LENNOX®

icomfort™ Residential Communicating Control System
icomfort Touch® Communicating Thermostat

PRODUCT SPECIFICATIONS

icomfort®

So simple. So smart. So comfortable.

The **icomfort Touch® Communicating Thermostat** recognizes and connects to all icomfort™-enabled products to automatically configure and control the system (based on user-specified settings) for the highest level of comfort, performance and efficiency. Also recognizes model and serial number information for icomfort™-enabled products to simplify system setup.

Advanced icomfort™ controls in specific heating and cooling units communicate information about various operating parameters to the thermostat to constantly maintain the most efficient operating conditions possible. Additional conventional (not icomfort™-enabled) indoor air quality comfort controls (PureAir™ Air Purification System, Healthy Climate® Humidifiers, Humiditrol® Enhanced Dehumidification Accessory, Healthy Climate® Energy/Heat Recovery Ventilators) can be added to the system for a complete total-comfort system.

Conventional outdoor units (not icomfort™-enabled) can easily be added and controlled by the icomfort Touch® Communicating Thermostat.

A simple easy-to-use menu-driven touchscreen allows complete system configuration. Scheduled maintenance alerts, system warnings and troubleshooting are also displayed in simple English on thermostat screen.

Easy to read 5.7 in. screen (measured diagonally).

A tabbed interface lists all programming options on the screen.

Installer setup screens allow quick and simple system configuration without a manual, Installer can also run tests on complete system or individual components for easy maintenance and troubleshooting.

Serial communications bus (RSBus), with less wiring than a conventional heating/cooling system, allows system communication. Uses 4-wire, 18-gauge standard thermostat wiring.

Thermostat can be recess mounted on a wall (3-gang electrical box required). Subbase with terminal strip is furnished for easy installation.

EQUIPMENT WARRANTY

Five years in residential installations and one year in non-residential installations.

Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

**icomfort Touch®
Communicating
Thermosat**

Outdoor Sensor
(furnished on all outdoor
icomfort®-enabled products)
(Also available as
an optional accessory)

RSBus

icomfort™-enabled
Furnace
SLP98V or SL280V
(Variable Capacity
Variable Speed
Blower)

icomfort™-enabled
Air Conditioner
XC21 (2-Stage) or
XC17 (1-Stage)
Heat Pump
XP21 (2-Stage) or
XP17 (1-Stage)

icomfort™-enabled
Air Handler
CBX40UHV or CBX32MV
Variable Speed
Blower

CONTROL ORDERING INFORMATION

Description	Catalog No.
icomfort Touch® Communicating Thermostat Dimensions (H x W x D) - 5 x 6-3/8 x 1-1/4 in.	**49W95**
[1] Optional Outdoor Sensor	**X2658**
[2] Discharge Temperature Sensor	**88K38**

[1] The Optional Outdoor Sensor may be used with an icomfort™ equipped outdoor unit for a secondary (alternate) sensor reading.
Optional Outdoor Sensor may be ordered for use with a conventional outdoor unit.

[2] Required with Air Handler applications when using EVENHEATER® option. Optional on all other applications for service diagnostics

SYSTEM COMPONENTS

The complete icomfort™ control system consists of an icomfort Touch® Communication Thermostat paired with an icomfort™-enabled furnace and air conditioner or an icomfort™-enabled air handler and heat pump outdoor unit (or furnace for dual-fuel operation). Indoor units must contain the icomfort™ control. A non-communicating outdoor unit may be used (some system features will be reduced).

FEATURED SYSTEM PRODUCTS

icomfort Touch® Communicating Thermostat

Large full color touchscreen - no hidden buttons or doors.

Temperature and humidity control (humidify/dehumidify). Sophisticated control and scheduling.

Also controls conventional (not icomfort™-enabled) products (includes standard thermostat terminal designations).

Dave Lennox *Signature*® Collection SLP98V Variable-Capacity, Variable-Speed Furnaces

Energy Star® qualified.

98% AFUE energy efficiency.

Variable-capacity operation.

Multi-position design.

icomfort™ control.

Precise Comfort™ technology.

AirFlex™ technology.

Fully insulated cabinet.

SureLight® Control delivers operation reliability.

Silicon nitride igniter.

Also available - SL280V Gas Furnace.

Dave Lennox *Signature*® Collection XC21 Two-Stage Air Conditioners (SunSource®-Ready)

Energy Star® qualified.

Up to 20.5 SEER cooling efficiency.

icomfort™ control.

SilentComfort™ technology.

Quiet operation, as low as 69 dB.

R-410A refrigerant.

Dependable and efficient two-stage scroll compressor.

SmartHinge™ louvered coil protection.

Optimized for use with the Humiditrol® whole-home dehumidification system.

Also available - XC17 Single-Stage Air Conditioner (SunSource®-Ready).

Dave Lennox *Signature*® Collection XP21 Two-Stage Heat Pumps (SunSource®-Ready)

Energy Star® qualified

Up to 19.0 SEER and 9.50 HSPF heating efficiency

icomfort™ control.

