

Zonal Heating Systems FAQ

Brrr! Some of our rooms are too cold!

Most homes have one or two rooms which always seem cold. Or, homeowners have rooms they want to keep warmer than the rest of the house. A child or elderly person may need a warmer room, or maybe you would like to heat the bathroom in the morning without heating the entire house.

Typically, the cold room is the room furthest from the central furnace or, it may be a room addition or remodel, like a finished basement or converted garage. The central heating system might be ducted into that room, but the flow of heat isn't enough to keep it warm without overheating the rest of the house. With a central heating system, turning the thermostat higher to fix these problems can waste energy.

Solution...

Install wall heaters in the one or two rooms you want warmer to increase the temperature in just those rooms and provide more comfort.

This cold room solution saves money on monthly heating bills. It's less expensive to install wall heaters compared to increasing the temperature throughout your entire home or modifying your central heating system. Plus, you have the added comfort of being able to better control the temperature in specific rooms.

Which type of electric heat should I choose? A fan-assisted wall heater, baseboard, or convection?

Each system has its advantages. Consider the following before you decide.

Heat Time

Wall heaters provide heat instantly and the fan forces the heat into the room immediately. Baseboard heaters require 15-20 minutes before you feel the heat in the room, and convection heaters heat the objects in the room. Although convection heat might take longer to heat at first, it retains the heat longer and doesn't cycle on/off as often.

Space

Baseboard heaters use more space than wall heaters. A 1,500-watt baseboard heater requires 6 feet of wall space, while a 1,500-watt wall heater or convection heater requires 14". Since you shouldn't put anything in front of any heater, wall heaters allow more flexibility in furniture arrangement.

Noise

All types of electric heaters are fairly quiet; a baseboard heater is silent, making it a good choice for those who are sensitive to noise in sleeping areas.

What About the Voltage?

Similarities:

Both 120 and 240-volt heaters operate with 100% efficiency and both use the same amount of electricity.

Differences:

The differences come with the breakers. A 240-volt heater requires double-pole breakers; 120-volt heaters only require single-pole breakers (see chart).

The National Electric Code states that the maximum wattage allowed on a 120-volt circuit is 1,500. A 120-volt heater draws twice the number of amps as a comparable 240-volt heater.

Remember Ohm's Law:

Volts AC	Breaker Size	Wire Size	Max. Watts
120	20 Amp Single-Pole	12/2 with Ground	1,500
240	20 Amp Double-Pole	12/2 with Ground	3,840
240	30 Amp Double-Pole	10/2 with Ground	5,760

Amps x Volts = Watts

You can determine most of the answers to your electrical questions using this formula.

Can I wire a 240-volt heater to a 120-volt circuit?

If you wire a 240-volt heater to a 120-volt circuit you will only get one-quarter of the wattage that the heater is designed to produce. Since the heater is not designed for this, the warranty would be voided.

What happens if I wire a 120-volt heater to 240-volts?

It will burn the heater up. In fan-forced heaters, the heater may run fast and furious for a few minutes and then the motor and element will burn out. Baseboard elements will burn out very quickly. Not a good idea, we don't recommend it and, your warranty would be voided. *Simply put, don't do it!*

Is my new baseboard heater supposed to smoke when I turn it on?

Actually, yes, there could be a small amount of smoke from residual oil left on the element fins at the time of manufacture. It takes approximately 20 minutes for this to burn off. It may be necessary to open the window to allow the smoke to escape.

What size heater should replace my old baseboard?

Are the existing heaters providing enough heat? If they are, then replace them with the same wattage. If you are using the same wiring and breaker it's very important that you **do not increase** the wattage so you don't overload the circuit and create a safety hazard. Check the Internet for heater sizing call our Member Services Department. You should **ALWAYS** replace one heater with another heater of the **SAME VOLTAGE**, unless you intend to change the breaker and possibly the wiring.

How far from the floor should my baseboard heater be mounted?

A baseboard heater can sit right on the floor when installed or mounted on paneled walls.

How close can I put something in front of my heaters?

