

MGE EPS 8000 Family

Performance power protection for large applications



EPS 8000 — Adaptive three-phase power protection up to 1125 kW in a single unit

- Proven track record
- Flexible wiring options
- Parallel configurations
- Intuitive monitoring
- Large color touch screen display
- OSHPD and IBC Seismic certified

Features and benefits

High availability and performance for large critical applications

The EPS™ 8000 is a true high-performance machine with efficiency up to 94 percent, delivering clean, reliable power even in the harshest of electrical environments. It also features 100 percent step-load capability, which ensures a fast response to load changes with highly accurate voltage regulation. In addition, the EPS 8000 incorporates fault-tolerant circuitry that protects the UPS from accidental short circuits usually caused by load side failures or overloads. The MGE EPS is equipped with a 100-percent-rated output static switch with a stable, reliable, predetermined response time. The low

carbon footprint and full front access with zero electromechanical connections at the rear of the unit allows for installation against the wall. The MGE EPS 8000 is the primary choice in the large data center market. Setting benchmarks for quality and availability, ranging from 555 to 1125 kVA in a single unit. Relying on advanced 12-pulse rectifier and inverter technologies, the unit restricts total harmonic distortion to less than 5 percent. Copper galvanic isolation is provided for both input and output to the UPS, isolating the DC ground from upstream devices in the event of a ground fault condition due to battery leakage.

MGE EPS 8000

Integration and management

- Schneider Electric StruxureWare™ software applications and suites
- Complete front access design for ease of installation and service
- Network management capability for easy access to the network
- Comprehensive local and remote monitoring over multiple protocols
- Extensive portfolio of site design, installation, and maintenance services
- Flexible bypass and auxiliary cabinet designs
- Broad selection of battery backup solutions
- Parallel flywheel energy storage solutions available for 555 – 1100 kVA EPS 8000 UPSs

Energy and cost savings

- Proven performance in real-life applications
- Centralized switch and integrated parallel configurations for redundancy and future expansion
- Reduced footprint with higher power density
- Adaptable cabling configuration for lower installation cost
- Electrical isolation with higher efficiency
- Modular rectifier, inverter, and filter subassemblies for ease of service
- Short and long backup times

MGE EPS 8000 features

Integrated input isolation transformer

Every EPS 8000 is equipped with an input isolation transformer fully integrated into the core module. Integrating the transformer directly into the module saves space and provides all the benefits of galvanic isolation, including a very robust buffer between the utility and the critical load.

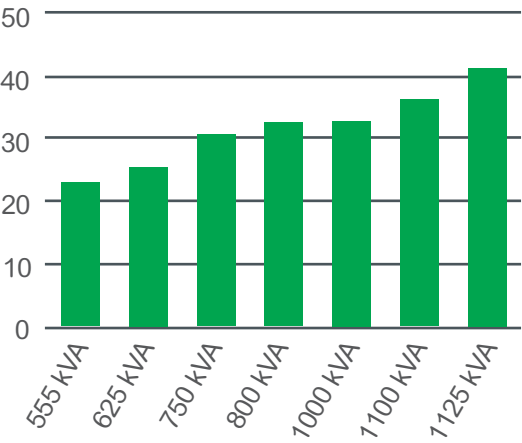
12-pulse rectifier

By using a 12-pulse rectifier, the EPS 8000 greatly reduces harmonics reflected onto the utility bus. Meaning the input filter required to reduce harmonics to 5 percent is only a fraction of the size of a traditional 6-pulse UPS module.

Power density and accessibility

The EPS 8000 has the highest power density footprint of any UPS in its class, providing up to 1125 kW at unity power factor at over 40 kW per square-foot power density. This is over 12 percent more power than competing standard models. Among the only UPS modules with 100 percent true front access, the EPS 8000 requires no rear or side access. All electromechanical connections are accessible via the front of the unit.

