach the **Add or Remove Non-communicating equipment** screen; press **yes**. Select **Outdoor Unit Type** from the menu and press the **edit** button. Select **1 Stage AC Unit** or **2 Stage AC Unit** and press **save**. Follow the red instructions then exit the system. |

*Bold* text indicates a button, or text display on the thermostat.

table continued on next page
<table>
<thead>
<tr>
<th>No.</th>
<th>Issue / Problem</th>
<th>Possible Cause</th>
<th>Corrective Action / Comments</th>
</tr>
</thead>
</table>
| 6   | High Balance Point and Low Balance Point are not listed as a menu item to adjust the setpoint on the thermostat of the heat pump system. | Balance Point Control must be enabled to display as the High Balance Point and Low Balance Point in the menu and provide the ability for the installer to adjust the setpoint. | - In the installer program select the equipment button, then scroll down to system device to System and press edit. Scroll down the menu item choices to Balance Point Control and press edit. Select enable and press save. High Balance Point and Low Balance Point are now listed; adjust the balance point settings and press save.  
- If Balance Point Control is not shown as a menu item choice, the system is not connected to Wi-Fi or does not have/recognize an outdoor sensor or the system is not a heat pump. |
| 7   | icomfort thermostat does not show a choice for Dew Point Control Humidification mode (only Basic and Precision choices). | Dew Point Control will only be displayed if the system has an outdoor sensor.                                                              | - Add an outdoor sensor to the system and connect to the outdoor sensor terminals on the indoor unit.  
- icomfort system is not able to read the outdoor temperature sensor in the icomfort outdoor unit, check outdoor sensor. |
| 8   | The icomfort does not display an alert code message, but the furnace or unit control displays a diagnostic code. | The red Critical Alert icon and homeowner alert button do not display non-critical alerts.                                                   | Go to the installer program alert button to view all alerts and details about those alerts.                 |
| 9   | The icomfort thermostat does not display the Model # and or Serial # indoor or outdoor unit. | The icomfort control was replaced with a replacement control before the icomfort system was initially setup or configured.                  | - Replacement icomfort controls do not have the Model # or Serial # loaded in the control.  
- The Model # and Serial # cannot be added to the control.  
- System will still operate normally. |
| 10  | A non-communicating 2-stage outdoor unit was added to the system but the unit only runs in 2nd stage. | The “W915 2 Stage Compr” clickable option link on the furnace or air handler control must be cut when used with a non-communicating 2-stage outdoor unit. | Cut the “W915 2 Stage Compr” option link on the furnace or air handler control.                          |
| 11  | Transfer the Model #, Serial # and system settings to a replacement control. | The icomfort system is capable of copying settings from the previous configuration to the new compatible device (control) found.            | Reconfigure the system using the installer program and select the setup button. The system will go through the system discovery process. The thermostat will display missing devices (old control) and found compatible devices (new control). Press the next button to accept the new device and copy the settings. Thermostat will display Settings were copied after successfully copying the information to the new control. See section title “Reconfiguring a system” in this manual. |

*Table 6. Troubleshooting Tips* **Bold** text indicates a button, or text display on the thermostat.
<table>
<thead>
<tr>
<th>No.</th>
<th>Issue / Problem</th>
<th>Possible Cause</th>
<th>Corrective Action / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Determine the actual Software version of the thermostat or one of the icomfort unit controls.</td>
<td>icomfort software is stored in the control and can be retrieved.</td>
<td>From the home screen click the right arrow ((Collectors) then click service info button; then click the thermostat info button; (display shows model &amp; serial numbers and hardware, software, Wi-Fi revision information).</td>
</tr>
</tbody>
</table>
| 13  | The icomfort thermostat shows an error code related to the outdoor sensor and or the DAS even after removing these optional accessories. | The outdoor sensor and discharge sensor are options, however if the system was setup with the sensor in place, the icomfort system will see an open sensor reading if it is disconnected. | - Disconnect the outdoor sensor or discharge sensor.  
- Using the installer program, reset the system by selecting setup button and follow the screen prompts as the thermostat goes through a new system discovery. |
| 14  | The icomfort thermostat will not provide me a choice to add a non-communicating heat pump to a gas furnace. | The icomfort system does not have the ability to control a non-communicating heat pump on a dual fuel system. | Replace the icomfort thermostat with a conventional thermostat that has a dual fuel control mode (e.g. Lennox ComfortSense™ 7000). |
| 15  | During system discovery, the thermostat displays a message **Thermostat is unable to communicate to system components.** | The thermostat was not successful in communicating to the indoor unit.        | - Verify the indoor unit has a icomfort communicating control.  
- Check wiring connections at R, i+, i- and C at the indoor unit and thermostats.  
- Check R, i+, i-, C wires for open/shorts. |
| 16  | Temperature or humidity calibration does not respond to calibration changes.     | Temperature/Humidity calibration changes will change display 1°F or 1% RH every 3 minutes. | Allow the system to stabilize and complete the calibration mode due to the time delay. A 5°F calibration change will take 15 minutes to calibrate the display. |
| 17  | The installer adjustable settings used to configure the system are not listed in the equipment button under the **Thermostat 49W95** (only Temp Reading Calibration and Humidity Reading Calibration are listed as menu items). | The adjustable system configuration settings are listed in the equipment button under **System**. | - In the installer program select the equipment button and choose System from system device and press edit.  
- Over 25 installer adjustable settings are provided including balance point, humidification control, dehumidification modes, stage differentials and delays. |

