

sen|si

Professional  
Installation

## Designed by the pros for the pros

There are a lot of choices when it comes to buying a thermostat, but only one combines 100 years of experience and the latest connected home technology to empower your customers to take control of their comfort from anywhere. We proudly connect you to a professional-grade thermostat that you can offer your customers with confidence and that will keep you connected with them even after the initial install.

## Sensi partner program

Always be the Contractor-On-Call with your customers. The Sensi app saves your contact information so when your customer needs service, you're just a tap away. Register at [www.sensiregistration.com](http://www.sensiregistration.com).

## Need help?

Visit [sensicomfort.com/support](http://sensicomfort.com/support) for around-the-clock access to support articles, instructional downloads and comprehensive support videos. Our highly-trained Sensi Support Team is available seven days a week.

 **1.888.605.7131**

 [support@sensicomfort.com](mailto:support@sensicomfort.com)

# Easy to install and connect

Sensi is designed to install like a standard thermostat. It gives you the flexibility to connect to Wi-Fi at installation or let your customer connect it later using the Sensi app.

## MOBILE DEVICE COMPATIBILITY

OPERATING SYSTEM	COMPATIBILITY
iOS	Yes
Android	Yes
Amazon Fire	Yes

## SMART HOME PLATFORM COMPATIBILITY

OPERATING SYSTEM	COMPATIBILITY
Amazon Alexa	Yes
Google Assistant	Yes
Sensi SmartThings	Yes

## HVAC SYSTEM COMPATIBILITY

SYSTEM TYPE	COMPATIBILITY	MODIFICATIONS
Conventional heating and cooling • Gas furnace • Air conditioner • Electric furnace • Boiler	Yes	Requires a common wire (c-wire)
Heat only • Gas furnace • Electric furnace • Boiler	Yes	Requires a common wire (c-wire)
Cool only • Air conditioner	Yes	Requires a common wire (c-wire)
Heat pump	Yes	Requires a common wire (c-wire)
Communicating proprietary systems	No	Needs standard HVAC wiring
Line voltage	No	Requires low voltage (20-30VAC)
Millivolt systems	No	Requires 20-30VAC

## ROUTER COMPATIBILITY

ROUTER TYPE	COMPATIBILITY
Single-band router with 2.4 GHz band	Yes*
Dual-band router with 2.4 & 5.0 GHz bands	Yes*
Single-band router with 5.0 GHz band	No

\*Sensi thermostats require an 802.11n 2.4 GHz Wi-Fi network and are compatible with most residential Wi-Fi networks, however there are some known incompatible routers. Visit [support.sensicomfort.com](http://support.sensicomfort.com) and search "router compatibility" for a list of known incompatible routers.

## What's in the box?

- Sensi Thermostat
- Screws and Anchors
- Welcome Guide
- Wire Labels

## Items needed for Wi-Fi connection:

- The homeowners compatible iOS or Android device with the Sensi app installed and registered
- Your customer's Wi-Fi network name (SSID) and password
- A Wi-Fi network with 802.11n 2.4GHz band

**QUICK TIP:** Ask the homeowner to download the Sensi app and gather their Wi-Fi information while you are installing the thermostat.

# Installation

1. Turn terminal light switch on for better visibility.
2. Install Sensi thermostat, referring to these terminal definitions, cross references and wiring diagrams as needed:

