



PEOPLE-POWERED
DATA CENTRE SOLUTIONS



As data center operators endeavour to push the boundaries of energy efficiency levels to reduce their carbon footprint and achieve a PUE ratio as near to 1.0 as possible, focus has turned to upgrading their most power-hungry equipment in the facility. After cooling equipment, old UPS systems using outdated technology are major contributors to compromising the optimum levels of efficiency.

Eamonn Sheridan, Data Center and Facilities Lead at Service Express

▶▶ We reduced our data centers PUE ratio to 1.1 ▶▶

It is important to note that the current industry average PUE is 1.6, and older facilities are finding it more challenging to achieve this than new ones. Despite these challenges, Service Express, a well-established Tier III and Tier IV data center formed in 1987, prides itself on its green credentials and PUE ratio. By using suppliers who value their carbon reduction goal for their data center equipment, Service Express has been able to build and operate one of the most efficient data centers in the UK. Let's take a look at their journey!

SIGNIFICANT ENERGY EFFICIENCY GAINS

As the UK modular UPS partner, Power Control works closely with Legrand to deliver their innovative, three phase, modular UPS systems. Power Control has played an instrumental part in helping Service Express achieve significant energy efficiency gains by presenting a high efficiency, transformerless UPS (uninterruptible power supply) solution to replace its 10-year-old transformer-based UPS systems which required a major service and battery replacement.

TRANSFORMER-BASED VERSUS TRANSFORMER FREE UPS

Transformer-based UPS have their place, but due to their component structure are less efficient than transformer-free and modular technologies, therefore, maximising their efficiency is more challenging. Transformer-based UPS can also limit scalability and inherently lead

to inefficiencies, in particular in 2N+1 configuration where the load is often not large enough. Loads within data centers fluctuate and this needs to be accounted for within any power protection strategy.

PUE

With UPS systems being a major contributor to PUE ratings, upgrading to new, more efficient technologies must be considered. Advances in transformerless, monolithic UPS technology not only give data center operators greater max KW output,

thanks to their unity power factor, but they have also proven their resilience.

BORRI

Following a site survey and operational assessment, Power Control confidently presented the Borri Ingenio Max solution from the Legrand portfolio as a direct swap out for the legacy transformer-based units. "In total three 400kVA transformer-based UPS systems in a 2N+1 configuration, which were providing a maximum 640kW load due to their 89% efficiency have been

SERVICE EXPRESS

built and operates one of the most efficient data centers in the UK

CUSTOMER CASE



Rob Mather, Director of Power Control



About Service Express

Service Express fully owns their highly secure UK data centers, where sustainability and the aim to be a carbon-neutral organization are top priorities. The result is an impressive Power Usage Effectiveness (PUE) of 1.1, thanks to their own patented eco-cooling system, delivering ideal temperatures from adiabatic cooling, floor voids, cold aisle containment and warm air recycling. There are many reasons why their world-class facilities are chosen for management and co-location by a wide variety of industries. One of those reasons being that they own and operate one of the few tier IV by design data centers in the UK.

replaced with three high efficiency 400kVA Borri Ingenio Max units in a 2N+1 configuration (the same as the previous) which provides up to 800kW maximum load due to the UPS unity power factor. Not only does this mean they are more efficient, but it also ensures optimal sizing”, says Rob Mather, Director of Power Control. Power Control also presented the Borri Ingenio Max UPS system as the best solution because of Borri’s Green Conversion technology, providing continuous savings, high efficiency and UPS component life extension for the customer.

MARKET LEADING PUE

“The direct swap out and upgrade has contributed to reducing the data centers PUE ratio to 1.1. Which is believed to be one of the lowest in the UK. This contributes to our overall goals of running one of the most energy efficient data centers in the UK. Thanks to Power Control’s expertise, all preparation was done in the week leading

up to the swap out. Meaning that each parallel set of UPS, commission and changeover, was completed in a single day. Minimising any disruption for us”, says Eamonn Sheridan, Data Center and Facilities Lead of Service Express.

ROI OF UNDER 5 YEARS

The new UPS installation also means Service Express benefits from an ROI of under 5 years and at current load levels, the efficiency savings for Service Express is approximately £20,000 per annum. The maximum efficiency of the Borri Ingenio Max is 96% so as the data center grows, and the load increases so will Service Express’ annual savings. Service Express has also benefited from the space saving and lightweight advantages presented by transformerless technology, meaning their critical infrastructure takes up a smaller footprint in the facility. ■

CUSTOMER CASE



White paper Data Center UPS - The essential characteristics of an optimized solution'



Data centers are the hidden core behind our daily “digital life”. Downtime of a data center means huge money losses, reputational damage and even potentially dangerous situations. For this reason, in modern data centers, dedicated infrastructure is implemented in order to guarantee operational continuity and to provide high system resiliency - a UPS is one such essential infrastructure component. A suitable UPS must offer business continuity, limited TCO (Total Cost of Ownership) and adaptability.



Would you like to learn more?
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