

# *conceptpower™ 40-300kVA*

## *High Performance Power Protection*



**Second generation transformerless three phase UPS in the range 40-300kVA  
protects your mission critical load and your environment**

Large and heavy traditional UPS systems have been in the market for a long time. Big and bulky accessories like 12pulse rectifiers and input harmonic filters are used to improve the input power factor and the input current THD in order not to pollute the mains. The consequences are increased expensive floor-space, increased power losses throughout the lifecycle of the UPS and increased audible noise.

In the past decade we have experienced very modest qualitative technological improvements with clear end-user benefits in the area of high power UPS's. Environmentally conscious customers today are not only demanding highest power protection availability but also systems that are environmentally friendly and ensure low cost of ownership.

**newave**  
ups systems

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# conceptpower™ 40-300kVA

Protects not only your critical load but also your environment during the entire UPS lifecycle.



## *Infinitely expandable*

Conceptpower™ is an advanced double conversion, VFI (Voltage and Frequency Independent) technology that responds fully to both highest availability and environmentally friendly requirements. In other words the conceptpower™ simultaneously protects your critical load and your environment. Furthermore your cost of ownership will be low during the entire lifecycle of the UPS system. Thanks to the unique and highest three-phase double conversion efficiency, low mains harmonic pollution, low audible noise and optimized material contents conceptpower™ is a true green UPS. The proven Newave double conversion technology guarantees highest reliability and unmatched electrical performance. If we add to the above features the unique Distributed Parallel Architecture (DPA) for redundancy and for extension of power capacity it will complete the picture of this exciting power protection system.

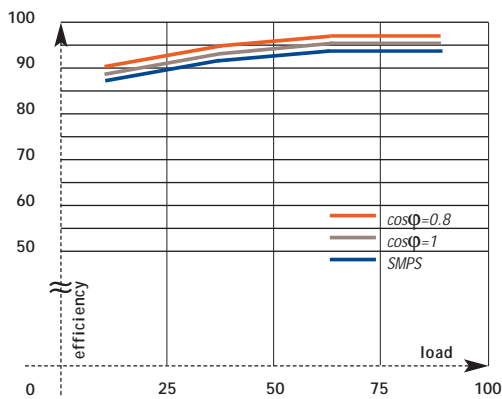


Environmentally Friendly  
Power Protection Concept

	 <b>Transformer-less conceptpower</b>	 <b>Transformer-based Traditional UPS</b>
 Down-time Cost Saving	Advanced Double Conversion technology with Unique Distributed Parallel Architecture (DPA) without single points of failure and infinitely expandable capability guarantees highest availability.	Conventional Double Conversion technology with output transformer. Limited number of parallelable UPS-units (up to 4-9).
 Transportation Cost Saving	Compact and light UPS (250kVA=660kg). Reduced freight, bringing-in and manoeuvring cost.	Typical weight of UPS 250kVA: - 1200 kg for 6 pulse models - 1800 kg for 12 pulse models
 Energy Cost Saving	High Double Conversion Efficiency (up to 97%) thanks to advanced transformerless technology with ESIS (Energy Saving Inverter Switching).	Low Double Conversion Efficiency (up to 93%) resulting in higher running cost.
 Floor-Space Cost Saving	Very reduced foot-print. 40kVA = 0.42 m <sup>2</sup> 80kVA = 0.435 m <sup>2</sup> 120kVA = 0.52 m <sup>2</sup> 300kVA = 0.9 m <sup>2</sup>	Typical foot-print: 40kVA 0.64 m <sup>2</sup> 80kVA 0.8 m <sup>2</sup> 120kVA 0.88 m <sup>2</sup> 300kVA 1.8 m <sup>2</sup>
 Installation Cost Saving	Sinewave Input Current (THD<7%) and PF=0.98 means smaller installation cost due to reduced cable/fuse ratings.	Typical THD>30% and PF=0.8 means it is necessary to add expensive 12pulse rectifiers with bulky transformers and/or input harmonic filters.
 Battery Cost Saving	Flexible Battery Management (FBM) with variable DC-voltage enabling the use of variable number of battery blocks to exactly match the requested battery autonomy. Further more the Ripple-free battery charger protects your battery from excessive temperatures.	Lack of flexibility due to a fixed number of battery blocks (typically 32 battery blocks of 12V).
 Power Extension Cost Saving	Every standard unit is provided with the parallel hardware and no on-site time consuming upgrade is necessary.	Typically the standard units are not provided with the parallel hardware and therefore expensive on-site time consuming upgrade is necessary.