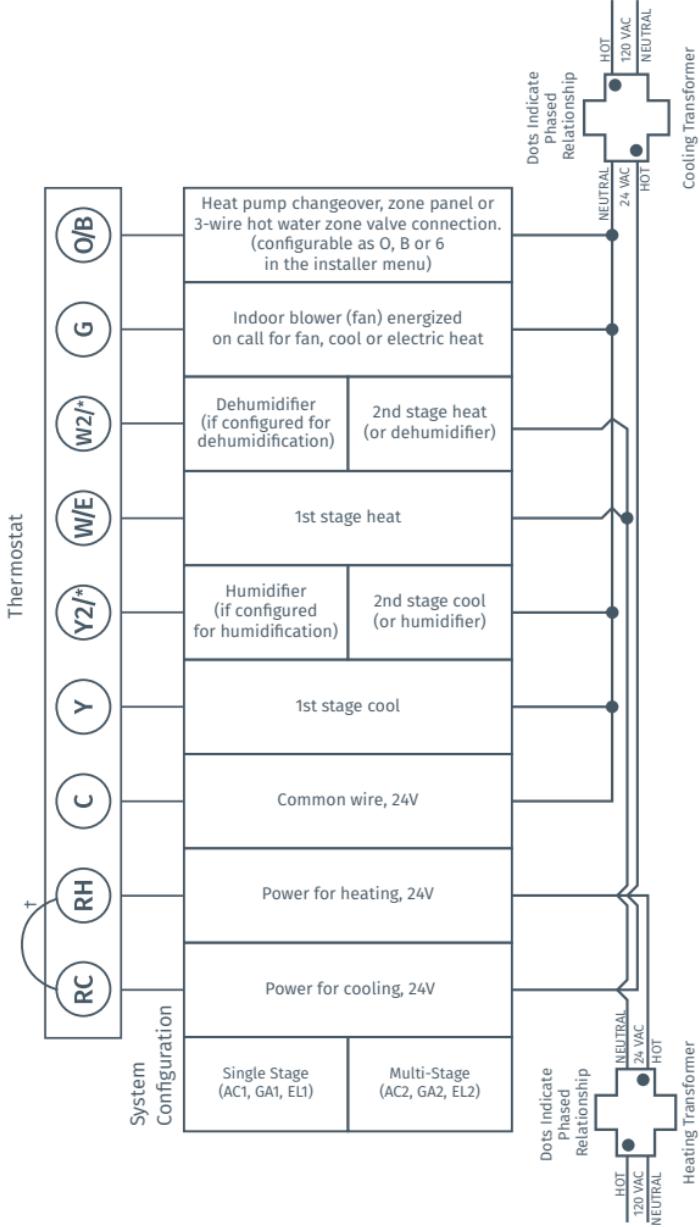
SENSI THERMOSTAT	CONVENTIONAL SYSTEM CONNECTION	HEAT PUMP SYSTEM CONNECTION
RC <sup>†</sup>	Power for cooling, 24V	
RH <sup>†</sup>	Power for heating, 24V	
C	Common wire, 24V	
Y	1st stage cool	1st stage heat and cool (compressor)
Y2/*	2nd stage cool (or humidifier)	2nd stage heat and cool (or humidifier)
W/E	1st stage heat	1st stage auxiliary/emergency heat (2nd stage heat)
W2/*	2nd stage heat (or dehumidifier)	2nd stage auxiliary/emergency heat (3rd stage heat or dehumidifier)
G	Indoor blower (fan)	
O/B	Heat pump changeover, zone panel or 3-wire hot water zone valve connection. (configurable as O, B or 6 in the installer menu)	Heat pump changeover (reversing valve) connection (configure as O or B in the installer menu)
ACC	External or Internal 24vac power in	
ACC-	External output power or no connection when using internal power	

<sup>†</sup> Two transformer systems (separate RC and RH wires), clip jumper located on backplate to the right of the terminals.

<sup>††</sup> Label "B" as "C" only if the old thermostat also had a wire in "O". If there is no wire on "O"-label the wire "B".

<sup>†††</sup> On Heat Pump system with separate W2 and E wires, label both wires W/E (2 wires in one terminal).

