



## Collocation firm gets “two for the price of one” with Eaton 9395

**Location Details:**  
Sioux Falls, SD

**Segment Details:**  
Eaton® 9395 UPS

**Problem:**  
Gain more power protection and significantly increase efficiency with less capital outlay.

**Solution:**  
Selection of Eaton's 9390 UPS.

**Results:**  
Unparalleled reliability, scalable and pay-as-you grow power protection, unique load testing capability ensures performance and saves time and money, a leading industry- efficient ESS, a small footprint saving space and freight costs.

*“Competitive offerings with a track record didn't exist – at least not for a modular UPS of this size. This application afforded the purchase of one UPS, so we were obviously delighted to find that we could purchase redundancy – effectively two for the price of one!”*

*Kevin Dorhmann, Chief Technology Officer*

### Background

Today's sluggish economy – coupled with skyrocketing energy costs – has data center managers scrambling for solutions that will help them accomplish more with less. That's why the opportunity to gain more power protection and significantly increased efficiency with less capital outlay was “a no-brainer,” according to Brian Driscoll, branch site manager for CoSentry, a one-source provider of business continuity and managed technical services.

Headquartered in Omaha, CoSentry supports data centers in Kansas City, Mo., Sioux Falls, S.D., Bellevue, Neb. and Papillion, Neb., where the company's highly anticipated Tier IV LEED-certified facility was unveiled in January 2010. Offering disaster recovery, hosting, collocation, managed technical services and a fullscale help desk, CoSentry's state-of-the-art infrastructure is uniquely positioned to provide clients with ‘always on, always connected’ business.

### Challenges

When it comes to safeguarding the critical networks of CoSentry clients, not just any uninterruptible power system (UPS) will suffice. That's because even the slightest amount of downtime can spell devastation for the firm's clients, who span a wide variety of industries, including medical, insurance, banking/financial, law enforcement, transportation and energy.

“We have a lot of clients in industries with very high security and uptime requirements,” Driscoll says, noting that some are so stringent that they are required to encrypt the data on their own private networks. “Here, a minute is like a day when you're talking about downtime.”

So when CoSentry began planning an expansion into unused space within its Sioux Falls facility, the search was on for a UPS capable of providing the highest level of availability to the site's 40-plus cabinets, which house storage networks, servers, switches, routers, and other network and computing resources.



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The 9395s modular design lets service technicians disconnect one UPM while the remaining UPMs support the load.

Although the facility's existing Eaton's Powerware® Plus UPS "was as strong as a horse, and had never once failed us," Driscoll says that the capacity of the 150 kVA unit just couldn't keep pace with CoSentry's rapid growth. Indeed, the approximately 3,000-squarefoot site – the smallest of the company's three branch locations – had tripled its client base in the previous two years alone. "The age of the unit and our growth dictated a new UPS," Driscoll explains.

In addition to reliability, price point was at the forefront of the organization's prerequisite list. "It was very important to look for the very most bang we could get for the buck," Driscoll reports.

Furthermore, as a company recognized for its "green" initiatives, CoSentry sought a solution that would contribute to its energy efficiency efforts.

### Solutions

Extensive research on a variety of manufacturers' UPS models quickly yielded a noticeable frontrunner: the Eaton 9395. "As I came to understand the modular functionality of the Eaton offering and the engineering behind its features and capabilities, I knew I was looking at something special," reveals Kevin Dohrmann, CoSentry's chief technology officer. "We conducted a thorough review of available technologies from leading UPS vendors and the Eaton 9395 was the clear winner."

Offering unprecedented power performance, reliability and efficiency, the 9395 delivers the highest level of reliability and availability on the market, thanks in part to its inherent redundancy option. The 9395 can be configured so its uninterruptible power modules (UPMs) automatically act as N+1 redundant systems, further enhancing reliability. Traditional UPS manufacturers cannot deliver this additional availability without adding a more costly second UPS.

"Competitive offerings with a track record didn't exist – at least not for a modular UPS of this size," Dohrmann says. "This application afforded the purchase of one UPS, so we were obviously delighted to find that we could purchase redundancy – effectively two for the price of one!"

With CoSentry's 500 kVA unit currently configured with two 250 kVA UPMs, the 9395 is leveraging the synchronization, load sharing and selective trip capabilities of Eaton's patented Powerware Hot Sync® technology. The unique peer-to-peer architecture eliminates the need for a single UPM to depend on any outside source for its control; instead multiple UPMs share the load equally, eliminating any system-level single point of failure.

