PRODUCT BROCHURE

Conceptpower DPA 500

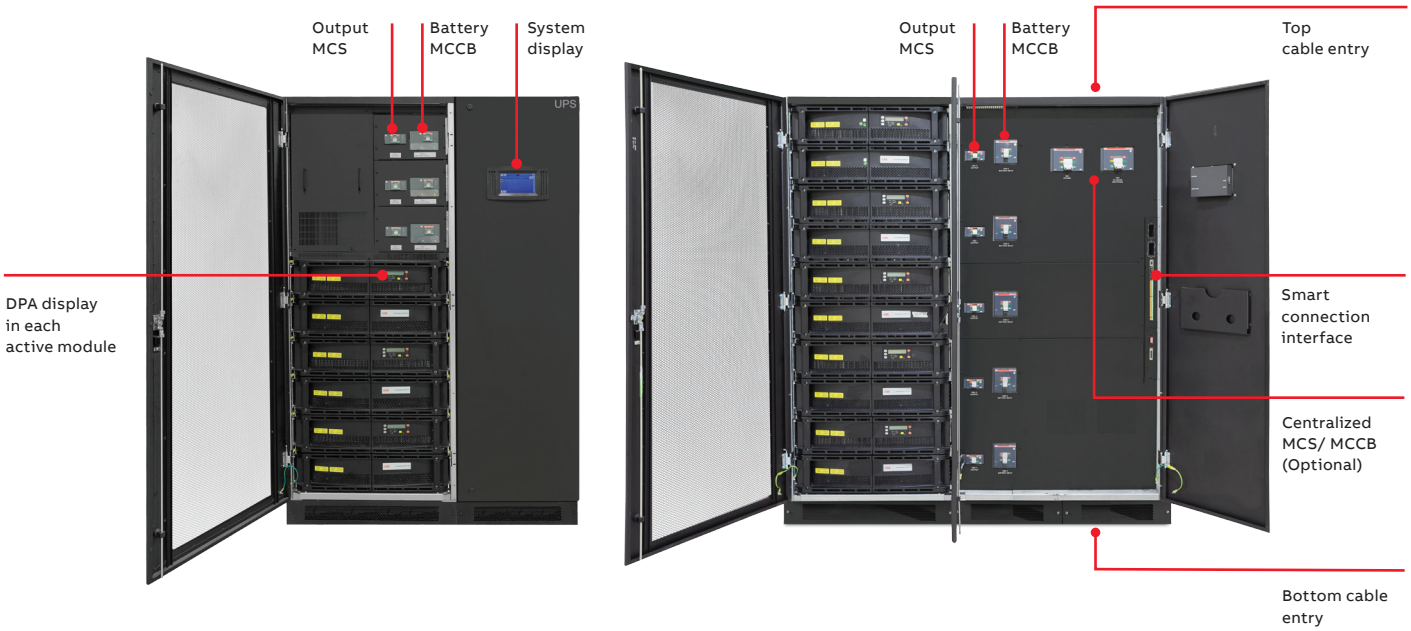
480V UL • Modular UPS

100kW–3MW

Today’s data centers require continuous uptime. That target is why ABB’s Conceptpower DPA 500 is based on Decentralized Parallel Architecture (DPA). Only a truly redundant architecture like DPA allows online modules to be swapped out while the system is running.

Conceptpower DPA 500

The modular UPS for medium-sized and large data centers



Today's data centers require continuous uptime. That target is why ABB's Conceptpower DPA 500 is based on Decentralized Parallel Architecture (DPA). Only a truly redundant architecture like DPA allows online modules to be swapped out while the system is running. Each high-reliability, standardized module is self-contained and can be swapped at any time, so no load has to be ever switched off – making routine maintenance safe and easy. Conceptpower DPA 500 is designed to secure continuity of critical operations for data centers, colocations, server rooms and other IT applications. It also protects industrial automation processes, healthcare facilities and many other vertical markets where operations are of a critical nature.

