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Frequently Asked Questions: How to Buy A Standby Generator

Air-conditioning, lights, refrigerators, televisions. Whether it lasts for several hours or several days, a power outage affecting these and hundreds of other devices can inconvenience you and your family and damage your home and possessions. And with many home medical and health machines operating on electricity, that inconvenience can turn into a real health risk. Many Americans are turning to standby home generators to make sure they have the power they need during an outage.

If you decide that a standby generator is right for you, the following tips and information should help you get started in choosing and installing one correctly and safely.

How does a standby generator work?

Standby generators are designed to automatically provide electricity to your home during a power outage. The automatic system constantly monitors utility power 24 hours a day. When power from the utility line fails, the automatic transfer switch (ATS) will safely disconnect the utility feed wires and connect the generator feed. This eliminates the harmful back-feeding of electricity from the house's generator power to the utility lines. A signal is sent, starting the generator and powering up your home's circuits. Automatic generators continue to monitor utility power and reverse the "switch" when the power outage ends. They return to standby mode, waiting for the next outage.

Unlike a portable generator, you do not need to activate any switches since the process is completely automated. And because they run on propane or natural gas, you don't need to find and transport gasoline on a daily basis.

Most standby generators are designed to exercise themselves once a week, a function that can be set/adjusted by the owner. During this exercise period (approximately twelve minutes) the engine is lubricated, the battery charged and a diagnostics check is run. Some manufacturers offer diagnostic reporting inside the home to alert the owner to any potential problems associated with the generator's operation.

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The Propane Education & Research Council was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of the Propane Education & Research Council is to promote the safe, efficient use of odorized propane gas as a preferred energy source.

What is the difference between standby and portable generators?

Standby generators are permanently installed and automatically supply electricity to selected circuits during an outage whether you are home or away. Propane and natural gas offer a safe, long-term fuel supply and are more environmentally friendly than gasoline or diesel fuels.

Portable generators supply electricity to selected appliances through extension cords. They are fueled by gasoline, which can be difficult to obtain, store and transport during a blackout. Carbon monoxide is always a concern in the safe use of portable generators as are the weather conditions in which the owner must operate in order to hook up the portable generator to selected appliances.

What components and features come with a standby generator?

When choosing a generator, make sure it comes with the following main components:

- Main alternator unit
- Automatic Transfer Switch
- Generator fuel shut-off valve
- Automatic shutdown protection system
- Factory warranted generator enclosure

The engine in a standby generator can be cooled by air or liquid. Air-cooled generators are better suited to small homes (less than 2,400 square feet) and serve as backup power for selected circuits in the home. If you have a large home, multiple air conditioning units (either window or central air), or several large appliances or medical equipment that needs constant power, then you might want to consider a liquid-cooled model, which will provide backup power for the whole house and light commercial applications.

What should you budget for a standby generator?

The cost of a standby generator depends on several items, including the basic equipment, installation, permit applications, and fuel source. Generally, a standby generator system should cost between \$2,800 and \$10,000 (product + installation), with the cost of the generator starting at \$1,500.

Where should you buy your generator?

You can buy your generator from a DIY retailer, online retailer or from a generator dealer who will offer installation and service. Whichever method you choose, make sure it comes from a reputable store or dealer and with a comprehensive warranty.

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How should you choose your standby generator's wattage?

Whether you are planning for a power outage that lasts several hours or several days, the most important factor in choosing a standby generator is that it will provide enough energy for your safety and comfort. The more circuits and appliances you want to power, the more wattage you will need.

An average home's essential appliances will operate on an air-cooled standby generator with 7,000 – 13,000 watts of power. High wattage "comfort" appliances such as central air conditioners, pool heaters and dryers require a lot of electricity when they first start up, so that may influence the size of the generator you need or how many appliances you will be able to power. Also, living in a warmer climate can mean a larger air conditioner that will require more dedicated circuits to the generator.

Most appliances are rated for running wattage (the amount of electricity necessary to run the appliance) and surge wattage (the higher amount of electricity needed to start electric motors commonly found in household appliances such as central air conditioning or refrigerators). To accurately tabulate your wattage requirements, check the appliances' user manuals or the data plate on the back of the appliance. A certified electrician can also provide an accurate reading of what your needs will be based on the appliances and circuits you want routed to the generator during an outage.

The following is a general guideline:

| 7,000 Watts | 10,000 Watts | 13,000 Watts | 16,000 Watts |
|------------------------|-------------------------------|-------------------------------|-------------------------------|
| 8 circuits | 10 circuits | 12 circuits | 16 circuits |
| Window AC (10,000 BTU) | 3-ton central air conditioner | 4-ton central air conditioner | 5-ton central air conditioner |

What fuels are used in a standby generator?

Standby generators run on either propane or natural gas and can be hooked directly to a homeowner's existing gas lines, which means that in the event of a severe storm, homeowners have access to a reliable source of fuel to power the generator. In fact, propane marketers are able to provide homeowners with an underground tank that is protected from the elements so that a constant source of fuel is available. On average, a 250 gallon propane tank fueling a seven kilowatt standby generator would provide enough electricity to power a home for five days, while a 500 gallon underground tank would provide 11 days' power.

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Where should you locate your standby generator?

Most standby generators don't take up any more space than a central air-conditioning system. In most cases, customers have them installed in close proximity to their central air unit outside their home. If you choose a standby model, keep a few things in mind when placing it. A standby generator should always be positioned in a well-ventilated outdoor space and never next to a window because of potentially harmful carbon monoxide exhaust. You should check with local codes to see if there are setback guidelines in your area.

Should you install a generator yourself?

No. It is highly recommended that you have your final generator connections done by licensed professionals. Some customers take the initiative to place and mount the various components, but rely on professionals for electrical and gas connections as well as the proper permitting. Also, it is sometimes necessary to have a generator professionally installed to maintain its warranty.

Remember to check with the business that sells you the standby generator about possible municipal permits you may have to obtain to install and operate it. Many stores or businesses will obtain these permits for you as part of their installation contract.

Should you notify your utility company that you have a standby generator?

Yes. This information is provided to line workers restoring power after an outage so that service won't be delayed while they check to see that a generator is working properly.

Where can I find more information about standby generators?

For additional information about standby generators, including a list of manufacturers, please visit www.usepropane.com.

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