



EPS 8000

555/625/750/800/1,000/1,100 kVA
Performance power protection
for critical applications



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Life Is On

APC[™]
by Schneider Electric



555 – 1,100 kVA robust three-phase power protection with adaptability to meet the unique requirements of medium to large data centers, buildings, and critical industrial processes

- Strong electrical features
- Intuitive monitoring
- New integrated parallel capabilities
- Synchronization to external source
- High availability architecture components



Features and benefits

High availability, high performance

The EPS 8000 is the primary choice in the large data center market, with its benchmarks for quality and availability, and ranging from 555 to 1,100 kVA in a single box. 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 while isolating the DC ground from upstream devices in the event of a ground fault condition due to battery leakage. The EPS 8000 is a true high-performance machine with efficiency up to 93.5 percent, delivering clean, reliable power even in the harshest of electrical

environments, and featuring 100 percent step-load capability, which ensures a fast response to load changes with 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 EPS is equipped with a 100 percent-rated output static switch with a stable, reliable, predetermined response time. Low carbon footprint and full front access with zero electromechanical connections at the rear of the unit allows for installation against the wall.

EPS 8000

Availability

- Higher power density
- Low kVAR filter
- Redundant parallel logic
- Integrated input/output isolation transformer
- Parallel for capacity or redundancy
- Higher level of availability than single module systems

Serviceability

- Front-access design
- Modular rectifier and inverter sub-assembly
- Intuitive graphical display
- UPS controls reside in each module, not in a centralized location or switchgear

Economy

- Low installation costs
- Reduced footprint
- Optimized CapEx solution
- Lower CapEx than SSC-based designs
- Low CapEx solution for growing enterprise

Simplified installation

- Top entry standard
- Comprehensive installation procedures
- IBC 2006 Seismic Compliancy
- Smaller footprint than SSC-based designs

Approvals

- UL1778
- cUL

Manageability

- Adaptable configurations
- Advanced battery management
- Remote power monitoring
- Built-in modbus

Options

- Battery cabinets
- System bypass cabinets
- SSC cabinets
- Bottom entry cabinet
- Network SNMP

Typical applications

- Data centers
- Financial institutions
- Industrial
- Healthcare
- Petrochemical
- Utility

EPS 8000 features

Integrated input isolation transformer

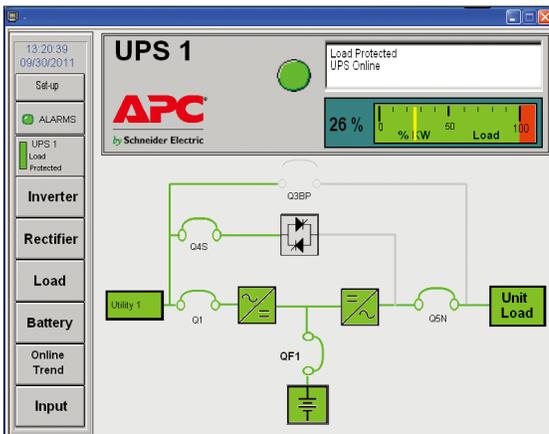
Every EPS 8000 is equipped with an input isolation transformer fully integrated into the core module. Integrating the transformer directly into the module saves footprint and provides all the benefits of galvanic isolation, including a very robust buffer between the utility and the critical load.

12-pulse rectifier

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

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 single or parallel systems.

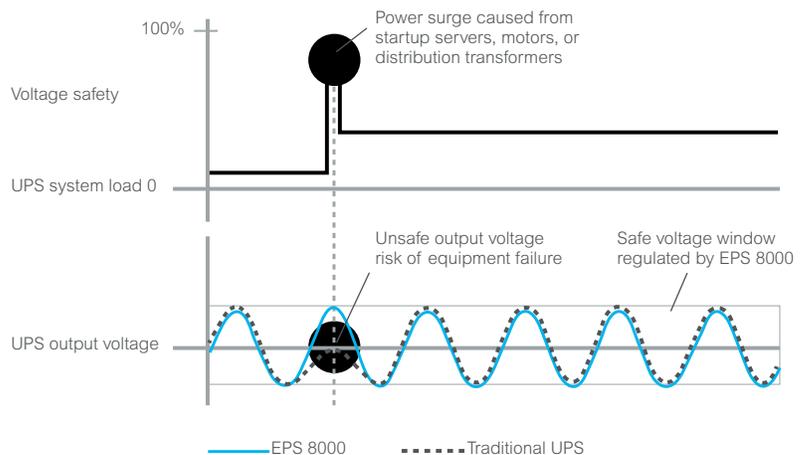


100 percent step load response — the essential performance characteristic

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.



