



2004 SMALL BUSINESS POWER POLL

GUIDELINES FOR DETERMINING AND OPERATING BACKUP POWER

The following guidelines will help small businesses identify, install and test the best type of backup power system to maintain operations during power failures.

1. Determine Your Objectives

Before you get started, think through what you want your backup system to accomplish. An uninterruptible power supply (UPS) provides protection against **short-term outages** and damage to computers and data from power surges and other anomalies. Typically, UPS systems have enough battery capacity to provide five to 15 minutes of power during an outage.

To keep business systems functioning during **longer outages**, a backup engine-generator power source (gen-set) and automatic transfer switch (ATS) is required. The gen-set, automatic transfer switch and UPS can work in concert during an outage to provide continuous power to essential loads.

Comparing the cost of backup equipment to the cost of not having a backup system – lost productivity, lost revenue and equipment damage – can help determine the appropriate level of protection for your business.

2. Make Protection a Priority

With all the day-to-day pressures of running a small business, it can be difficult to carve out time to create a backup power plan for your business. But careful planning is essential to success. You are not preparing for “if” there will be a power outage, but “when” and “how long” it will last.

3. Decide What Needs Power

Your backup system must provide power for all essential business systems. Your specific solution will depend on the type of systems you are backing up. For example, systems can provide backup power for lighting, heating, air conditioning, freezers, cash registers, ATMs, ventilation, and production processes. Computers, telecommunications, networking systems and other sensitive electronics demand that a UPS be used in tandem with the gen-set to provide a smooth power transition. Your backup power system’s capacity should exceed the maximum power draw (in kilowatts) of all the loads that have to be served at one time, including higher startup loads.

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To determine the size of your backup power system:

- Identify the critical loads that you really need – including risk evaluation of what you stand to lose if a power outage idles any equipment tied to those loads.
- Total the wattage of the equipment on the circuits you'd like to power.
- Check the labels or owner's manuals for ratings for your critical equipment.
- Add about 25 percent as a reserve for the startup power needed for most electrical devices.

Service businesses that specialize in backup systems, such as computer resellers and electrical contractors, can help ensure backup systems are sized appropriately.

4. Select the Right Equipment

If your business is computer dependent, the type of UPS it needs will be required by the specifics of your situation. Offline and line interactive UPS systems provide an economical solution to short-term outage protection for small businesses. If a gen-set is part of the backup system, an online double conversion UPS system should be utilized.

The gen-set can be configured with a manual or automatic transfer switch. The automatic transfer switch eliminates the need to manually start the generator in the event of an outage and, working with a UPS, can assure uninterruptible power to critical systems. To make backup power seamless and truly hassle-free, you can get an automatic transfer switch pre-packaged with other components. For example, a transient voltage surge suppressor will protect your business' equipment from power spikes. A power distribution panel and disconnect breaker also can be included to eliminate the need to install multiple cabinets and wiring.

5. Consult an Electrician

Most small uninterruptible power systems (less than 3000 VA) are "plug and play" and need no further professional installation help.

If a gen-set is part of your backup system, it must be installed by a qualified electrician or electrical contractor. The transfer switch and associated equipment must be installed in accordance with the National Electrical Code and all applicable local codes. In addition, the equipment must be installed with a building permit and be inspected prior to operation.

To ensure compliance with applicable codes, a UL 1008 listed automatic transfer switch is required to switch power from the municipal power supply to your backup generator when the power fails, and back to utility power once power returns.

6. Test Your System Regularly

Regularly test your gen-set backup system to make sure it can provide power to your essential loads. Automatic transfer switches are available to automatically test your backup power source once a month.