*table continued on next page*
<table>
<thead>
<tr>
<th>No.</th>
<th>Issue / Problem</th>
<th>Possible Cause</th>
<th>Corrective Action / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>During the cooling mode the displayed air volume on the indoor control is substantially lower than expected.</td>
<td>The system may be following “the cooling ramping” profile or may be in “the dehumidification mode”.</td>
<td>- During the default cooling ramping profile the blower will run for 7.5 minutes at 82% of the cooling air volume. If the “cooling ramping profile” is selected, the system will ramp to 100% after 7.5 minutes. - The dehumidification mode will run the system at 70% of the cooling air volume which will be in addition to the air volume reduction provided during the ramping profile. During the dehumidification mode, a “d” will be displayed on the furnace or air handler control.</td>
</tr>
<tr>
<td>19</td>
<td>The Indoor unit is not providing the expected air volume according to the cfm shown on the indoor unit control.</td>
<td>- Indoor unit air volume settings in the icomfort thermostat are not correct. - System is operating in the cooling mode and following the cooling ramping profile or dehumidification air volume.</td>
<td>- In the installer program select the equipment button and choose the furnace or air handler from the system devices list and press edit. Verify/set the correct air volume for heating and cooling modes. - If in the cooling mode check for cooling ramp mode or dehumidification mode as in #18.</td>
</tr>
<tr>
<td>20</td>
<td>- No second stage cooling is provided on a icomfort outdoor unit. - Space temperature is above second stage differential and has run in first stage a long time. - No red Critical Alert icon or alert is displayed in the homeowner alert button.</td>
<td>The red Critical Alert icon and homeowner alert button do not display non-critical alerts.</td>
<td>- Go to the installer program alert button to view all alerts and details about those alerts. - Look for alert code 401 (Compressor Long On Cycle) which indicates compressor ran more than 18 hours continuous and will lock out 2nd stage compressor. - Cycle indoor power off and back on, alert code 401 will clear within a few minutes.</td>
</tr>
<tr>
<td>21</td>
<td>No weather being displayed.</td>
<td>icomfort Wi-Fi™ not communicating with router.</td>
<td>Make sure Wi-Fi is enabled (see Page 24).</td>
</tr>
<tr>
<td>22</td>
<td>Unable to complete Wi-Fi router / internet connection</td>
<td>Refer to 507037-01 Wi-Fi Troubleshooting checklist for icomfort Wi-Fi™ thermostat.</td>
<td></td>
</tr>
</tbody>
</table>
**Wiring Diagrams**

**icomfort™ Communicating System Wiring**

**DAS NOTE** - The discharge air sensor is intended to be mounted downstream of the furnace heat exchanger and air conditioning coil. It must be placed in free airflow, where other accessories (such as humidifiers, UV lights, etc.) will not interfere with its accuracy. Wiring distance between the IFC or AHC and the discharge air sensor should not exceed 10ft when wired with 18-gauge thermostat wire.

**OAS NOTE** - Wiring distance between the IFC or AHC and the outdoor temperature sensor should not exceed 200ft when wired with 18-gauge thermostat wire.

---

**HP/AC**

icomfort Wi-Fi™ Thermostat
icomfort by Lennox™ Indoor Furnace or Air Handler
icomfort by Lennox™ Outdoor Condensing Unit or Heat Pump

Maximum total length of all connections on the RSBus is limited to 1500ft. Wire gauge of RSBus wire is 18.
Wiring Diagrams
icomfort™ Communicating Indoor/non-Communicating Outdoor System Wiring

icomfort by Lennox™ AIR HANDLER (AHC)

OPTIONAL DIS-CHARGE AIR SENSOR (SEE DAS NOTE Page 59)

icomfort Wi-Fi™ THERMOSTAT

Maximum total length of all connections on the RSBus is limited to 1500ft.
Wire gauge of RSBus wire is 18.

icomfort by Lennox™ FURNACE (IFC) OR AIR HANDLER (AHC)

OPTIONAL OUT-DOOR AIR SENSOR (SEE OAS NOTE Page 59)

Setup Notes:
- Cut Y1-Y2 Onboard Link For 2-stage Outdoor Units
- Cut R-O Onboard Link For Outdoor Heat Pump Units

Maximum total length of all connections on the RSBus is limited to 1500ft.
Wire gauge of RSBus wire is 18.

Setup Note:
Cut Y1-Y2 Onboard Link For 2-stage Outdoor Units

Y1 Y2 L R C

2 STG. ONLY
LSOM ONLY
O OUT BL

Y1 Y2 L R C

2 STG. ONLY
LSOM ONLY
O OUT BL

Standard Outdoor Heat Pump

Standard Outdoor Condensing Unit

Optional outdoor air sensor (see OAS note Page 59)

Optional discharge air sensor (see DAS note Page 59)
Optional Accessories Wiring
for use with any icomfort by Lennox™ system

NOTE: icomfort Wi-Fi™ THERMOSTAT SENSES HUMIDITY & CONTROLS 24V “H” OUTPUT (& 120V “H” OUTPUT) TO CYCLE HUMIDIFIER BASED ON DEMAND. NO OTHER CONTROL OR HUMIDISTAT REQUIRED. OPTIONAL OUTDOOR AIR SENSOR FOR USE WITH HUMIDIFIER (IF NOT ALREADY IN THE SYSTEM FOR OTHER FUNCTIONS. BUILT INTO ALL icomfort by Lennox™ OUTDOOR UNITS). (SEE OAS NOTE Page 59)

Maximum total length of all connections on the RSBus is limited to 1500ft.
Wire gauge of RSBus wire is 18.

