



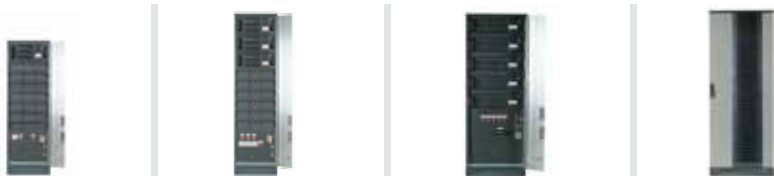
CONCEPTPOWER DPA™

Safe-Swap Modular UPS Systems
for Continuous Power Protection Availability



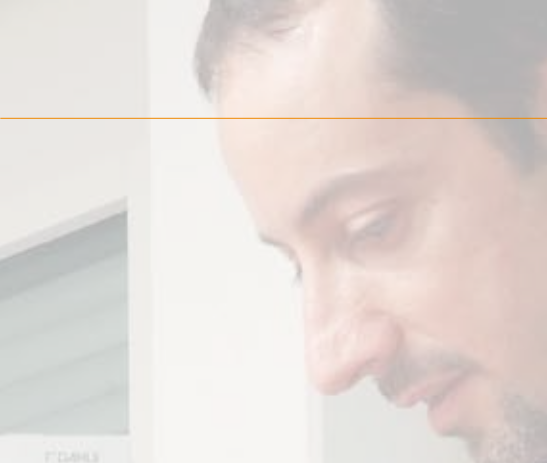
CONCEPTPOWER DPA™ 8-200kW

Technical specifications



CONCEPTPOWER DPA™ MD-FRAMES		CLASSIC DPA-25 UPS+BATTERY	TRIPLE DPA-75 UPS+BATTERY	UPGRADE DPA-125 UPS	CBAT DPA-120 BATTERY			
UPS-modules, pcs	Max.	1	1...3	1...5	-			
Inbuilt Batteries		Yes	Yes	No	Battery only			
Output Power, kVA / kW	Max.	25/20	75/60	125/100	-			
Dimensions (WxHxD)	mm	550x1650x780	550x1975x780	550x1975x780	730x1975x800			
Weight with all modules	kg	Up to 215	Up to 323	Up to 346	290 (with trays & w/out batteries)			
CONCEPTPOWER DPA™ MX-FRAMES		CLASSIC DPA-50 UPS+BATTERY	TRIPLE DPA-150 UPS+BATTERY	UPGRADE DPA-250 UPS	CBAT DPA-200 BATTERY			
UPS-modules, pcs	Max.	1	1...3	1...5	-			
Inbuilt Batteries		Yes	Yes	No	Battery only			
Output Power, kVA / kW	Max.	50/40	150/120	250/200	-			
Dimensions (WxHxD)	mm	730x1650x800	730x1975x800	730x1975x800	1200x1975x800			
Weight with all modules	kg	Up to 318	Up to 407	Up to 485	410 (with trays & w/out batteries)			
CONCEPTPOWER DPA™ SAFE-SWAP MODULES		 For MD-Frames			 For MX-Frames			
Nominal Output Power	kVA/kW	10/8	15/12	20/16	25/20	30/24	40/32	45/40
Topology		True double conversion on-line (VFI-SS-I11)						
Parallel configuration		True modularity, Distributed Parallel Architecture DPA™ (up to 20 modules)						
INPUT								
Nominal Voltage	V	3 x 380/220+N, 3 x 400/230+N, 3 x 415/240+N (-23%,+15% @ 400V)						
Frequency	Hz	35 - 70						
Power Factor		0,99 @ 100% load						
Harmonic Current Distortion THDI	%	< 3% @ 100% load (sinewave)						
OUTPUT								
Voltage	V	3 x 380/220+N, 3 x 400/230+N, 3 x 415/240+N						
Frequency	Hz	50 or 60						
Voltage Distortion	%	< 1,5% @ linear load, < 2% @ non-linear load (IEC/EN 62040-3)						
Overloading Capability	%	125% / 10 min, 150% / 60 s						
Crest Factor		3 : 1						
EFFICIENCY								
Load 100/75/50/25%	%	Up to 95.5/95.5/95/94, AC-AC on-line mode						
Eco-Mode at 100% Load	%	98						
ENVIRONMENT								
Storage Temperature	C	-25...+70						
Operating Temperature	C	0...+40						
Maximum Altitude	m	1000 m without derating, max. 3000 m						
COMMUNICATIONS								
Modular Level		Power Management Display (PMD), 1x RS 232						
Frame Level		2 x RS232 (SMART PORTS), 1 x USB, 2 x empty slots for options Customer Input Interfaces (Remote shutdown, GENSET-ON, Temperature) Customer Output Interfaces (10 x Dry Ports)						
Options		Additional COM-Cards (SNMP, Newavewatch™)						
WEIGHT, DIMENSIONS								
Weight	kg	28.5	31	33	35	44	53	56
Dimensions (WxHxD)	mm	483x225x700				663x225x720		
STANDARDS								
Safety		IEC/EN 62040-1-1, IEC/EN 60950-1						
Electromagnetic Comp. (EMC)		IEC/EN 61000-6-4 (product standard IEC/EN 62040-2 limit A (C2 UPS)) IEC/EN 61000-6-2 (product standard IEC/EN 62040-2 Criterion A (C2 UPS)) IEC/EN 61000-4-2, IEC/EN 61000-4-3, IEC/EN 61000-4-4, IEC/EN 61000-4-5, IEC/EN 61000-4-6						
Performance		IEC/EN 62040-3						
Product Certification		CE, GOST by TÜV						
Enclosure		IP 20						
Manufacturing		ISO 9001:2008, ISO 14001:2004						
Country of origin		Switzerland						

