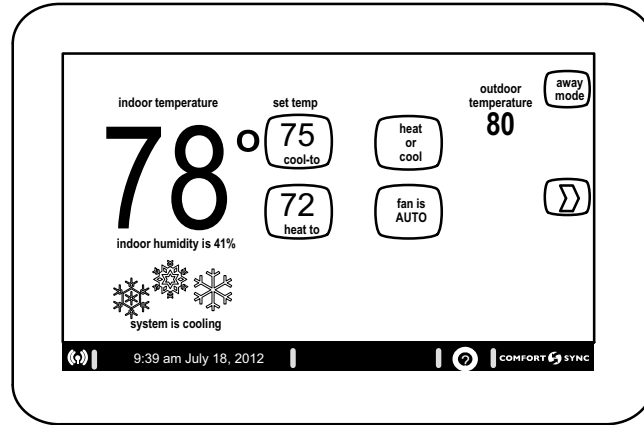


507063-01  
11/12  
Supersedes 08/12

**THIS MANUAL MUST BE LEFT WITH THE HOMEOWNER FOR FUTURE REFERENCE**

**Comfort Sync™ Thermostat  
INSTALLATION INSTRUCTIONS**

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



**NOTICE**

**Before beginning installation, note the type of equipment, number of stages, and any accessories being installed. The Comfort Sync™ 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](http://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.**

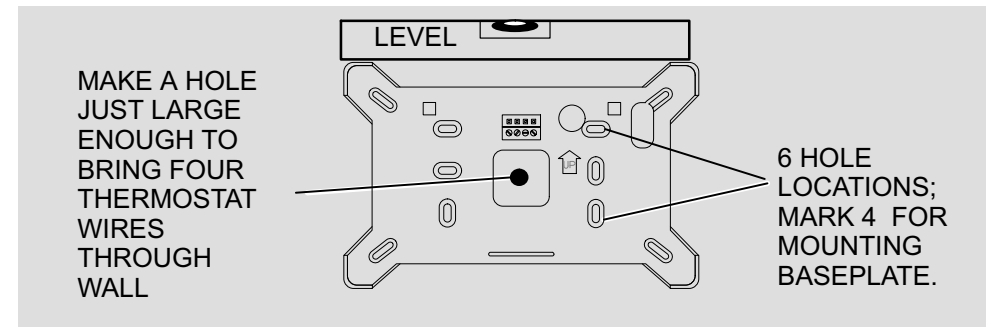
- DO NOT**
- Install on voltages higher than 30VAC.
  - Install on outside walls or in direct sunlight.
  - Install in commercial applications unless used with approved split-system matches.

**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).

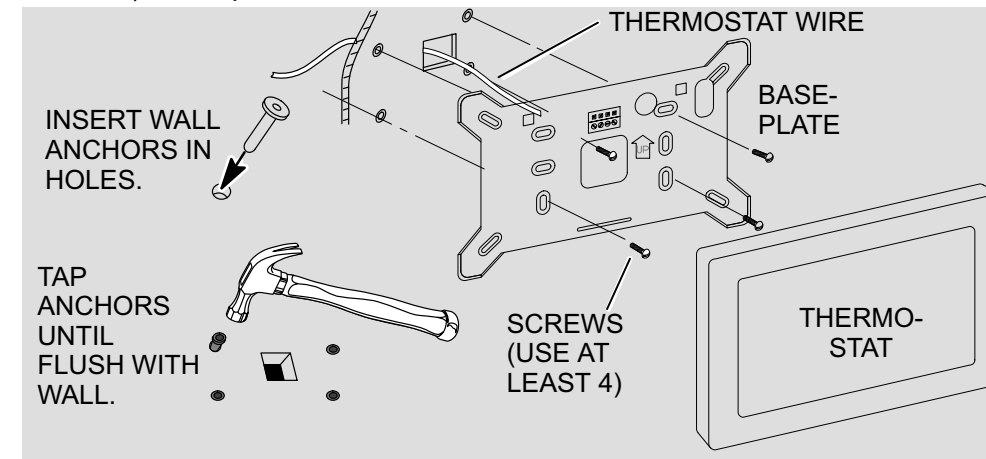
**Wall mounting instructions**

- 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.