NOTE: 24V UV LIGHT APPLICATIONS
In an icomfort by Lennox™ system, neither furnace nor air handler transformer will have adequate VA to power 24V UV light applications. An additional transformer for UV light applications is required. UV light wiring connections are independent of HVAC system operation; see UV light installation instructions.

NOTE: icomfort Wi-Fi™ enabled outdoor unit

HVAC EQUIPMENT
AUXILIARY DEHUMIDIFIER
HCWH-01 DEHUMIDIFIER CONTROL

120VAC
HVAC EQUIPMENT
AUXILIARY DEHUMIDIFIER 090 & 135 capacities only (065 not compatible)

For SL290 & EL296, see HUMIDIFIER diagram below (bottom right)

SL280, EL296 FURNACE
48G96 Relay
GND
IN

HRV2/ERV2 WIRING
HRV2 OR ERV2
T10 (N.C.)
T11 (COM)
T12 (N.O.)

NC
NO
COM

120VAC HUM OUTPUT IS ENERGIZED ANYTIME HUMIDITY DEMAND IS PRESENT.
120VAC EAC OUTPUT IS ENERGIZED ANYTIME BLOWER IS RUNNING.

84x342
Optional Accessories Wiring
for use with any icomfort by Lennox™ system

SLP98 & G71MPF FURNACE (IFC) OR AIR HANDLER (AHC)

NOTE: icomfort Wi-Fi™ THERMOSTAT SENSES HUMIDITY & CONTROLS 24V “H” OUTPUT (& 120V “H” OUTPUT) TO CYCLE HUMIDIFIER BASED ON DEMAND. NO OTHER CONTROL OR HUMIDISTAT REQUIRED. OPTIONAL OUTDOOR AIR SENSOR FOR USE WITH HUMIDIFIER (IF NOT ALREADY IN THE SYSTEM FOR OTHER FUNCTIONS. BUILT INTO ALL icomfort by Lennox™ OUTDOOR UNITS). (SEE OAS NOTE Page 59)

Maximum total length of all connections on the RSBus is limited to 1500ft.
Wire gauge of RSBus wire is 18.

NOTE: 24V UV LIGHT APPLICATIONS
In an icomfort by Lennox™ system, neither furnace nor air handler transformer will have adequate VA to power 24V UV light applications. An additional transformer for UV light applications is required. UV light wiring connections are independent of HVAC system operation; see UV light installation instructions.

NOTE: icomfort Wi-Fi™ enabled outdoor unit

HVAC EQUIPMENT
AUXILIARY DEHUMIDIFIER
HCWH-01 DEHUMIDIFIER CONTROL

120VAC
HVAC EQUIPMENT
AUXILIARY DEHUMIDIFIER 090 & 135 capacities only (065 not compatible)

For SL290 & EL296, see HUMIDIFIER diagram below (bottom right)

SL280, EL296 FURNACE
48G96 Relay
GND
IN

HRV2/ERV2 WIRING
HRV2 OR ERV2
T10 (N.C.)
T11 (COM)
T12 (N.O.)

NC
NO
COM

120VAC HUM OUTPUT IS ENERGIZED ANYTIME HUMIDITY DEMAND IS PRESENT.
120VAC EAC OUTPUT IS ENERGIZED ANYTIME BLOWER IS RUNNING.

84x342
Optional Accessories Wiring
for use with any icomfort by Lennox™ system

SLP98 & G71MPF FURNACE (IFC) OR AIR HANDLER (AHC)

NOTE: icomfort Wi-Fi™ THERMOSTAT SENSES HUMIDITY & CONTROLS 24V “H” OUTPUT (& 120V “H” OUTPUT) TO CYCLE HUMIDIFIER BASED ON DEMAND. NO OTHER CONTROL OR HUMIDISTAT REQUIRED. OPTIONAL OUTDOOR AIR SENSOR FOR USE WITH HUMIDIFIER (IF NOT ALREADY IN THE SYSTEM FOR OTHER FUNCTIONS. BUILT INTO ALL icomfort by Lennox™ OUTDOOR UNITS). (SEE OAS NOTE Page 59)

Maximum total length of all connections on the RSBus is limited to 1500ft.
Wire gauge of RSBus wire is 18.

NOTE: 24V UV LIGHT APPLICATIONS
In an icomfort by Lennox™ system, neither furnace nor air handler transformer will have adequate VA to power 24V UV light applications. An additional transformer for UV light applications is required. UV light wiring connections are independent of HVAC system operation; see UV light installation instructions.

NOTE: icomfort Wi-Fi™ enabled outdoor unit

HVAC EQUIPMENT
AUXILIARY DEHUMIDIFIER
HCWH-01 DEHUMIDIFIER CONTROL

120VAC
HVAC EQUIPMENT
AUXILIARY DEHUMIDIFIER 090 & 135 capacities only (065 not compatible)

For SL290 & EL296, see HUMIDIFIER diagram below (bottom right)

SL280, EL296 FURNACE
48G96 Relay
GND
IN

HRV2/ERV2 WIRING
HRV2 OR ERV2
T10 (N.C.)
T11 (COM)
T12 (N.O.)

NC
NO
COM

120VAC HUM OUTPUT IS ENERGIZED ANYTIME HUMIDITY DEMAND IS PRESENT.
120VAC EAC OUTPUT IS ENERGIZED ANYTIME BLOWER IS RUNNING.