Key benefits

Maximized availability
- 99.9999% availability
- Decentralized parallel architecture
- Replace or add modules with no downtime
- Short mean-time-to repair
- No single points of failure

Cost effective "right-sizing"
- Scalable from 100kW up to 3MW
- Optimized cabinets – available in 300kW and 500kW
- Vertical and horizontal scalability
- Pay as you grow

Low total cost of ownership
- > 96% true online efficiency
- Small footprint/high power density
- Unity power factor (kW = kVA)
- Low input harmonic distortion (THDi < 3.5%)

Efficient service concept
- Simple power upgrade
- Fast service – low MTTR
- Reduced spare parts needed
- Online-swap modularity (OSM)
- Online serviceability

The lowest total cost of ownership

The Conceptpower DPA 500 boasts a low cost of ownership compared to other UPS systems by offering energy efficiency, scalability and ergonomic design to enable easy serviceability.

It can be sized to align closely with prevailing IT requirements, but can be added to incrementally as IT needs grow. This means that you only power and cool what you need. The resulting savings in power usage over the service life of the UPS are substantial.

Rack-mounted configurations can be right-sized by inserting or removing 'online-swappable' modules while the systems remain online, enabling power to be added as requirements grow without any footprint penalty. This makes servicing simple as modules can be replaced without powering down.

Together with the excellent efficiency rating (> 96%) of the product, all these factors gives the Conceptpower DPA 500 the lowest total cost of ownership of any similar UPS system.

Sized to fit your needs
Designers often over-specify UPS systems to take account of future demand growth. With the Conceptpower DPA 500, modules can simply be added in parallel to increase the system's total capacity. The Conceptpower DPA 500's vertical and horizontal scalability allows:

- Flexible power upgrades and downgrades
- Easy maintenance
- Pay as you grow

Protecting power has never been easier
True, online-swap modularity enables the safe removal and/or insertion of Conceptpower DPA modules without risk to the critical load and without the need to power down or transfer to raw mains supply. This unique feature directly addresses today's requirement for continuous uptime. The ability to online-swap modules in a Conceptpower DPA system significantly reduces its mean time to repair (MTTR) and simplifies system upgrades. The modular approach pays off too when it comes to serviceability and availability – online-swapping of modules means you don't have to switch off or switch to bypass during replacements, so there is no downtime in a redundant configuration.

Installation and service is easy too:
The straightforward concept of the Conceptpower DPA simplifies every step of the deployment process, from planning, through installation and commissioning to full use. Flexible set-up and fast maintenance means lower operating and maintenance costs. The UPS is serviceable by front access only.

Total vertical and horizontal scalability

5x6x100kW=3MW

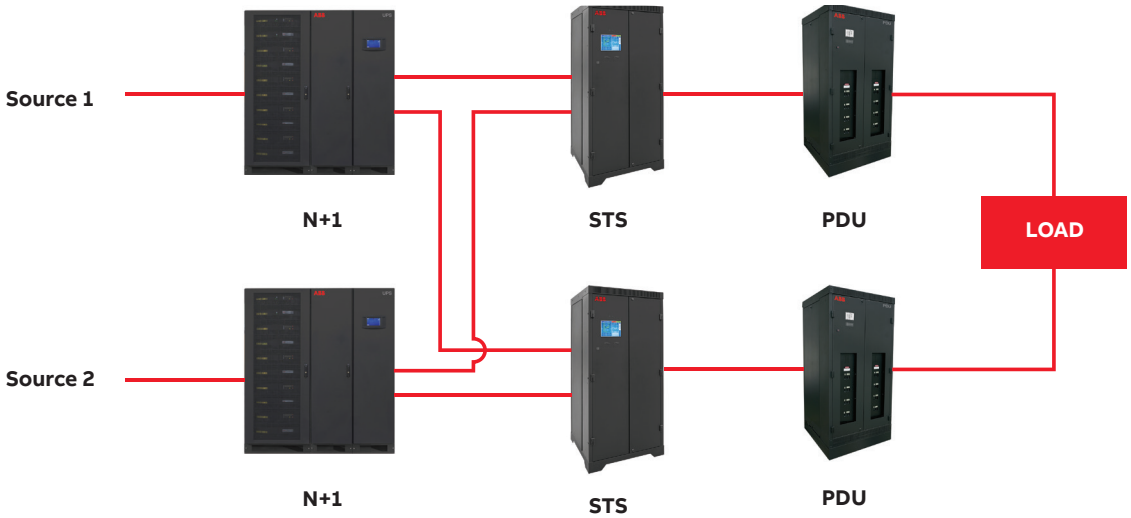
The Conceptpower DPA 500 delivers power protection from 100kW up to 3MW.