Power Density by Model



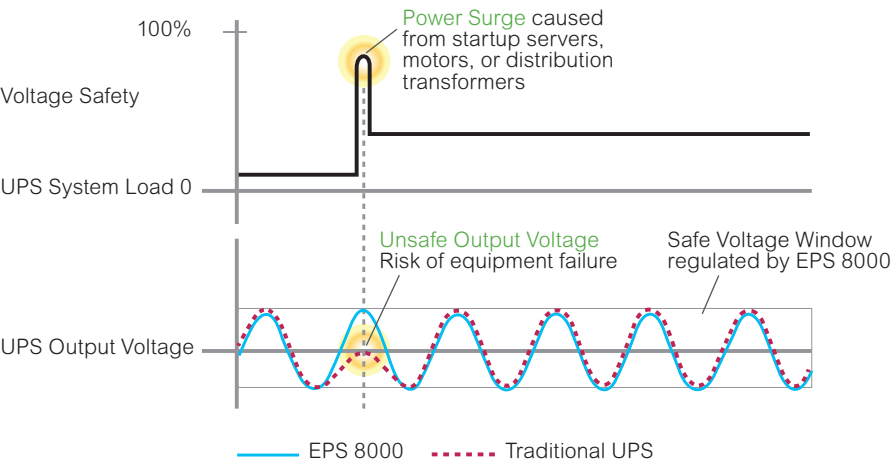
100 percent step-load response — the essential performance characteristic

Another feature of the EPS 8000 is the inverter's super dynamic response. Even in the event of a 100 percent step load (0 percent load to 100 percent load instantly placed on the output of the UPS), the output voltage will remain in tolerance for all three phases.

When facing step-load changes as high as 100 percent of the nominal load, the EPS 8000 inverter maintains output voltage regulation to within 5 percent or better on all phases. This regulated dynamic response is essential as extreme step loads are common when starting distribution transformers or large banks of servers. Medical imaging systems and broadcast transmitters also exhibit very high step loads, making the EPS 8000 ideal for such applications.

Good dynamic response is also vital in redundant UPS systems when the redundant UPS is required to pick up 100 percent of the load in the event of a power transfer from the primary UPS. The redundant UPS must be capable of instantly sustaining any load level without any decay in voltage quality.

MGE EPS 8000 Electrical Isolation



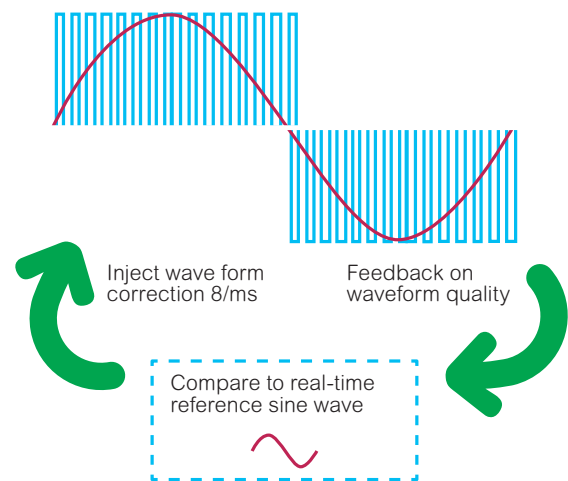
MGE EPS 8000 features

Digital power quality inverter

Using a unique technology called Digital Power Quality Management (DPQM), the inverter maintains precision voltage regulation under all operating conditions. The key to the superior performance lies in the speed and resolution of the waveform, which is generated by up to eight pulses per millisecond, allowing the waveform to be tightly controlled. The waveform is constantly compared to a real-time reference sine wave. If the sine wave deviates from the reference sine wave, the gain of the inverter output is adjusted, creating a “correction” pulse maintaining a “power quality envelope” that is ± 1 percent of a perfect sine wave. A free switching frequency accelerates during periods of major variations for better regulation. By optimizing the switching frequency, the EPS 8000 is also able to minimize switching losses and maintain a high efficiency level even at lower loads.

Another benefit of the high-resolution control topology is that harmonic distortion reflected from the loads is practically eliminated.