84x342
Optional Accessories Wiring
for use with any icomfort by Lennox™ system

SLP98 & G71MPF FURNACE (IFC) OR AIR HANDLER (AHC)

NOTE: icomfort Wi-Fi™ THERMOSTAT SENSES HUMIDITY & CONTROLS 24V “H” OUTPUT (& 120V “H” OUTPUT) TO CYCLE HUMIDIFIER BASED ON DEMAND. NO OTHER CONTROL OR HUMIDISTAT REQUIRED. OPTIONAL OUTDOOR AIR SENSOR FOR USE WITH HUMIDIFIER (IF NOT ALREADY IN THE SYSTEM FOR OTHER FUNCTIONS. BUILT INTO ALL icomfort by Lennox™ OUTDOOR UNITS). (SEE OAS NOTE Page 59)

Maximum total length of all connections on the RSBus is limited to 1500ft.
Wire gauge of RSBus wire is 18.

NOTE: 24V UV LIGHT APPLICATIONS
In an icomfort by Lennox™ system, neither furnace nor air handler transformer will have adequate VA to power 24V UV light applications. An additional transformer for UV light applications is required. UV light wiring connections are independent of HVAC system operation; see UV light installation instructions.

NOTE: icomfort Wi-Fi™ enabled outdoor unit

HVAC EQUIPMENT
AUXILIARY DEHUMIDIFIER
HCWH-01 DEHUMIDIFIER CONTROL

120VAC
HVAC EQUIPMENT
AUXILIARY DEHUMIDIFIER 090 & 135 capacities only (065 not compatible)

For SL290 & EL296, see HUMIDIFIER diagram below (bottom right)

SL280, EL296 FURNACE
48G96 Relay
GND
IN

HRV2/ERV2 WIRING
HRV2 OR ERV2
T10 (N.C.)
T11 (COM)
T12 (N.O.)

NC
NO
COM

120VAC HUM OUTPUT IS ENERGIZED ANYTIME HUMIDITY DEMAND IS PRESENT.
120VAC EAC OUTPUT IS ENERGIZED ANYTIME BLOWER IS RUNNING.
Optional Accessories Wiring
for use with any icomfort by Lennox™ system

26L56 Current sensing relay kit.

NOTE: Pass the blower motor L1 wire through the current loop on the current sensing relay as shown.

HVAC Heat or Cool call, or the fan is in continuous operation, the ventilation controller will open OA damper to ventilate if the outdoor temperature and indoor humidity are within the limits of the ventilation controller.

LVCS: Set cycle time to 1 hour; set ventilation time to 60 minutes.

NOTE: Use the icomfort™ circulate fan percentage of ON* TIME to control ventilation time.

Pass indoor blower motor common wire through current loop.
See HEPA Interlock Kit for installation details.
Thermostat wire termination in communicating system

Communicating systems using the icomfort Wi-Fi™ thermostat require four thermostat wires between the thermostat and the furnace/air handler control and four wires between the outdoor unit and the furnace/air handler control. When a thermostat cable with more than four wires is used, the extra wires must be properly connected to avoid electrical noise. The wires must not be left disconnected.

Use wire nuts to bundle the unused wires at each end of the cable. A single wire should then be connected to the indoor unit end of the wire bundle and attached to the “C” terminals as shown in the diagram above. This is not an issue in non-communicating systems.
Configuring heat strips on Air Handler Control (AHC)

IMPORTANT: After electric heat strips are installed, the Air Handler Control (AHC) must be manually configured to detect the number of electric heat sections. (SEE ALSO 506181-01 for complete configuration guide.)

To configure the heat strips so that they will be detected by the thermostat:

- Power must be applied to the air handler but NOT to the thermostat. Remove thermostat from baseplate or remove wires to thermostat at the air handler.
- On the air handler control (AHC), unit should be in idle mode (decimal blinks at 1 Hertz—0.5 second ON, 0.5 second OFF.
- Select field test mode—press and hold the pushbutton until solid “—” appears; release button. Display will blink.
- Press the pushbutton and wait for the display LED to show “H” (capital H), then release the button.
- The AHC cycles the indoor blower motor “on” to the selected heat speed and stages the electric heat relays “on” and “off” to automatically detect the number of electric heat sections. The AHC stores the number of electric heat sections, then automatically exits “Field Test Mode”.
- At this point, the icomfort Wi-Fi™ will now detect the heat strip information stored in the AHC.
**Setting up typical systems—FURNACE & AIR CONDITIONING UNIT**

icomfort™-enabled furnace & icomfort™-enabled air conditioner

An icomfort-enabled gas furnace (G71MPP, EL296V, SLP98, SL280) with an icomfort-enabled AC (XC17 or XC21 only) unit.

1. **Wiring**—See Communicating System Wiring diagram on Page 59 and Optional Accessories Wiring (Page 61) for any accessories being installed with the system.
   - 4-conductor thermostat wire from the icomfort Wi-Fi™ thermostat to the gas furnace (R, i+, i−, C)
   - 4-conductor thermostat wire from the integrated furnace control (IFC) terminal strip to the icomfort-enabled AC unit (R, i+, i−, C)
   - Wiring as required for accessories

2. **DO NOT** cut any option link on air handler control.

3. After the entire system is wired, power up the system; the icomfort Wi-Fi™ thermostat will check the system for installed communication devices.