## CONVENTIONAL SINGLE STAGE OR MULTI-STAGE SYSTEMS (NO HEAT PUMP)



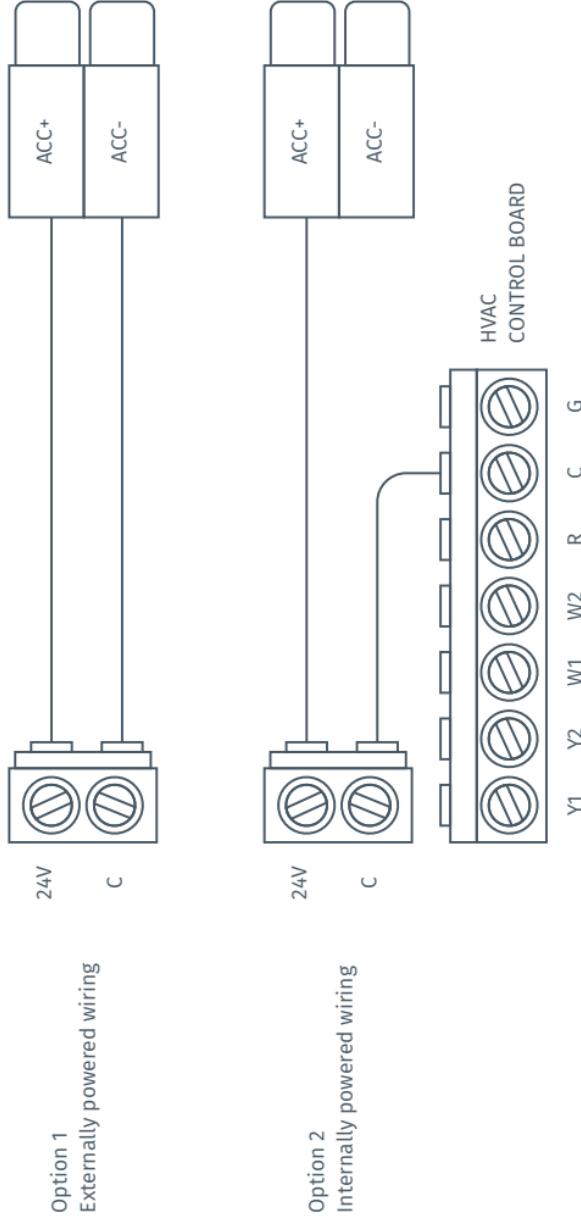
System Configuration	Thermostat								
Heat Pump Single Stage HP1	Heat pump changeover (reversing valve) connection (configure as O or B in the installer menu)								
Heat Pump Multi-Stage HP2	Indoor blower (fan) energized on call for fan, cool or heat								
		2nd stage auxiliary/ emergency heat (3rd stage heat or dehumidifier)		2nd stage auxiliary/ emergency heat (4th stage heat or dehumidifier)					
		1st stage auxiliary/ emergency heat (2nd stage heat)		1st stage auxiliary/ emergency heat (3rd stage heat)					
		Humidifier (if configured for humidification)		2nd stage heat and cool compressor					
		1st stage heat and cool compressor							
		Common wire, 24V							
		Power for heating, 24V							
		Power for cooling, 24V							



<sup>†</sup>Internal jumper between RC and RH, located on back of thermostat.

<sup>††</sup>Common connection required on Heat-only, Cool-only or Heat Pump systems.

## ACCESSORY DEVICE



# Configuration

1. Before configuring the thermostat, switch off the terminal light.
2. Configure the thermostat to the appropriate system type. On the thermostat, press **Menu > Advanced Set Up > Set Up HVAC Equipment**. Refer to these menu options as needed:

## CONFIGURATION MENU ITEMS REFERENCE

Menu item	Description	Options
Outdoor Equipment	Select AC or Heat Pump equipment, as well as the number of stages. Set this to AC1 for single stage systems or HP1 or HP2 for single or multi-stage heat pumps	AC1/AC2/HP1/HP2/None
Indoor Equipment	Select whether the equipment is an electric or gas furnace, or fan only. Set this to EL1 for single stage electric or GA1 or GA2 for single or multi-stage gas systems.	GA1/GA2/EL1/EL2/Fan
Reversing Valve Position	When configured for 0, reversing valve is energized in Cooling. This will cover most applications. Some manufacturers such as Rheem or Rhudd use the B terminal, which would energize in heating. For three-wire zone hydronic systems set this to 6.	O/B/6/None
<b>Additional Accessories</b>		
Humidifier (wired to thermostat)	If a humidifier is wired to the thermostat, change the Humidifier setting to YES	Yes/No
Dehumidifier (wired to thermostat)	If a dehumidifier is wired to the thermostat, change the Dehumidifier setting to YES.	Yes/No

