LENNOX

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Dallas, Texas, USA

icomfort.
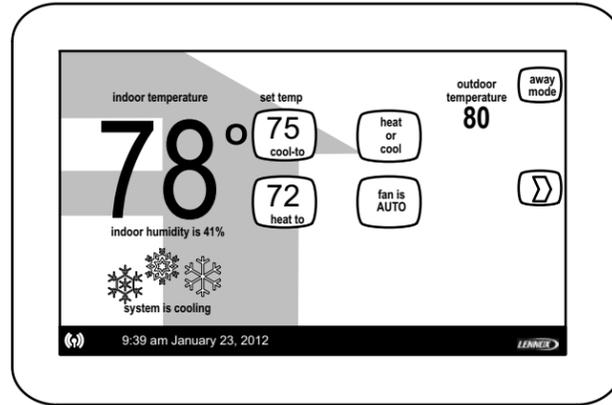So simple. So smart. So comfortable.

CONTROLS

506919-01
08/12
Supersedes 04/12

THIS MANUAL MUST BE LEFT WITH THE
HOMEOWNER FOR FUTURE REFERENCE

QUICK START GUIDE

**icomfort Wi-Fi™ Thermostat
INSTALLATION INSTRUCTIONS**

**icomfort Wi-Fi™
Communicating
Thermostat,
Touch Screen,
7-Day
Programmable**

NOTICE

Before beginning installation, note the type of equipment, number of stages, and any accessories being installed. The icomfort Wi-Fi™ thermostat is a 24VAC Class 2 thermostat and requires a common wire to the thermostat to operate.

NOTE: Return mercury-switch thermostats, intact, to participating recycling wholesalers at hundreds of locations across the nation. For a list of participating wholesalers, see www.nema.org/trc. If your wholesaler is not participating, ask them to start now.

DO

• Shut off all power to system before installing.

• Read this entire document, noting which instructions pertain to your equipment & system requirements. Also, consult Installer's Guide 506920-01.

• Make sure that all wiring conforms to local and national building and electrical codes and ordinances.

• Use 18 gauge thermostat wire or larger.

• Install all sensors and accessories before powering up.

NOTE - If electric heat strips are used, the strips MUST be configured on the air handler control (AHC) board before beginning the "discovery" sequence as described in the Installer's Guide.

DO NOT

• Install on voltages higher than 30VAC.

• Install on outside walls or in direct sunlight.

• Install in commercial applications unless used with approved split-system matches.

Installation

1. Unpack the thermostat and separate the baseplate from the thermostat by using hand slot (shown in figure 4) and pulling apart, tilting away from the top. Open to 45 degrees and separate the two halves.

2. When determining the location for the Wi-Fi thermostat, be sure it is in an area near enough to the homeowner's 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.)

3. Install thermostat using wall mounting instructions (figures 1 through 4).

4. Connect wiring between thermostat, indoor unit, and outdoor unit and other devices as shown in the wiring diagrams (figures 5).

Wall mounting instructions

A. Use a level to align the thermostat baseplate against the wall where the thermostat will be installed (see figure 1). Mark an appropriate hole location on the wall for routing the wires and mark (4) mounting holes at the same time.
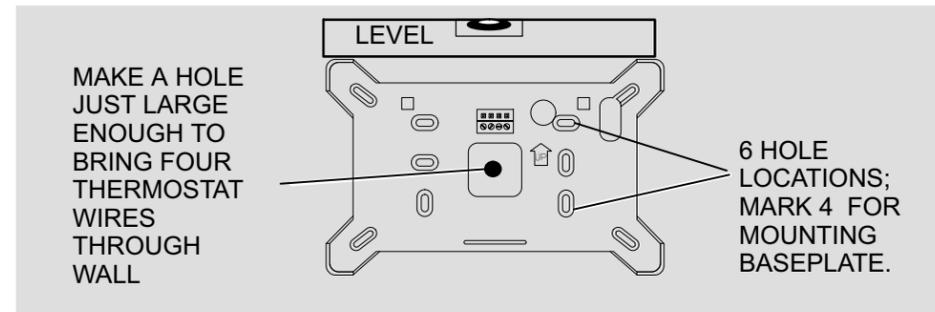
MAKE A HOLE JUST LARGE ENOUGH TO BRING FOUR THERMOSTAT WIRES THROUGH WALL