**Figure 1. Hole locations**

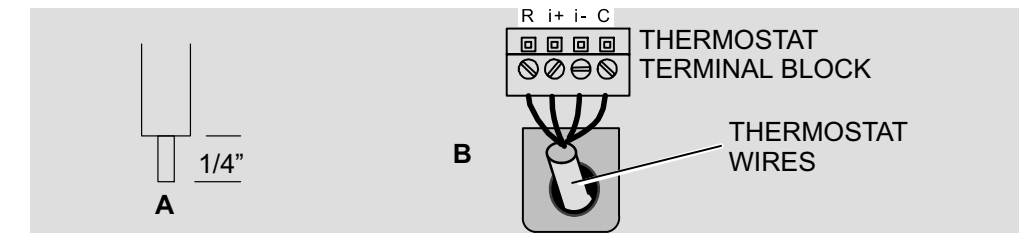
- B.** Drill (4) 3/16" holes in wall for anchors. Insert wall anchors in holes (see figure 2) and tap the anchor until flush with the wall.



**Figure 2. On-wall mounting**

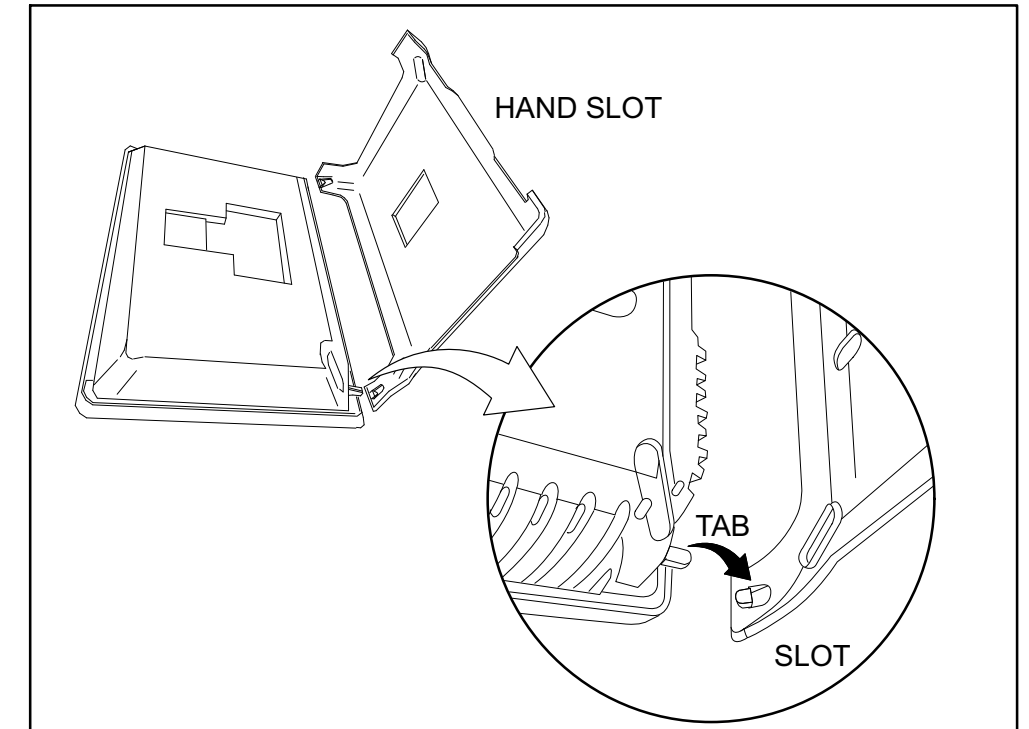
- C.** Route the thermostat wire and feed approximately six inches of wire through the hole and into the room.

- 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).