SilentComfort™ technology

Quiet operation, as low as 67 dB

R-410A refrigerant

Dependable and efficient two-stage scroll compressor

SmartHinge louvered coil protection

Optimized for use with the Humiditrol® whole-home dehumidification system

Also available - XP17 Single-Stage Heat Pump (SunSource®-Ready).

Dave Lennox *Signature*® Collection CBX40UHV Variable-Speed Air Handlers

4-way multi-position design.

icomfort™ control.

Variable-speed blower motor.

R-410A refrigerant compatible.

Automatic comfort control for lower, summertime humidity levels.

Anti-microbial drain pan resists the growth of mold and mildew.

Healthy Climate® MERV 16 high efficiency air filter factory installed.

Includes knock-out for easy installation of Healthy Climate® germicidal light.

Also available - CBX32MV Variable-Speed Air Handler.

CONTENTS

USER SETTINGS

HOME SCREEN (PROGRAM ON)
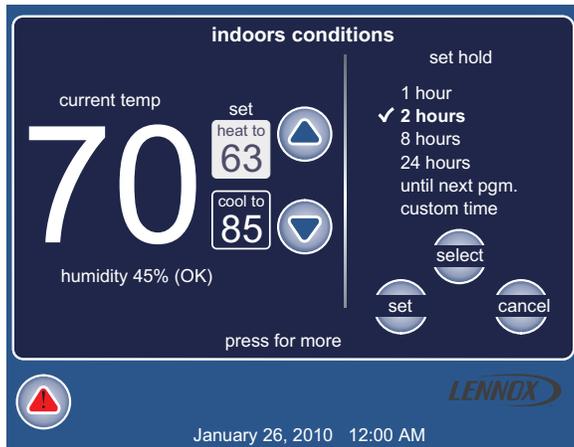
Indoor Conditions

- Large display of current indoor temperature (*°F or °C*)
- Current heating setpoint temperature (*heat to*)
- Current cooling setpoint temperature (*cool to*)
- Raise / Lower temperature setting arrows (*up / down arrows*) to set heating or cooling setpoints indefinitely (program off).

⌖ If program is "on" screen displays adjustable set hold time (1, 2, 8, 24 hours, until next program or custom set time)

⌖ Both setpoint temperatures and adjustment arrows are displayed if System is set to Heat/Cool mode.

- Humidity settings (humidity is 45% OK)
- System Mode (system is heating / cooling)
- Program Mode (*program is off, program is on*)
- Service Alerts (triangle symbol). Touch for details.

⌖ Press for more displays Indoor Settings (and dashboard) screen.

INDOOR SETTINGS AND USER DASHBOARD
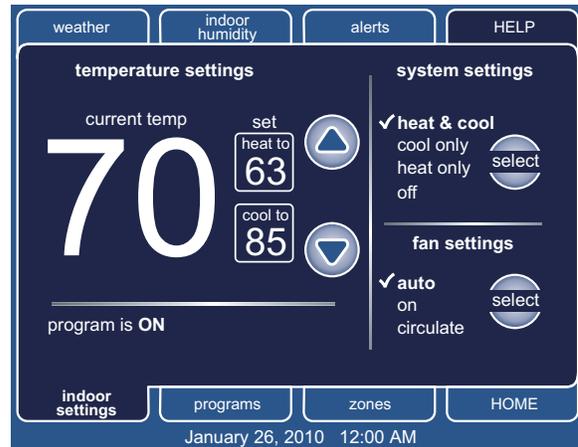
Temperature Settings

- Large display of current indoor temperature (*°F or °C*)
- Current heating setpoint temperature (*heat to*)
- Current cooling setpoint temperature (*cool to*)
- Raise / Lower temperature setting arrows (*up / down arrows*) to set heating or cooling setpoints indefinitely

System Settings

- Heat & Cool
- Cool Only
- Heat Only
- Emergency Heat (if air handler or dual fuel system)
- Off

⌖ Selecting Heat Only or Cool Only only displays those setpoints.

Fan Settings

- Auto
- On
- Circulate

⌖ Selecting other tabs on screen displays different Dashboard Tab screens.

USER SETTINGS

USER DASHBOARD TABS

- Programs Tab
- Indoor Humidity
- Alerts
- HELP
- HOME
- Zones Tab (for future use)
- Weather Tab - Displays outdoor temperature if icomfort™-enabled outdoor unit or optional outdoor temperature sensor is enabled (set in user setup)

PROGRAMS
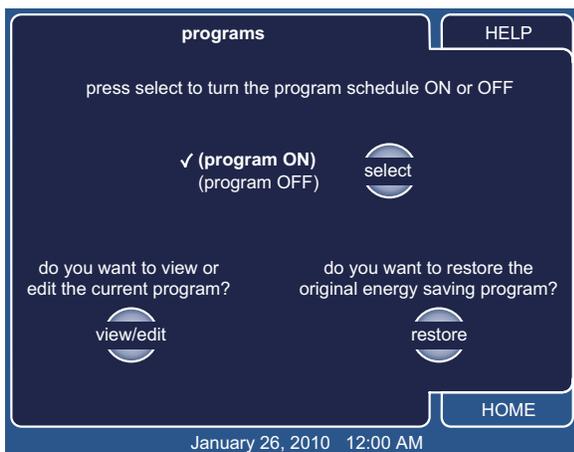
- Program (*Program On, Program Off*)
- Current Program (*View* or *Edit*)
- Restore ENERGYSTAR® Program (*Confirm* or *Cancel*)?

