CONTROLS FOR A HEAT PUMP WITH SECONDARY HEATING
FOR HOMEOWNERS

WHAT ARE TWO-SYSTEM CONTROLS AND HOW DO THEY WORK?

> **Two-system controls are a single control package that switches between heat pump and other heating systems at a pre-determined condition such as outdoor or indoor temperature.**

Prioritizing the heat pump minimizes the use of fossil fuels or inefficient heating systems which reduces the carbon footprint of the home while maximizing savings and comfort. Two-system controls allow for "set-it-and-forget-it" operation which requires less effort and management to control. Concepts addressed for two-system controls also apply to systems with more than two heating types.

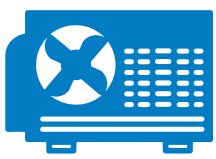
WHEN SHOULD TWO-SYSTEM CONTROLS BE INSTALLED?

Heat pump systems do not require two-system controls. If the heat pump is properly sized for a whole home solution, it will be fully capable of heating the home even in cold climates. Two-system controls should be installed with heat pumps installed with high efficiency secondary heating systems. The controls will manage the two-systems to simplify operation and ensure they work well together.

TWO-SYSTEM CONTROL STRATEGIES AND WHEN TO USE

Two-system controls should be configured to prioritize heat pump operation as the primary heating, then switch to or supplement with the other system as secondary heating. Two-system controls are configured to take advantage of the heat pump's high efficiency to minimize cost and carbon production.

Primary Heating



Secondary Heating

What are your priorities?

All controls are installed to ensure comfort and safety. Going beyond comfort, decide how your controls should be configured.

Ease Of Use, Energy Efficiency, And Carbon Footprint Reduction

Ask your installer to set up indoor temperature controls. This method will only engage secondary heating if the heat pump needs help maintaining indoor temperature. This maximizes use of the heat pump which is the best way to reduce your carbon footprint. This can be configured if your system has one or two thermostats and should not need adjustment.

Cost Reduction

Ask your installer to calculate the economic switchover temperature. At colder temperatures, the secondary heating system is cheaper to operate than the heat pump. At warmer temperatures, the heat pump is cheaper to operate. The cost savings are difficult to estimate and usually relatively small. This method requires re-evaluation annually as fuel and electricity costs change. It is suggested that other methods be used when possible.

Questions for Your Contractor

- How are my heating systems being controlled?
- What signs can I look for to ensure my systems are operating as planned?
- How do I adjust indoor temperature and fan speed?
- How do I monitor electric and fuel usage?

Perfect Your System's Controls

Controls are installed to ensure the two heating systems work well together to keep the home comfortable. When configured properly, the systems should operate effectively with very low management. Some small adjustments may be necessary to perfect your control settings. If you experience these issues, call your contractor:

- High bills or excess fossil fuel use may indicate overuse of secondary heating.
- Frequent on/off cycling may indicate the switchover conditions are incorrect.
- Secondary heating engaging at high outdoor temperatures may indicate an error in the controls.
- Some heating systems, such as radiant floors, take time to heat up which may cause a delay in secondary heating. The indoor temperature method helps minimize impacts of secondary heating delay.
- Uneven temperature or hot and cold zones throughout the home may indicate mismatched zoning, secondary heating delay, or a needed increase in switchover temperature.

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