LEVEL

6 HOLE LOCATIONS; MARK 4 FOR MOUNTING BASEPLATE.

Figure 1. Hole locations

B. Drill (4) 3/16" holes in wall for anchors. Insert wall anchors in holes (see figure 2) and tap the anchor until flush with the wall.
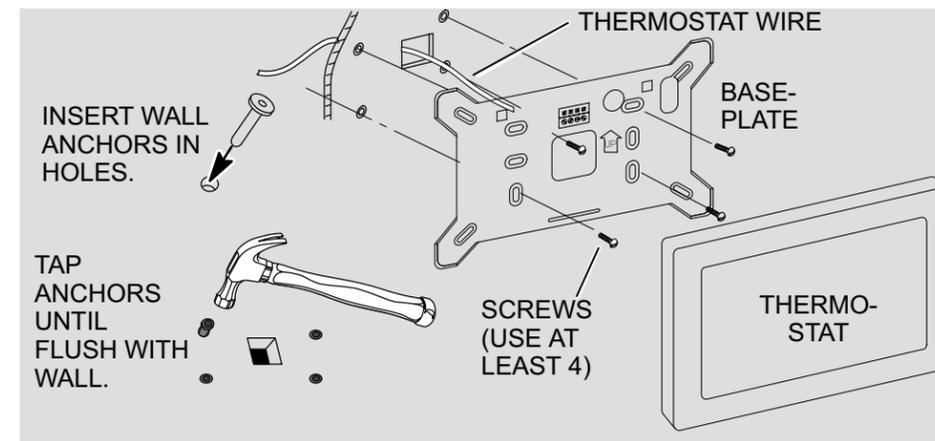
INSERT WALL ANCHORS IN HOLES.

THERMOSTAT WIRE

BASE-PLATE

TAP ANCHORS UNTIL FLUSH WITH WALL.

SCREWS (USE AT LEAST 4)

THERMO-STAT

Figure 2. On-wall mounting

C. Route the thermostat wire and feed approximately six inches of wire through the hole and into the room.

D. Feed the thermostat wires through the opening in the baseplate. Align the thermostat mounting bracket with the anchors and fasten to wall with four screws being sure to maintain level.

E. Trim 1/4" insulation from end of each wire (figure 3, wiring detail A). Insert the trimmed ends of the wires in the appropriate holes on the bottom of the thermostat's terminal block and tighten the screws to secure the wires (figure 3, wiring detail B).

R i+ i- C

THERMOSTAT TERMINAL BLOCK

THERMOSTAT WIRES

1/4"

A

B
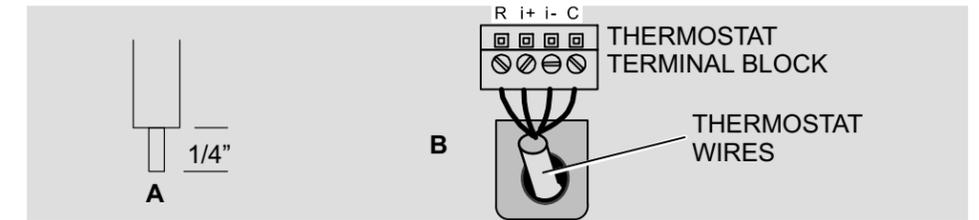
Figure 3. Wiring details

F. After running the thermostat wire through the hole, seal to prevent air from the wall cavity from affecting the thermostat's temperature sensor.

G. Align the tabs on the thermostat with the slots on the base, holding it at about a 45 degree angle to the wall. When the tabs seat into the slot, rotate the thermostat upward until it snaps into place (see figure 4).