Digital power quality logic



MGE EPS 8000 Options

Integration and management

- Short and extended backup times
- Traditional battery solutions
- 555 – 1100 kVA EPS 8000 UPSs:
Flywheel energy storage
- Battery and breaker cabinets
- Bypass cabinets for both single unit
and parallel system configurations
- Cable routing through top, bottom,
or side
- Increased Short-Circuit Current
Rating (SCCR)
- Certified seismic frame

MGE EPS 8000 features

Redundant, expandable configurations

In addition to a single UPS system configuration, the MGE EPS 8000 supports both centralized parallel and integrated parallel installations.

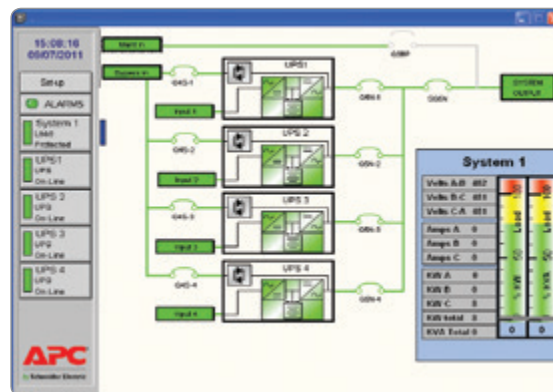
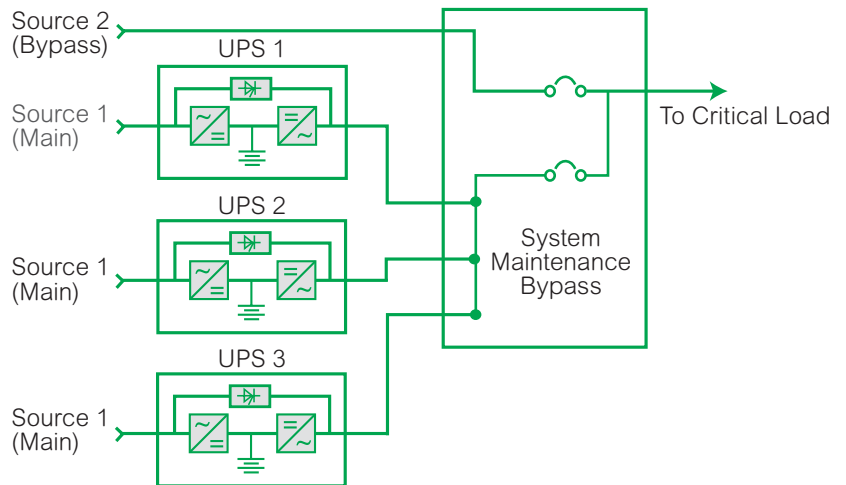
Parallel redundant configurations consist of paralleling multiple, same-size UPS modules on to a common output bus. These installations are designed for redundancy (N+1) or future expansion. A centralized parallel configuration will have a single automatic switch controlling the connection of each UPS system onto the output bus. An integrated parallel configuration will have all UPS systems communicate to control the switchover. The output voltage is completely synchronized in both configurations.

The UPS modules in a parallel redundant installation share the critical load evenly in normal operating situations. When one of the modules is removed from the parallel bus, the remaining UPS modules will immediately accept the load for the failed UPS module. This capability allows any one module to be removed from the bus without requiring the critical load to be connected to straight utility.

Graphical user interface

The advanced graphical interface for the EPS 8000 UPS system features a 12-inch, high-contrast touch screen. Delivering features including animated mimic diagrams, alarm event logs, trending, component level status, and more, the interface presents UPS status information in an easy-to-read graphical format. Guided by a clear menu, users can navigate through all screens to explore system-level information on a single UPS or across all UPSs on the parallel bus.

Single-line Integrated Parallel



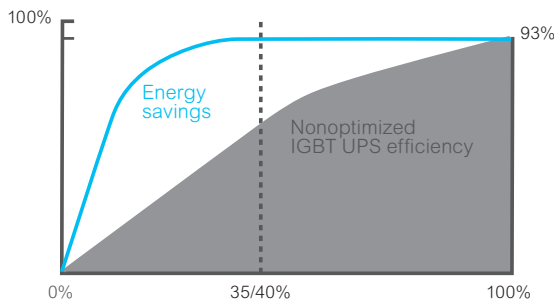
Graphical user interface displays and controls parallel configurations

