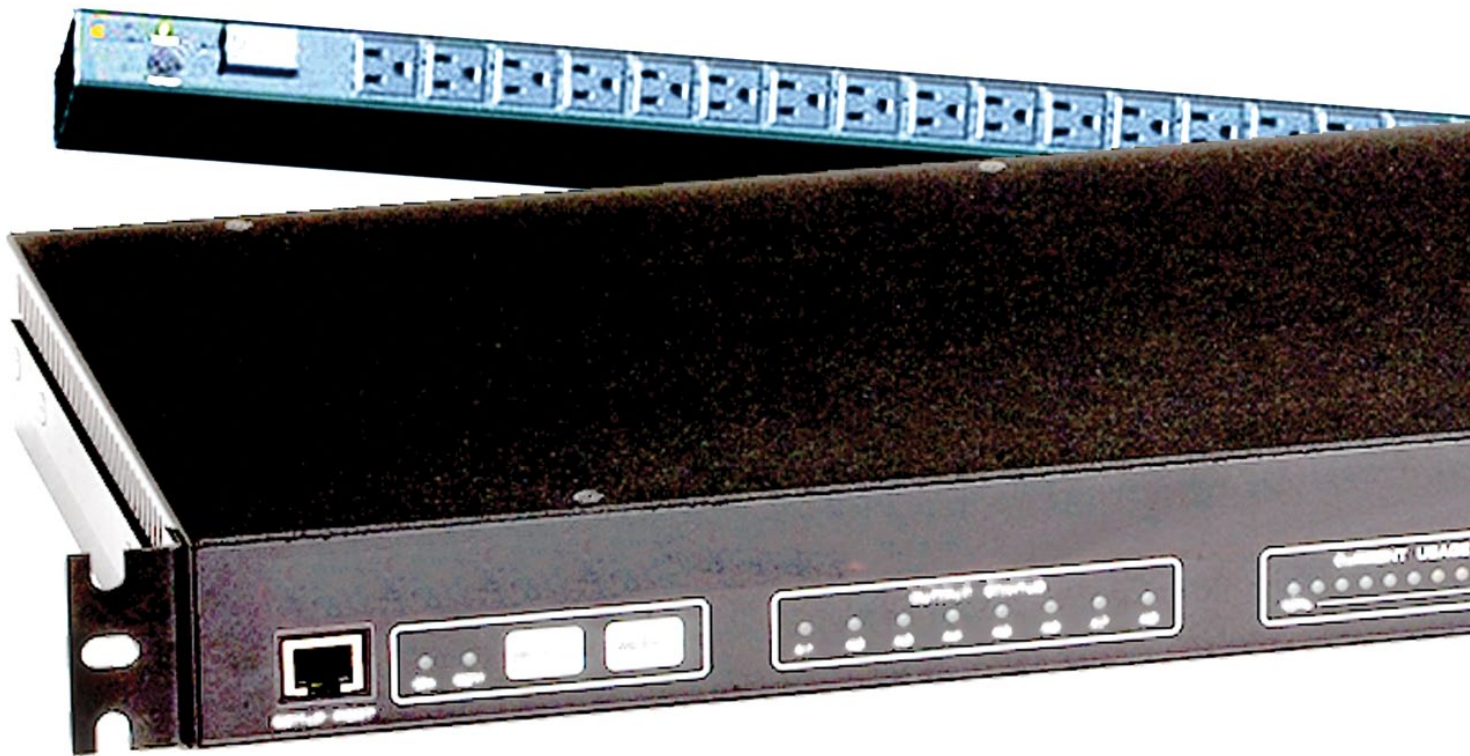


BUYING TIPS:

UPSes



THE IMPORTANCE OF UPSes can't be overstated. If power outages occur and the data center doesn't have UPSes in place that can meet necessary power requirements, the result will be potentially business-crippling downtime. Consider the following advice when purchasing UPSes.

