

# PRO 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 125 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
Apple HomeKit	Yes, but requires a common wire (c-wire)
Wink	Yes

## HVAC SYSTEM COMPATIBILITY

SYSTEM TYPE	COMPATIBILITY	MODIFICATIONS
Conventional heating and cooling <ul style="list-style-type: none"><li>• Gas furnace</li><li>• Air conditioner</li><li>• Electric furnace</li><li>• Boiler</li></ul>	Yes	None
Heat only <ul style="list-style-type: none"><li>• Gas furnace</li><li>• Electric furnace</li><li>• Boiler</li></ul>	Yes	Requires a common wire (c-wire)
Cool only <ul style="list-style-type: none"><li>• Air conditioner</li></ul>	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

# What's in the box?

- Sensi Thermostat
- Screws and Anchors
- Wire Labels
- 2 AA Batteries
- Sensi Security Code  
(found on the back of the Welcome Guide)

## 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

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

# Installation

1. Install Sensi thermostat, referring to these terminal definitions, cross references and wiring diagrams as needed:

OLD THERMOSTAT	SENSI THERMOSTAT	CONVENTIONAL SYSTEM	HEAT PUMP SYSTEM
RH	RH†	Power for heating, 24V	
RC, R	RC†	Power for cooling, 24V	
C, X, B**	C	Common wire, 24V	
Y, Y1	Y	1st stage cool	1st outdoor stage heat
Y2	Y2/*	2nd stage cool or humidifier	2nd outdoor stage heat and cool or humidifier
W, W1, W/E, Aux/E, E	W/E	1st indoor stage heat	1st stage auxiliary/emergency heat
W2†††	W2/*	2nd indoor stage heat or dehumidifier	2nd stage auxiliary/emergency heat or dehumidifier
G	G	Indoor blower (fan)	
O,B,†† O/B	O/B	Changeover (reversing valve) connection for heat pump or zone panel systems	
L	L	no function	"L" terminal connection

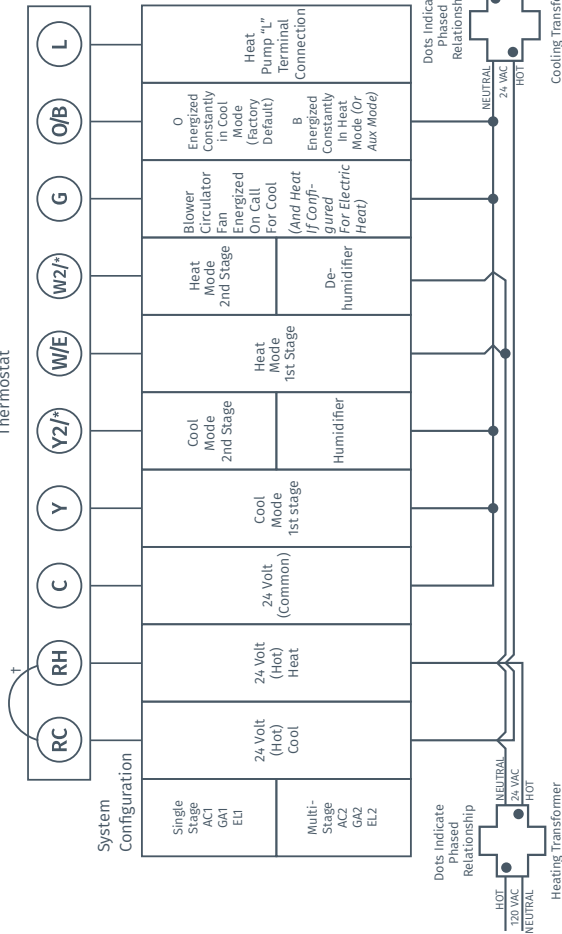
† Two transformer systems (separate RC and RH wires), clip internal jumper located on back of Sensi above battery compartment.

†† 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".

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

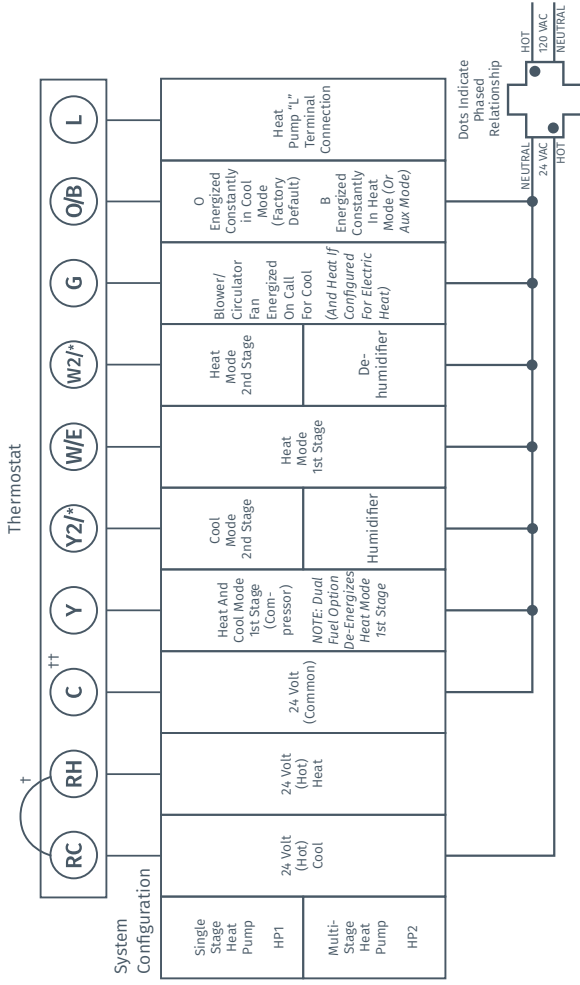
# SINGLE STAGE OR MULTI-STAGE SYSTEM (NO HEAT PUMP) WITH TWO TRANSFORMERS

Thermostat



\*Two transformers systems (separate RC and RH wires), clip internal RC /RH jumper, located on back of thermostat.