View Program
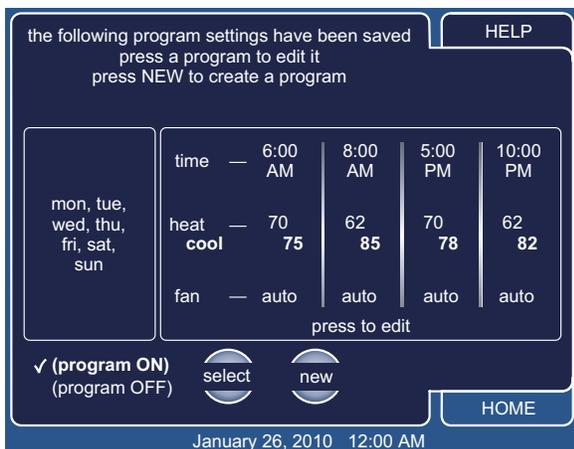
- Displays current program

Edit Program
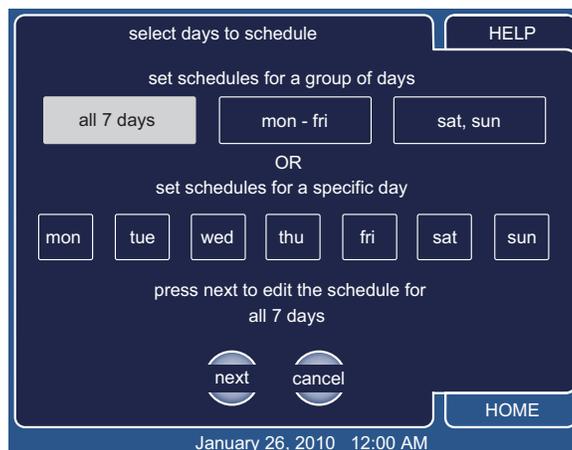
- Set schedule for a group of days (*all 7 days, mon - fri, sat - sun*) or set schedule for each individual day
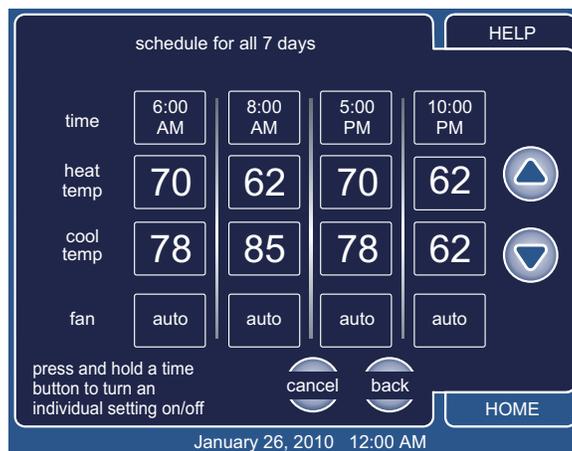
- Set time of day, heat temp., cool temp. and fan settings for days selected (four events per day)
- Skip an event if desired

Restore ENERGYSTAR® Program

- Restores program to ENERGYSTAR® default comfort settings:

Setting	Time	Heat Temp.	Cooling Temp.
Wake	6:00 am	< 70°F	> 78°F
***Day**	8:00 am	Setback 8° F	Setup 7°F
Evening	6:00 pm	< 70°F	> 78°F
***Sleep**	10:00 pm	Setback 8°F	Setup 4°F

*At least setback and setup temperatures.

HELP

- Left side of screen displays various help screens depending on which dashboard tab is selected first (*Indoor Settings, Programs, Indoor Humidity, Alerts*)
- Clean Screen (30 second timer for cleaning screen without affecting settings)
- Use Preferences (see User Preferences section for details)

HOME

- Returns to home screen

USER SETTINGS

INDOOR HUMIDITY
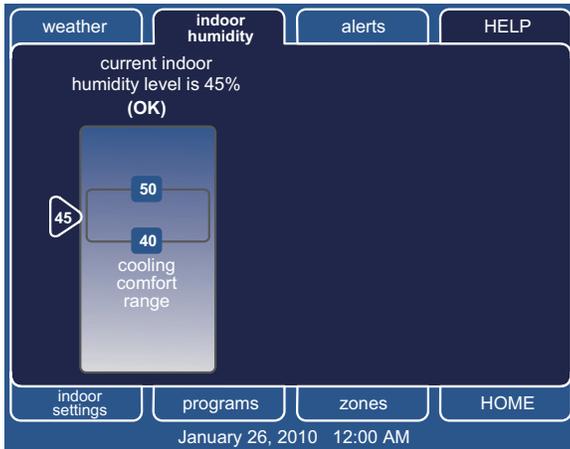
- Set humidity or dehumidify levels (if equipped)
- Humidity adjustable from 15 to 45% relative humidity (RH)
- Dehumidify adjustable from 40 to 60% relative humidity (RH)

