



Success Story: Zenium Data Centers

Market Served
Data center

Zenium and Eaton collaborate to drive data center efficiency

Location:

Slough, England

Segment:

Data Center

Solution:

Eaton Power Xpert FMX medium voltage switchgear; Eaton Power Xpert 9395P

Problem:

Accelerate the construction of a 4,300-square-meter data center with containerized power distribution to preserve valuable internal floor space and supply energy-efficient backup power system components capable of reliable operation in high-power density data halls and air-cooled plant rooms

Results:

On-time power system construction providing a high availability N+N fully concurrent maintainable electrical distribution system, as well as ongoing electrical savings through Eaton's highly efficient backup power systems and inherent cooling capabilities, which contribute to an ultra-low PUE

"The relationship between Zenium and Eaton has developed over a number of years. During that time, a high level of trust and partnership has been established."

Mike Venables, principal engineer, Zenium

Background

Zenium Data Centers is an international company delivering state-of-the-art, purpose-built, secure, efficient, and resilient data center solutions for businesses in established and emerging markets.

With a growing portfolio of data center locations, Zenium provides tailored solutions for businesses seeking world-class facilities across the globe. Previously, the company worked with Eaton to establish reliable backup power systems in its 5,000-square-meter Frankfurt One data center and 12,000-square-meter Istanbul One data center.

Throughout each of its data center locations, Zenium strives to combine its industry knowledge and mission-critical expertise with a commitment to innovation to deliver the most scalable, reliable, and energy-efficient data center solutions possible for its customers.

Challenge

In 2016, Zenium began construction of its latest London One data center—a purpose-built state-of-the-art facility offering high specification technical space located in Slough, one of the UK's premier data center locations.

In addition to constructing more than 4,000 square meters of technical space across two floors, Zenium aimed to engineer a fully redundant power system designed to Uptime Institute Tier III guidelines, create scalable data halls to meet customer requirements and achieve industry-leading levels of energy-efficiency.

To create power distribution and backup power systems that would support these needs, Zenium required support from a vendor that understood its business challenges and could provide dedicated onsite engineering support, local manufacturing expertise, and on-time equipment delivery throughout the construction process.

"I was introduced to Eaton when looking for a more customized backup power system during the construction of an earlier data center and quickly realized the value its team could bring to our future projects," said Mike Venables, principal engineer at Zenium. "Eaton not only provided proven technology with market-leading electrical efficiency and reliability, but also served as a major project collaborator that listened to our challenges and proactively responded with solutions catered to our needs."



Powering Business Worldwide

Solution

To help accelerate the construction of Zenium's London One data center and preserve valuable data center floor space, Eaton created prefabricated and containerized medium voltage power distribution units for outdoor installation. The factory-designed and integrated units arrived system-tested and required minimal assembly onsite to maintain ambitious project timelines. The units also supported a low total cost of ownership and could be deployed quickly, while allowing for more units to be added as needed.

The containerized solutions supported Zenium's incoming A and B power sources and facilitated connection with multiple emergency generators. For reliable power distribution, the containers were equipped with Eaton's Power Xpert® FMX medium voltage switchgear, which provides reliable power protection, metering and distribution of electrical energy using only environmentally friendly technology and materials. This switchgear also featured software logic that allowed for controls algorithms to be developed during the construction process to further accelerate the project.

To enhance safety within the compact footprint of the containers, the Power Xpert FMX switchgear featured an integrated arc channel with absorber to help mitigate the impact of arc events. In normal switchgear, gases caused by an internal arc are guided out by means of an extra arc duct, creating an arc channel connected to the switchgear and an outside wall. These ducts require extra space, limit the possible locations for the switchgear and can increase total building cost.

To further simplify operation and maintenance, Zenium color-coded all electrical system equipment according to the incoming power source. Eaton provided factory painting of the containerized power distribution units, allowing Zenium to seamlessly integrate the containers upon arrival.

For protection of the critical loads within its data halls, Zenium deployed Eaton's Power Xpert™ 9395P backup power systems. All the 9395P's critical components employ redundant designs with control technology that provides advance warning of potential component failures to reduce unexpected outages.

Mitigating the need for cooling equipment, the 9395Ps feature integrated airflow management and internal cooling fans. The units can also reduce the heat emitted from their electrical cables by up to 33 percent, while redundancy in the power supply logic unit and cooling fans eliminates the need for additional wiring and cooling systems.

"We design all our data centers for improved operation at higher internal and external temperatures to reduce mechanical cooling requirements, energy consumption and overall cost for customers," explained Venables. "The inherent airflow management capabilities of Eaton's backup power systems paired with one of the highest temperature operating ranges in the industry compounded to greatly reduce the cost of running a large data center."

To help Zenium and its customers easily accommodate future requirements, the 9395Ps are engineered with internal scalability modules. This technology enables the company to adapt to future changes in load demands and meet new requirements for higher reliability without requiring the purchase of additional backup power system components.



Results

With Eaton's help, Zenium is on track to energize its London One data center in early 2017 while providing customers with continuous uptime and high availability. The company can extend electrical savings to its customers through Eaton's highly efficient backup power systems with inherent cooling capabilities, which contribute to an ultra-low PUE.

"The relationship between Zenium and Eaton has developed over a number of years. During that time, a high level of trust and partnership has been established," said Venables.

"This strong collaborative nature exists due to Eaton's willingness to listen and respond to not only our needs, but also the needs of our customers.

"Zenium is built on a proven tradition of customer satisfaction," he continued. "With Eaton's help, we've created a data center environment that can truly address each and every one of our customers' unique requirements while pushing the boundaries of energy-efficiency and reliability. It sounds like a simple task, but it isn't typically

accomplished with as much grace as we've managed with Eaton."

By using Eaton's containerized power distribution units, Zenium preserved valuable data center floor space while accelerating its project timeline through factory-testing and simplified assembly upon delivery.

And, Zenium can quickly and easily expand its power protection system with inherent scalability while maintaining the health of each backup power system with assistance from Eaton service technicians.

Through a global business footprint and products compliant with global industry standards, Eaton's data center engineers and professionals are accessible and networked around the world to share local experience and responsive support, improving uptime and reducing costs.

To learn more, visit
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