You shouldn't put anything in front of heaters. Baseboards need a 12" minimum clearance in front

and 6" above the heater. For drapes, we recommend 12" above the heater. If you put a couch in front of the baseboard it will heat the couch before any of the heat gets into the room, not a very efficient use of energy. Fan heaters should also have an unobstructed air path for at least 12" in front of the heater. Wall heaters have safety devices to shut the heater off if they are blocked.

Are screens available for the opening on my baseboard heaters?

No. It's important not to impede the flow of air from a baseboard heater.

What does CFM mean?

CFM stands for Cubic Feet per Minute and is the measure of air movement. The number tells how much air is going through the heater and is determined by measuring the area of the hole in front of the heater and multiplying that by the speed of the air, in feet per minute, coming out of the heater.

Can the wall heater grill become warm enough to burn a child's hand?

The grill does become warm, however, the child's natural reflexes typically causes them to pull their hand away.

How can I heat areas that are open to outside air?

YOU CAN'T! In applications where doors are open a lot, a space heater is not the proper selection. Instead, use radiant heaters which heat objects (people, work areas, etc.) instead of the air.

How close to the wall heater housing can wall insulation be installed?

Check the manufacturer's directions. In most cases the insulation can safely come in direct contact with the wall heater housing.

Why don't wall heaters go on outside walls?

Heat from your fan-forced heater should be directed toward or along the outside (cold) wall. This is accomplished by placing the heater on an inside wall. Placing a fan heater on an outside wall requires cutting a hole in the insulation, which reduces the thermal integrity of the outside wall.

Is my heater supposed to glow?

No. Usually when a heater glows it needs to be cleaned.

Can I repaint my heater another color?

We don't recommend repainting heaters. Often the paint process used is a powder coating that is electro-statically applied and baked on. Painting the heater could void the warranty. If you choose to paint the heater anyway, use high temperature paint, such as engine block or wood stove paint.

Should I wire parallel or in-series?

Parallel is best. One reason not to series wire is, if one heater goes out, they all go out. Similar to when one strand of Christmas tree light isn't working they all stop working. More importantly, with each added heater in a series there is a decrease in voltage and the heater does not work as it was designed. Both baseboard and fan heaters will give off less heat and, it could affect the motor, causing it to burn out sooner. **We do not recommend wiring in series.**

Should I use a wall or built-in thermostat and where should I locate them?

For the best control, a wall thermostat is preferable for both wall and baseboard heaters. Wall thermostats sense the room temperature where your body does - typically 4 to 5 feet from the floor. Wall thermostats are also not as susceptible to drafts and the effects of a heat source as built-in thermostats.

For both baseboard and fan heaters, locate the thermostat across the room on an inside wall. The easiest location for a fan heater is about 5' high in the same stud cavity above the heater. If you have two or more fan heaters in one room, centrally-locate the thermostat and be sure it's not placed in a draft or direct sunlight, as this will affect the thermostat performance.

Can I put all the heaters on one thermostat?

Each room (or zone) needs its own thermostat.

What is a double-pole thermostat? Single-pole thermostat? Heat-anticipated thermostat?

Single-pole thermostats only break one side of the line and only have a low position on the faceplate. Double-pole thermostats break both sides and have an off position. Heat-anticipated thermostats have a resistor that introduces heat to the sensing device, causing the thermostat to shut off a little sooner. It takes into account the reaction time of the thermostat as well as the residual heat that dissipates after the heater is shut off which helps prevent temperature swings common in non-heat-anticipated thermostats. A heat-anticipated thermostat is well worth the minimal extra cost for the added comfort.

Can I use a double-pole thermostat with a 120-volt heater?

Yes. If you use a double-pole thermostat, wire it the same way you would a 240-volt heater.

Which is better, a bi-metal or electronic thermostat?

For accuracy, **definitely** electronic. The temperature swing is one to two degrees compared to five or six degrees with a bi-metal thermostat. If cost is an issue and you use a bi-metal thermostat, try to use a heat-anticipated version.

For more information, contact our
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