EPS 8000 features

Digital power quality inverter

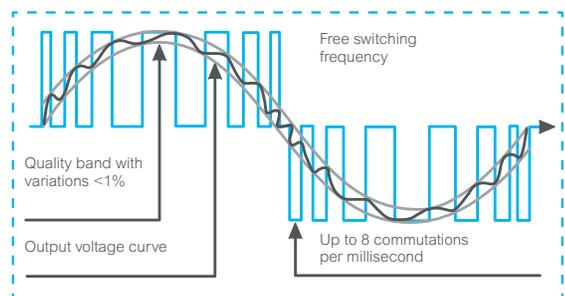
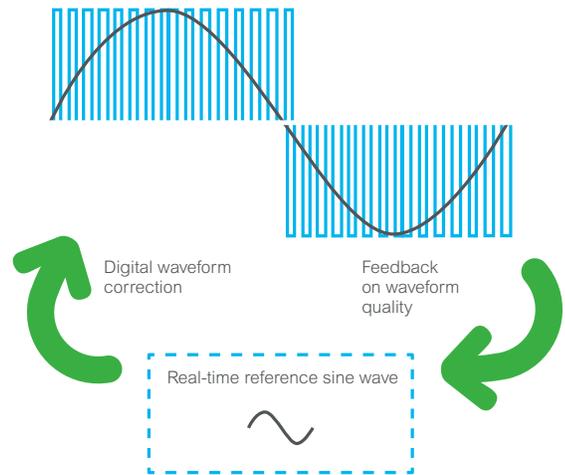
Using a unique technology called Digital Power Quality Management, the inverter maintains precision voltage regulation under all operating conditions. The key to the superior performance lies in the speed and resolution of the waveform, which is generated by up to eight pulses per millisecond, allowing 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.

Accessibility

Power density: The EPS 8000 has the highest power density (footprint to kW) of any UPS in its class, providing up to 720 kW at 0.9 power factor and up to 23 kW/square foot power density. This is over 12 percent more power than competing standard models. As average loads are growing (average IT and computer loads are increasing by 15 percent annually), the extra power provided by the EPS 8000 will easily accommodate future growth, realizing significant savings by avoiding the requirement for future system upgrades. 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.

Digital power quality logic



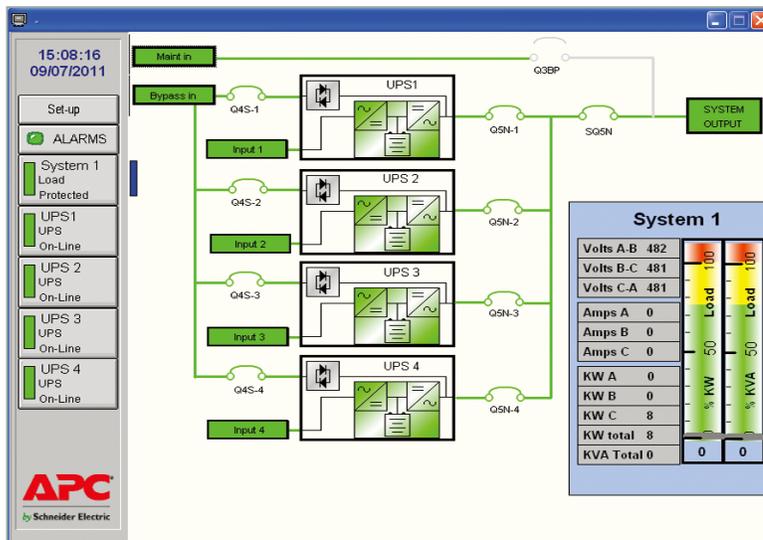
EPS 8000 features

Integrated parallel UPS display

Each EPS 8000 UPS is equipped with a 12-inch graphical user interface (GUI) and can monitor and display the load on the system and the system voltage and current characteristics at a system level. The GUI has touch-screen capability and can display how many modules are on the parallel bus,

module status, and how many modules are needed in order to maintain redundancy in the system.

