

Solving a data center's need for rightsizing and simple scalability

Volico Data Centers' owner/operations manager built his center with a pay-as-we-grow concept in mind. But when it came time to grow, it was a no-go because his UPS didn't have the needed flexibility and scalability. ABB's new Conceptpower DPA 500 UPS provided the easy scalability and reliability needed to support his growth.

Volico Data Centers made a smart decision when they implemented their pay-as-you-grow strategy. Rather than building out their entire data center, their initial facility was built with a plan to grow as needed. Unfortunately when they were ready to grow they discovered their UPS lacked the scalability and flexibility needed to support that growth. Faced with a major roadblock to expansion, Volico reached out to ABB for help.

"We have a long history of providing both maintenance and product to Volico," explains Amanda Trumble, Regional Sales Manager, Power Protection for ABB. "When they contacted us about their situation, we were able to provide technology that perfectly fit their current need and offer easy scalability to match future requirements for scalable growth with high availability."

That technology is the Conceptpower DPA 500 UPS, which is suitable for large and mid-sized data centers, server rooms, and other IT infrastructure. While only recently available in the US, the technology has been successfully proven in other markets globally. It features an architecture that ensures the highest level of both reliability and availability by providing true, total redundancy across the UPS modules.

Reliability

"DPA stands for decentralized parallel architecture," explains Joergen Madsen, Business Development Manager, Power Protection. "The main appeal of this UPS design is that it proactively eliminates or dramatically reduces single points of failure. Every power module is its own fully independent entity, with its own control and all needed hardware. As long as there are more modules than needed to supply the load, one or more modules can be lost with no power interruption."

"Other modular products contain shared components which present single points of failure. The modules of the



Conceptpower DPA 500 are totally independent, offering full redundancy."

Efficiency

Other UPS suppliers achieve the same >96% energy efficiency that the Conceptpower DPA 500 delivers, but not at the same reliability levels.

"Many data-center owners and managers like me expect – and increasingly demand – both high availability and efficiency," says Gadi Hus – Volico's Owner and Director of Operations. "That's what's delivered in the Conceptpower DPA 500."

"A decade ago, UPS efficiency was in the high 80% range," says Madsen. "The resulting, high losses were a costly toll, but data-center managers accepted them in return for reliable, quality power. The Conceptpower DPA 500 technology provides Volico with the best of both worlds; high online efficiency combined with very high reliability."

Scalability

What prompted the search for a new UPS supplier was Volico's need to expand, something Hus will be able to do with ease in the future. His initial installation consisted of two frames containing 10 module sets, delivering 1MW. Adding more power will be as easy as inserting another module.

The system is based on unique slide-in UPS module sets, each rated at 100 kW. Modules can be inserted or removed from the frame while the system is running securely in double conversion. The Conceptpower DPA 500 can scale vertically, up to 500 kW in a single frame, and horizontally by adding up to six parallel frames, to a total of 3 MW of power.

With ABB's new modular UPS solution, Volico's power needs will be easily covered – up to the full potential capacity of the data center.

Cost of ownership

Volico can expect lower operating costs because the Conceptpower DPA 500 provides low total cost of ownership compared to other UPS systems. The savings begin with speed and ease of installation. The straightforward front-access-only design, combined with a true three-wire-plus ground system, simplifies every step of deployment. Additionally, the Conceptpower DPA 500's "online-swap modularity" (OSM) capability, allowing modules to be inserted and removed with the UPS running, simplifies routine maintenance and eliminates service-related downtime.

Finally, but especially critical to Volico, is the pay-as-you-grow capability. The operator can invest in additional capacity in 100 kW increments as needed. The Conceptpower DPA 500 offers reliable redundant power in a very compact footprint, and significant savings on operating cost thanks to its very high online efficiency.

Summary

For Volico, the Conceptpower DPA 500 perfectly resolved the short-term need to replace a system that was a barrier to expansion, and lays the foundation for future growth.

"Many things played into the success of this project," says Hus. "The ABB modular UPS gave me exactly what our data center needed to enable current and future expansions. At the end of the day, ABB provided the best solution to keep Volico up and running."

Solution details

Each module includes:

- True online double-conversion UPS
- Decentralized module isolator
- Built-in back-feed protection
- Individual module display with LED mimic diagram

Each frame contains:

- UPS input and output terminals
- Battery breakers and output isolation switches for each module set
- HMI interface with mimic diagram and LCD providing information in 13 languages
- Communication interfaces (RS-232 and USB ports, I/O dry contacts and external bypass interlock)
- Top or bottom cable entry

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