"With Eaton's modular implementation, we were able to plan space for three modules yet purchase only two initially – reducing capital outlay upfront," Dohrmann says. "I have redundancy from day one, and when our load approaches 250 kVA – or 50 percent load – in the future, we just add the third module and maintain redundancy internally. The modules automatically load balance. And most important of all, I can take a hit on core UPS components such as the rectifier or inverter, and my clients remain golden – any two of the three modules can carry the day, instantly."

"Everyone loves pay-as-you-go, and now that option is available on a proven, enterprise-grade UPS," Dohrmann enthuses. "It won't be long before we will be expanding," he adds. "This UPS will carry us far in our expansion plans."

Even more, the redundant modules enable Eaton field technicians to completely isolate and service one module while the others carry the load without going to bypass, another advantage Driscoll values.

While the 9395's modularity benefits were key for CoSentry, the team was also extremely impressed by the unit's unique ability to test its entire power train under load stress without requiring an external load bank.

Easy Capacity Load Testing – which is inherent in the design of the 9395 – alleviates the hassle and expense of load bank rental by relying instead on the UPS's internal power converters to act as an internal load bank.

"You would normally pay a lot of money for that required functionality," Dohrmann points out, noting that load bank testing can cost several thousand dollars for just a couple of hours. "This not only saves money, but it is so much more convenient."

Easy Capacity Load Testing is completed by an Eaton field engineer, who programs the 9395's rectifier and inverter to operate in a special mode. By simulating stress tests on components before the UPS is committed to a critical load, Easy Capacity removes the cost and logistics hassles from UPS commissioning, while increasing the user's confidence that the UPS will perform as specified.

During the procedure, the service technician can calibrate meters, complete key performance measurements and test the unit under stress, all of which are useful not just at the time of commissioning, but during subsequent maintenance visits and service calls over the lifespan of the UPS. "It gives you the opportunity to find potential problems," Dohrmann says. "Maybe something would fail at a 60 percent load level that wouldn't fail at 30 percent. You need to put the pedal to the metal and see it perform prior to going live with hosting assets that are processing millions of transmissions and dollars every minute."

Further benefitting CoSentry is the 9395's unmatched green power performance, which is significantly superior to competitive products, according to Larry Serbousek, principal at Eaton partner IET America in Omaha, which supplied the 9395 to CoSentry. "It is refreshing to work with an innovative company that recognizes the practical benefits of advanced power systems," Serbousek says. "CoSentry is willing to embrace where power delivery technology is headed, instead of clinging to the less efficient and less capable products of the past."



For CoSentry, uptime matters most. Eaton's service technicians are factory trained to provide the highest quality maintenance, battery testing/replacement and support.

Indeed, by operating at greater than 94 percent efficiency, the 9395 reduces utility costs, creates cooler operating conditions, enhances reliability and extends the overall life of the UPS components. "This was a big step up for us in efficiency," Dohrmann reports.

And the company's efficiency gains are about to skyrocket even further, as CoSentry prepares to deploy Eaton Energy Saver System (ESS). The revolutionary ESS enables the 9395 to attain an industry-leading efficiency level of 99 percent at all load levels, making it the only technology on the market capable of yielding such results. Using ESS, the UPS intelligently adapts to utility power conditions while supplying clean power to the connected equipment. Even more, because UPSs using ESS maintain 99 percent efficiency even when lightly loaded, the technology can deliver gains of up to 15 percentage points in efficiency over traditional models in the typical operating range.

"The 9395 alone provides about a 10 percent gain in efficiency over our previous unit," Dohrmann reveals. "And with ESS, of course, that goes all the way to 99 percent, which would be about a 15 percent increase. It's huge."

In fact, the energy savings from ESS typically allow customers to recover 100 percent of the cost of the UPS cost over just a three- to five-year time period. At 250 kW of critical load, the savings represent about \$4,000 per year per point of efficiency gain. Even more, backing up a 250 kW load with an ESS UPS is equivalent to removing 29 cars from the road.

While CoSentry can take comfort in the fact that its UPS is doing its part to help the environment, Driscoll is gaining further peace of mind from the solution's eNotify Remote Monitoring Service. eNotify provides real-time monitoring of more than 100 UPS and battery alarms, with Eaton service technicians remotely overseeing both the UPS and batteries at all times. This second set of eyes enables many issues to be resolved remotely – often before a customer even knows a potential problem exists.

"With eNotify, any alert immediately goes to our Network Operations Center, as well as to the people that we would turn around and call anyway," Dohrmann explains. "With Eaton, the technician is in the truck and on the road before they even hear from us – and that's a big deal."

