

Introduction

As a master electrician, I have installed quite a few standby generator systems – of many different brands. Thus I am in a unique position to do a direct comparison. That is, which system is the easiest to install, which is designed better, which is more versatile, etc. The bottom line is, which system would a master electrician put in his/her own house. The answer is: the PowerStay system by GenTran Corporation.

Perhaps one of the biggest strong points of the PowerStay is the ability of the system to incorporate arc-fault (AFCIs) and ground fault circuit interrupters (GFCIs) by simply adding the breaker to the PowerStay panel. To my knowledge, no other standby panel accepts these. This means that you can add bedroom, bathroom, and outside outlets to the standby generator system. Other panels, with permanently mounted breakers that cannot be removed or added to, will be breaking code if you cut over to a common breaker when you cut in the standby panel. That is, if your main panel is using GFCIs and AFCIs, you cannot put those circuits into a standby panel unless that panel can give the same protection.

Material

What material do electricians want their standby panel made of? In one word: steel. Electricians want something solid that won't break. Several years ago a major manufacturer came out with a plastic main service panel box – thinking electricians would prefer it over metal. We didn't, and they pulled it off the market. The same logic goes with generator panels, we want something solid that doesn't bend, break, or crack. We want steel. This eliminates the Briggs and Stratton and other plastic-base units.

Versatility

All generator panels are not created equal. It does no good to install a generator panel if it doesn't do what you want it to. That is, most lock you into a set of breakers (built into the frame) that you may not be able to use. This defeats the whole logic of putting the system in from the get-go.

For example, if the pre-wired system comes with a compliment of breakers (or equivalent) that are 15 amp, you are stuck with (cutting into the generator) only the 15-amp circuits that are in the main panel. If your fridge is on a 20-amp circuit, forget it. Same logic with your freezer. Typical examples of this are the Generac, Reliance Controls, and Briggs & Stratton systems. However, the Briggs & Stratton unit has an additional problem of breaker arm accessibility. It is quite hard to turn the breakers on and off due to the panel design. That is, the on/off flippers are flush with the panel cover and you have to get a fingernail down into a narrow slot to throw the breaker on and off. This is impossible to do with gloves on, and sometimes hurts your fingers.

Since there is no way the designers of the panel can know ahead of time your exact circuit needs, they compromise. You might get a 20-amp circuit, you might not. On the other hand, some manufacturers install almost all 20-amp circuits in the standby panel. This means you cannot cut in the fridge if it is on a 15-amp circuit in your main service panel. Bottom line: Any standby power system that has fixed or specialty breakers permanently mounted to the panel frame limits your versatility to the point that you may not be able to provide emergency power to the needed circuits.

So what is the solution? The absolute best way is to let the electrician decide what circuits to cut in after the customer tells him/her what appliances need emergency power. That means you need a standby generator panel that has complete versatility. And the only system I know of that does that is GenTran's PowerStay system. This system includes an assortment of breakers, but you can change them out to suit your needs. With this system, you pop the Siemens interchangeable type breakers in and out like a common panel. Thus, you can install any 15- or 20-amp circuit you want. Same with double-pole circuits. If you want the electric water heater on the emergency back-up system, then install a 30-amp double pole. Want the water pump on the system? Install a 20-amp double pole. Since the breakers are not pre-wired, you install a Siemens' or interchangeable type breaker for whatever you want on the system.

Corded vs. hard-wired systems

When you install a standby generator, you have to make a decision as to how you are going to connect your generator to the generator panel. Is it to run off a cord from the generator panel or are you going to hard wire conductors from the panel to the generator location outside (to the power inlet box) – and then run a cord from the power inlet box to the generator. Indeed, you might not even know that bit of info when you are purchasing the standby system.

This takes us back to versatility again. The standby panel must be versatile enough to accommodate both – many do not. Some units force you to hardwire it or to use a cord connection, while others require you to buy additional accessories to install it the way you want. With the PowerStay unit, you can plug directly into the box or hardwire the system over to a power inlet box where the generator is located. If your system cannot do this, you will be forced to make your own very long, very expensive, large gauge cord.

Design

We assume that the design is going to be logical and durable. Experience has shown that this is not always the case. For example, the Briggs and Stratton unit has a plastic hinged cover that binds on the flex conduit adapter. Push the lid down to get it out of the way and it breaks off. You can't go wrong with GenTran PowerStay design; it is simply a common steel panel that you put breakers in. The utility breaker is connected to the generator breaker so that if you throw the utility breaker on it forces the generator breaker off – and vice versa. Now all you have to do is install breakers to match what you want in the system.

Speed/ease of installation

All the systems installed reasonably fast – within 1-3 hours depending on where the generator was to be located. All come with wires (that jump from standby panel to main panel) which are lettered so you won't get them mixed up. However, expect a significant delay, and a significant expense, if you pick a system other than PowerStay and it does not have an easy way of getting the circuits from the standby box to the generator in a remote location.

For more information, contact:

Rex Cauldwell
www.rexcauldwell.com
(540) 482-0109

This was an independent analysis done for the benefit of the consumer and contractor, and I received no compensation for it.

BIOGRAPHY

A third generation tradesperson, Rex started working in the trades as soon as he was able to hold a wrench and is the owner/operator of Little Mountain Electric and Plumbing. He has written several books on the art of working within the trades.

To disseminate trade information, Rex gives electrical and plumbing seminars nationwide for inspection organizations such as CREIA, ASHI, and Pillar to Post, writes/edits/photographs for many national books, magazines, and major corporations. These include Siemens Corporation, Time Life, Readers Digest, Fine Homebuilding, Lowe's, Tools of the Trade, Handy, The ASHI Reporter, cornerhardware.com, Journal of Light Construction, among others.

Rex has a degree in Electronic Engineering from DeVry Institute of Technology (now DeVry University) in Chicago, is a consultant and Q & A reference for various corporations, book and magazine publishers, and educational CD-ROM suppliers. He has been featured in one electrical how-to video and is an expert witness. He currently has over 100,000 book copies in print and has written hundreds of articles.

His books *Inspecting A House*, *Wiring A House*, and *Safe Home Wiring Projects* are sold at all bookstores nationwide. With his down-home style of speaking and writing, he is one of the most popular how-to authors and speakers in the United States.