



## Critical Devices Get Clean Bill of Health with Eaton UPSs

**Product:**

Eaton® 9390 UPS

**Location:**

Vista, Calif.

**Market Served:**

Medical Device

*"We've been extremely happy. Eaton is our standard going forward."*

*- John Iraci, VP enterprise infrastructure*

**Background**

As a leading global provider of high-quality medical devices that provide solutions for musculoskeletal health, vascular health and pain management, DJO Incorporated's products address the continuum of patient care from injury prevention to post-surgical rehabilitation to injury from degenerative disease. DJO offers a broad range of products that include rigid and soft orthopedic bracing, hot and cold therapy, bone growth stimulators, vascular systems, electrical stimulators used for pain management, and physical therapy products. The company's surgical division offers a comprehensive suite of reconstructive joint products for the hip, knee and shoulder. DJO's products are marketed in more than 70 countries worldwide under the brands Aircast®, DonJoy®, ProCare®, CMF®, Empi®, Saunders®, Chattanooga, DJO Surgical, Cefar®-Compex® and Ormed®.

Orthopedic and spine surgeons, podiatrists, orthopedic and prosthetic centers, third-party distributors, hospitals, surgery centers, physical therapists, athletic trainers and other healthcare professionals rely on DJO products to prevent injury, treat chronic conditions and aid in recovery.

**Challenge**

Ensuring the ongoing health of its critical data center equipment became a prime consideration for the medical device company when it relocated to a brand new facility two and a half years ago. Although DJO was quite satisfied with its existing uninterruptible power system (UPS) – a 40 kVA Powerware® 9330 – additional capacity and redundancy were required in order to accommodate the company's expansion plans.

Aside from redundancy, DJO sought a power protection solution with highest levels of reliability and availability — capable of preventing any injury to its critical data center equipment, which includes more than 150 traditional and virtualized servers, a VoIP phone system, and a plethora of networking devices such as routers, core switches, circuits and firewalls.

"The UPSs are highly essential because if we didn't have that protection during an outage, we would lose access to all of our systems that are critical in nature," explains John M. Iraci, vice president, enterprise infrastructure.

A space-saving design and high power factor rating were other important considerations when the company began investigating UPS options.

**Solution**

Rather than undergo a complete reconstruction, DJO was able to build on its existing solution. By pairing the 9330 UPS with a second, identical 40 kVA model – then purchasing a new 80 kVA Eaton 9390 UPS – the company not only achieved its desired capacity and redundancy requirements, but was able to deploy a cutting-edge three-phase power protection solution.

"Our existing unit still had plenty of life, so I just added another 40 kVA to it and bought a 9390 to make the entire thing redundant," Iraci explains of the decision.

Indeed, the 9390 proved to be just what the doctor ordered, boasting an impressive combination of power performance, battery management, scalable architecture, flexibility, power density, and a comprehensive



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warranty and service plan. With a double-conversion design that offers the highest level of protection available, the unit safeguards DJO's data center equipment against a comprehensive range of power anomalies.

Even more, the 9390 enables the company to parallel for redundancy using Eaton's Powerware Hot Sync® technology, which allows up to six UPS modules to operate in parallel without the need for inter-module connectivity. Doing so maximizes availability and eliminates the system-level, single-point-of-failure inherent in traditional parallel configurations. Each UPS module in the 9390 is configured with its own backup battery system, as opposed to standard systems that generally incorporate a common battery system.

DJO wired the solution so every device receives two separate power feeds. "We have the 'A side,' which is the two 9330s, and the 'B side,' which is the 9390, and both have separate power feeds coming from main feed," Iraci explains. "So we could fail either way and still be good. We could drop a whole half of the load and still not drop any equipment in the room," he acknowledges. "And we have tested that several times."

More importantly, the solution has proved to be steadfast during real-life power quality scenarios. "Last week, the entire building lost power," Iraci reports, "but we avoided any issues in the data center because our UPS kicked on immediately."

Another key benefit of the 9390 is the unit's unmatched power performance, including an output power factor of .90. "The power factor was compelling for us," Iraci confirms. "It increased significantly over that of the 9330."

Furthermore, the unit's high efficiency rating of 99 percent with Energy Saver Mode lowers total cost of ownership for DJO by reducing the cost of power to support protected loads, an advantage that directly ties to the company's green initiative. "We want to cut power usage in all areas," Iraci acknowledges.

Because the 9390 runs efficiently and produces less heat, it also lowers facility cooling costs. In addition, the UPS's low total input harmonic current distortion (THD) of less than 4.5 percent enhances compatibility with upstream power systems — most notably generators — while the unit's input power factor of 0.99 minimizes auxiliary generator sizing requirements. This was advantageous to DJO, as its new facility relies on a generator to help ensure continuous uptime.

The 9390's exceptional level of protection is also ringing true for DJO's VoIP system. "Eaton does a lot to make sure VoIP systems are covered," Iraci points out. "Those systems can be a little trickier than most things you need power protection for. It made us feel a lot more comfortable to go with Eaton."

To enable customers to keep a constant pulse on the 9390, every unit includes on-site startup service and training, a full year of 7x24 parts and labor, a service protection plan, and Eaton's eNotify Remote Monitoring Service, which provides real-time monitoring of more than 100 UPS and battery alarms. eNotify also delivers monthly reports that detail the status of the 9390, including information on voltages, loads, temperature and humidity. Furthermore, the service includes remote monitoring by Eaton technicians of both the UPS and batteries at all times, allowing many

issues to be resolved remotely, often before a customer even realizes a potential problem exists. If needed, the service will automatically dispatch a technician to the site.

"Generally, they get notified before we do if there's a problem," Iraci points out. "I like knowing that someone else is watching the system closer than we are. It provides real peace of mind."

## Implementation

Placed within DJO's computer room, the 9390 was easy to deploy, with the flexibility of installing the unit against walls, using top- or bottom-entry cabling. Furthermore, convenient front-panel access for all services and operation increases serviceability and reduces repair time.

Iraci is also quick to praise the small footprint of the UPS, which contributes to lower installation time and costs. "Our 9330 units take up twice as much space as the 9390," he points out.

The quality of service provided by Eaton's customer service engineers has been another benefit that Iraci says cannot be overstated. "That piece has been great," he reveals, emphasizing that regardless of the product purchased, there will be an issue with service at some point. "Eaton has been superb," he says. "Especially when you're building a new building and everything has to work, you need guys who will go the extra mile and they've done that for us."

Looking to the future, Iraci is confident that any power protection requirement DJO has can be accommodated with the Eaton brand. "Our plan is probably within the next year to replace the 9330s and kick up to at least 100 kVA," he reports, adding that the company intends

to upgrade with another 9390 unit. "We definitely like the footprint and the design of the 9390," he says.

In fact, DJO has been so pleased with the Eaton brand that the company purchased smaller units for its Indianapolis distribution center, and just added a pair of 20 kVA Eaton 9355 units for redundant power protection at the site. "We've been extremely happy," says Iraci. "Eaton is our standard going forward."

## Result

Safeguarded by the team of 9390 and 9330 UPSs, DJO is now able to:

- Provide 24x7 uninterrupted, clean power to its entire data center
- Reduce energy and cooling costs through best-in-class efficiency performance
- Deliver sufficient ride-through during an extended power failure until the company's generator can get up and running
- Ensure ultimate protection for its VoIP system



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