HAND SLOT

TAB

SLOT
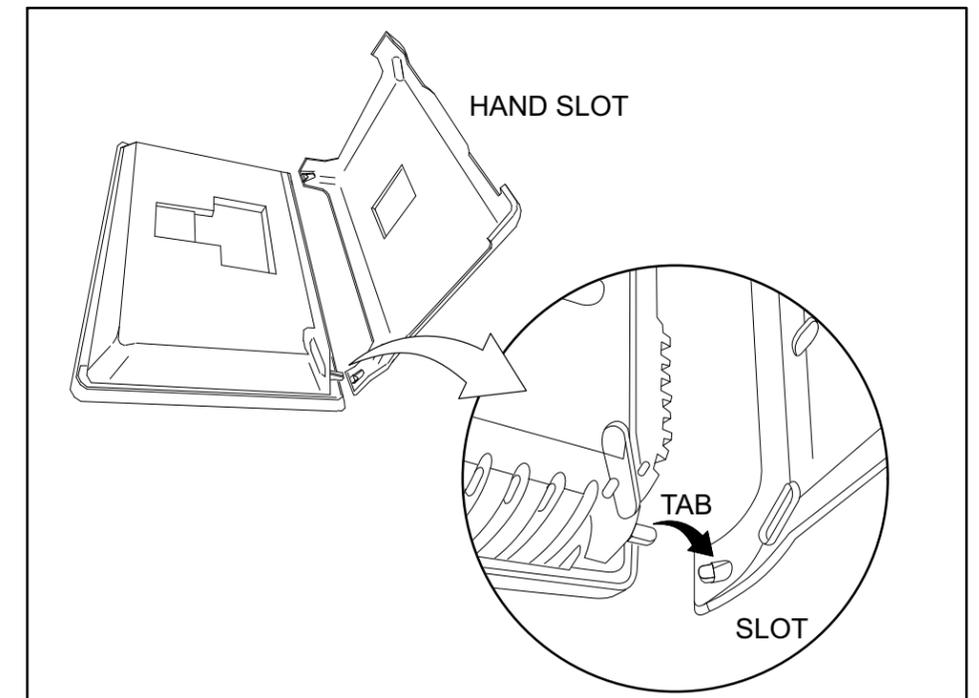
Figure 4. Installing thermostat onto bracket

Date	Revision History
04-2012	Preliminary release
08-2012	Minor changes

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icomfort by Lennox™ Communicating Systems

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

HP/AC

OPTIONAL DISCHARGE AIR SENSOR (SEE DAS NOTE)

OPTIONAL OUTDOOR AIR SENSOR (SEE OAS NOTE)

icomfort Wi-Fi™ THERMOSTAT

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

icomfort by Lennox™ OUTDOOR AIR CONDITIONING OR HEAT PUMP UNIT

C / i- / i+ / YELLOW / RED / R — GREEN WHITE YELLOW RED

RSBus

Maximum total length of all connections on the RSBus is limited to 1500 ft. (450 m).

Max. length between components is 300 ft. (90 m).

