

What types of HVAC systems are ecobee thermostats compatible with?

ecobee thermostats are compatible with most 24-volt residential heating and cooling systems in North America, including gas, oil, electric, and dual-fuel systems.

To check if your system is compatible prior to purchase, please use our [compatibility checker](#).

During setup, the **ecobee app** will guide you through each step to let you know if your system is compatible before you install it.

The majority of ecobee thermostat owners are able to power their ecobee thermostat with the **common wire** (C wire) or the ecobee **Power Extender Kit** (PEK), a simple-to-install device that comes in the box and attaches to the system control board. [Less common setups](#) may require the purchase of additional third-party components.

To confirm if your system is compatible or not, you will only need to know the type of heating season you have. The exact make and model doesn't matter, but if you are unsure what type of system you have, check the owner's manual or contact your system's manufacturer, or an HVAC professional.

Using the compatibility checker

The [ecobee thermostat compatibility checker](#) is the easiest way to determine if an ecobee thermostat is the right fit for your home. The checker contains everything you need to determine compatibility, but here is some additional information that you may find helpful.

Find your system

Your heating, ventilation, and air conditioning system is most likely to be in your basement, attic, utility closet, or behind a panel in the wall near your thermostat.

Power off your system

Use the master switch on your HVAC system or the circuit breaker box to power off your system. There may be a regular light switch on or near your system that you can use. If your system doesn't have a switch, turn off the power to your HVAC system at the electrical panel or fuse box.

Powering off your system protects your safety and avoids blowing a fuse in your equipment.

Test that the power is off

1. First, change the temperature by at least five degrees. If it's summer, turn the temperature down to activate cooling. If it's winter, turn the temperature up.
2. Wait at least five minutes to check if your system comes on or feel for hot or cool air coming through the vents.
3. Ensure that no lights on your furnace or fan are on. If lights are on, your system might still be drawing power. In which case, turn off the main power to your home at the breaker before proceeding.

Remove your thermostat from the wall

Most thermostats can be gently pulled off the wall. In some cases, a screwdriver may be needed. After you remove your thermostat you should see your thermostat's base.

The base is often screwed into the wall. Wires running from your heating and cooling system attach to the base.

Rule out incompatibility

ecobee thermostats are designed to work with most 24-volt systems, even older ones.

Take a look at your thermostat. If your system is high-voltage, the thermostat should be labeled with **120 V** or **240 V** or have **L1/L2** labels and thick wire nuts. High-voltage systems like electric baseboard heaters are not compatible.

In some cases, it may be possible that a professional can make your system compatible. [Find a pro](#) in your area and ask if they can install a 240 V/120 V-24 V step-down transformer.

Other systems that ecobee thermostats are not compatible with:

- Millivolt systems (e.g., wall heaters or floor heaters)
- DC voltage (e.g., heating and cooling systems in recreational vehicles)

- Proprietary systems (non-standard wire labels, e.g., **1,2,3,4** or **A,B,C,D**, indicate your system is proprietary.)
- Solid fuel systems (coal, anthracite, wood, wood chips, and other biomass fuel sources)

[Learn more about incompatible systems.](#)

Ignore wire colors

Do not rely on the color of a wire to determine its function. Wire colors are not standardized, which means not all systems are connected to the thermostat with the same wire colors.

For example, if you see a red wire, do not enter **R** in the compatibility checker unless the red wire is connected to the connector labeled **R** on the thermostat base.

In other words, always use the label on the connector the wire is attached to as your guide, not the wire's color.

Ignore jumper wires

A jumper is a short wire or staple that attaches two connectors (usually **Rc** and **Rh**). Only enter the labels for connectors that attach to wires that lead behind the wall.

[Learn more about jumper wires.](#)

If you see wires attached to your thermostat base

Note the label on the connector each wire is attached to and enter them into the [compatibility checker](#).

If you see two sets of labels on each connector

Some thermostat bases have two labels on each connector, which can make it hard to tell which labels to enter into the compatibility checker.

If you see two sets of labels on each connector, refer to this article for more information: [Help with thermostats with two sets of wire labels](#).

If you don't see any wire labels

If you remove the cover and don't see any wires, connectors, or labels, your thermostat may have a mid-plate.

Mid-plates screw into the thermostat base or directly into the wall and can hide your wire labels and connectors.