4. On the thermostat, go past the “Add or remove non-communicating devices” to the “To adjust a setting” screen.

5. Use the arrows to select “Furnace” from system devices list; press **edit**. From this Furnace screen you will have access to the various airflow settings. Set the system air volumes according the needs of the home. When you change certain settings, the system will prompt you to “please view and save all red settings”. Use the arrows to select the red settings and press **edit**. Either make changes or not, but press **save** either way. The red settings will go away after pressing **save**. When all CFM settings are complete, press the **back** button. Press **next step** to advance to the tests button.

6. Using up/down arrows, select the test options individually (if so desired, you may choose to TEST ALL) and press the **select** button. (If selecting individual tests, repeat until you have selected all you intend to run.)

7. Press the **start** button. Confirm the AC unit is electrically energized and operational. Press **done**.

8. Exit the installer setup mode by selecting the **EXIT** button.

**TIPS**

- An outdoor temperature sensor is provided in an icomfort-enabled air conditioning unit. To display the outdoor temperature on the home screen of the thermostat, you must turn on (or off) the “Outdoor Temp Display”. From the Home screen, press **press for more area** and select the **HELP** icon. Press the **user preferences** box and scroll down to “Outdoor Temp Display”. Press the **modify** button and use the up/down arrows to select **On** (or Off) and then press the **save** button. Press **done** to return to the Home screen.
- Turn the Indoor Humidity Display on and off in a similar manner as above.
icomfort™-enabled furnace & non-communicating air conditioner

An icomfort-enabled gas furnace (G71MPP, EL296V, SLP98, SL280) with a conventional non-communicating air conditioner.

1. **Wiring**—See Communicating Indoor/Non-Communicating Outdoor System Wiring diagram on Page 59 and Optional Accessories Wiring (Page 61) for any accessories being installed with the system.
   - 4-conductor thermostat wire from the icomfort Wi-Fi thermostat to the gas furnace (R, i+, i-, C)
   - Conventional thermostat wire with 2 to 4 conductors from the furnace terminal strip to the AC unit (Y1, C, & on some models, R & Y2)
   - Wiring as required for accessories

2. Cut option link “2-stage compr” (Y1 to Y2, W915) on furnace control on two-stage AC units only.

3. After the entire system is wired, power up the system; the icomfort Wi-Fi thermostat will check the system for installed communication devices.

4. In the installer setup button, select “Add or Remove non-communicating equipment” by using the yes button.

5. Select the “Outdoor Unit Type” from the device list using the up/down arrows and press the edit button. Then select the AC type (1-stage AC or 2-stage AC) and press the save button.

6. Select the outdoor unit capacity and minimum outdoor unit capacity (2-stage only). Press save after editing each setting. Press back when finished to return to the adjust screen.

7. Use the arrows to select “Furnace” from system devices list; press edit. From this Furnace screen you will have access to the various airflow settings. Set the system air volumes according the needs of the home. When you change certain settings, the system will prompt you to “please view and save all red settings”. Use the arrows to select the red settings and press edit. Either make changes or not, but press save either way. The red settings will go away after pressing save. When all CFM settings are complete, press the back button. Press next step to advance to the tests button.

8. Using up/down arrows, select the test options individually (if so desired, you may choose to TEST ALL) and press the select button. (If selecting individual tests, repeat until you have selected all you intend to run.)

9. Press the start button. Confirm the AC unit is electrically energized and operational. Press done.

10. Exit the installer setup mode by selecting the EXIT button.

**TIPS**

- If the thermostat “System Setting” only shows “heat only” or “off” choices and does not offer a choice for “cooling” you must “Install” the non-communicating air conditioning unit. Select “Add or Remove non-communicating” under the setup button in the Installer Section. Select “Outdoor Unit Type”, press the edit button and then choose “1 Stage AC” or “2 Stage AC” and press the save button.

- On two-Stage Air Conditioners you must cut the “W915 2 Stage Compr” link on the furnace control.
Setting up typical systems—FURNACE & HEAT PUMP (DUAL FUEL)

icomfort™-enabled Furnace & icomfort™-enabled HP unit (Dual fuel)

Dual fuel system using an icomfort-enabled gas furnace (G71MPP, EL296V, SLP98, SL280) with an icomfort-enabled heat pump (XP17 or XP21 only).

1. **Wiring**—see Communicating System Wiring diagram on Page 59 and Optional Accessories Wiring (Page 61) for any accessories being installed with the system.
   - 4-conductor thermostat wire from the icomfort Wi-Fi™ thermostat to the gas furnace (R, i+, i−, C)
   - 4-conductor thermostat wire from the furnace terminal strip to the icomfort-enabled HP (R, i+, i−, C)
   - Wiring as required for accessories

2. **DO NOT** cut any option link on furnace control.

3. After the entire system is wired, power up the system; the icomfort Wi-Fi™ thermostat will check the system for installed communication devices.

4. On the thermostat, go past the “Add or remove non-communicating devices” to the “To adjust a setting” screen. Select “System” from the device list using the up/down arrows and press the edit button.

5. Select Balance Point Control and press edit. Use the down arrow to select “Enabled” and press save. High and Low Balance Points will appear in red.

6. Complete Balance Point Control by editing the High and Low Balance Points. It is not necessary to change the defaults, but you must save each setting. The red settings will go away after pressing save. Press the back button to return to the adjust screen.

7. Use the arrows to select “Furnace” from system devices list; press edit. From this Furnace screen you will have access to the various airflow settings. Set the system air volumes according the needs of the home. When you change certain settings, the system will prompt you to “please view and save all red settings”. Use the arrows to select the red settings and press edit. Either make changes or not, but press save either way. The red settings will go away after pressing save.