IMPORTANT! BEFORE POWERING THERMOSTAT

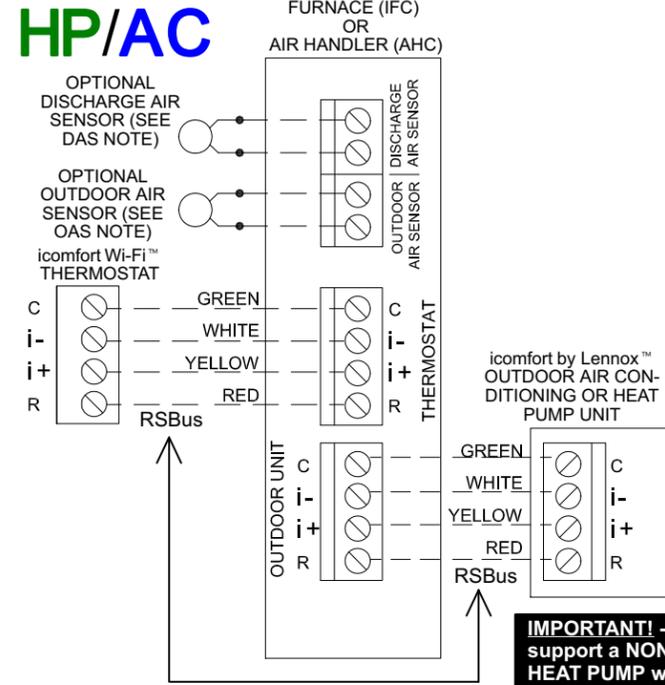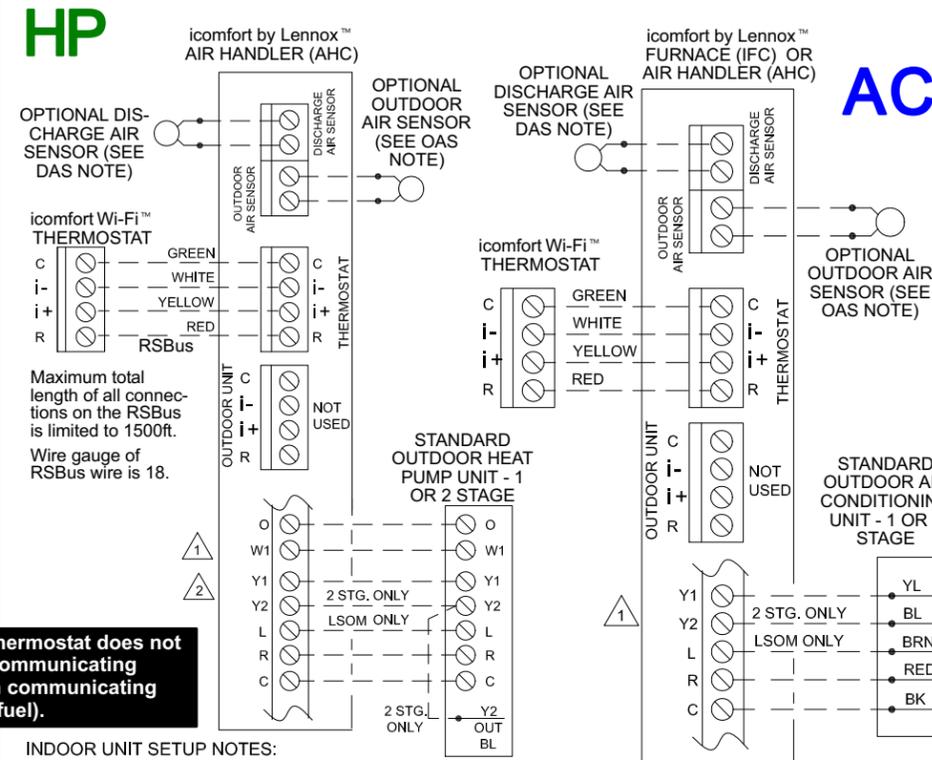NOTE - If electric heat strips are used, the strips MUST be configured on the air handler control (AHC) board before beginning the "discovery" sequence as described in the Installer's Guide.

DAS NOTE The discharge air sensor is intended to be mounted downstream of the 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 10 feet when wired with 18-gauge thermostat wire.

OAS NOTE The outdoor temperature sensor wiring distance between the IFC or AHC should not exceed 200 feet when wired with 18-gauge thermostat wire.