Unscrew the mid-plate to reveal the thermostat base. After you've found the labels that wires connect to the base, you can enter them into the [compatibility checker](#).

If you don't see any wire labels on your thermostat base

If you've removed your thermostat from the wall to reveal the base and do not see labels on the connectors, you will need to [identify your wires at your system control board](#) before you can safely install an ecobee thermostat.

If you only see two wires attached to the connectors on your thermostat

If you only see two wires attached to the **R** and **W** or **T** and **T** connectors on your thermostat, you will not be able to install an ecobee thermostat with the PEK as it requires a third wire to operate. Your installation will require running a new wire from the **C connector** on your heating equipment to the **C connector** on the ecobee thermostat or the purchase of third-party components. For more information, see [My thermostat has only two wires. Am I compatible with ecobee?](#)

Systems that are compatible with ecobee thermostats

ecobee thermostats are compatible with 24V system control boards, [including zone boards](#).

Use the below table to see if your system is compatible with an ecobee thermostat.

Keep in mind, if a C or common wire isn't present, the thermostat can be installed with the included PEK unless otherwise indicated.

Systems that are not compatible with ecobee thermostats

ecobee thermostats are compatible with the majority of homes in North America, but not all systems are compatible.

If you have one of the systems below, it won't work with an ecobee thermostat.

High-voltage systems

Often used to power electric baseboard heaters and electric furnaces, high-voltage or line-voltage thermostats typically have two or four thick wires coming out of the thermostat. Thermostat wires are commonly attached to the HVAC system by wire nuts.

High-voltage thermostats are usually labeled **110**, **115**, **120**, or **240 VAC** and have **L1/L2** labels on the connectors. High-voltage systems are not compatible with ecobee thermostats. In some cases, it may be possible that a professional can make your system compatible. [Find a pro](#) in your area and ask if they can install a 240 V/120 V-24 V step-down transformer.

Proprietary systems

Non-standard labels on your thermostat's connectors (like, for example, **1,2,3,4** or **A,B,C,D**) indicate that your system is proprietary.

If you have both heating and cooling, but only two wires come out of the wall and connect to your thermostat, your system is likely proprietary.

ecobee thermostats require standard terminals (e.g., **R**, **G**, **Y**, **W**, **C**) at the furnace control board. If you do have these terminals present, it's possible that your system can be made compatible with some rewiring; however, you may lose some of your system's functionality. [Find a pro](#) in your area and ask if they can rewire your system.

Millivolt systems

Millivolt systems usually consist of a floor heater or wall heater powered by electricity or natural gas. Millivolt systems use a very low voltage and cannot deliver the power needed to power ecobee thermostats.

Solid fuel systems

Solid fuel systems that use coal, anthracite, wood, wood chips, or other biomass fuel sources are not compatible with ecobee thermostats.

Incompatible wires

Wired temperature sensors

Outdoor temperature sensors are used to give your thermostat weather data. ecobee thermostats obtain weather data from the Internet, so these sensor wires (e.g., S, S1, S2) are not necessary. If your system has sensor wires, it may still be ecobee-compatible. Check compatibility.

L wires for heat pumps

On some thermostats for heat pump systems, L wires control an indicator light that turns on when auxiliary or emergency heat is on. L wires cannot be connected to an ecobee thermostat—it doesn't need them. The ecobee thermostat and app will show you the status of your system without connecting L wires.

More information

Thermostat wire labels

If you would like to learn about what the labels on your thermostat connectors and wires mean, refer to the following article for more information.

What do my thermostat's wire labels mean?

Systems with more than two stages of heat or cool

Some furnaces and air conditioners have three stages of heating and cooling. ecobee thermostats only support up to two stages of heating and cooling. If you see a wire connected to your current thermostat's W3 or Y3 terminals, we recommend booking a pro near you to install your ecobee.

Important note for owners of dual-fuel HVAC systems

Also known as packaged or hybrid systems, dual-fuel HVAC systems are made up of an electric heat pump and a secondary heat source, usually a gas furnace that provides reliable, uninterrupted heating on very cold days. If you have a dual-fuel system, during thermostat setup it is very important that you select **Disable** on the **Allow the Heat Pump and Aux Heat** to run simultaneously screen to avoid damage to your heat pump.