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The rapid growth of data centers with mission critical applications that are fundamentally immune to planned and unplanned downtime have increased the demand for continuous availability, flexibility, serviceability and performance.

Decentralized Parallel Architecture for mission-critical applications



Newave's newest modular UPS design Conceptpower DPA™ (Decentralized Parallel Architecture) with unique Safe-Swap Modules (SSM) addresses all the availability concerns related to power protection of mission critical applications.

The move to high power density blade servers has caused a shift in the performance of advanced power protection systems.

High power density, high efficiency and no power derating with leading loads have become the key features of modern UPS Systems.



Conceptpower DPA™ highlights at a glance



- High power density (200kW per rack)
For floor space saving
- DPA with Safe-Swap Modules (SSM)
For premium power protection availability
- Low Total Cost of Ownership (TCO)
Cost saving during entire life-cycle
- Flexibility / Scalability
Ease of power upgrade, pay as you grow
- Enhanced Serviceability
Rapid fault recovery
- Link to Newavewatch™
Instantaneous fault recognition



How to achieve highest power protection availability levels

Have you identified the level of consequential loss of your operation in the event of an outage? Understanding the risk level and translating it into power protection availability requirements is essential. For more than a decade Newave has been designing high availability and resilient power protection concepts to help IT and facility managers to easily tailor their power protection systems to meet highest availability requirements.

High power protection availability is achieved by combining the double conversion technology (high reliability), advanced redundant parallel architecture (high availability) and Safe-Swap modular technique (premium availability).

To maintain the premium availability in time and hence achieve Continuous Power Protection Availability, Newave has designed Newavewatch™ an advanced, maintenance based, Remote Monitoring and Management System.

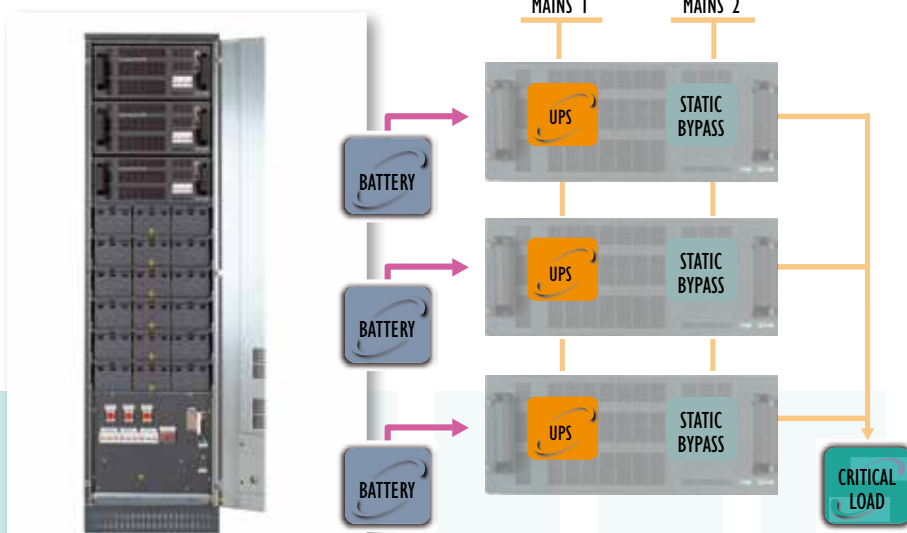
What is Decentralized Parallel Architecture (DPA)?