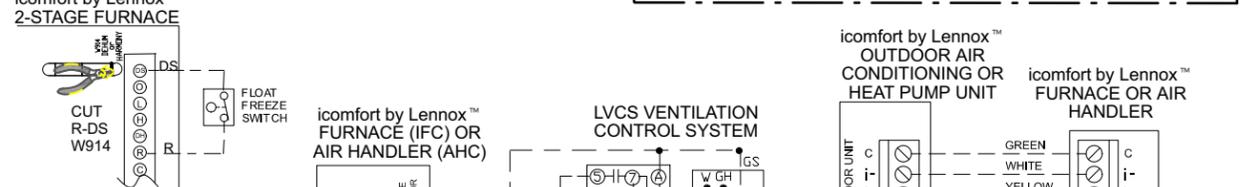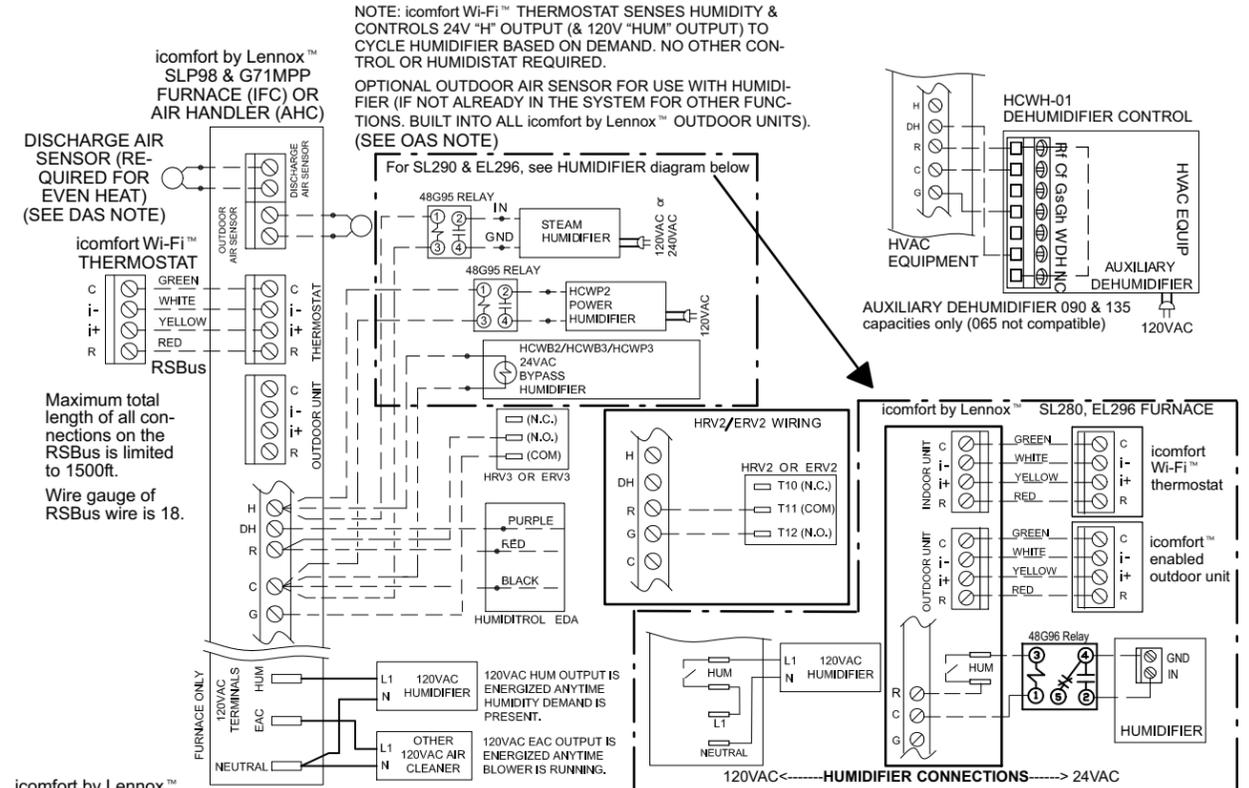## icomfort by Lennox™ Communicating Indoor Unit / non-Communicating Outdoor Unit

icomfort Wi-Fi™ Thermostat
icomfort by Lennox™ Air Handler
Standard Outdoor Heat Pump

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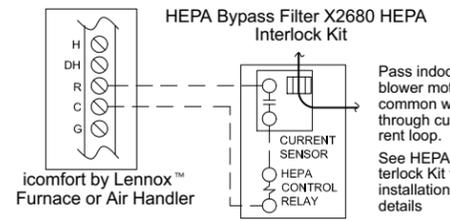Standard Outdoor Condensing Unit

HP

OPTIONAL DISCHARGE AIR SENSOR (SEE DAS NOTE)

icomfort by Lennox™ AIR HANDLER (AHC)

OPTIONAL OUTDOOR AIR SENSOR (SEE OAS NOTE)

icomfort Wi-Fi™ THERMOSTAT

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

STANDARD OUTDOOR HEAT PUMP UNIT - 1 OR 2 STAGE

2 STG. ONLY / LSOM ONLY

2 STG. ONLY

IMPORTANT! - Thermostat does not support a NON-communicating HEAT PUMP with communicating FURNACE (dual fuel).

