

UPS Case Study | Absorbing MFP Inrush Current to Keep a FAX Order Center Running

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Overview

UPS implementation at Oriental Bakery Co., Ltd. The sponge-and-dough breadmaking process requires several hours of fermentation and maturation, so previous-day orders are essential to the next day's production plan. A portable UPS with a bidirectional inverter and expansion batteries protects the MFP, FAX server, and network path without interruption so orders can continue to be received through the cutoff time.

Case Answer

The protected asset is not the multifunction printer; it is the business path that completes previous-day orders

Oriental Bakery Co., Ltd. receives previous-day orders through its FAX order center so they can be reflected in the next day's production and shipping plan. Because the sponge-and-dough process requires several hours of fermentation and maturation, orders must be finalized by the cutoff time and passed to production in order for the business process to continue.

The outage-protection target is not the multifunction printer alone. The FAX server, ONU, router, network switch, multifunction printer, and the path used to confirm received data all have to remain operational continuously for order intake itself to function.

The existing UPS provided only about 10 minutes of runtime, while the multifunction printer introduces variable loads and inrush current from its fuser heater and motors. A design based only on steady-state power consumption therefore could not satisfy both long-duration outage requirements and rapid load variation.

The system was redesigned around a portable UPS with a bidirectional inverter, expansion batteries, hot-swappable battery operation, and outage/event notification so that the complete order path—including the multifunction printer, FAX server, and communications equipment—can continue without interruption.

Scope

- FAX order center receiving previous-day orders
- Multifunction printer, FAX server, ONU, router, and network switch
- Order-intake workflow that feeds the next day's production and shipping plan

Constraints

- The order path must remain available through the order cutoff time
- The existing UPS provided only about 10 minutes of runtime
- The system must tolerate variable load and inrush current from the multifunction printer
- The entire path, including communications equipment, must remain available during a long-duration outage

Evidence / References

Kei Communication Technology Inc. installation and implementation record for this case

Supports: Review of the previous-day-order workflow at the FAX order center, approximately 10 minutes of runtime from the existing UPS, MFP inrush current, the FAX server and communications path, and implementation of a portable UPS with a bidirectional inverter and expansion batteries.

URL: <https://www.ieee802.co.jp/cases/case-007-fax-reception.php>

Oriental Bakery recruitment website, “ How Bread Is Made ”

Supports: Reference information on the bakery production process, including the sponge-and-dough method.

URL: <https://orientalbakery-recruit.com/topics/bread/>

Kei Communication Technology Inc., “ Why Do UPS Load Faults and Overloads Occur? ”

Supports: Technical explanation of UPS overload and protective shutdown caused by loads such as multifunction printers.

URL: <https://www.ieee802.co.jp/articles/article-049-ups.php>

Kei Communication Technology Inc., “ 16 UPS Pitfalls ”

Supports: Related technical analysis covering insufficient runtime and other failure modes that remain after a UPS is installed.

URL: <https://www.ieee802.co.jp/articles/article-075-ups.php>

Original Source

<https://www.ieee802.co.jp/cases/case-007-fax-reception-en.php>

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