NEWAVE'S Decentralized Parallel Architecture (DPA)™ is based on independent Safe-Swap Modules (SSM) that include virtually the entire UPS hardware and software and hence eliminating all common parts which are potential single points of failures. A Safe-Swap DPA-Module includes distributed CPU'S, distributed control panels, distributed power units and distributed static bypass switches. The batteries are separately configured for each module.

Modular

Premium Availability: DPA with Safe-Swap Modules

To achieve near-zero downtime and avoid very costly consequences of disruption of mission critical applications, advanced Decentralized Parallel Architectures providing high availability must be employed. NEWAVE'S new second generation modular Conceptpower DPA™ is based on a unique Safe-Swap technique to provide premium availability.



Safe-Swap

What is Safe-Swap Modularity (SSM)?

When adding or replacing modules in a power protection system that supplies a mission critical application it is of paramount importance to understand how safe it is to perform this very delicate operation?

A Module is Safe-Swappable if:

- It is hot-swappable, meaning hot insertion or hot removal of modules from a host system by means of plugs or connectors without removing the power to the load
- It is replaceable without transferring the load to raw mains (true Hot-Swap, no downtime, no risk)

- It is designed for easy and safe swapping (secure module isolation from rest of the system), meaning the replacement or scaling is achieved without any risk of manipulation errors that may cause damage to the module, system or even cause a load crash.



NEWAVE'S unique Safe-Swap ModularTechnique is a true Safe-Swap modular concept that allows easy (plug-and-play) scaling and/or replacing of modules whilst the load continues to be supplied by safe UPS power. The load must not be transferred to unreliable raw mains or even be interrupted. This is unique and perfectly responds to today's data centre requirements where planned computer shutdowns are becoming a rarity.

Watch

Newavewatch™

A common misconception of a UPS is that it is a “commission-and-forget” solution. UPS units are complex equipments and however well designed and manufactured they require regular maintenance and monitoring in order to maintain the highest availability of your power protection system and hence not allow to compromise the uptime of mission-critical applications.

To ensure early recognition of anomalies and short recovery times NEWAVE has developed an advanced Remote Monitoring and Management System Newavewatch™ to tackle the anomalies at an early stage and before they cause more important

consequences or even downtimes of mission-critical applications. Newavewatch™ has a unique redundant communication option by means of modem, GSM or through the internet.

WATCH represents the integration of an effective UPS management and service that should be regarded as an essential element of a power protection solution. Mission critical systems require constant availability of the power protection infrastructure. Continuous monitoring in the form of Newavewatch™ is an affordable insurance policy designed to detect and warn of problems before they become a crisis.

NEWAVE's expert engineers at the Master (Switzerland) or Local Service Centre are always at hand to help diagnose and resolve problems, quickly and efficiently.





Why is TCO so important?

UPS systems operate 24h a day and 365 days a year and during more than 10 years.

The Total Cost of Ownership (TCO) of a UPS System during its lifecycle is typically a multiple of the initial investment cost of the UPS system.

The major impact on TCO have following parameters:

- UPS efficiency at partial/full load;
- Cooling system efficiency;
- Rightsizing the system power over time;
- Adding power without need of additional floor space;
- Input PF and THDi.

Energy

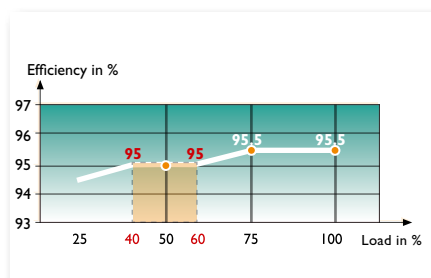
Low losses at partial loads will result in major energy savings

The major impact on the life-cycle cost of a UPS system is generated by the operating losses. The emitted heat in data centres must be evacuated by appropriate cooling systems that also generate losses and hence increase the overall operating losses.

