How To Choose The Right APC UPS For Your Application

- *Small Office Applications*
- *Network and Server Applications*
- *Data Center Applications*
- *Facility and Gray Space Applications*
- *Industrial Applications*

EXECUTIVE SUMMARY:

APC by Schneider Electric offers a wide range UPS equipment and choosing the right one to meet specific needs can be complicated. There are many available options, different battery chemistries, power ratings, power factors, and discharge rates. Additionally, there are several choices available for input and output voltages, topology, capacity, load, runtime, environment, and form factor. This whitepaper walks you through the selection process based on application.

One of the most common questions we hear is, “Which is the right APC UPS for my application?” Finding the right APC by Schneider Electric UPS for your facility can be complicated. There are many available options, different battery chemistries, power ratings, power factors, and discharge rates. Then you need to consider input and output voltages, topology, capacity, load, runtime, environment, and form factor.

So how do you choose the right APC UPS for your application? Start by considering the load size and environment the UPS will be operating in. Below are a few categories with some detail to help distinguish between the different product families.

Small Office Applications

The UPS equipment in this category is most appropriate for a single or for a few workstations and their peripheral equipment, such as printers and scanners. These UPS units can also be used to back up one or a few modems and routers and are intended to provide enough back up time to safely power down computer and networking equipment and are not appropriate for longer runtimes.

If the power to the workstation is already being backed up by a larger UPS in the data center or if the building has a facility UPS, adding a smaller UPS – or daisy chain – does not add additional power protection or runtime and can even create a false sense of security.

For the top four reasons you should never daisy chain UPS units, refer to our article.

Back UPS Pro (650VA – 1500VA) – The APC Back-UPS Pro family offers guaranteed power protection for high performance computer systems, routers/modems, external storage devices, game consoles and other electronics for home or small business. These UPS models supply electronics with abundant battery backup during outages and stabilize unsafe voltage levels. They also provide power protection from damaging surges and spikes and allow the use of management software, so you get the most out of your UPS. Premium features of this family may include Automatic Voltage

Regulation (AVR), an LCD display, Smart Outlets, energy saving functions that reduce electricity use, network manageability, Watchdog, or configurable outlets. Together with the rest of the Back-UPS Pro's standard features, they are the perfect choice to protect your data and keep your system available.

Network and Server Applications

Network and Server applications are uses where the load size is relatively small. A typical data center rack has a power draw of 5kW. The APC by Schneider Electric UPS equipment in this category is appropriate for individual data center racks, remote network closets, branch offices with a relatively low IT power draw, and workstation or small office back-up power.

The APC by Schneider Electric, Smart UPS family is one of the most trusted and popular UPS brands in the industry.

Smart UPS (420VA – 5000VA) – Smart-UPS are trusted by millions of IT professionals throughout the world to protect equipment and critical data from costly interruptions by supplying reliable, network-grade power reliably and efficiently. Available in a variety of form factors and classes (entry level, standard and extended run), there is a model for nearly every application and budget. Standard models are the most popular UPS in the world for business servers, storage and network devices and have long been considered the benchmark for reliability and manageability. Entry level Smart-UPS models are an economical choice for small and medium businesses looking to protect small networking devices, point-of-sale (POS) equipment and entry level servers. The extended run models accept external battery packs for long runtime to power critical servers, security and communication systems through outages that could last hours.

Smart UPS Online (1000VA – 20kVA) – Smart-UPS On-Line provides high density, true double-conversion on-line power protection for servers, voice/data networks, medical labs, and light industrial applications. Capable of supporting loads from 1 to 20kVA in a rack/tower convertible form, the Smart-UPS On-Line is available from 2U to 12U. Recent family extensions at 15 and 20kVA enable support of power-hungry blade servers or heavily loaded equipment racks. When business-critical systems require runtime in

hours, not minutes, Smart-UPS On-Line can be configured with matching battery packs to comply with aggressive runtime demands. The included PowerChute management software provides unattended graceful shutdown of network operating systems. All models 5kVA and above include an integrated Network Management Card for remote management (optional on models below 5 kVA). The Smart-UPS On-Line family provides customers with a reliable source of uninterruptible power even in demanding power environments, including very wide input voltage window, extremely tight output voltage regulation, frequency regulation, internal bypass, and input power factor correction.