Integrated parallel allows the user or engineer to easily configure up to 3+1 UPS modules without a centralized static switch cabinet.



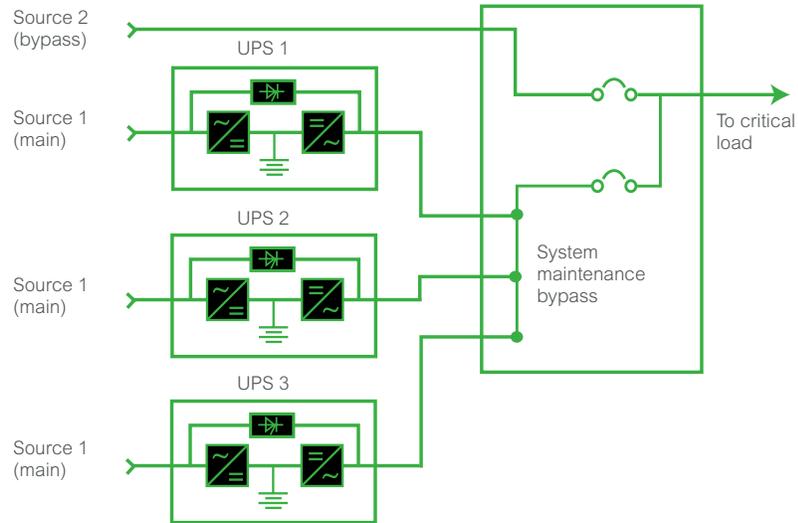
Operation

All of the UPS modules in an integrated parallel N+1 configuration feed the critical load directly. The system's static switch is the sum of the individual UPS modules' static switches and the system's maintenance bypass is typically integrated into the system's switchgear.

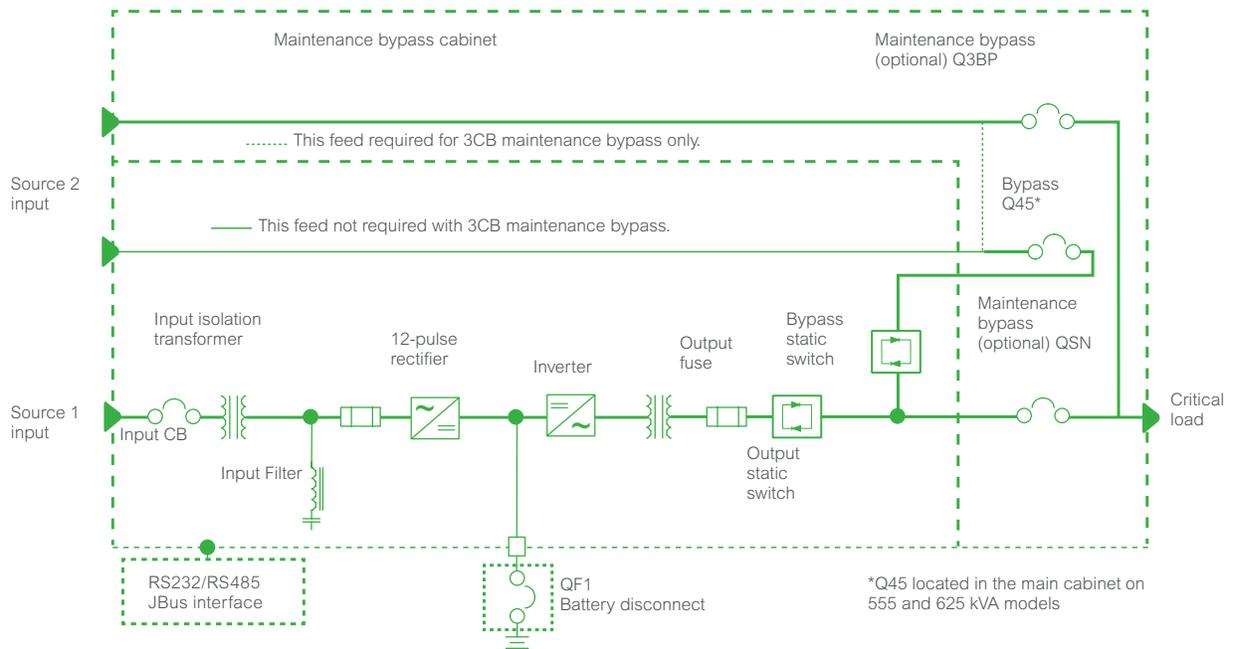
A parallel redundant configuration consists of paralleling multiple, same size UPS modules onto a common output bus. The system is N+1 redundant if the "spare" amount of power is at least equal to the capacity of one system module; the system would be N+2 redundant if the spare power is equal to two system modules. Each EPS 8000 comes equipped with local paralleling boards