Specific technical advantages

Energy-efficient for significant cost savings

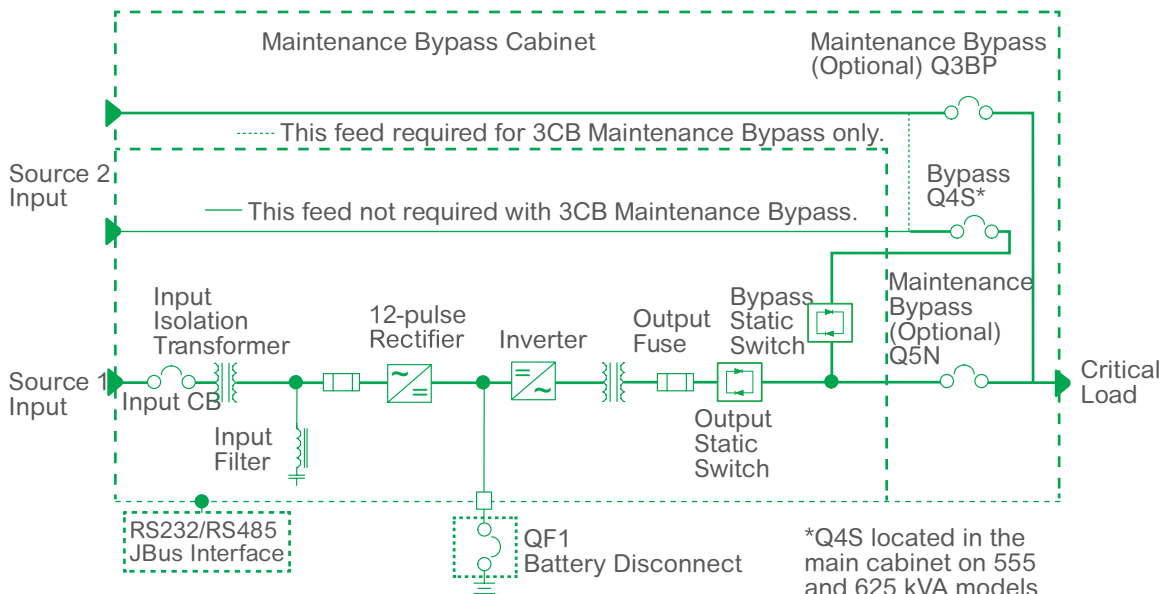
The energy efficiency of the EPS 8000 is extremely high, especially at lower loads where redundant UPS modules operate. Even with the standard input isolation transformer (most published efficiencies do not include the input isolation transformer), efficiency is among the highest in the industry. The result is often energy cost savings that exceed the cost of the UPS in as little as three to five years compared to leading brands.

- Core efficiency up to 94 percent with input isolation transformer
- High efficiency maintained over lower load levels where most UPS module operate
- Potential energy cost savings that can equal the value of the UPS in as little as a few years



The EPS 8000 is the most generator-friendly UPS thanks to its unique input filter technology. This technology eliminates one of the major reliability risks associated with large UPS systems: the failure of the generator to support the UPS under low load conditions. Generator/UPS interaction problems are typically caused from the capacitor located in the input filter (used to regulate the THD reflected by the UPS rectifier), which create very high reactive currents at loads below 40 percent, where most UPS products operate.

The traditional way to combat the problem of the UPS reactive currents is to oversize the generator by up to three times in the case of multimodule systems. This is an extremely expensive solution that also requires the generator operate at very low loads, causing carbon build-up and shortening the life of the generator. Shunt inductor input filter technology provides a superior solution that both limits input THD and ensures that the input power factor never becomes leading at all load levels. The result is a very reliable filter technology that permits safe UPS/generation operations without excessive generator oversizing.



StruxureWare for Data Centers Software Suite

In the data center environment, the EPS 8000 is fully managed through StruxureWare for Data Centers software, an integrated suite of data center infrastructure management (DCIM) applications. It enables businesses to prosper by managing their data centers across multiple domains, providing actionable intelligence for an ideal balance of high availability and peak efficiency throughout the entire data center life cycle. StruxureWare software applications and suites are key elements of Schneider Electric EcoStruxure™ integrated hardware and software system architecture — a system designed for intelligent energy management.