Symmetra LX (2kVA – 16kVA) – Engineered to deliver the highest level of business continuity possible, Symmetra's modular, redundant architecture can scale power and run time as demand increases or when higher levels of availability are required. Integrated network manageability provides real time status updates of UPS health and environmental conditions. Hot-swappable, user replaceable power, battery, and intelligence modules enables low mean time to repair (MTTR) and ease of service. Symmetra's modular design provides redundant power in a single chassis for business-critical applications in server rooms and network closets.

Data Center Applications

Three-phase UPS products are intended for multi-rack data center applications, large network closets, and other highly critical loads. Installed upstream of the power panels that feed most of the IT and networking gear throughout an office building, these UPS provide both back-up power and some degree of power conditioning. Designed to support sensitive IT equipment and servers, these APC UPS should be installed in temperature and humidity-controlled environments that are closely monitored.

Data Center UPS systems provide both back-up power and some degree of power conditioning and should be installed in temperature and humidity-controlled environments.

Symmetra PX (10kVA – 500kVA) – The Symmetra PX, 10-500kVA (480V) and 10–100kVA (208V), high performance, right-sized, modular, scalable, 3 phase UPS power protection with ultra-high availability and efficiency is ideal for any size data center or high density power zone. The PX is designed to cost effectively provide high levels of availability. Seamlessly integrating into today's state-of-the-art data center designs, the Symmetra PX is a true modular system. Made up of dedicated and redundant modules, power, intelligence, battery and bypass, all engineered into a design that is easily and efficiently serviceable, this architecture can scale power and runtime as demand grows or as higher levels of availability are required.

Symmetra PX serves as the core power train that drives InfraStruXure systems for small and medium data centers but can also power individual "zones" of larger data centers. Highly manageable, the Symmetra PX features self-diagnostic capabilities and standardized modules which mitigate the risk of human error resulting in increased overall data center reliability.

Symmetra MW (400kW-1600kVA) – The Symmetra MW, 400 -1600kVA ultra energy efficient, modular, scalable, 3 phase UPS power protection is ideal for large data centers and mission-critical environments. The MW redefines high-power UPS technology as a modular, fault-tolerant UPS in the 400kW - 1600kW range. Ideal for large data centers, complete buildings, healthcare and other critical facility protection requirements, the Symmetra MW can be scaled for rigorous and changing electrical demands.

Symmetra MW provides increased availability through internal N+1 configurability, predictive failure notification and multi-module paralleling features. Setting a new standard for low cost of ownership, Symmetra MW delivers best-in-class efficiency and a reduction in rating of electrical infrastructure- wires, transformers and generators. Slide-in/out power modules, manageable external batteries and self-diagnosing features greatly reduce mean time to repair, and lithium-ion battery solutions reduce battery maintenance and cost.

Symmetra MW provides a customizable system in a standardized design for any large on-demand network-critical physical infrastructure.

Facility and Gray Space Applications

Critical applications outside the data center are often referred to as facility or gray space applications. Because data centers aren't the only application that require reliable back-up power, Schneider Electric offers an extensive line of facility 3-Phase UPS options ranging from 10kVA up to 1500kVA. These are the most versatile product offerings available and their high configurability makes them customizable to just about any application.

Facility and Gray Space UPS equipment is designed to thrive in space that is not able to maintain ideal temperature

Galaxy VS – Galaxy VS is a highly efficient, modular, easy-to-deploy 20 to 100 kW (480 V) and 10 to 50 kW (208 V), three-phase uninterruptible power supply that delivers top performance for edge, small, and medium data centers, as well as critical infrastructure in commercial and industrial facilities. Its compact design, high-density technology, N+1 redundancy, and fault-tolerant architecture maximize availability, operational efficiency, and critical load protection, while minimizing total cost of ownership. Thanks to patented technologies, this UPS delivers up to 97% efficiency in normal operating mode and up to 99% in ECOnversion mode, equivalent to 66% higher energy savings. Galaxy VS is EcoStruxure ready to give you peace of mind anytime, anywhere. Smart modular batteries integrated in the UPS cabinet optimize footprint and ensure critical loads have highly predictable runtimes. Start-up service is included to optimize your system's performance, quality, and safety.