for the system in each module. The paralleling boards will communicate with each other to create an output voltage that is completely synchronized. The UPS modules in a parallel redundant design share the critical load evenly in normal operating situations. When one of the modules is removed from the parallel bus for service (or if it were to remove itself due to an internal failure), the remaining UPS modules are required to immediately accept the load of the failed UPS module. This capability allows any one module to be removed from the bus and be repaired without requiring the critical load to be connected to straight utility.

EPS 8000 features



EPS 8000 single module

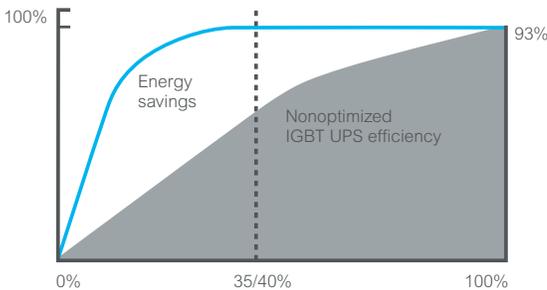


Specific technical advantages

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 usually exceed the cost of the UPS module in as little as three to five years compared to leading brands.

- Core efficiency up to 93.5 percent with input isolation transformer
- High efficiency maintained over lower load levels where most UPS modules operate
- Potential energy cost savings that can equal the value of the UPS in as little as a few years

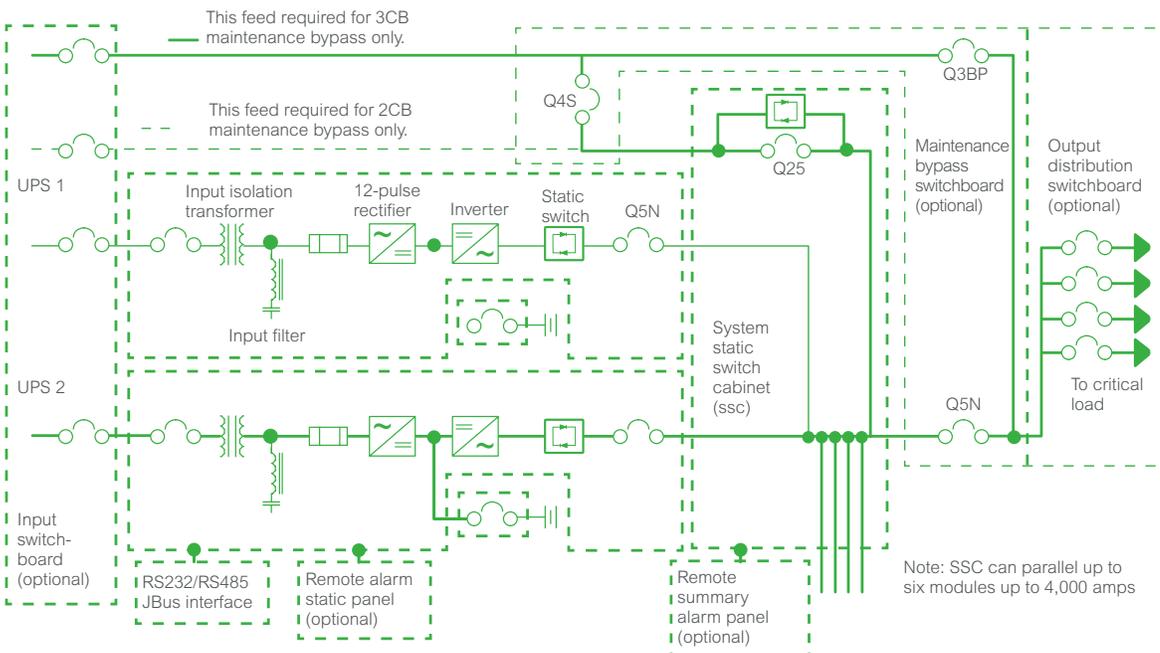


Generator compatibility/Input filter technology

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 capacitors 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 modules operate).