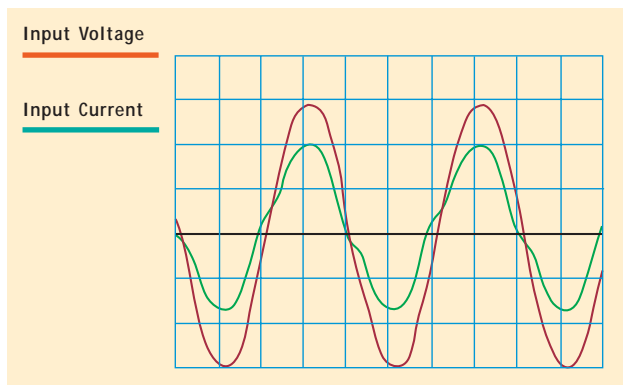
conceptpower™ was designed to meet also important environmental demands and to focus on the cost of ownership of a power protection infrastructure. Features like low heat emission, low level of harmonic pollution or low level audible pollution are part of the Power Protection Concept (PPC) and have been built into the conceptpower™ design.

## High Efficiency



High conceptpower™ efficiency means low heat emission and therefore no unnecessary overheating of our environment. In addition to that, low losses means less energy consumption, which can differ substantially from one product technology to another. Furthermore the heat must always be evacuated by cooling systems, which must be sized to the amount of losses emitted by the UPS's. That is also a cost that must be considered during the entire lifecycle of the UPS. Thanks to the transformerless technology and the unique ESIS (Energy Saving Inverter Switching) Technology the conceptpower™ reaches double conversion efficiencies of up to 97%. This advanced high efficiency design has in average at least 5% higher efficiency than equivalent traditional double-conversion designs and has similar efficiency compared to single conversion technologies.

## High Input Power Factor/Sinewave Input Current



The near to one input power factor of conceptpower™ reduces the input installation cost by using smaller cable sections and smaller fuse sizes. Thanks to the low input current THDI = 7-9% (sinewave input current) the level of harmonic pollution of the conceptpower™ is very low. The low harmonic emission into the mains saves unnecessary oversizing of the gen-sets. The near to one input power factor and the low input current THDI = 7-9% of conceptpower™ are electronically regulated and there is therefore no need for expensive filtering or 12pulse rectification like in traditional double conversion topologies.

## Low Audible Noise

With its low audible noise conceptpower™ is a very comforting UPS that does not disturb the working environment. Thanks to

the load dependent noise level regulation the noise level is even more reduced when the load is < 70% of the UPS's rated power.

## Battery Protection and Battery Management

conceptpower™ is provided with a unique ripple-free battery charger that protects the battery from overheating and consequently increases the battery lifecycle. A further battery protection feature is the temperature regulated battery charge voltage. The battery charger automatically regulates the battery charge voltage as the ambient temperature changes. The built-in

Flexible Battery Management (FBM) periodically and automatically checks the fitness of the battery and alerts immediately if any anomaly appears. The FBM allows the use of various numbers (40-50) of battery blocks to provide the exact battery runtime and thus optimize battery cost.

## Redundant Power Management Display advances the Power Protection Manageability Concept

conceptpower™ can be managed locally and remotely by means of computer networks or modems and telephone lines.

### Local Management

Each UPS-module of conceptpower™ is provided with a Power Management Display (PMD). In a parallel redundant system the PMD's are also redundant. The User Interface PMD is easy to use:



- Intuitive and consistent PMD for ease of learning and execution.
- Problem and event reporting on display for rapid response.
- Common data execution functions for parallel systems on redundant parallel PMD's. The complete parallel system may be managed by any one of the parallel PMD's.
- PMD consists of mimic diagram for system status, pushbuttons for single module and parallel system control and LCD for monitoring, event logs and diagnosis.

### Remote Management

Each UPS-module of conceptpower™ is provided with communication ports for remote monitoring, shut-down and management.

### Remote Signalling Panel (RSP)



The RSP provides remote warnings and UPS status change on LED indicators and with mimic diagram. A general audible and visual alarm is available. The monitoring may be achieved to distances of up to 100m.

### Shutdown and Management Software (Wavemon)



Wavemon is the management and shutdown software that can be used with virtually all operating systems available in the marketplace. The software is available also for crossplatform shutdown and monitoring.



Each UPS-module is provided with a slot for an optional SNMP-card and can be monitored independently. In addition to this solution it is possible to implement a more cost/effective solution where only one SNMP-card is necessary for the entire parallel UPS system also called Multidrop solutions.