**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).



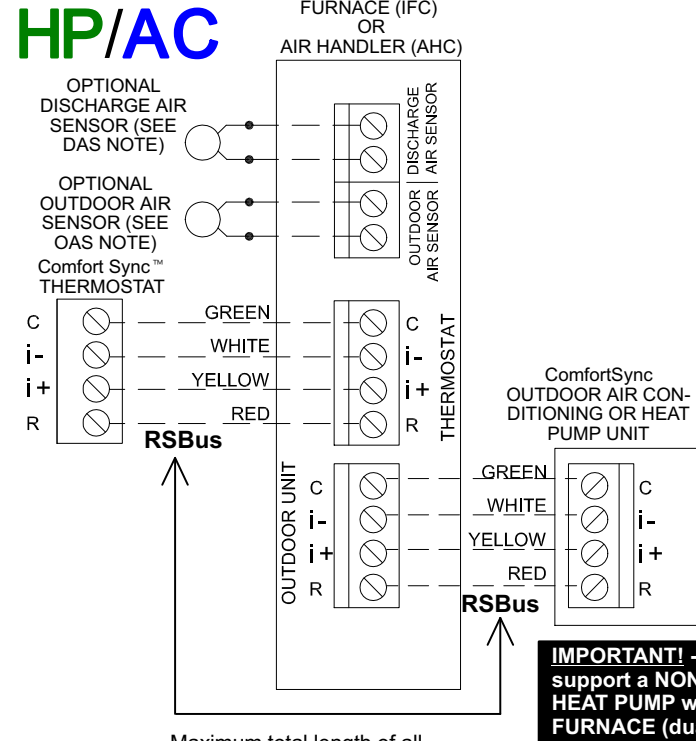
**Figure 4. Installing thermostat onto bracket**

Date	Revision History
08-2012	Preliminary release (fixed barcode)



**Comfort Sync™ Communicating Systems**

ComfortSync Thermostat  
ComfortSync Indoor Furnace or Air Handler  
ComfortSync Outdoor Condensing Unit or Heat Pump



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.

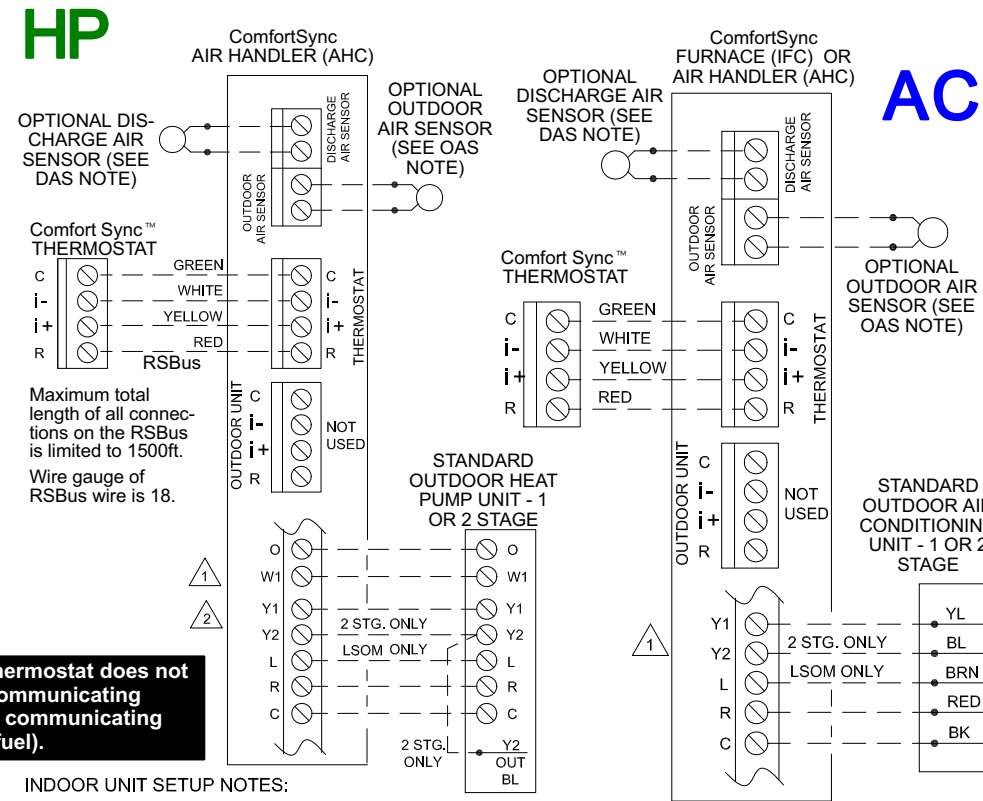
**DAS NOTE** The discharge air sensor is intended to be mounted downstream of the heat exchanger and air conditioning coil. It must be placed in free airflow, where other accessories (such as humidifiers, UV lights, etc.) will not interfere with its accuracy. Wiring distance between the IFC or AHC and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