ALERTS
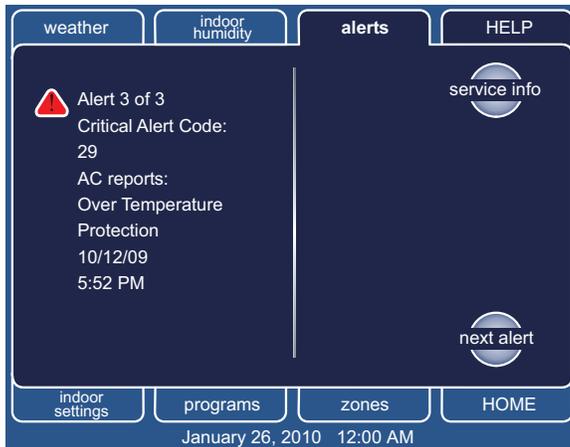
- Press the Alert Icon on Home Screen (if program is running) to display system or device active alerts

> If program is not running, press Alert Icon on Dashboard Screen to display alerts.

- A red **Critical Alert** indicates that service is required for a major system component as soon as possible
- A yellow **Service Alert** indicates required maintenance (filter replacement, humidifier pad replacement, UV light replacement, PureAir™ Air Purification System servicing and Maintenance)
- Next Alert scrolls through available system alerts
- Remind Later allows a Service Alert to be postponed (1 day, 1 week, 1 month, 3 months or a custom time)

USER PREFERENCES
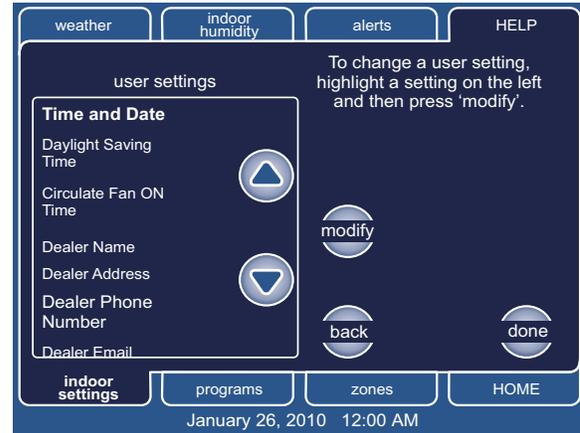
User Setting	Default Setting	Variable Settings
Time and Date		Time/date elements screen)
Daylight Saving Time	Enabled	Enabled, Disabled
Circulate Fan ON Time	35%	15 to 45% (in 1% increments)
Dealer Name	These may show installer input data but owner can change	Keyboard input screen
Dealer Address		
Dealer Phone		
Dealer Email		
Dealer Website		
Language Displayed	English	English
Temperature Display Scale	°F	Fahrenheit (°F) or Celsius (°C)
Clock Format	12 Hour	12 Hour, 24 Hour
Screen Lock-out	Unlocked	Unlocked, Partially Locked, Fully Locked
Backlight Setting	Always On	Power Save, Always On
Backlight Intensity	100%	20 to 100% (in 20% increments)
Outdoor Temp Display	Disabled	Disabled, Enabled
Indoor Humidity Display	Enabled	Disabled, Enabled
Filter 1 Timer	Disabled	Disabled, 3, 6, 12, 24 Months or Custom Time
Filter 2 Timer	Disabled	
Humidifier Pad Timer	Disabled	
UV Bulb Timer	Disabled	
Maintenance Timer	Disabled	
PureAir Timer	Disabled	

INSTALLER SETUP

SYSTEM DISCOVERY

SYSTEM DISCOVERY IN PROGRESS

setup			HELP

Thermostat 1

Use this Thermostat?

press here
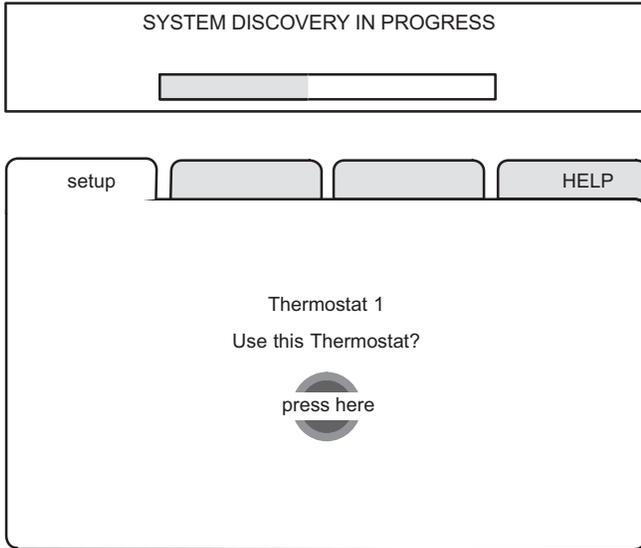
After power is applied to the thermostat for the first time, it checks the system for installed communicating devices, the "*System Discovery*" progress screen is displayed on the thermostat; followed by the "*Use this thermostat?*" screen.

critical alert

⚠️

Active

Critical Alert Code: 31

AIR HANDLER reports:

