

Creating & designing an efficient data centre

The complexities of power protection and getting the right solution for an operation cannot be underestimated. The true importance of what is being supported and protected means that some elements, such as the value of the data held are near on impossible to put a price on. The decisions to be made are therefore, crucial.

Based on Critical Power's knowledge, experience and qualifications, we have a clear and concise approach to data centre design, which encompasses:

■ Site survey

Designed to reveal the scope and complexities of the work involved, site surveys explore the type of electrical loads, power quality issues, the electrical distribution and harmonics, whether for existing or new data centre installations.

■ Power continuity planning and design

Good system design takes into account the need to balance resilience with Total Cost of Ownership (TCO), the need for N+1 redundancy combined with operating efficiencies, energy usage and running costs. With significant expenditure on data centre cooling, this also offers one of the greatest opportunities for energy efficiency improvements, which is why scalable cooling systems should be adopted.

■ Installation and commissioning

A data centre must be properly installed and commissioned in accordance with the manufacturer's guidelines and recommendations. The aim is to ensure a trouble-free working life, while integrating with existing building management systems.

■ Monitoring and maintenance

On-going maintenance and monitoring of all systems ensure uptime and long-term health. The ability to monitor bandwidth use, as well as energy, storage and physical rack space gives valuable insights into how the system is operating, and sends alerts when outages or low thresholds are breached.

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Data Centre Design

Secure Environment. Secure Power. Secure Temperature.

Reliable power, cooling & energy management

The reliance on electricity supply has never been greater and therefore, nor has the requirement for dependable, resilient power protection, energy management and cooling. Data centres present clear challenges: they need to ensure continuous uptime, accelerate return on investment and offer the lowest total cost of ownership, while also delivering long-term future flexibility.

However, no two data centres are the same, so the approach shouldn't be either.

Primed to minimise downtime, improve efficiency and reduce environmental impact, Critical Power deliver fully configured power systems for data centres. Including every aspect from switchgear, transformers and cooling technologies; all integrated to provide a data centre with an uninterruptible power supply.

Whether for existing or new installations, this end-to-end approach is enhanced through a range of monitoring and maintenance programmes to provide extensive visibility and control.



A Data Centre

Server box with mounted power sockets

Featuring AC/DC Front Ends to provide power supply modules and board mounted power with higher densities and improved efficiencies.



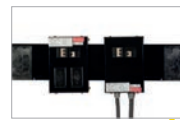
In Row cooling

Cooling is extensive and includes all aspects from in-row, fresh air or portable cooling to specific computer room air cooling (CRAC) to ensure cold air flows directly through the racks, picking up the heat as it goes, before exiting.



Cold isle containment & cages

These eliminate data centre hot spots by creating uniform and predictable airflows.



MDS/RU

Ensures critical power distribution is maintained to the busway systems overhead and onto the critical load servers.



Racks & cabinets

Flexible, scalable racks and cabinets designed to accommodate future demands, including capacity for higher weight thresholds, adjustable rails and wider vertical managers.



ATS

Essential for maintaining sustainable uptime, as it transfers the critical load to the most stable power source in the operation.



DCIM monitoring

Core to operations, this environment centrally monitors and manages the critical systems of the data centre.



SPD

Protects the computers, servers etc. from power surges coming from utility and generator feeds



UPS

High Efficiency UPS Solutions, future proofed for power expansion built on the latest high availability and Modular Technology.

Raw power from grid



Generators

The PSG manages the start-up and synchronisation of the generator, ensuring operational safety and efficiency is achieved.

What else do we cover?

Protection discrimination

Ensures devices within a supply circuit are coordinated, so any fault loads (overload, short-circuit or earth), are quickly removed without disruption to other loads.

Topologies and new architectures

Ability to support common topologies like ToR (top of rack), MoR (middle of row) and EoR (end of row) along with new architectures, like leaf-spine and other mesh configurations.

Modular approach

Flexible and scalable infrastructures, designed to support future network changes, computing power and technology upgrades and facilitate long-term growth plans without major disruptions.

Cable management

Optimised cable and connectivity, with potentially an integrated cable and airflow approach, where the most ideal cable route is adopted to ensure maximum performance and ability to support copper and fibre.

Space

Space requirements minimised where possible by patching outside the rack and cabinet, such as overhead to allow more floor space for equipment. Potentially, have a rack or cabinet that can easily integrate with overhead pathways.

Security

Agreed and implemented access control measures, with some data centres lending themselves to having different zones of security and CCTV.

Fire suppression

The heat generated by data centres increases fire risk. Whether for a room or a cabinet, a Pneumatically Actuated Fire Suppression Systems (PAFSS) will detect the fire source and extinguish it early, minimise damage and enable a quicker recovery of operations.

Critical Power is a specialist provider of power protection and energy management products and services. We understand the vital need for sustainable uptime, optimised energy consumption and power continuity in today's business environments.

Manufacturer independent and accredited (OHSAS 18001, SAFEcontractor, ISO 9001 and ISO 14001) – we take the time to design and choose the right solution for your data centre whatever your industry:

- Health
- IT
- Industrial
- Marine
- Military
- Retail
- Telecommunications

From simply supplying a generator or battery, right the way through to completing site surveys and managing the whole data centre project to fruition – we are happy to operate to any level of support required and are practiced at getting things right, first time.

WIN A FREE DATA CENTRE AUDIT

To be in with a chance to WIN a FREE Data Centre audit, all you need to do is visit our website at ... criticalpowersupplies.co.uk/forms/datacentresurvey and simply fill in the survey and you will be entered into our prize draw.

The winner will be notified by May 31st 2016.

GOOD LUCK!