AC

OPTIONAL DISCHARGE AIR SENSOR (SEE DAS NOTE)

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

icomfort Wi-Fi™ THERMOSTAT

OPTIONAL OUTDOOR AIR SENSOR (SEE OAS NOTE)

STANDARD OUTDOOR AIR CONDITIONING UNIT - 1 OR 2 STAGE

2 STG. ONLY / LSOM ONLY — YL / BL / BRN / RED / BK

INDOOR UNIT SETUP NOTES:

1. CUT Y1-Y2 ON BOARD LINK FOR 2 STAGE OUTDOOR UNITS.

2. CUT R-O ON BOARD LINK FOR OUTDOOR HEAT PUMP UNITS.

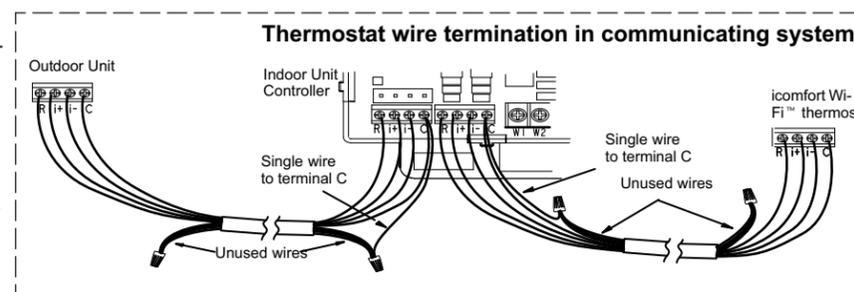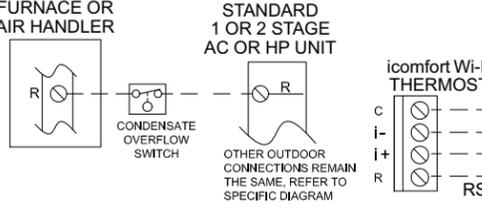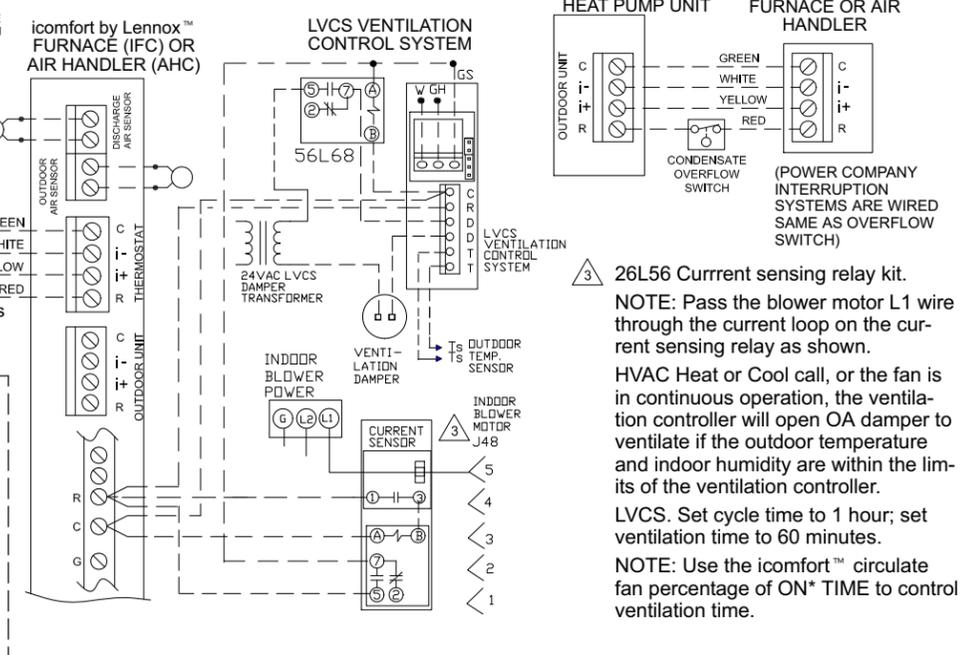HEPA Bypass Filter X2680 HEPA Interlock Kit

Pass indoor blower motor common wire through current loop.