Lost Communication with

THERMOSTAT −

Latest occurrence: 8/23/09

1:57 PM

press for more

close
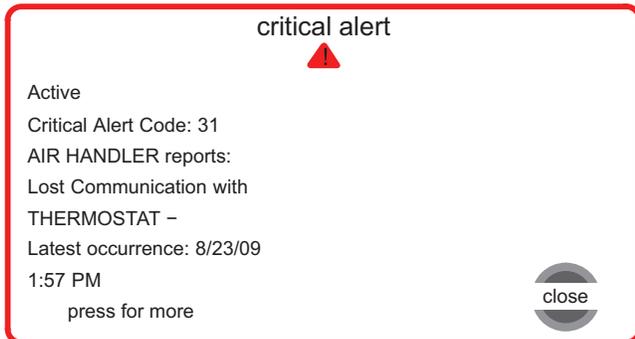
During the setup process, alerts may be displayed to inform the installer of any information that affects the setup process.

SETUP - SYSTEM SETTINGS

setup			HELP

system settings

Time and Date
Daylight Saving Time
Circulate Fan ON time
Dealer Name
Dealer Address
Dealer Phone Number
Dealer Email

To view/edit a setting, highlight it, then press edit.

Current Value:
(35%)

edit

back   next step
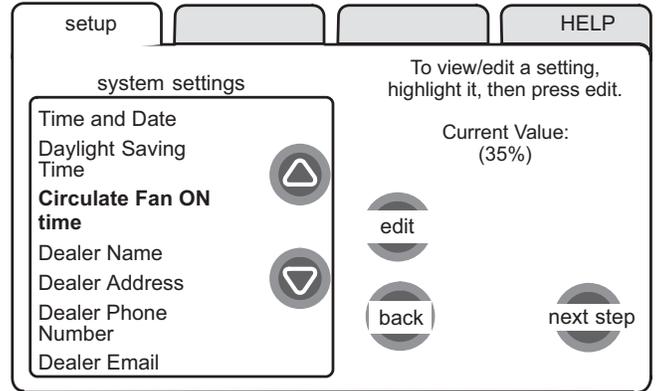
Use the up / down arrows to scroll through available settings. Right side of screen displays the current value of each setting.

Installer System Settings and Default Setting

System Setting	Range / Condition	Default Setting	Modify with
Time and Date	Time and Date Screen and arrow buttons (see example)		
Daylight Saving Time	Enabled/ Disabled	Enabled	Up / Down Arrows
Circulate Fan ON Time	15 to 45%	35%	
Dealer Name	alpha-numeric characters	Lennox	Keyboard tool
Dealer Address		- - -	
Dealer Phone Number		1-800-9-LENNOX	
Dealer Email		- - -	
Dealer Website		www.lennox.com	

Time and Date Screen

setup			HELP

Time and Date

10	:19	AM
Oct	15	2009

adjust

cancel

save
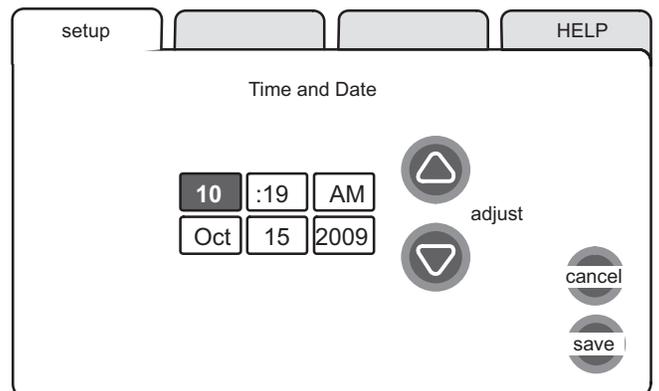
INSTALLER SETTINGS

Add / Remove / Modify Non-Communicating Devices
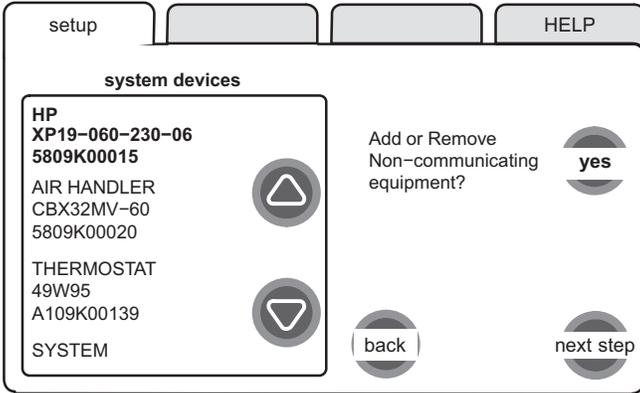
Press "yes" to access non-communicating device list screen
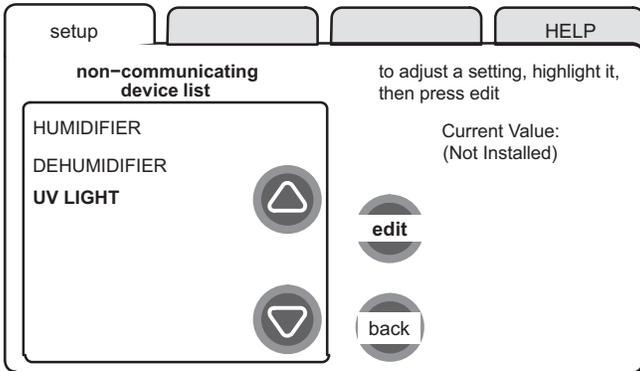
Use up/down arrow buttons to highlight and modify non-communicating device

