

Nominee: Vertiv

Nomination title: Liebert® APM 30-600 kW

Liebert® APM is a versatile and modular, transformer-free UPS designed to operate with a maximum energy efficiency of up to 96.3% in double-conversion mode for the protection of medium to large-sized business-critical applications at both row and room level. Its modular and scalable configuration may house both power and battery modules inside the same UPS cabinet, or simply include power modules depending on the UPS rating. This guarantees maximum adaptability to every possible requirement in terms of footprint, power and runtime.

Liebert APM has a solid design and history as it evolved from the Liebert APM 30-150 kW with in-row application focus. In the last couple of years, the product family has expanded to include Liebert APM 30-300 kW (2016), Liebert APM 50-400 kW and 50-600 kW (2017). By extending the capacity range to 600 kW, Liebert APM is now ideal for both in-row and in-room applications. In fact, the modular architecture of Liebert APM allows a single unit capacity to be scaled up to a maximum of 600 kW in one single unit. There are four different models available, each with a specific power module and maximum cabinet capacity:

- Liebert APM 30-150 kVA/kW
- Liebert APM 30-300 kVA/kW
- Liebert APM 50-400 kVA/kW
- Liebert APM 50-600 kVA/kW

Increases in capacity and redundancy can be made both vertically and horizontally by adding power modules to an existing UPS cabinet or by connecting complete UPS systems in parallel in order to reach a maximum of 2.4 MW of active power.

Liebert APM is parallel and dual bus ready and can be connected with up to two or four units in parallel, depending on the configuration.

Additionally, Liebert APM allows for easy deployment of Tier IV architecture through its integrated dual bus control.

Liebert APM is characterised by flexible battery configuration, therefore designed to meet individual installation availability and back-up time requirements. It is compatible with numerous battery configurations including internal hot-scalable (valid for Liebert APM 30-150 kW only) as well as traditional external battery banks with string lengths between 30 and 40 battery blocks per string (valid for all product versions).

In a parallel system, batteries can be installed in a common bank to maximise cost effectiveness and minimise floor space. Alternatively, a single battery bank can be dedicated to each UPS, delivering full redundancy and avoiding the possibility of a single point of failure.

Extended battery life is further ensured through a temperature compensated charging algorithm which prevents battery damage, thus prolonging lifespan.

The tangible impact our product/solution has on the market and customers:

- **Optimise Total Cost of Ownership (TCO)** thanks to its remarkable double-conversion efficiency of up to 96.3%: In the example of a 400 kVA/kW installation with a Liebert APM UPS, customers can save up to 2,800 EUR/year compared to a 400 kVA/kW installation with a UPS that has a VFI efficiency of 95.5% (calculation based on an energy price of 0.1 EUR/kW)
- **Improve long term network flexibility and efficiency** with its two module ratings and four cabinet capacities: Customers can size Liebert APM according to their specific requirements, with a wide range of choices in terms of power modules and cabinet sizes, making it fit for row or room applications
- **Enable a pay-as-you-grow model** through a modular and hot-scalable solution: Customers can increase the power of the UPS as their load increases, without the need to oversize the UPS from day 1 and without the need to disconnect the existing load when adding power modules
- **Reduce fault rates and lower operating costs** thanks to an independent module control system: Customers' peace of mind is assured by the absence of a single point of failure thanks to the fact that the control is included in each power module
- **Increase levels of active power** with its unitary output power factor: Customers can select the most appropriate rating for their critical application, sizing the system based on the actual active power requirements, thus minimising the initial investment and maximising TCO

Major differentiators between our product/solution and those of our primary competitors:

- **Modular and hot-scalable**
- **Fit for row or room installations**
- **Optimised efficiency at full and partial load**
- **Flexible battery configurations, including internal battery configuration**
- **Full switch configuration as standard on all the cabinets**



Please find the link to view our Liebert APM interactive infographic:

https://www.sisomostorage.com/infographic/apm/Interactive_Infographic_Liebert_APM.html

Why nominee should win

1. **Modular and hot-scalable, thus allowing customers to pay as their applications/needs grow and easily increase capacity without putting the load on maintenance bypass**
2. **Fit for row or room installations thanks to its four different cabinet capacities and two power module sizes**
3. **Remarkable efficiency of up to 96.3% in double-conversion online operation, enhanced by the fact that the efficiency curve is flat even at partial load. This grants significant cost savings while at the same time contributes to reducing the carbon footprint of the installation and optimising Power Usage Effectiveness (PUE)**
4. **Unitary output power factor grants maximum active power utilisation and avoids the need to oversize the system**
5. **Integrated with remote diagnostics and preventive monitoring service (Vertiv™ LIFE™ Services)**