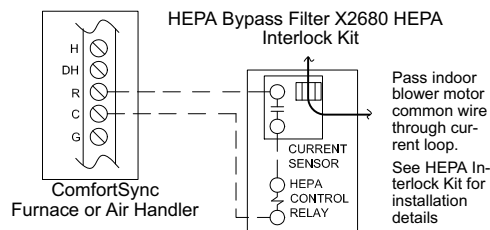
**Comfort Sync™ Communicating Indoor Unit / non-Communicating Outdoor Unit**

ComfortSync Thermostat  
ComfortSync Air Handler  
Standard Outdoor Heat Pump

ComfortSync Thermostat  
ComfortSync Indoor Furnace or Air Handler  
Standard Outdoor Condensing Unit



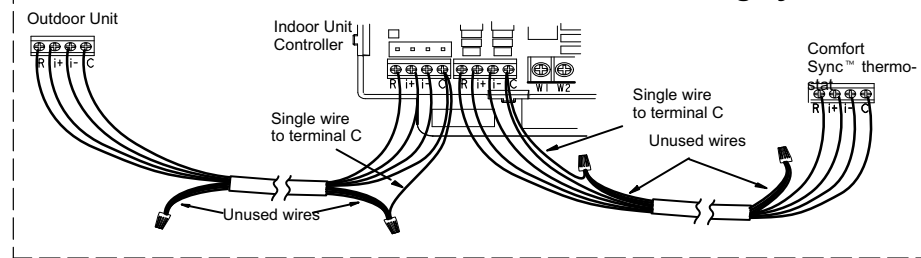
**INDOOR UNIT SETUP NOTES:**  
1 CUT Y1-Y2 ON BOARD LINK FOR 2 STAGE OUTDOOR UNITS.  
2 CUT R-O ON BOARD LINK FOR OUTDOOR HEAT PUMP UNITS.