The traditional way to combat the problem of the UPS module's reactive currents is to grossly oversize the generator by up to three times in the case of multimodule systems. This is an extremely expensive solution that also requires that 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 goes leading — at all load levels. The result is a very reliable filter technology that permits safe UPS/generator operation without excessive generator oversizing.

EPS 8000 parallel module with centralized static switch



StruxureWare for Data Centers software suite

APC™ by Schneider Electric UPS units and secure power systems are a core component of any architecture designed for highly critical applications, such as data centers, industry environments, infrastructure, and buildings.

Intelligent energy management of these systems is enabled by Schneider Electric EcoStruxure™ integrated hardware and software system architecture. StruxureWare™ software applications and suites are a key element of the EcoStruxure architecture. StruxureWare software helps maximize system reliability and optimize operational efficiency.

StruxureWare for Data Centers software collects and manages real-time information about assets, resource use, and operation status throughout the data center life cycle. This data center infrastructure management software fully integrates the EPS 7000 UPS. With full system visibility, managers can monitor and apply this information in order to optimize data center performance to meet IT-, business-, and service-oriented goals.



A comprehensive portfolio of services

Schneider Electric Critical Power & Cooling Services provides the highest quality services and solutions by trained and trusted professionals. Our world-class services offer a smart way to build, operate, and maintain your critical applications, ensuring the right people, in the right place, at the right time.

Assembly and start-up service

Assembly and start-up service by a certified Field Service Engineer (FSE) ensures full factory warranty coverage. A Schneider Electric certified installation of your solution ensures your equipment is properly and safely configured for optimal performance. This service features a standard eight-hour, five-day response time, with upgrades available for off-business hours.

Advantage plans

Flexible service packages offer hassle-free system maintenance to improve uptime at a predictable cost. These packages provide your system with the care it needs to operate most efficiently while minimizing downtime. 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 problems before they become critical.

Preventive maintenance

Preventive Maintenance on-site examinations of your critical systems are designed to prevent problems before they occur and keep your system running at maximum efficiency.

On-site warranty extension service

In the event of a system issue, an FSE will arrive on site by the next business day to isolate, diagnose, and correct the problem in as little time as possible, minimizing downtime. Upgrades to even faster response times are available.



Technical specifications

Rated power (kVA/kW)	555/500	625/562	750/675	800/720	1,000/900	1,100/990
Normal AC input						
Input voltage (V)	480 (3ph, 3/4 W + GRD)					
Frequency (Hz)	60 Hz +/- 10%					
Distortion	5% max. THD at full load					
Nominal input current (A)	719	817	1,034	1,103	1,338	1,472
Maximum input current (A)	825	923	1,141	1,226	1,502	1,636
Bypass AC input						
Voltage (V)	+10/-10% UPS output (3ph, 3/4 W + GRD)					
Frequency (Hz)	60 Hz (+0.25 Hz up to 2 Hz)					
Normal bypass current (A)	668	752	900	960	1,203	1,323
Output						
Power factor	0.9					
Output voltage (V)	480 (3ph, 3/4 W + GRD)					
Frequency (Hz)	60 Hz (selectable +5%) 0.1% free running					
Voltage regulation	+/- 1% steady state (+2.5% 100% step load)					
Inverter overload	125% for 10 minutes, 150% for 1 minute					
Max output current (A)	668	752	900	960	1,203	1,323
Battery						
DC current (Max)	1,364	1,533	1,766	1,884	2,392	2,625
Overall efficiency						
System efficiency (50% load) up to	93%		94%		92%	
System efficiency (75% load) up to	93%		94%		92%	
System efficiency (full load) up to	93%		94%		91%	
Full load heat rejection (BTUs)	125,970	158,000	144,000	160,000	282,000	339,000
Environmental conditions						
Acoustical noise level	75 ° dBA at 5 feet					
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)					
Non-operating	-20 °C to +45 °C (-4 °F to 113 °F)					
Relative humidity	0 to 90% (noncondensing)					
Dimensions and weights						
Multi module (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	
Maintenance bypass for single module	22 x 82 x 39 in.				24 x 90 x 44 in.	
Bottom entry	36 x 82 x 39 in.				24 x 90 x 44 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 44 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 guide specifications and installation drawings for further details.

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