- Outdoor Unit Type (*Not Installed, 1 Stage AC, 2 Stage AC*)
- Humidifier (*Not Installed, Bypass (24 VAC), Power (120 VAC), Bypass and Power*)
- Dehumidifier (*Not Installed, Humiditrol, Auxiliary Dehumidifier*)
- UV Light (*Not Installed, UV Light*)

⊘ NOTE - If outdoor unit is non-communicating type, screen will display parameters to set (*Outdoor Unit Capacity, 18 to 60 kBtu in 1 kBtu increments, default is 60 kBtu*)

System Devices
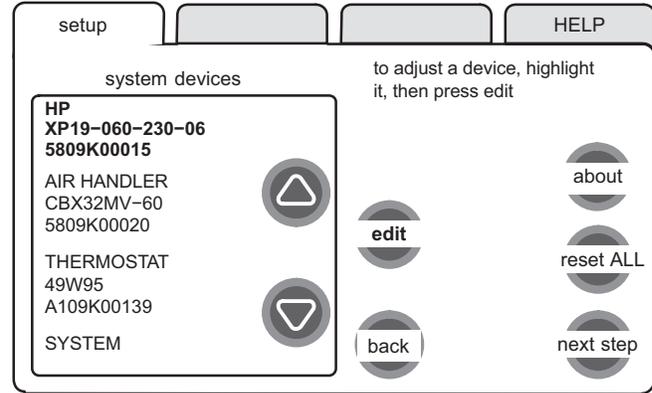
Use *up / down arrow* buttons to select device. Press *edit* button to modify device settings.

⊘ Pressing "about" displays equipment information depending on type *(name, model, serial number, number of stages, cooling btuh, indoor blower cfm range, software version, outdoor air temp sensor installed, etc.)*

NOTE - "Reset ALL" resets all devices back to original factory default settings. Each individual device can be also reset to factory settings on the selected equipment screen.

Equipment Name - Press "edit" button to change equipment name, use keyboard tool to change

- **Air Conditioner**
  - Equipment Name
  - Compressor Short Cycle Delay (*60 to 300 sec. in 60 sec. increments, default is 300 sec.*)
- **Heat Pump**
  - Equipment Name
  - Compressor Short Cycle Delay (*60 to 300 sec. in 60 sec. increments, default is 300 sec.*)
  - Defrost Termination Temp (*50 to 100°F in 10°F increments, default is 50°F*)
  - Compressor Shift Delay (*On/Off*)

INSTALLER SETUP

System Devices (Continued)

- **Furnace**:
  - Equipment Name
  - Heating Airflow Control Type - Selections available if Discharge Air Temperature Sensor is installed (*Fixed cfm, fixed Discharge Air Temperature*)

    With Discharge Air Temperature:
    - Low Heating Discharge Air Temperature - Available if Discharge Air Temperature Sensor is installed (*110 to 140°F in 5°F increments, default is 120°F*)
    - High Heating Discharge Air Temperature - Available if Discharge Air Temperature Sensor is installed (*120 to 150°F in 5°F increments, default is 135°F*)

    With Fixed cfm:
    - Low Heating Airflow (*325 to 1280 in 25 cfm increments*
    - High Heating Airflow (*300 to 1805 in 25 cfm increments*
  - Low Cooling Airflow (*300 to 1390 in 25 cfm increments*
  - High Cooling Airflow (*300 to 2190 in 25 cfm increments*
  - Airflow Profile Cooling:
    A. On (*50% for 30 sec., 82% for 7.5 min.*); Off (*50% for 30 sec.*)
    B. On (*82% for 7.5 min.); Off (No delays*)
    C. No delays; Off (*45 sec. delay*)
    D. No delays
  - Low HP Airflow (*300 to 1400 cfm in 25 cfm increments*)
  - High HP Airflow (*300 to 1400 cfm in 25 cfm increments*)
  - Continuous Indoor Blower Airflow (*300 to 1400 in 25 cfm increments)*
  - Humidification Airflow (*300 to 1400 cfm in 25 cfm increments, default is 500 cfm*)
  - Dehumidification Airflow (*60 to 80% RH in 1% increments)*
  - Heating Indoor Blower Off Delay (*60 to 80 sec. in 10 sec. increments default is 90 sec.*)
  - Heating Indoor Blower On Delay (*15 to 45 sec. in 5 sec. increments, default is 45 sec.*)
  - Cooling Indoor Blower Off Delay (*0 to 30 sec. in 2 sec. increments, default is 0 sec.*)
  - Cooling Indoor Blower On Delay (*0 to 10 sec. in 5 sec. increments, default is 2 sec.*)
  - HP Indoor Blower Off Delay (*0 to 60 sec. in 5 sec. increments, default is 45 sec.*)
  - HP Indoor Blower On Delay (*0 to 30 sec. in 5 sec. increments, default is 0 sec.*)

> ⑦ All furnace default airflow settings are dependent on furnace capacity.