General Data				
Output Rated Power	kVA	40	60	80
Output Power Factor		0.8		
Topology		On-Line, Double Conversion, VFI		
Parallel Technology		Distributed Parallel Architecture		
Redundancy n+1		High reliability, no limitation of paralleling		
Capacity Upgrade		Add your power as you grow (no limitation)		
Static and Maintenance Bypass		standard		
Accessibility		Front and rear accessible for service and maintenance (no need for side or top access)		
Efficiency (Double Conversion)		Up to 97%		
Audible Noise With 100%/75% Load	dBA	57 / 51	59 / 54	69 / 63
Standards		EN 50091, part 1, 2 and 3, IEC 62040, part 1, 2 and 3		

Input Data	
Input Voltage	3x380/220V+N, 3x400/230V+N, 3x415/240V+N
Input Voltage Tolerance (Ref. to 3x400/230V)	For loads <100% (-23%, +15%), <80% (-30%, +15%), <60% (-40%, +15%)
Input Frequency	35 – 70Hz
Input Power Factor	0.98 (electrically regulated)
Input Current Form (Sinewave)	Sinewave THDI = 7-9% at 100% load
Inrush Current	Soft start
Input Cabling	Hardwired

Output Data	
Output Voltage	3x380/220V+N, 3x400/230V+N, 3x415/240V+N
Output Voltage Tolerance	+/- 1% (linear load), +/- 3% (non-linear load)
Output Voltage Tolerance (Load Jumps 0-100-0%)	+/- 4%
Output Frequency	50 or 60Hz
Output Frequency Tolerance	+/- 0.1% (free-running), +/- 4% (with mains, adjustable)
Crest Factor	3 : 1
Overload	150% for 1min., 125% for 10min.
Permissible Unbalanced Load	100% (all 3 phases regulated independently)

Monitoring and Control Data	
Power Management Display (PMD)	With LCD, Mimic Diagram, Control
Communication port (Smart Port)	Serial RS 232
Communication port (Dry Port)	Volt-free relays
SNMP	Yes
Shutdown and Monitoring Software	Yes (Wavemon)
Emergency Power Off (EPO)	Yes

Mechanical Data				
Size Conceptpower Frame (WxHxD)	mm	580 x 1400 x 750	580 x 1800 x 750	
Size Additional Battery Frame (WxHxD)	mm	580 x 1400 x 750	580 x 1800 x 750	
Weight Conceptpower (Without batteries)	kg	170	190	240

General Data							
Output Rated Power	kVA	100	120	160	200	250	300
Output Power Factor		0.8					
Topology		On-Line, Double Conversion, VFI					
Parallel Technology		Distributed Parallel Architecture					
Redundancy n+1		High reliability, no limitation of paralleling					
Capacity Upgrade		Add your power as you grow (no limitation)					
Static and Maintenance Bypass		standard					
Accessibility		Front and rear accessible for service and maintenance (no need for side or top access)					
Efficiency (Double Conversion)		Up to 97%					
Audible Noise With 100%/75% Load	dBA	69 / 63	69 / 63	74 / 72	74 / 72	74 / 72	77 / 74
Standards		EN 50091, part 1, 2 and 3, IEC 62040, part 1, 2 and 3					

Input Data	
Input Voltage	3x380/220V+N, 3x400V/230V+N, 3x415/240V+N
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Output Voltage	3x380/220V+N, 3x400V/230V+N, 3x415/240V+N
Output Voltage Tolerance	+/- 1% (linear load), +/- 3 (non-linear load)
Output Voltage Tolerance (Load Jumps 0-100% and 100-0%)	+/- 4%
Output Frequency	50 or 60Hz
Output Frequency Tolerance	+/- 0.1 (free-running), +/- 4 (with mains, adjustable)
Crest Factor	3 : 1
Overload	150% for 1min., 125% for 10min.
Permissible Unbalanced Load	100% (all 3 phases regulated independently)

Monitoring and Control Data	
Power Management Display (PMD)	With LCD, Mimic Diagram, Control
Communication port (Smart Port)	Serial RS 232
Communication port (Dry Port)	Volt-free relays
SNMP	Yes
Shutdown and Monitoring Software	Yes (Wavemon)
Emergency Power Off (EPO)	Yes

Mechanical Data							
Size Conceptpower Frame (WxHxD)	mm	700 x 1800 x 750			1200 x 1900 x 750		
Size Additional Battery Frame (WxHxD)	mm	580 x 1800 x 750			(on request)		
Weight Conceptpower	kg	330	350	620	640	660	700



The following are just some of the companies using the products and services of Newave SA:

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Acer  
American British Racing  
American Express  
AEG SVS  
Benning  
Biz Basel  
British Telecom  
Cable and Wireless  
Cambridge University  
Coca Cola  
Credit Suisse  
Danfoss  
Deutsche Bank  
Glaxo Smith Kline  
Hewlett Packard

Hilti  
Hilton  
Honeywell  
Hyatt  
Intel  
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Lloyds TSB  
Meridien  
Metropolitana Lisboa  
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Royal Scandinavia  
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