When all CFM settings are complete, press the back button. Press next step to advance to the tests button.

8. Test the system operation and confirm the HP unit is electrically energized and operational. Press done.

9. Exit the installer setup mode by selecting the EXIT button.

**TIPS**
- High & Low Balance points are enabled and adjusted under the installer section of the thermostat. In the equipment button select “System” and press edit. Scroll down to “Balance Point Control” and press edit and select Enabled and then save.
- An outdoor temperature sensor is provided in an icomfort-enabled heat pump unit. To display the outdoor temperature on the home screen of the thermostat, you must turn on (or off) the “Outdoor Temp Display”. From the Home screen, press for more area and select the HELP icon. Press the user preferences box and scroll down to “Outdoor Temp Display”. Press the modify button and use the up/down arrows to select On (or Off) and then press the save button. Press done to return to the Home screen.
- Turn the Indoor Humidity Display on and off in a similar manner as above.
- Gas heat is not provided to temper the air during defrost cycles.

icomfort™-enabled Furnace & non-communicating HP unit (Dual fuel)

*NOTE - DO NOT use a conventional non-communicating heat pump unit in an icomfort dual fuel system.*

**TIPS**
- A conventional thermostat capable of controlling a dual fuel system, like the ComfortSense® 7000, must be selected for this type of application.
icomfort™-enabled Air Handler & icomfort™-enabled Air Conditioner

An icomfort-enabled air handler (CBX32MV or CBX40UHV) with an icomfort-enabled air conditioner (XC17 or XC21 only).

**NOTE - IMPORTANT!** Be sure to configure the air handler control so that heat strips (if used) information will be detected by the icomfort thermostat. This must be done prior to powering up the system and thermostat.

1. Configure air handler control (AHC) for auxiliary heat strips if used.
2. **Wiring**—See **Communicating System Wiring** diagram on Page 59 and **Optional Accessories Wiring** (Page 61) for any accessories being installed with the system.
   - 4-conductor thermostat wire from the icomfort Wi-Fi™ thermostat to the air handler (R, i+, i−, C)
   - 4-conductor thermostat wire from the air handler terminal strip to the icomfort-enabled AC (R, i+, i−, C)
   - Wiring as required for accessories
3. **DO NOT** cut any option link on air handler control.
4. After the entire system is wired, power up the system; the icomfort Wi-Fi™ thermostat will check the system for installed communication devices.
5. On the thermostat, go past the “Add or remove non-communicating equipment” to the “To adjust a setting” screen.
6. Use the arrows to select “Air Handler” from system devices list; press **edit**. From this Air Handler screen you will have access to the various airflow settings. Set the system air volumes according to the needs of the home. When you change certain settings, the system will prompt you to “please view and save all red settings”. Use the arrows to select the red settings and press **edit**. Either make changes or not, but press **save** either way. The red settings will go away after pressing **save**. When all CFM settings are complete, press the **back** button. Press **next step** to advance to the tests button.
7. Test the system operation and confirm the system is electrically energized and operational. Particularly, test the heat strips (when used) to insure the auxiliary stages operate as designed. Press **done**.
8. Exit the installer setup mode by selecting the **EXIT** button.

**TIPS**
- If the thermostat “System Setting” does not offer a choice for “emerg. heat” and or the electric heat will not function; the electric heat has not been configured. Configure the electric heat as described on Page 64, or for complete detail, see the Air Handler installation instructions. Reconfigure the icomfort system by entering the installer program and selecting the **setup** button and following the prompts.
- An outdoor temperature sensor is provided in an icomfort-enabled air conditioning unit. To display the outdoor temperature on the home screen of the thermostat, you must turn on (or off) the “Outdoor Temp Display”. From the Home screen, press **press for more** area and select the **HELP** icon. Press the **user preferences** box and scroll down to “Outdoor Temp Display”. Press the **modify** button and use the up/down arrows to select **On** (or **Off**) and then press the **save** button. Press **done** to return to the Home screen.
- Turn the Indoor Humidity Display on and off in a similar manner as above.
icomfort™ enabled Air Handler & conventional non-communicating Air Conditioner

An icomfort air handler (CBX32MV or CBX40UHV) with a conventional non-communicating AC unit.

NOTE - IMPORTANT! Be sure to set up the air handler control for heat strips (if used) prior to powering up the system and thermostat.

1. Configure air handler control (AHC) for auxiliary heat strips if used.

2. Wiring—see Communicating Indoor / Non-Communicating Outdoor System Wiring diagram on Page 59 and Optional Accessories Wiring (Page 61) for any accessories being installed with the system.
   - 4-conductor thermostat wire from the icomfort Wi-Fi™ thermostat to the air handler (R, i+, i-, C)
   - icomfort air handler to conventional AC (5 – 8 wires). (Y1, Y2, C, R, W1,W2)
   - Wiring as required for accessories

3. On 2-stage AC, cut the “W915 2 Stage Compr” onboard clippable link.

4. On air handler control, remove jumper between W1 & W2 for two-stage electric heat only.

5. After the entire system is wired, power up the system; the icomfort Wi-Fi™ thermostat will check the system for installed communication devices.

6. In the installer setup button, select “Add or Remove non-communicating equipment” by using the yes button.

7. Select the “Outdoor Unit Type” from the device list using the up/down arrows and press the edit button. Then select the AC type (1-stage AC or 2-stage AC) and press the save button.