> ⑦ NOTE - Humidification and Dehumidification Airflow settings are only viewable if those non-communicating products are added during setup.

Air Handler

- Equipment Name
- Electric Heating Airflow (*1560 to 2150 cfm in 5 cfm increments*)
- Low Cooling Airflow (*450 to 2150 cfm in 5 cfm increments*)
- High Cooling Airflow (*450 to 2150 cfm in 5 cfm increments*)
- Airflow Profile Cooling:
  1. No Delays
  2. On (*No delays*); Off (*45 sec. delay*)
  3. On (*82% for 7.5 min.*); Off (*No delays*)
  4. On (*50% for 30 sec., 82% for 7.5 min.*); Off (*50% for 30 sec.*)
- Low HP Airflow (*450 to 2150 cfm in 5 cfm increments*)
- High HP Airflow (*450 to 2150 cfm in 5 cfm increments*)
- Continuous Indoor Blower Airflow (*450 to 2150 in 10 cfm increments*)
- Humidification Airflow (*450 to 2150 cfm in 5 cfm increments*)
- Dehumidification Airflow % (*60 to 80% RH in 1% increments)*
- Heating Indoor Blower OFF Delay (*0 to 10 sec. in 1 sec. increments, default is 10 sec.*)
- Heating Indoor Blower ON Delay (*0 to 5 sec. in 1 sec. increments, default is 0 sec.*)
- Cooling Indoor Blower OFF Delay (*0 to 30 sec. in 2 sec. increments, default is 0 sec.*)
- Cooling Indoor Blower ON Delay (*0 to 10 sec. in 1 sec. increments, default is 2 sec.*)
- HP Indoor Blower OFF Delay (*0 to 60 sec. in 5 sec. increments, default is 45 sec.*)
- HP Indoor Blower ON Delay (*0 to 30 sec. in 5 sec. increments, default is 0 sec.*)

> ⑦ All air handler default airflow settings are dependent on furnace capacity.

INSTALLER SETTINGS

- **Thermostat**:
  - Temp. Reading Calibration (*-5 to 5°F, default is 0°F*)
  - Humidity Reading Calibration (*-10 to 10°F, default is 0°F*)
- **System**
  - Equipment Name
  - Filter 1 Timer Selection (*Calendar or Run Time*)
  - Filter 2 Timer Selection (*Calendar or Run Time*)
  - UV Bulb Timer Selection (*Calendar or Run Time*)
  - Humidifier Pad Timer Selection (*Calendar or Run Time*)
  - PureAir Timer Selection (*Calendar or Run Time*)
  - Smooth Setback Recovery (*Enabled/Disabled*)
  - Electric Heat Control Mode (*Standard/EvenHeat*)
  - Gas Heat Control Mode (*Staged/Modulating*)
  - Auto-Changeover Temp. Deadband (*3 to 9°F, default is 5°F*)
  - Max. Heat Setpoint (*40 to 90°F, default is 90°F*)
  - Min. Cool Setpoint (*60 to 99°F, default is 60°F*)
  - Heat Cool Stages Locked In (*Enabled/Disabled*)
    - 1st Stage Differential (*0.5 to 3°F, default is 0.5°F*)
    - 2nd Stage Differential (*0.5 to 8°F, default is 1.5°F*)
    - 3rd Stage Differential (*0.5 to 8°F, default is 2°F*)
    - 4th Stage Differential (*0.5 to 8°F, default is 2.5°F*)
    - 5th Stage Differential (*0.5 to 8°F, default is 3°F*)
    - 6th Stage Differential (*0.5 to 8°F, default is 3.5°F*)
  - Staged Delay Timers (*Enabled/Disabled*)
    - 2nd through 6th Stage Delays (*5 to 120 min. in 5 min. increments, default is 20 min.*)
  - Locked in 2nd Stage HP by Outdoor Temp (*off, 40°F, 45°F, 50°F, 55°F*)
  - Balance Point Control (*enabled/disabled*)
  - Defrost Target Discharge Temp (*50 to 60°F in 1°F increments, default is 55°F*)
  - EvenHeater® Discharge Temp (*80 to 130°F in 1°F increments, default is 85°F*)
  - Dehumidification Control Mode (*Display Only, Basic, Precision*)
  - Humidification Control Mode (*Display Only, Dewpoint Control*)
  - OK/Humid Boundary (*45 to 60°F in 1°F increments, default is 50°F*

> ⊘ NOTE - Depending on type of system (conventional heating/cooling or heat pump system) not all system settings will be displayed.