Galaxy VM – The Galaxy VM is highly efficient 3 phase UPS, with power rating of 160 -1125kVA (480V). The VX is ideal for medium data centers, industrial or facilities applications. Galaxy VM deploys state of the art technology to lower energy cost through very high efficiency ratings and the newly innovative ECOnversion mode. Galaxy VM seamlessly links to your electrical network using state of the art electrical performances like very wide input voltage range, high overload and short circuit capacity, and integrated back feed protection, providing excellent power quality. The highly compact Galaxy VM also links in with your facility monitoring systems and smart grid requirements and offers both traditional and modular energy storage

flexibility that allows tailoring of the solution to specific needs. Galaxy VM features top and bottom cable entry without the need for an additional side cabinet, full front service access, back to the wall installation, and included start up service, making it one of the easiest UPS in its class to deploy, install and maintain.

Galaxy VX – The Schneider Electric Galaxy VX UPS is highly efficient 3-phase power protection with flexible operating modes. It is a scalable, high-performance extension of the Galaxy V-Series solutions, designed for large data center and industrial applications. With power ratings of 500 to 1500kVA and 500 to 1500kW N+1, the VX offers 99% efficiency in ECOnversion mode and can lower your energy costs. The VX is easy to install and deploy. You can manage your power from anywhere as the Galaxy VX supports local and remote communication via touchscreen, Web interface, Modbus, and the Schneider Electric StruxureWare for Data Center Expert solution.

Galaxy Lithium-Ion Battery Systems – The Schneider Electric Lithium-ion battery solution offers a compact, lightweight, long-lasting and sophisticated energy storage solution for 3-phase uninterruptible power supplies. This is a high-value, innovative energy storage protection solution for data centers, industrial processes, and critical infrastructure. The Li-ion battery solution significantly reduces battery footprint and weight to allow more effective use of space. It also doubles battery life and simplifies maintenance compared to traditional batteries. The higher operating temperature reduces cooling requirements, and the included battery management system improves backup storage predictability and manageability, which reduces total cost of ownership.

Industrial Applications

Many environments are dusty, warm, and just not ideal for highly sensitive IT UPS equipment. Industrial applications are rugged environments and a reliable workhorse UPS is simply the only option. Resistant to dust, heat, and other irritants in dirty, industrial environments, this family of Schneider Electric UPS is designed to deliver reliable back-up power in harsher environments.

Industrial UPS equipment is designed to withstand dirty, hot and dusty environments.

Gutor PXC – The Gutor PXC 3 Phase UPS, 25 to 100kVA (208V), offers high performance in a compact footprint and is ideal for light and heavy industrial applications. The PXC is the first pre-engineered industrial UPS for light and heavy industrial environments. Highly compact, Gutor PXC works effortlessly with your facility monitoring systems and offers full industrial design options, and a wide temperature range from -10 to +55 °C. It also features top and bottom cable entry and a fully integrated isolation transformer option (50Hz: available today; 60Hz: coming soon). The PXC boasts full front service access, modular fans, power modules and easy installation and maintenance.

Conclusion

APC by Schneider Electric has one of the most varied product offerings of UPS equipment in the world. Choosing the right APC UPS can be intimidating, but it doesn't have to be. Connecting with a power expert from Power Solutions will help identify the right the APC by Schneider Electric UPS to buy whether it's for your home office or for a multi-floor office building. Give us a call and we can get started.

For more details about choosing the right APC UPS for your application, contact Power Solutions. 800-876-9373 or sales@power-solutions.com

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