With two optimized cabinet solutions, of up to 300 and 500kW respectively, these can operate in a parallel configuration to build the UPS system with both vertical and horizontal scalability. This means that there is no need to over specify the original configuration as power modules can simply be added, as needed, in the future.

Designed with maximum flexibility and redundancy at its core for the standardization of power protection.

In a data center, power distribution systems have historically been oversized to meet the redundancy requirements. The Conceptpower DPA 500 UPS was designed for data centers and other high power applications that require redundant configurations (for example N+1, 2 (N+1), etc.). Adding redundancy for increased availability comes easy with the advanced scalability within the Conceptpower DPA 500 UPS. Conceptpower DPA 500 complements and completes the data center power distribution system for ABB, providing customers with a centralized power protection solution.

Centralized power protection solutions
Sample reference scenario of ABB's centralized power protection solution, Tier 4 data center 2 (N+1) UPS configuration



N = Conceptpower DPA 500 480V UL

Compact cabinet designs provide added flexibility

True parallel architecture
This advanced UPS design provides the highest degree of protection in critical applications where the load must be fed with quality power. The Conceptpower DPA 500 utilizes decentralized parallel architecture and ensures the highest level of reliability and availability with true redundancy across modules.

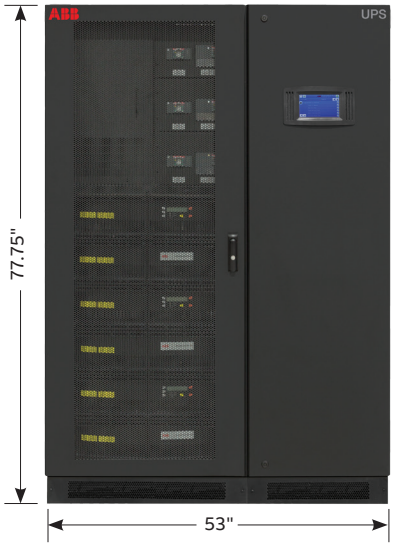
Each module operates independently, containing all hardware and software required for full system operation, creating complete redundancy within the unit. Each UPS module has its own independent static bypass, rectifier, inverter, logic control, control panel and battery charger. With all the critical components duplicated and distributed between individual units, potential single points of failure are eliminated.

Basic system configuration
The module includes:
- 100kW rated power module
- True online double conversion UPS
- Built-in modular isolation
- Built-in backfeed protection
- Individual module display
- HMI interface with mimic diagram and LCD providing information in five languages

The cabinet includes:
- Optimized cabinets, with either 300 or 500kW of rated power
- Top or bottom cable entry (standard)
- Rectifier, bypass terminals (single or dual-input mains connection available) and UPS output terminals
- Battery breakers and output switches for each module set
- Graphical color touch screen system display
- Communication interfaces: RS-232 and USB ports, I/O dry contacts (e.g. EPO, GEN On) and external bypass interlock

Options
- Centralized MCS / MCCB*
- Battery monitoring
- Dual input feed
- Seismic bracing
- Maintenance bypass cabinet*
- Control and monitoring (Modbus RS-485, Modbus TCP/IP, SNMP, Bacnet and others)
- Line-and-match battery cabinets

* Available for some models. Please contact factory for availability.