TESTS

A variety of system tests can be performed by the installer. Press the *tests* tab, then press *start* to begin system testing.
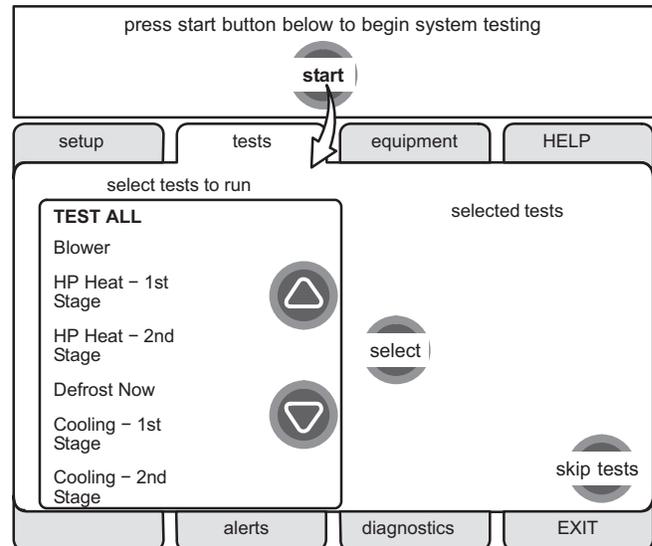
TEST ALL is the default.

You can also test equipment individually. Use *up / down arrow* buttons to select device.

Then press *select*, then *start* on the next screen to test all or individual equipment.
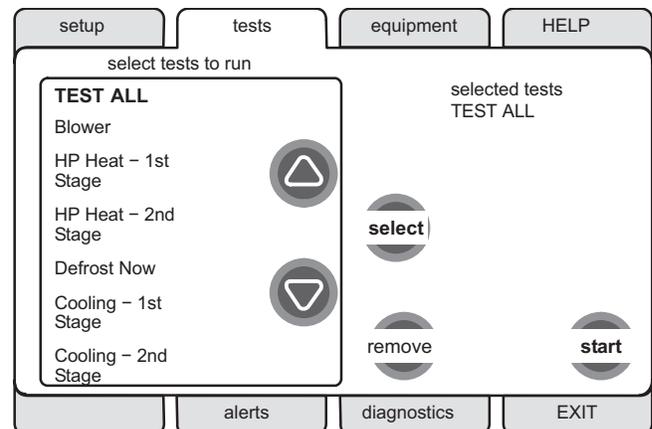
The *remove* button allows to you remove individual equipment from the TEST ALL list if you only want to test certain equipment. Press the *start* button to begin testing.
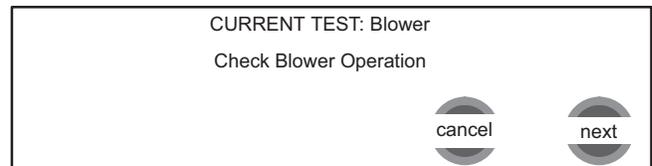
When a test is running, a status screen will show which test is being run. A *Testing Process is Finished* confirmation screen will appear when testing is complete.

> ⊘ NOTE - The *tests* feature is not available until after setup has been completed at least once.

INSTALLER SETTINGS

DIAGNOSTICS

Allows installer to run diagnostic tests on any icomfort™-enabled product.

select device to run diagnostics on

**HP
XP19−060−230−
06
5809K00015**

AIR HANDLER
CBX32MV−60
5809K00020

select

run diagnostics on:
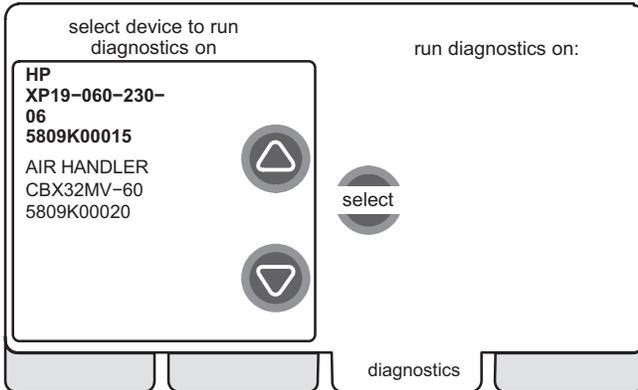
diagnostics

Use the up/down arrow buttons to highlight and press *select* and *start* to run diagnostics on selected equipment.

Screen will display "DIAGNOSTICS IN PROGRESS . ." and will show a list of values and conditions.

select type of device to run diagnostics on

**HP
XP19−060−230−
06
5809K00015**

AIR HANDLER
CBX32MV−60
5809K00020

remove   start

run diagnostics on:
HP

diagnostics

HP

Diagnostics

Line Voltage	**220 volts**
24VAC Voltage	24 volts
Y1 − Output	On
PSC Fan Relay	Closed
ECM Fan 1	On
ECM Fan 2	On
Y2 Solenoid	On

done
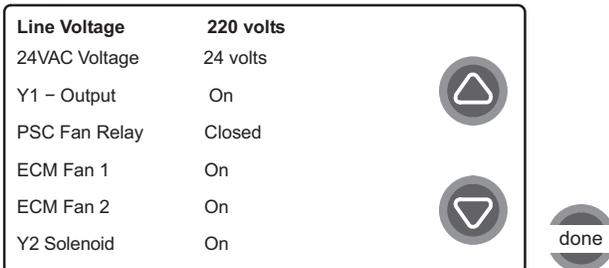
Use the up/down arrow buttons to scroll through the available information.

EQUIPMENT

The *equipment* tab allows the same equipment setting adjustments as in the *setup* tab, see System Devices, page 4.

REVISIONS

Sections	Description of Change
Warranty	Added warranty description.