In redundant UPS configurations single modules operate at partial loads typically at 40-60% of the rated UPS power.

Conceptpower DPA™ with its unique Energy Saving Inverter Switching (ESIS) technique has been designed to provide high efficiencies at partial and at rated loads. The diagram below shows Conceptpower DPA™ flat efficiency curve with high

efficiencies even at very low partial loads.



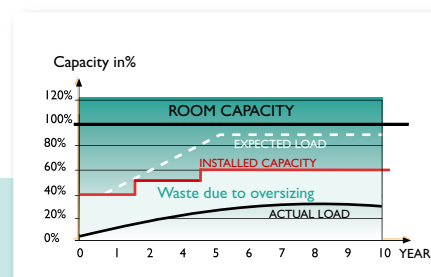
Rightsizing of the Power Protection System Over Time

Thanks to the ability of true modular UPS systems to easily scale power, it is possible to add power as the data centre power requirements grow. This eliminates the high initial investment cost of purchasing power capacity that is not required at the stage of installation and hence it helps avoid waste due to over sizing. In addition, the correct sizing of the power protection system during the entire life-cycle helps keep the total cost of ownership low.

The unique Conceptpower DPA™ modular design with Safe-Swap modules guarantees safe power upgrading without the need of removing the power nor transferring the load to raw mains. Power capacity can be added up to 200kW (250kVA) in one single rack without increasing the foot-print. If the power requirements grow above 200kW additional racks can be added to provide up to 800kW (900kVA) power.



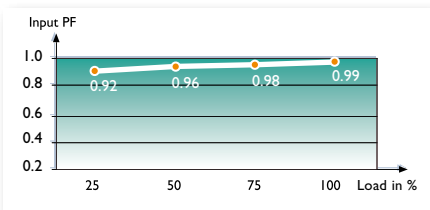
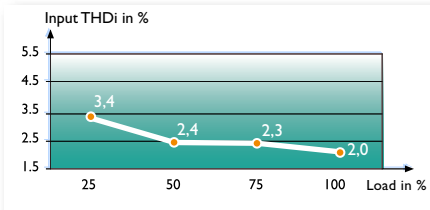
Pay as you grow...



Low input THDi and near unity PF results major installations savings

Conceptpower DPA™ Advanced Booster Technology (ABT) generates a near unity input power factor and reduces the input THDi to values <3% even at partial loads. The low THDi generated by the UPS, avoids expensive over sizing of gen-sets that are often used as backup for longer outages.

The near unity input power factor at partial and full load reduces input cable and fuses sizes.



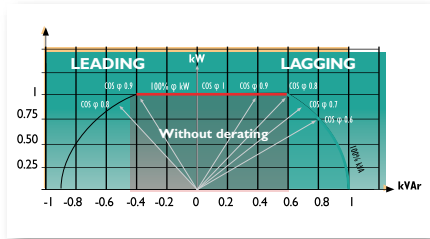
Space

DPA was designed to reduce material contents

Thanks to the advanced transformer-less design the modules are very compact in size and weight. Up to 5 modules can be accommodated into a single space-saving rack reaching highest power density of up to 342kW/m2. Blade servers have leading power factors and therefore require adequate UPS power.

Conceptpower DPA™ provides full rated power in the range of 0.9-leading to 0.8-lagging power factors. Thus saving valuable data centre floor space.

The reduction of the material contents results in saving of natural resources and decreases the environmental impact.



In addition, the compact size of the modular Conceptpower DPA™ saves packaging weight and decreases substantially energy consumption in transport to customers.

Recycling

DPA was designed to use materials to reduce environmental impact

NEWAVE works with suppliers to identify materials that will reduce the environmental footprint of NEWAVE products and that of our customers. Materials innovation at NEWAVE is reducing the environmental impact of materials we select or already use for NEWAVE products. This innovation often aligns with our objective of reducing materials and recycling costs.

NEWAVE considers the following aspects of materials innovation:

- Substituting materials when there are concerns due to their potential effects on people and the environment
- Eliminating materials of concern from our products
- Lowering product weight and size to decrease resource use and reduce environmental impacts throughout the product life cycle



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Newave Certifications & Recognitions