300kW cabinet	
Capacity	Up to three modules
Parallel capability	Up to 4 cabinets in parallel (1.2MW)

500kW cabinet	
Capacity	Up to five modules
Parallel capability	Up to 6 cabinets in parallel (3MW)

Technical specifications

300kW cabinet	
General Data	
System power range	100kW–1.2MW
Nominal power/module	100kW
Nominal power/cabinet (capacity)	300kW
Output power factor	1.0
Topology	Double conversion, transformerless, modular, Decentralized Parallel Architecture
Parallel configuration	Up to 3 modules in one cabinet (300kW)/up to 4 cabinets in parallel (1.2MW)
Cable entry	Bottom or top as standard
Serviceability	Front access only
Back-feed protection	Built-in as (standard)
Input	
Nominal input voltage	3 x 480V + G
Voltage tolerance	± 10%
Input distortion THDi	< 3.5% at 100% load
Frequency range	60Hz ± 5%
Power factor	0.99 @ 100% load
Walk in/soft start	Yes
Output	
Rated output voltage	3 x 480 V
Voltage tolerance	< ±1% with static load/< ± 4% with step load (referred to 480V)
Voltage distortion	± 1.5%
Frequency	60 Hz
Efficiency	
AC-AC	> 96% (at nominal load)
Environment	
Protection rating	IP 20
Storage temperature	–25° to +70°C
Operating temperature	0° to +40°C
Altitude (above sea level)	1000 m without de-rating
Batteries	
Number of 12V jars/ string	45 jars (540V nominal)
Types	VRLA, vented lead-acid, NiCd
Battery charger	Decentralized charger in each module set
Communications	
User interface	Graphical touch screen (one per cabinet as standard) Decentralized LCD + mimic diagram (one per module as standard)
Communication ports	USB, RS-232, voltage-free contacts, SNMP (optional)
Customer interface	Remote shutdown, gen-set interface, external bypass contact
Compliancy	
Safety	UL 1778 5th edition, CSA C22.2 No. 107.3-14 Third Edition
EMC	IEC/EN 62040-2 C3
Manufacturing	ISO 9001:2008
Weight, Dimensions	
Weight	1944 lbs. (882 kg)
Dimensions WxHxD	53" x 77.75" x 36" (1347 x 1975 x 914 mm)

500kW cabinet	
General Data	
System power range	100kW–3MW
Nominal power/module	100kW
Nominal power/cabinet (capacity)	500kW
Output power factor	1.0
Topology	Double conversion, transformerless, modular, Decentralized Parallel Architecture
Parallel configuration	Up to 5 modules in one cabinet (500kW)/up to 6 cabinets in parallel (3MW)
Cable entry	Bottom or top as standard
Serviceability	Front access only
Back-feed protection	Built-in as (standard)
Input	
Nominal input voltage	3 x 480V + G
Voltage tolerance	± 10%
Input distortion THDi	< 3.5% at 100% load
Frequency range	60Hz ± 5%
Power factor	0.99 @ 100% load
Walk in/soft start	Yes
Output	
Rated output voltage	3 x 480 V
Voltage tolerance	< ±1% with static load/< ± 4% with step load (referred to 480V)
Voltage distortion	± 1.5%
Frequency	60 Hz
Efficiency	
AC-AC	> 96% (at nominal load)
Environment	
Protection rating	IP 20
Storage temperature	–25° to +70°C
Operating temperature	0° to +40°C
Altitude (above sea level)	1000 m without de-rating
Batteries	
Number of 12V jars/ string	45 jars (540V nominal)
Types	VRLA, vented lead-acid, NiCd
Battery charger	Decentralized charger in each module set
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Communication ports	USB, RS-232, voltage-free contacts, SNMP (optional)
Customer interface	Remote shutdown, gen-set interface, external bypass contact
Compliancy	
Safety	UL 1778 5th edition, CSA C22.2 No. 107.3-14 Third Edition
EMC	IEC/EN 62040-2 C3
Manufacturing	ISO 9001:2008
Weight, Dimensions	
Weight	2700 lbs. (1225 kg)
Dimensions WxHxD	70" x 77.75" x 36" (1778 x 1975 x 914 mm)

Note: Please refer to ABB Conceptpower DPA 500 technical documents for configurations, features, recommendations and guidelines.

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