

ecobee Enhanced

Dual Fuel Air Source Heat Pump Thermostat Configuration Guide



The ecobee Enhanced is a popular smart thermostat that is compatible with 24V dual fuel heat pump systems. This guide provides an overview of the configuration steps necessary to set up an ecobee to improve comfort and savings on a dual fuel air source heat pump system.

Getting Started: The Basics

When powered on for the first time, the ecobee will greet users with a setup wizard to configure basic settings. Ensuring proper configuration is critical for both performance and user experience. Recommended settings related to dual fuel operation are listed below and can be set during initial setup or adjusted later under *Main Menu*  *> General*  *> Settings > Installation Settings > Equipment*.

Setting	Suggested	Notes
What kind of heat pump do you have?	Air to air	Correct selection here is required to see all relevant settings.
How is your O/B Reversing Valve energized?	On cool	Check heat pump specifications; reversing On cool (O) is common but not universal.
Allow Heat Pump and Aux Heat to run together?	Disable	Disable for dual fuel systems. Enable is for all-electric plenum heaters.
Set the minimum outdoor temperature	30°F to 5°F or lower	Choose a lower temperature to save on expensive fossil fuel costs (e.g., propane, fuel oil) or to minimize emissions.
What type of heating do you have?	Furnace	Select Furnace for forced air or Boiler for hydronic systems.
How do you want your fan controlled?	By thermostat	Reference furnace and heat pump specifications.

Switchover: Compressor Minimum Outdoor Temperature

Whenever possible, use reputable guidance designed for your specific location or from the electric utility to select the switchover, which ecobee calls the Compressor Minimum Outdoor Temperature. Fuel costs can guide switchover selection when staging controls are used to guarantee comfort. In a pinch, follow the guidelines on the table below or visit the [MN ASHP Collaborative](#) website for additional information.

Temperature	Notes
30°F or lower	When using a natural gas furnace with standard residential electric rates.
20°F or lower	When using a natural gas furnace with reduced electric space heating rates or to maximize emission reductions.
5°F or lower	For scenarios with high fuel cost relative to electricity cost (e.g., propane, fuel oil).

These switchover recommendations assume that staging controls are implemented to avoid capacity balance point concerns. In addition to an outdoor switchover temperature, the ecobee can switch to auxiliary heat after an indoor temperature drop (recommended) or time delay.

Next page: Use staging controls to ensure comfort.



Staging Controls Ensure Comfort

Avoid issues from heat pump capacity limitations by using thermostat-defined staging controls. In the ecobee, staging is affected by the settings found under *Main Menu* ≡ > *General* ⚙ > *Settings* > *Installation Settings* > *Thresholds*

Setting	Suggested	Notes
Auto Heat/Cool	Disable	Disable to avoid heating and cooling on the same day.
Configure Staging	Automatically	Automatically allows basic droop and switchover selection. Choose Manually for more granular control.
Aux Savings Optimization (Automatic staging only)	2.9°F	Decrease to prioritize comfort or increase to prioritize savings.
Aux Heat Max Outdoor Temperature	40°F or lower	Set at least 10°F higher than Compressor Min Outdoor Temperature.
Compressor Min Outdoor Temperature	30°F to 5°F or lower	Choose a lower compressor min temperature when backup heat is costly or to lower emissions.
Compressor to Aux Temperature Delta (Manual staging only)	2°F	Decrease to prioritize comfort or increase to prioritize savings.
Compressor to Aux Runtime (Manual staging only)	Auto	Not recommended, set to Auto and set an Aux Temperature Delta instead to disable.
Aux Reverse Staging	On	Recommended, allows heat pump operation to resume near end of cycle.

Schedules and Other Settings

Basic configuration on the ecobee occurs from the home screen and within the *Main Menu* ≡ These settings include System Mode, Comfort Setting, and Fan Mode. Under *Main Menu* ≡ > *General* ⚙ you can set a schedule and other options to maximize comfort.

Thermostat setpoint schedules should maximize comfort. Modern heat pumps are so efficient that little to no energy is saved from using them with large setbacks. No setbacks are recommended with switchovers less than 5°F unless it improves occupant comfort.

Troubleshooting

Issue	Possible Thermostat Control Solutions
Comfort	1. Ensure O/B reversing valve energizing setting is correct to the specific heat pump installed or it may cool while in heating mode. 2. Increase the Aux Heat Max Outdoor Temperature and Compressor Min Outdoor Temperature if aux staging is not always engaging when the setpoint is significantly missed. 3. Reduce the value of Aux Savings Optimization or Compressor to Aux Temperature Delta to 1°F to increase staging speed and system responsiveness.
Costs	1. To reduce reliance on the heat pump and increase aux heat use, increase the Compressor Min Outdoor Temperature. If Manual staging mode is on, also increase Aux Temperature Delta. 2. For homes with high-cost aux fuels (propane, fuel oil), ensure Compressor Min Outdoor Temperature is not higher than 30°F and Aux Savings Optimization or Compressor to Aux Temperature Delta is not less than 1°F.