8. On the thermostat, go past the “Add or remove non-communicating devices” to the “To adjust a setting” screen. Select the “System” from the device list using the up/down arrows and press the edit button

9. Use the arrows to select “Air Handler” from system devices list; press edit. From this Air Handler screen you will have access to the various airflow settings. Set the system air volumes according the needs of the home. When you change certain settings, the system will prompt you to “please view and save all red settings”. Use the arrows to select the red settings and press edit. Either make changes or not, but press save either way. The red settings will go away after pressing save. When all CFM settings are complete, press the back button. Press next step to advance to the tests button.

10. Test the system operation and confirm the system is electrically energized and operational. Particularly, test the heat strips (when used) to insure the auxiliary stages have been detected and are operational. Press done.

11. Exit the installer setup mode by selecting the EXIT button.

TIPS
- If the thermostat “System Setting” does not offer a choice for “emerg. heat” and or the electric heat will not function; the electric heat has not been configured. Configure the electric heat as described on Page 64, or for complete detail, see the Air Handler installation instructions. Reconfigure the icomfort system by entering the installer program and selecting the setup button and following the prompts.
- If the thermostat “System Setting” only shows “heat only” or “off” choices and does not offer a choice for “cooling” you must “Install” the non-communicating air conditioning unit. Select “Add or Remove non-communicating” under the setup button in the Installer Section. Select “Outdoor Unit Type”, press the edit button and then choose “1 Stage AC” or “2 Stage AC” and press the save button.
- On two-stage Air Conditioners you must cut the “W915 2 Stage Compr” Link on the air handler control.
Setting up typical systems—AIR HANDLER & HEAT PUMP UNITS

icomfort™-enabled Air Handler & icomfort™-enabled Heat Pump unit

An icomfort air handler (CBX32MV or CBX40UHV) with an icomfort-enabled heat pump (XP17 or XP21 only) unit.

NOTE - IMPORTANT! Be sure to set up the air handler control for heat strips (if used) prior to powering up the system and thermostat.

1. Configure air handler control (AHC) for auxiliary heat strips if used.

2. Wiring—See Communicating System Wiring diagram on Page 59 and Optional Accessories Wiring (Page 61) for any accessories being installed with the system.
   - 4-conductor thermostat wire from the icomfort Wi-Fi™ thermostat to the air handler (R, i+, i−, C)
   - 4-conductor thermostat wire from the air handler terminal strip to the icomfort-enabled HP (R, i+, i−, C)
   - Wiring as required for accessories

3. DO NOT cut any option link on air handler control.

4. After the entire system is wired, power up the system; the icomfort Wi-Fi™ thermostat will check the system for installed communication devices.

5. On the thermostat, go past the “Add or remove non-communicating devices” to the “To adjust a setting” screen. Select the “System” from the device list using the up/down arrows and press the edit button

6. Select Balance Point Control and press edit. Use the down arrow to select Enabled and press save. High and Low Balance Points will appear in red.

7. Complete Balance Point Control by editing the High and Low Balance Points. It is not necessary to change the defaults, but you must save each setting. The red settings will go away after pressing save. Press the back button to return to the adjust screen.

8. Use the arrows to select Air Handler from system devices list. Press edit. From this Air Handler screen you will have access to the various airflow settings. Set the system air volumes according to the needs of the home. When all CFM settings are complete, press the back button. Address any red settings as described in steps 6 and 7. Press next step to advance to the tests button.

9. Test the system operation and confirm the system is electrically energized and operational. Particularly, test the heat strips (when used) to ensure the auxiliary stages operate as designed. Press done.

10. Exit the installer setup mode by selecting the EXIT button.

TIPS
- If the thermostat “System Setting” does not offer a choice for “emerg. heat” and the electric heat will not function; the electric heat has not been configured. Configure the electric heat as described on Page 64, or for complete detail, see the Air Handler installation instructions. Reconfigure the icomfort system by entering the installer program and selecting the setup button and following the prompts.
- High & low balance points are enabled and adjusted under the installer section of the thermostat. In the equipment button select “System” and press edit. Scroll down to “Balance Point Control” and press edit and select Enabled and then save.
- An outdoor temperature sensor is provided in an icomfort enabled heat pump unit. To display the outdoor temperature on the home screen of the thermostat, you must turn on (or off) the “Outdoor Temp Display”. From the Home screen, press press for more area and select the HELP icon. Press the user preferences box and scroll down to “Outdoor Temp Display”. Press the modify button and use the up/down arrows to select On (or Off) and then press the save button. Press done to return to the Home screen.
icomfort™-enabled Air Handler & conventional non-communicating Heat Pump unit

An icomfort air handler (CBX32MV or CBX40UHV) with a conventional non-communicating heat pump unit.

NOTE - IMPORTANT! Be sure to set up the air handler control for heat strips (if used) prior to powering up the system and thermostat.

1. Configure air handler control (AHC) for auxiliary heat strips if used.

2. **Wiring**—see Communicating System Wiring diagram on Page 59 and Optional Accessories Wiring (Page 61) for any accessories being installed with the system:
   - 4-conductor thermostat wire from the icomfort Wi-Fi™ thermostat to the air handler (R, i+, i−, C)
   - Conventional thermostat wire with 5 to 6 conductors from icomfort air handler to conventional HP (5 – 8 wires). (Y1, C, R, W1, O, and on some models Y2)
   - Wiring as required for accessories

3. On air handler control, with 2-stage HP cut the “W915 2 Stage Compr” onboard clippable link. Cut W951 between W1 & W2 for two-stage electric heat only.

4. After the entire system is wired, power up the system; the icomfort Wi-Fi™ thermostat will check the system for installed communication devices.