See HEPA Interlock Kit for installation details

icomfort by Lennox™ Furnace or Air Handler

CURRENT SENSOR / HEPA CONTROL RELAY

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 for transformer VA requirements and wiring details.

Optional Accessories for use with any icomfort by Lennox™ system

NOTE: icomfort Wi-Fi™ THERMOSTAT SENSES HUMIDITY & CONTROLS 24V "H" OUTPUT (& 120V "HUM" 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)

icomfort by Lennox™ SLP98 & G71MPP FURNACE (IFC) OR AIR HANDLER (AHC)

DISCHARGE AIR SENSOR (REQUIRED FOR EVEN HEAT) (SEE DAS NOTE)

icomfort Wi-Fi™ THERMOSTAT

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

For SL290 & EL296, see HUMIDIFIER diagram below

48G95 RELAY — STEAM HUMIDIFIER

48G95 RELAY — HCWP2 POWER HUMIDIFIER

HCWB2/HCWB3/HCWP3 24VAC BYPASS HUMIDIFIER

HRV2/ERV2 WIRING — HRV2 OR ERV2 / HRV3 OR ERV3 — T10 (N.C.) / T11 (COM) / T12 (N.O.)

PURPLE / RED / BLACK

HUMIDITROL EDA

FURNACE ONLY — 120VAC TERMINALS — HUM / EAC / NEUTRAL

120VAC HUMIDIFIER — 120VAC HUM OUTPUT IS ENERGIZED ANYTIME HUMIDITY DEMAND IS PRESENT.

OTHER 120VAC EAC CLEANER — 120VAC EAC OUTPUT IS ENERGIZED ANYTIME BLOWER IS RUNNING.

HCWH-01 DEHUMIDIFIER CONTROL

HVAC EQUIPMENT / HVAC EQUIP

AUXILIARY DEHUMIDIFIER

AUXILIARY DEHUMIDIFIER 090 & 135 capacities only (065 not compatible)

icomfort by Lennox™ SL280, EL296 FURNACE

icomfort Wi-Fi™ thermostat

icomfort™ enabled outdoor unit

48G96 Relay — HUM / NEUTRAL / L1

120VAC HUMIDIFIER

120VAC ◄——— HUMIDIFIER CONNECTIONS ———► 24VAC

icomfort by Lennox™ 2-STAGE FURNACE

CUT R-DS W914

FLOAT FREEZE SWITCH

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

icomfort Wi-Fi™ THERMOSTAT

LVCS VENTILATION CONTROL SYSTEM

56L68

24VAC LVCS DAMPER TRANSFORMER

LVCS VENTILATION CONTROL SYSTEM

INDOOR BLOWER POWER

VENTILATION DAMPER

OUTDOOR TEMP. SENSOR

INDOOR BLOWER MOTOR J48

CURRENT SENSOR

icomfort by Lennox™ OUTDOOR AIR CONDITIONING OR HEAT PUMP UNIT

icomfort by Lennox™ FURNACE OR AIR HANDLER

CONDENSATE OVERFLOW SWITCH

(POWER COMPANY INTERRUPTION SYSTEMS ARE WIRED SAME AS OVERFLOW SWITCH)

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.

icomfort by Lennox™ FURNACE OR AIR HANDLER

STANDARD 1 OR 2 STAGE AC OR HP UNIT

CONDENSATE OVERFLOW SWITCH

OTHER OUTDOOR CONNECTIONS REMAIN THE SAME, REFER TO SPECIFIC DIAGRAM

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

icomfort Wi-Fi™ THERMOSTAT

Thermostat wire termination in communicating system

Outdoor Unit

Indoor Unit Controller

icomfort Wi-Fi™ thermostat

Single wire to terminal C

Single wire to terminal C

Unused wires

Unused wires

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.

Figure 5. Wiring Diagrams