3. Once the thermostat is installed and properly configured, test the equipment by following these steps:

### **Turn on power to the system.**

#### **Fan Operation**

- If your system does not have a “G” terminal connection, skip to “Heating System” below.
- Press the **Fan** button on the thermostat and select the **On** position. The blower should begin to operate.
- Press the **Mode** button to turn off the system. Then press the **Fan** button on the thermostat and select the **Auto** position. The blower should stop immediately.

#### **Circulating Fan**

- Press the **Mode** button on the thermostat then set Circulating fan to **On**
- Set the % run time from 10%-100% in 5% increments (default is OFF).
- The % run time is the percentage of time the fan shall run in a day. This calculation takes into account the amount of time the heating, cooling and continuous fan have run during the same day.

## Heating System

- Press the **Mode** button on the thermostat and select the **Heat** position.
- Press **Plus** on the thermostat and adjust the setting to 1° above the current room temperature. The heating system should begin to operate and the thermostat display will turn red indicating heating on the screen.
- For heat pumps with auxiliary, press **Plus** on the thermostat and adjust the setting to 3° above the current room temperature. The auxiliary heat should begin to operate and the thermostat will indicate “Heating Auxiliary” on the screen.
- Press **Minus** on the thermostat and adjust the setting to 1° below the current room temperature. The heating system should stop operating and the display will go back to a neutral gray color.

## Auxiliary System (only for heat pumps with auxiliary)

- Press the **Mode** button on the thermostat and select the **Aux** position. This bypasses the heat pump and runs auxiliary-only heat.
- Press **Plus** on the thermostat and adjust the setting to 1° above the current room temperature. The auxiliary heating system should begin to operate and the thermostat will indicate “Heating Auxiliary” on the screen.
- Press **Minus** on the thermostat and adjust the setting to 1° below the current room temperature. The auxiliary heating system should stop operating and “Heating Auxiliary” will disappear from the screen.

## Cooling System

- Press the **Mode** button on the thermostat and select the **Cool** position.
- Press **Minus** and adjust the setting to 1° below the current room temperature. The blower should come on immediately on high speed, followed by cold air circulation. The thermostat display will turn blue. Note that there can be up to a 5 minute delay for this process. This is indicated by a flashing setpoint temperature.
- Press **Plus** and adjust the setting to 1° above the current room temperature. The cooling system should stop operating and the display will go to a neutral gray color.
- If you encounter any issues while testing the equipment, refer to the troubleshooting actions on page 16.

## Humidification

- Press the **Mode** button on the thermostat and select the **Heat** position.
- Press **Plus** on the thermostat and adjust the setting to 1° above the current room temperature. The heating system should begin to operate and the thermostat display will turn red indicating heating on the screen.
- Press **Menu > Advanced Setup > Humidify**
  - Set Humidification to **ON** and set the humidity set point higher than the current room humidity.
  - Humidity can be adjusted from 5% to 50% in 5% increments.
  - Check that the humidifier is running.
  - Go back to the main screen.
- Press **Minus** on the thermostat and adjust the setting to 1° below the current room temperature. The heating and humidification system should stop operating and the display will go back to a neutral gray color.