## HEAT PUMP SYSTEMS



<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.



2. After installation, configure the thermostat to the appropriate system type. Press “Menu” on the thermostat and refer to these menu options as needed:

#### CONFIGURATION MENU ITEMS REFERENCE

Display Code	Menu item	Default	Options
	Wireless Setup Connects Thermostat to Wi-Fi network	—	Connect
	Fahrenheit or Celsius	F	F C
	Outdoor Equipment Configuration Cooling or heat pumps	AC2	AC1 – Conventional Cooling 1 (Single Stage) AC2 – Conventional Cooling 2 (Two-Stage) HP1 – Heat Pump 1 (Single Stage) HP2 – Heat Pump 2 (Two-Stage) AC0 – No Cooling
	Indoor Equipment Configuration For Gas or Electric Heat	EL2	EL1 – Electric 1 (Single Stage) EL2 – Electric 2 (Two-Stage) FAn GA1 Gas 1 (Single Stage) GA2 Gas 2 (Two-Stage)
	Reversing Valve Position Selects “O” or “B” Setting For Heat Pumps Only	O	O B 2
Fn	Circulating Fan	OFF	Off/10% – 100% (5% increments)
H AA	Humidification Add Accessory	OFF	Off/On
H SP	Humidification Set Point	OFF	Off/5% – 50% (5% increments)
dH AA	Dehumidification Add Accessory	Od	Od/Oc Od – Optimal dehumidification (Overcool to dehumidify) Oc – Optimal comfort (Wired dehumidification)
dH SP	Dehumidification Set Point	OFF	Off/40% – 95% (5% increments)
	Wireless Radio Turns Wi-Fi Radio On/Off	ON	Off/On

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 “Menu” button on the thermostat and press the “Next” button until you reach the “Fn” screen.
- Adjust the % run time from 10%-100% in 5% increments by using the arrow up or down buttons (default is OFF), then press “Exit”.
- 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 the up arrow on the thermostat and adjust the setting to 1° above the current room temperature. The heating system should begin to operate and the thermostat will indicate “Heating” or “Heating Auxiliary” on the screen.
- For heat pumps with auxiliary, press the up arrow 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 the down arrow on the thermostat and adjust the setting to 1° below the current room temperature. The heating system should stop operating and “Heating” or “Heating Auxiliary” will disappear from the screen.

- **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 the up arrow 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 the down arrow 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 the down arrow 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 will indicate “Cooling” on the screen. Note that there can be up to a 5 minute delay for this process. This is indicated by a flashing setpoint temperature.
- Press the up arrow and adjust the setting to 1° above the current room temperature. The cooling system should stop operating and “Cooling” will disappear from the screen.
- If you encounter any issues while testing the equipment, refer to the troubleshooting actions on page 17.

## • Humidification

- Press the “Mode” button on the thermostat and select the “Heat” position.
- Press the up arrow on the thermostat and adjust the setting to 1° above the current room temperature. The heating system should begin to operate and the thermostat will indicate “Heating” on the screen.
- Press the “Menu” button on the thermostat and press the “Next” button until you reach the “H SP” screen.
- Turn Humidification On by pressing either the Up or Down button until the humidity set point is higher than the current room humidity. Humidity can be adjusted from 5%-50% in 5% increments, then press “Exit”.
- Check to ensure humidifier is running.
- Press the down arrow on the thermostat and adjust the setting to 1° below the current room temperature. The heating and humidification systems should both stop operating.

## • Dehumidification

- Press the “Mode” button on the thermostat and select the “Cool” position.
- Press the down arrow 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 will indicate “Cooling” on the screen. Note that there can be up to a 5 minute delay for this process. This is indicated by a flashing setpoint temperature.
- Press the “Menu” button on the thermostat and press the “Next” button until you reach the “dH SP” screen.
- Turn Dehumidification On by pressing either the Up or Down button until the humidity setpoint is lower than the current room humidity. Humidity can be adjusted from 40% to 95% in 5% increments, then press “Exit”.
- 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.
- Press the up arrow and adjust the setting to 1° above the current room temperature. The cooling system and dehumidifier (if applicable) should both stop operating.

# 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 "Heating" should appear on display. 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>



SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
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>
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 Sensi app.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Humidity Display & Hygrometer Disagree	Humidity display requires adjustment	Display can be adjusted in 5% increments +/-25% using the Humidity Offset in the Sensi app.
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.
"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.



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, along with the Sensi Security Code card 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 "Contractor" from the drop down menu.



# 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.

### **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**

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

### **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** 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:

- Includes their Sensi Security Code for connecting to Wi-Fi
- 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







0037-7678003