

Quality Power

CASHMAN
Power Solutions



Quality Power – Solving Challenging Problems with Simple, Complete Solutions

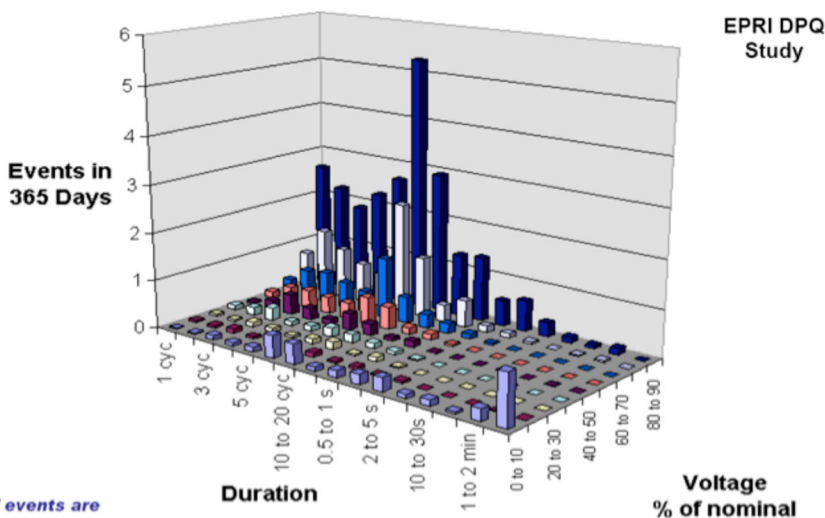
Power disturbances can cost your business significant money in:

- Lost labor
- Lost data
- Wasted material
- Lost productivity

Typical Power Outages:

As shown in figure 1, the vast majority of power disturbances are less than 1 second in duration. You can protect your critical electric loads with industry-leading products and support from Cashman Power Solutions.

Figure 1: RMS Voltage Variation Sag and Interruption Rate



Note: 98% of events are disturbances well under 5 secs in duration.

Power Quality Protection You Can Trust

Cashman Power Solutions and its subsidiary, Computer Protection Systems (CPS), have been providing and servicing Uninterruptible Power Supplies (UPS) systems for over 20 years. We have the products you need and the support you can trust to ensure your critical loads will be protected.

Cat Flywheel UPS

The Cat UPS system uses flywheel energy storage, which is typically more reliable than conventional lead-acid battery UPS.

Advantages over batteries include:

- Low maintenance - the flywheel will likely outlive the building.
- 98% energy efficient - versus 85-92% for most conventional systems
- Efficiency applicable regardless of load factor
- Compact - the footprint is just 30% of the size of standard static UPS systems.
- Temperature independent – reasonable hot or cold conditions do not affect performance or service life.

Green Technology

No batteries means saving the environment from hazardous waste disposal of old batteries. High efficiency means energy savings for your building.

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Configurations to Suit Your Needs

The Cat UPS is ideal for protecting:

- High-value production processes.
- Voltage-sensitive variable-speed drives.
- Computer and data networks.
- Communication systems.

Available Configurations Include:

- Glitch protection. A stand-alone flywheel UPS protects against voltage sags or surges and “rides through” brief power interruptions.
- Continuous power. The flywheel UPS interconnects with any standby generator set and auxiliary equipment to provide a continuous power solution.
- Critical power. The flywheel UPS can provide redundancy for a battery type UPS system, increasing reliability tenfold or even more.

Other Considerations;

The Cat Flywheel UPS, while offering many advantages over battery systems, does have some disadvantages:

- Line Interactive Topology – loads are still technically directly connected to incoming power
- Limited ride-through time – 12 seconds at full load. While this is more than enough time for a generator set to start and be online, a generator failure will result in a hard system crash with no notice.

Mitsubishi Double-Conversion UPS

Mitsubishi Electrical Power Products Inc. (MEPPI) is widely recognized as providing the most technologically advanced electrical system products in the world. Their UPS product is no exception.

- True online double conversion topology – your loads are always protected from utility line anomalies
- True IGBT (Insulated Gate Bipolar Transistor) on the input and output.
- Not just any IGBT, but 5th Generation IGBT – the smartest and most efficient online UPS in history
- Highest Full Load Efficiency of any online UPS in the industry – as high as 98%. While this is excellent for an online UPS, others claim to meet this same standard. However, nobody runs their UPS at full load – part load efficiency is much more critical...
- And here's where the real money is saved – Mitsubishi UPS is still 94%+ efficient down to ¼ load factor

SAVINGS EXAMPLE: Typical double conversion 750kVA UPS at 85% efficiency at half load vs. Mitsubishi 750kVA UPS at 95% efficiency at half load:

- Assume:
 - \$0.15/kW-hr average utility rate (blended rate):
 - 750kVA/2=375kVA UPS output
 - Competitors' UPS require 441kW to provide 375kVA output @ 85% efficiency
 - Mitsubishi UPS requires 395kW to provide 375kVA output @ 95% efficiency
- Competitors' utility cost: 441kW x 8760 hours per year x \$0.15/kW-hr = \$579,474/year
- Mitsubishi's utility cost: 395kW x 8760 hours per year x \$0.15/kW-hr = \$519,030/year
- That's a \$60,000 per year savings in utility costs alone. For a \$150,000 UPS, that's an ROI of less than 3 years!
- And the savings don't stop there – higher efficiency equals less heat rejected which equals lower cooling costs, saving additional money. The product is half the physical size of most competitors' products, so there are real estate savings as well. The product operates at close to unity power factor so feeder breakers and cable sizes can be reduced.

Net Result: When you buy your UPS from Cashman Power Solutions, we offer the most efficient UPS product available. Whether you need the ultimate green product with our Cat Flywheel UPS or the most efficient online conventional UPS with Mitsubishi, we have it!

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Additional offerings:

Genset Start Up Feature

Our UPS products can be used in conjunction with the CAT "gen-set start" feature that utilizes UPS power for engine cranking giving you a 99.996% chance of your generator starting.

World-Class Product Support:

We have numerous factory-trained and certified technicians able to keep you up and running when you need it most. We have the latest technology diagnostic tooling to provide you with the ability to make predictive repair decisions rather than emergency ones. If you do have an emergency, you can be confident the technician who arrives at your site will be courteous, professional, and expedient while carrying out repairs.

One Stop Provider Assurance:

When you buy a complete Generator, Switchgear, and UPS system from Cashman, we guarantee complete system compatibility. No onsite "blame-games."

Accessories

- Clean Room Air Conditioners
- Computer Room Racks
- Remote Power Panels
- Power Distribution Units
- Batteries of all sizes, brands, and types
- Compact UPS
- Surge Suppressors

Call Cashman for Help - 1.800.937.2326

No one product solves every customer challenge. With our complete portfolio of products, we have a product to support your operations reliably and efficiently. We can assist you in identifying sizing and space requirements for your needs at the installation you are specifying. Contact us for these or other specifications.