5. In the installer setup button, select “Add or Remove non-communicating equipment” by using the yes button.

6. Select the “Outdoor Unit Type” from the device list using the up/down arrows and press the edit button. Then select the heat pump type (1-stage HP or 2-stage HP) and press the save button.

7. On the thermostat, go past the “Add or remove non-communicating devices” to the “To adjust a setting” screen. Select the “System” from the device list using the up/down arrows and press the edit button.

8. Select Balance Point Control (if outdoor sensor is installed) and press edit. Use the down arrow to select “Enabled” and press save. High and Low Balance Points will appear in red.

9. Complete Balance Point Control by editing the High and Low Balance Points. It is not necessary to change the defaults, but you must save each setting. The red settings will go away after pressing save. Press the back button to return to the adjust screen.

10. Use the arrows to select Air Handler from system devices list. Press edit. From this Air Handler screen you will have access to the various airflow settings. Set the system air volumes according the needs of the home. When all CFM settings are complete, press the back button. Address any red settings as described in steps 8 and 9. Press next step to advance to the tests button.

11. Test the system operation and confirm the system is electrically energized and operational. Particularly, test the heat strips (when used) to insure the auxiliary stages operate as designed. Press done.

12. Exit the installer setup mode by selecting the EXIT button.

**TIPS**

- If the thermostat “System Setting” does not offer a choice for “emerg. heat” and or the electric heat will not function; the electric heat has not been configured. Configure the electric heat as described on Page 64, or for complete detail, see the Air Handler installation instructions. Reconfigure the icomfort system by entering the installer program and selecting the setup button and following the prompts.

- High & low balance points are enabled and adjusted under the installer section of the thermostat. In the equipment button select “System” and press edit. Scroll down to “Balance Point Control” and press edit and select Enabled and then save.

- If an optional outdoor temperature sensor has been installed, you may display the outdoor temperature on the home screen of the thermostat. To turn on (or off) the “Outdoor Temp Display”. From the Home screen, press press for more area and select the HELP icon. Press the user preferences box and scroll down to “Outdoor Temp Display”. Press the modify button and use the up/down arrows to select On (or Off) and then press the save button. Press done to return to the Home screen.
### Table 7. Replacement Controls

The following kits have been set up for replacement of the icomfort™-enabled controls. Please note that control kits are unit- and revision-specific.

<table>
<thead>
<tr>
<th>icomfort™-Enabled Unit</th>
<th>Replacement Kit Catalog No.</th>
<th>Control Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>G71MPP (rev. 03 or later)</td>
<td>65W69</td>
<td>605341-01</td>
</tr>
<tr>
<td>SLP98 (rev. 01 or later)</td>
<td>73W45</td>
<td>102813-02</td>
</tr>
<tr>
<td>SL280 (rev. 02 or later)</td>
<td>83W88</td>
<td>103130-01</td>
</tr>
<tr>
<td>EL296 (rev. 01 or later)</td>
<td>83W88</td>
<td>103130-01</td>
</tr>
<tr>
<td>CBX40UHV (rev. 02 or later) AND CBX32MV (rev. 06 or later)</td>
<td>65W70</td>
<td>605341-02</td>
</tr>
<tr>
<td>XC17-24/30/42/60 (rev. 02 thru 04) AND XC17-36/48 (rev. 02 thru 05)</td>
<td>65W71</td>
<td>605341-03</td>
</tr>
<tr>
<td>XC17-24/30/42/60 (rev. 05 or later) AND XC17-36/48 (rev. 06 or later)</td>
<td>87W24/96W55</td>
<td>103369-01</td>
</tr>
<tr>
<td>XP17-24/30 (rev. 02 thru 05) AND XP17-36/42/48/60 (rev. 02 thru 04)</td>
<td>65W73</td>
<td>605341-05</td>
</tr>
<tr>
<td>XP17-24/30 (rev. 06 or later) AND XP17-36/42/48/60 (rev. 05 or later)</td>
<td>87W24/96W55</td>
<td>103369-01</td>
</tr>
<tr>
<td>XP19-24/36/48/60 (rev. 06 or later)</td>
<td>87W24/96W55</td>
<td>103369-01</td>
</tr>
<tr>
<td>XC21-24/36/48/60 (rev. 05 thru -07)</td>
<td>65W72</td>
<td>605341-04</td>
</tr>
<tr>
<td>XC21-24/36/48/60 (rev. 08 or later)</td>
<td>87W24/96W55</td>
<td>103369-01</td>
</tr>
<tr>
<td>XP21-24 (rev. 01 thru 04) AND XP21-36/48/60 (rev. 01 thru 03)</td>
<td>65W74</td>
<td>605341-06</td>
</tr>
<tr>
<td>XP21-24 (rev. 05 or later) AND XP21-36/48/60 (rev. 04 or later)</td>
<td>87W24/96W55</td>
<td>103369-01</td>
</tr>
</tbody>
</table>

### REVISION HISTORY

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision description</th>
<th>Date</th>
<th>Revision description</th>
</tr>
</thead>
<tbody>
<tr>
<td>03-2012</td>
<td>Preliminary release</td>
<td>04-2012</td>
<td>Minor Revisions</td>
</tr>
<tr>
<td>05-2012</td>
<td>Pilot release; added note page 1; new registration screen page.26.</td>
<td>09-2012</td>
<td>Changed Wi-Fi button; add Gelaskins; minor software changes; alert code corrections</td>
</tr>
</tbody>
</table>

506920-01 09/12