Cover The Basics

Narrowing down the exact elements you should seek in UPSes can be difficult, and the number of options available can complicate matters. "You have to start with some basics and be armed with some knowledge before making a selection," says Brett Femrite, director of business development at Rackmount Solutions (866/207-6631; www.rackmountsolutions.net). "Selecting the appropriate size UPS and feature set aren't the easiest tasks." Prep work includes having data available detailing the total load of all equipment you'll connect to the UPS, the minimum time UPS batteries must provide power, and the maximum runtime needed, he says. "You'll also need to know the voltage of the electrical service that will power the UPS," Femrite says.

Jim Hall, marketing manager at Staco Energy Products (866/261-1191; www.stacoenergy.com), advises obtaining UPSes that provide an overall efficiency rating of 95% or greater, input power factor greater than 99%, and input distortion factor of 3% or less. Also consider models with multiple operation modes that are generator-friendly and that support hot system expansion, which allows parallel UPS additions without going to maintenance bypass, resulting in continuous protection of the loads.

Overall, ensure the UPS has sufficient capacity to handle IT loads. Additionally, make low TCO a primary objective when selecting UPSes, Hall says. "This includes batteries and other auxiliary hardware. The considerations are initial cost to acquire, install, operate, and maintain the equipment." UPS maintenance (in-house or outsourced) is also a significant portion of TCO cost, he says. Additionally, backup batteries that need replacement form the main factor affecting a UPS TCO figure, he says. Be sure to pay attention to

battery types, longevity, quantity, and automatic testing when specifying a UPS.

Determine What's Important

The UPS features your enterprise needs can depend greatly on the protection level required for given applications. Femrite says that although it's desirable to have a UPS with a high efficiency rating, external bypass

switches that enable power to bypass the UPS for maintenance purposes, monitoring capabilities (local and remote), warranties (system, batteries, etc.) and high-performance filtering, "they may not all be needed or cost-effective."

Hall says three-phase online double conversion (converts AC to DC power and back to AC) UPSes provide the best overall value while providing conditioned power to IT loads. Such systems completely isolate the load from the primary AC line, preventing noise, sags, and swells from reaching the load. Also consider UPSes with high-performance filtering (protects upstream power sources from harmonics and reactive power), dual input for main and secondary emergency standby power (increases resilience of both single and parallel configurations), and IGBT (insulate-gate bipolar transistors) and DSP (digital signal processors) that provide for true online double conversion UPS system, Hall says.

Monitor Battery Power

Batteries, Halls says, are the leading cause of power interruptions, both as primary emergency power backup and as the source of crossover power for starting backup generators. Batteries degrade with age, he says, even when not experiencing lots of discharge cycles. If minimum runtime is critical, select a battery that provides a cushion so that after several years minimum, runtimes are still achievable, he says. Also ensure the UPS is properly sized to handle transient loads that might occur when utility sources aren't available. "While a UPS can handle significant momentary overloads using the bypass, this capability is not available when running on battery power," Hall says. Enterprises often buy UPSes sized too close to the average load power and don't take transient loads into account, he says.

Also, Hall says, federal law requires that all used lead acid batteries be managed as universal waste. "For this reason alone, facilities with lead acid valve regulated or wet cell/flooded batteries should consider hiring approved firms to handle all battery installations, maintenance, and disposal," Hall says. ■

BUYERS' CHECKLIST

- ✓ Determine your power and protection requirements
- ✓ Ensure the UPS can handle required loads
- ✓ Make certain the UPS provides sufficient runtime and capacity
- ✓ Consider outsourcing battery installation, maintenance, and disposal duties
- ✓ Determine warranty, insurance, and guarantee requirements

KEY TERMS

Line-interactive:

A UPS type with built-in line-sensing abilities to regulate high- and low-voltage levels; an inverter activates when power loss occurs and the system switches to battery power.

Online:

A UPS type providing the highest protection level; the inverter is online and operates constantly to eliminate incoming surges and low and high voltage issues while delivering clean power.

Standby:

A UPS type that runs power through surge suppression to connected equipment; after a power outage, the UPS switches to battery backup power, reverting to AC power when power returns.