## Dehumidification

- Press the **Mode** button on the thermostat and select the **Cool** position.
- Press **Minus** and adjust the setting to 1° below the current room temperature. The blower should come on immediately on high speed, followed by cold air circulation. The thermostat display will turn blue. Note that there can be up to a 5 minute delay for this process. This is indicated by a flashing setpoint temperature.
- Press **Menu > Advanced Setup > Dehumidify**
- Set Dehumidification to **On** and set the humidity set point lower than the current room humidity. Humidity can be adjusted from 40% to 95% in 5% increments.
- Depending on installed equipment, check that the system fan speed has slowed, the dehumidifier is running, or the system cools up to 3° below temperature set point or until the humidity set point is reached.
- Go back to the home screen.
- Press **Plus** and adjust the setting to 1° above the current room temperature. The cooling system should stop operating and the display will go to a neutral gray color.

# Troubleshooting

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
No Heat/ No Cool/ No Fan (common problem)	<ol style="list-style-type: none"><li>1. Blown fuse or tripped circuit breaker</li><li>2. Furnace power switch to OFF</li><li>3. Furnace blower compartment door panel loose</li><li>4. Loose connection to thermostat or system</li></ol>	<ol style="list-style-type: none"><li>1. Replace fuse or reset breaker</li><li>2. Turn switch to ON</li><li>3. Replace door panel in proper position to engage safety interlock or door switch</li><li>4. Tighten connections</li></ol>
No Heat	<ol style="list-style-type: none"><li>1. Thermostat not set to Heat</li><li>2. Loose connection to thermostat or system</li><li>3. Heating system requires service or thermostat requires replacement</li></ol>	<ol style="list-style-type: none"><li>1. Set thermostat to Heat.</li><li>2. Verify thermostat and system wires are securely attached.</li><li>3. Diagnostic: Set Mode to Heat and raise the setpoint above room temperature. Within five minutes the thermostat should make a soft click sound and the display should turn red. This sound indicates the thermostat is operating properly. If the thermostat does not click, try resetting the thermostat. If the thermostat does not click after being reset, contact your heating and cooling service person or place of purchase for a replacement. If the thermostat clicks, verify the heating system is operating correctly.</li></ol>
No Cool	<ol style="list-style-type: none"><li>1. Thermostat not set to Cool</li><li>2. Loose connection to thermostat or system</li><li>3. Cooling system requires service or thermostat requires replacement</li></ol>	<ol style="list-style-type: none"><li>1. Set thermostat to Cool.</li><li>2. Verify thermostat and system wires are securely attached.</li><li>3. Diagnostic: Set Mode to Cool and lower setpoint below room temperature. Same procedures as diagnostic for "No Heat" condition except set the thermostat to Cool and lower the setpoint below the room temperature. There may be up to a five minute delay before the thermostat clicks in Cooling if the AC Protection feature is on.</li></ol>

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Heat, Cool or Fan Runs Constantly	Possible short in wiring, thermostat, heat, cool or fan system	Check each wire connection to verify they are not shorted or touching other wires. Try resetting the thermostat.
Thermostat Display & Thermometer Disagree	Thermostat display requires adjustment	Display can be adjusted +/-5° using the Temperature Offset in the Sensi app.
Humidity Display & Hygrometer Disagree	Humidity display requires adjustment	Display can be adjusted in 5% increments +/-25% using the Humidity Offset in the Sensi app.
Display is Blank	The display could be turned off or you need a common wire (c-wire)	Attach a common wire (c-wire) or turn on the display.
Furnace (Air Conditioner) Cycles Too Fast or Slow	The location of the thermostat and/ or the size of the Heating System may be influencing the cycle rate	Digital thermostats provide precise control and cycle faster than older mechanical models. The system turns on and off more frequently, but runs for a shorter time. If you would like to increase cycle time, choose Slow for the Cycle Rate in the Sensi app.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
“Call for Service” appears on the screen	<ol style="list-style-type: none"> <li>1. Heating or Cooling system is not able to heat/cool the space to within 5 degrees of the setpoint within 2 hours</li> <li>2. If “--” is displayed for the Room Temperature, a replacement thermostat is needed</li> <li>3. None of the buttons operate on the thermostat</li> </ol>	<ol style="list-style-type: none"> <li>1. See corrective action for “No Heat” or “No Cool”</li> <li>2. Replace thermostat</li> <li>3. Make sure keypad lockout is not turned on. If it's OFF, try resetting the thermostat.</li> </ol> <p>Reset: Turn the power to your system off, wait 5 seconds and turn it back on.</p>
Fan turns on randomly	The fan has been set to run occasionally in the configuration menu	Enter the configuration menu and make sure the ‘Fn’ fan run time percentage is OFF.