A Comprehensive Portfolio of Services

Schneider Electric Critical Power & Cooling Services (CPCS) provides the expertise, services, and support you need for your building, industry, power, or data center infrastructure. Our world-class life cycle services offer a smart way to install and maintain your critical applications, ensuring your systems are always running at peak performance. Assembly and start-up service by a certified Field Service Engineer (FSE) allows full factory warranty coverage.

A Schneider Electric certified installation makes certain your equipment is properly configured for optimal performance. This service features a standard eight-hour, five-day response time with upgrades available for off-business hours.

On-site warranty extension service

In the case of a system event, an FSE will arrive by the next business day (or faster with upgrades) to isolate, diagnose, and correct in as little time as possible, minimizing downtime.

Advantage plans

Flexible service packages offer hassle-free system maintenance to improve uptime at a predictable cost. The Advantage Plus, Prime, Ultra, and Max are full-service packages that include technical support, preventive maintenance, quick on-site response, and remote monitoring. Response time upgrades are available.

Remote Monitoring Service (RMS)

RMS is an economical and easy-to-use Web-based service that lets you quickly respond to environmental or system changes. Trained technicians provide secure 24-hour monitoring of your physical infrastructure to diagnose and resolve events before they become critical.

Preventive maintenance

On-site examinations and preventive maintenance keep your critical systems running at maximum efficiency.



Technical specifications

	555/500	625/562	750/675	800/720	1000/900	1100/990	1125/1125
Normal AC Supply Input							
Input voltage	480/575/600 V Nominal, 3 Ph 3W + G						
Normal and bypass AC inputs	Dual or single input						
Frequency	60 Hz +/-10%						
Input power factor	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Distortion (THDI)	Less than 5% at full load						
Output							
Phase-to-phase output voltage	480/575/600 V						
Load power factor	0.9 lagging to 0.9 leading (with derating)						1
Output frequency	60 Hz (selectable +5%) 0.1% free running						
Overload capacity	+/- 1% steady state (+2.5% 100% step load)						
Output voltage regulation	125% for 10 minutes, 150% for 1 minute						
Total harmonic distortion (THDU)	<2% line to line						
Output voltage tolerance	+/-5% adjustable						
Overall Efficiency							
System efficiency (50% load)	93.0%	93.5%	94.0%	94.0%	92.2%	92.2%	93.8%
System efficiency (75% load)	93.2%	93.3%	94.2%	94.0%	92.1%	92.0%	94.0%
System efficiency (full load)	93.1%	93.0%	94.0%	93.9%	91.4%	91.0%	93.7%
Full load heat rejection (BTU)	127,000	145,000	147,000	160,000	290,000	335,000	270,000
Environmental Conditions							
Max. audible noise at 5 ft from unit	74.0	74.0	78.0	78.0	72.5	72.5	76.5
Operating temperature	0 to 40 °C (32 to 86 °F)						
Storage temperature	-20 to 50 °C (-4 to 122 °F)						
Relative humidity	0 to 95% (noncondensing)						
Dimensions and Weights							
Multimodule (W x H x D)	121 x 82 x 39 in.				141 x 90 x 44 in.		
Single module — top entry	121 x 82 x 39 in.		135 x 82 x 39 in.		141 x 90 x 44 in.		
UPS cabinet (lb)	12,200		14,000		17,000		480 V: 19,770 575/600 V: 20,620
Maintenance bypass for single module	22 x 82 x 39 in.				24 x 90 x 45 in.		
Bottom entry	36 x 82 x 39 in.				24 x 90 x 45 in.		
Battery disconnect	36 x 90 x 24 in.				36 x 90 x 24 in.		
Max shipping split	61 x 82 x 39 in.				70 x 90 x 45 in.		

NOTE: Due to continued product enhancements, specifications are subject to change without notice. Data above is for reference only — not construction. Schneider Electric assumes no liability for damages as a result of any data errors or omissions in this document. Consult product technical specifications and installation drawings for further details.

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