

UPS – the power guarantee

While data centers physically may be firmly anchored in their digital ecosystem, operationally they run in constant pursuit. Their goal is to capture six-nines status—an uptime target of 99.9999 percent. A key technology supporting that effort is the uninterruptible power supply, or UPS.

The UPS conditions incoming power to eliminate spikes, swells, sags, noise and harmonics; and if a power failure occurs, power stored in UPS batteries or other energy storage systems will keep the center operating until a backup generator comes on-line. While flywheels, hydrogen fuel cells and other alternatives to UPS batteries for backup are available, their costs or difficult handling often make them prohibitive.

Advanced UPS technology is highly efficient and offers a low total cost of ownership. For example, the ABB Conceptpower DPA 500 employs a decentralized parallel architecture so each

UPS module in the center contains all the hardware and software required for full operation. The modules share no common components—each one operates independently, with its own static bypass, rectifier, inverter, logic control, control panel, battery charger and batteries. The modules therefore can be swapped out with no interruption of operations.

Should a failure occur in one module, the system continues to operate normally—with one less module, temporarily. Disconnecting and replacing the faulty module has no impact on the others.

With 96 percent energy efficiency, these ABB UPS systems significantly lower electricity costs and improve power usage effectiveness. Additionally, since they use less electricity, they produce less heat—helping trim cooling costs as well—and they need only a very small footprint, which is a significant benefit in locations where real estate costs are high or space is restricted. Certified as VFI-SS-111, the top rating for operational behavior, these UPSs bring exceptional reliability and flexibility to data center power distribution.

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