# Connecting Sensi to Wi-Fi

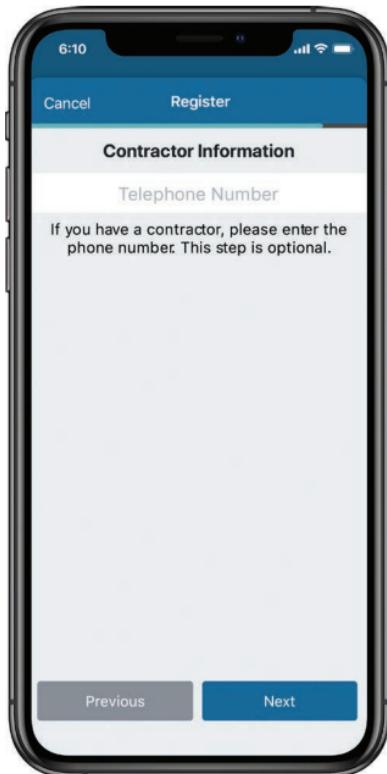
1. Ask the homeowner to download the free Sensi app onto their iOS or Android device. They can scan the QR code in the Welcome Guide or search “Sensi” in the app store.



2. Ask the homeowner to follow the prompts to create an account.
3. Once the homeowner has logged in, ask to use their device to connect the thermostat to the Wi-Fi.

**QUICK TIP:** You must have your customer’s Wi-Fi Network (SSID) and Password to complete the wireless setup.

4. Select **Connect Thermostat to Wi-Fi** and follow the in-app prompts to complete the connection steps.
5. Once the thermostat is connected to Wi-Fi, enter your registered phone number by selecting **Settings** at the bottom then **Contractor Info**.



# Warnings

## INSTALLER INFORMATION

FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

### ⚠ WARNING

#### WARNING: OUT OF PHASE TRANSFORMERS

On two transformer systems, the transformers **MUST** be in phase. Measure the voltage across RC and RH. If more than 12 Volts AC is present between RC and RH, then the transformers are **NOT** in phase.

To correct this condition, reverse the secondary low voltage connections at either the Heating or Cooling transformer.

### ⚠ CAUTION

To prevent electrical shock and/or equipment damage, disconnect electric power to system at main circuit breaker box until installation is complete.

### ⚠ WARNING

#### VOLTAGE REQUIREMENTS

Do not use on circuits exceeding specified voltage. Higher voltage will damage control and could cause shock or fire hazard.

Thermostat installation and all components of the control system shall conform to Class II circuits per the NEC code.

### ⚠ CAUTION

#### CAUTION: E5 Alert

If "Call For Service" is displayed on your Sensi thermostat, and E4 or E5 appears where the room temperature should be displayed or the backlight is flashing, please call our support team immediately at 888.605.7131

### ⚠ WARNING

**FOR CALIFORNIA RESIDENTS: WARNING:**  
This product contains a chemical known to the state of California to cause cancer and birth defects and other reproductive harm.

### ATTENTION: MERCURY NOTICE

This product does not contain mercury. However, this product may replace a product that contains mercury. Mercury and products containing mercury must not be discarded in household trash. Refer to [thermostat-recycle.org](http://thermostat-recycle.org) for location to send product containing mercury.

# For Your Customer

## **MAKE SURE TO LEAVE THE SENSI WELCOME GUIDE FOR YOUR CUSTOMER.**

It provides helpful instructions and information on the following:

- How to connect their Sensi thermostat to Wi-Fi (if this has not already been completed) or connect additional devices
- Key features of the thermostat and the app and how they work
- Customer Support







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