

Five Myth- Busting Tips on Modular UPS

Article

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At Centiel, we work in close partnership with consultants and clients as trusted advisors to develop the best and most appropriate critical power solution for their individual circumstances. This enables end users to maximise availability and reduce total cost of ownership (TCO) over the long term.

There are lots of different types of Modular UPS systems available on the market so here are our five myth-busting tips on modular!

1 Modular UPS are more expensive than Standalone

The initial cost of a modular UPS system and its surrounding infrastructure can certainly seem more expensive than installing a standalone alternative. However, the purpose of a UPS is to ensure the highest possible level of system availability. This means the overall-uptime, or the readiness of a system to provide a corrective service. When you consider the cost of a Modular UPS, and its infrastructure you need to factor in the additional benefits and long-term savings.

Best practice would be to calculate the TCO over the long term to determine the savings from introducing a modular system which offers the highest level of availability.

For example, to create redundancy in a standalone UPS, it is necessary to have a minimum of two units. Suddenly, the lower initial purchase cost starts to look more expensive. Particularly when remedial works are factored in. An engineer may need to be onsite for several "chargeable" hours to complete these works as it's not as simple to swap out elements of a standalone UPS. This dramatically increases the Mean Time to Repair (MTTR), leaving the system with reduced or no redundancy and adding risk to the critical load.

Installing the infrastructure to run and support a facility at full capacity with a standalone UPS from the outset, may also not offer the most cost-effective option. What if the facility never reaches full capacity, or even half? Under-utilised standalone UPS need to be run, maintained and managed, which can dramatically increase TCO over time.

Adopting a pay-as-you-grow approach to modular UPS installations can offer a flexible solution that minimises initial expenditure and ongoing running costs. Even air conditioning can be reduced for a smaller system. We can help you do the maths!



2 Standalone UPS offer Redundancy

Many organisations choose a standalone UPS system rather than modular. In fact, the results from our recent online survey showed 25% of respondents preferred standalone as a choice for system design.

Standalone configurations can offer redundancy, however, what happens if one standalone UPS unit fails? Suddenly, there is no redundancy. UPS systems designed with decentralised or distributed architectures are truly modular, offering the ability to hot-swap modules. This means that if one module needs to be exchanged it is easy for trained staff to swap it with a service module kept locally on site. Centiel's CumulusPower™ takes this one step further with safe-hot-swap capability which enables modules to be changed in a live system, safely isolating, and testing the replacement module before it is introduced to a live load. Safe-hot-swap removes the risk of an inherent fault being added to the system through the introduction of a new module.

3 Modular is Modular

Modular simply means it's possible to swap certain elements out in a live system, increasing availability. However, the elements of commonality in a centralised solution, leading to single points of failure, are open to huge variations between manufacturers. The result is that not all modular systems are the same.

The idea to move to modular is based around removing single points of failure and therefore increasing availability or uptime. Therefore, look for a system that achieves this – not all do!

At Centiel, we refer to 'true modular'. This means each module is a UPS in its own right, all containing every element of a UPS including rectifier, inverter and static bypass. This offers the highest level of availability as single points of failure are removed, there is redundancy on every component.

CumulusPower™ is the latest in true modular UPS technology and has been designed with distributed decision-making control logic. This means that no single module takes control of the decisions for the whole system. Instead, a distributed decision-making consensus takes place eliminating the logic's single point of failure.



4 Modular introduces redundancy

Yes, it can but, again, not all modular systems introduce the same levels of redundancy. Some “modular concept” UPS systems are designed with a centralised architecture which means that there are elements of commonality, leading to single points of failure. Single points of failure might include: a CPU, inverter, or static switch. If there is a fault with one of the common components the whole system could fail, resulting in the load being lost.

A true modular UPS such as CumulusPower™, offers the capacity for redundancy increasing availability. Its distributed architecture offers the highest level of availability because it replicates all of the components across the multiple modules resulting in further power resilience.

Similarly, with battery strings, by avoiding a configuration with a common battery, it is easy to separate a string with a true modular system to maintain N+ runtime. Battery string isolation or creating redundancy within a frame is simply not possible with modular concept UPS systems. Not all modular UPS are equal!

5 Any modular system offers peace of mind

A further hidden cost from installing a modular concept UPS is the domino effect or risk of cascade failure. Imagine if a static switch fails in a modular concept UPS. The system will switch to by-pass. Then what if there is a power failure? The load the UPS is supporting would be dropped. This sort of outage could cost an organisation many thousands of pounds in lost revenue, fines, damaged reputations etc ...

A true modular system avoids the common single point of failure of the static switch as each element of the UPS is replicated many times over within each module. Choose carefully!

For further information please see:
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