The capabilities of the 9395 are also a big deal to CoSentry's clients, including Sioux Falls-based CSD, which has used the firm's data center for its voice and IT infrastructure needs for more than three years. "We are excited about this UPS upgrade," reports Jeff Best, director of IT for CSD. "We really benefit from this location and being part of the Resiliency Network that CoSentry has built."

"Uptime is the one big thing that matters most to my clients," Dohrmann acknowledges. "And that is a word that is all-encompassing – connectivity, power, cooling, access, security, monitoring, and support. With uptime as the centerpiece of our mission, we need backend infrastructure that can meet the task."



With eNotify Remote Monitoring, any alert immediately goes to CoSentry's Network Operations Center as well as Eaton's 7x24 Remote Monitoring Command Center.

### Implementation

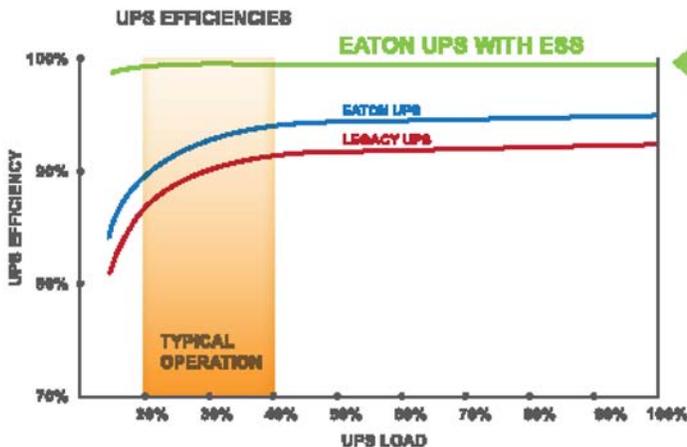
When it came time to deploy the 9395, CoSentry was able to rack up even more savings, thanks to the unit's small footprint and lowest weight of any UPS in its class – 50 to 60 percent less than competitive units. Not only did the fully integrated system minimize the company's cabling requirements and expense, but it dramatically reduced shipping costs, as well.

The slight footprint of the 9395 makes installation a breeze, as the UPS fits easily through doors and onto freight elevators with no need for dismantling. The size certainly benefitted CoSentry's facility, where the unit was installed in a long narrow equipment room with only two inches to spare beyond the margins required by local electrical code. "Nearly every dimension was bigger on competitive UPSs," Driscoll says. "With the 9395, we now have room for a second unit in that room."

Since everything on the UPS is pre-wired, the installation process and time are also dramatically reduced. "What impressed us was the quality of the design and the ease of the installation," comments Tom Smithback, president of Electric Supply, the electrical contractor for the project.

Although every 9395 includes startup service plus a full one-year on-site service plan at no additional charge, CoSentry opted to purchase an extended warranty in advance to ensure its unit remains in tip-top shape well into the future.

"Everybody acknowledges Eaton quality, and everybody knows that Eaton does a great job," Driscoll says, noting a marked discrepancy in response time among manufacturers' service plans. "On the nearest competitor's support contract, the print indicates they will call you back within four hours if there's a problem," Driscoll reveals.



*Energy Saver System*

To learn more, visit [Eaton.com/ESS](http://Eaton.com/ESS)

Energy Saver System boosts UPS efficiency to 99%, even at low load levels where UPSs typically operate, while maintaining complete protection for the load.

*“With our Eaton contract, there is a qualified technician standing in front of our unit within four hours, and in practice, usually much quicker. For me, that was a stark difference.”*

*Brian Driscoll, Branch Site Manager*

### Results

“Arguably, we have two UPSs for the price of one,” Driscoll enthuses about the 9395. “The argument can be made that to accomplish the redundancy that we have with this UPS deployment, one would have to purchase two of any traditional unit. That sheer fact will play into nearly every sequence of assessment when selecting a new UPS.

“With the 9395 supporting operations at its Sioux Falls facility, CoSentry is now able to:

- Achieve unparalleled reliability with the 9395’s inherent redundancy
- Easily expand its power protection solution without having to purchase another UPS, thanks to the unit’s scalability and pay-as-you-grow approach
- Ensure performance while saving time and money with the unit’s unique load testing capability
- Ring up hefty utility savings with the 9395’s industry-leading efficiency and unprecedented ESS
- Preserve valuable data center space and save thousands of dollars in freight costs with the unit’s small footprint



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