**NOTE: 24V UV LIGHT APPLICATIONS**

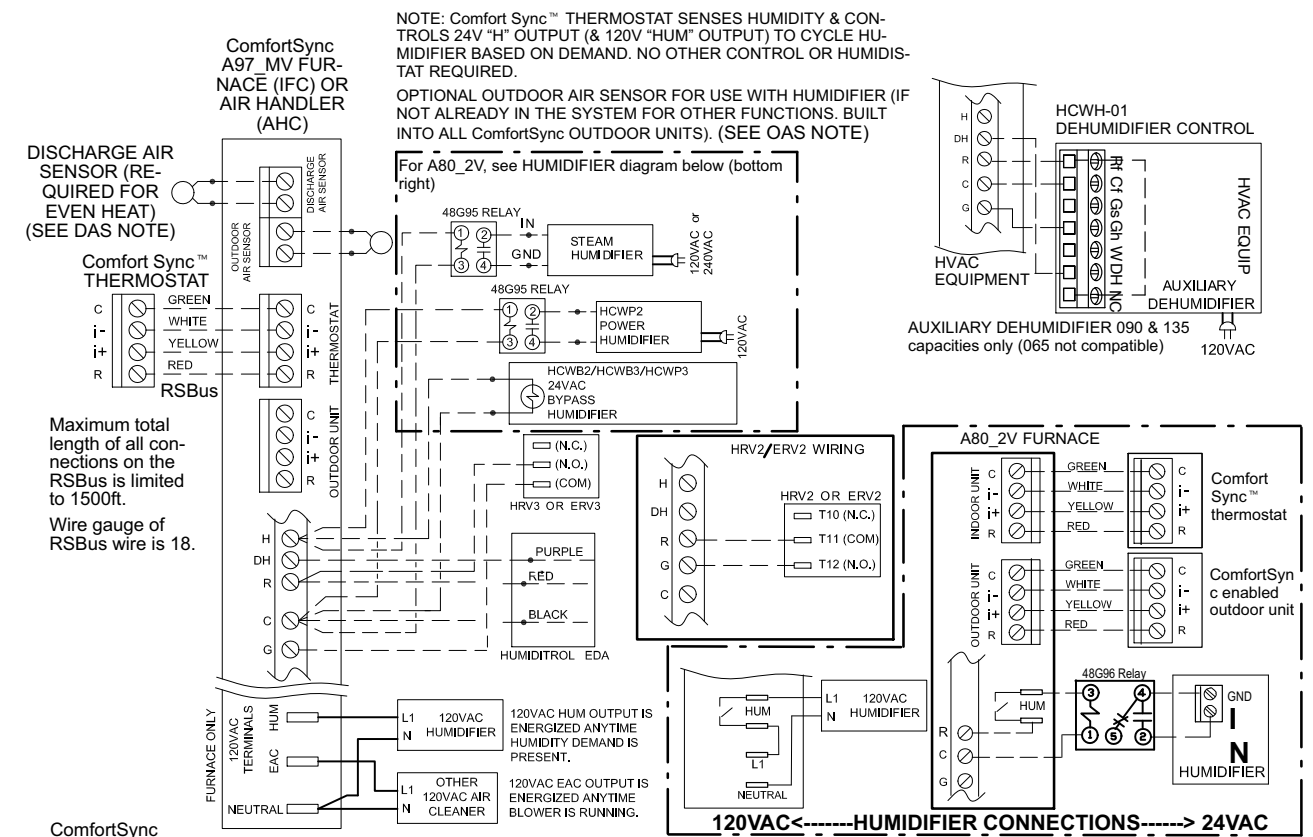
In an ComfortSync system, neither furnace nor air handler transformer will have adequate VA to power 24V UV light applications. An additional transformer for UV light applications is required. UV light wiring connections are independent of HVAC system operation; see UV light installation instructions for transformer VA requirements and wiring details.

**Thermostat wire termination in communicating system**

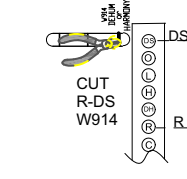


Communicating systems using the Comfort Sync™ thermostat require four thermostat wires between the thermostat and the furnace/air handler control and four wires between the outdoor unit and the furnace/air handler control. When a thermostat cable with more than four wires is used, the extra wires must 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.

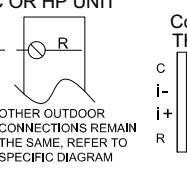
**Optional Accessories for use with any ComfortSync system**



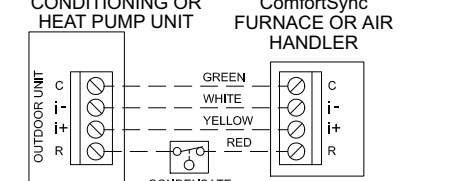
**ComfortSync 2-STAGE FURNACE**



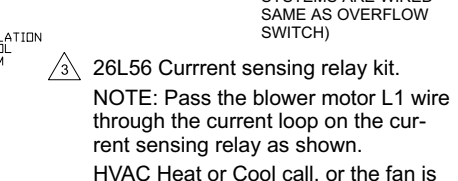
**STANDARD 1 OR 2 STAGE AC OR HP UNIT**



**ComfortSync OUTDOOR AIR CONDITIONING OR HEAT PUMP UNIT**



**ComfortSync FURNACE OR AIR HANDLER**



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 ComfortSync circulate fan percentage of ON\* TIME to control ventilation time.

**Figure 5. Wiring Diagrams**