



REHLKO *PW* 9500DPA

Modular three-phase uninterruptible power supply

(100–500 kVA/kW)

Parallelable up to 3 MVA/MW

Flexible power, *trusted* performance.

500 kVA/kW three-phase modular UPS, designed with high efficiency, maximum resilience and optimum flexibility at its core.

The Rehlko PW 9500DPA boasts an impressive track record for providing resilient, flexible power protection with a low total cost of ownership.

Leading levels of online VFI energy efficiency, made available across a broad load range, significantly reduce system running and cooling costs, whilst also helping reduce an organisation's carbon footprint.

Modular, scalable DPAT[™] architecture delivers maximum availability whilst also allowing systems to be right-sized now and incrementally expanded as load grows.

Innovative electronic design allows savings on input cable and fuses, via input power factor, whilst a low THDi extends the life of input components and avoids unnecessary over-sizing of generators, cabling and circuit breakers or extra heating of input transformers.



REHLKO PW 9500DPA

Scalable up to 3 MVA/MW



Total vertical and horizontal scalability using hot swap

Scalable up to 3 MVA/ MW

| Vertical and horizontal scalability

| Cost effective 'right sizing'

The Rehlko PW 9500DPA can be scaled vertically in 100 kVA/kW modular steps to provide up to 500 kVA/kW of power in a single frame. This enables power to be added as requirements grow, without the impact on footprint.

Horizontal scalability is also possible, with up to six frames in parallel, to increase total power up to 3 MVA/MW. This two-dimensional scalability means that there is no need to overspecify the original configuration, as modules and/or frames can be added to optimise the power requirements and increase/decrease power to meet future requirements.

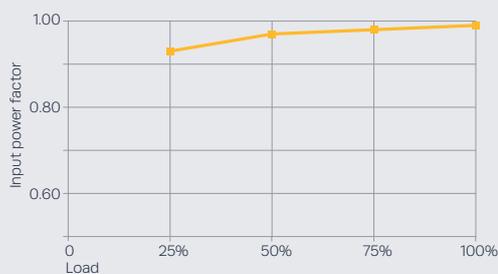
Input and output characteristics

Power vs power factor



No derating in the range 0.9 leading to 0.6 lagging

Input power factor



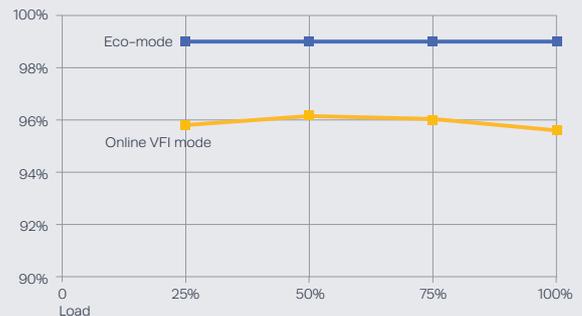
Near unity input power factor, at partial and full load, reduces the required size of the input cable and fuses, thereby reducing the materials (and costs) associated with the system's electrical installation.

REHLKO PW 9500DPA UPS 500 kVA/kW

- | Broad range online VFI efficiency, up to 96.1%
- | Eco-mode efficiency $\geq 99\%$
- | Cost effective scalability to 'right size' system
- | Unity power factor and low input THDi
- | Transformerless technology
- | Hot swappable 100 kVA/kW modules
- | Low total cost of ownership
- | 99.9999% (six nines) availability
- | Small footprint/high power density
- | Unity power factor (kW = kVA)
- | Low input harmonic distortion (THDi $<3.5\%$)
- | Top and bottom cable entry
- | Graphical touchscreen system display
- | Xtra VFI mode: maximum efficiency even when underloaded
- | Grid support functionality



AC/AC Efficiency with linear, resistive load



Advanced Decentralised Parallel Architecture (DPA)

- | Distributed control and power
- | Independent hot-swap modules
- | No single points of failure

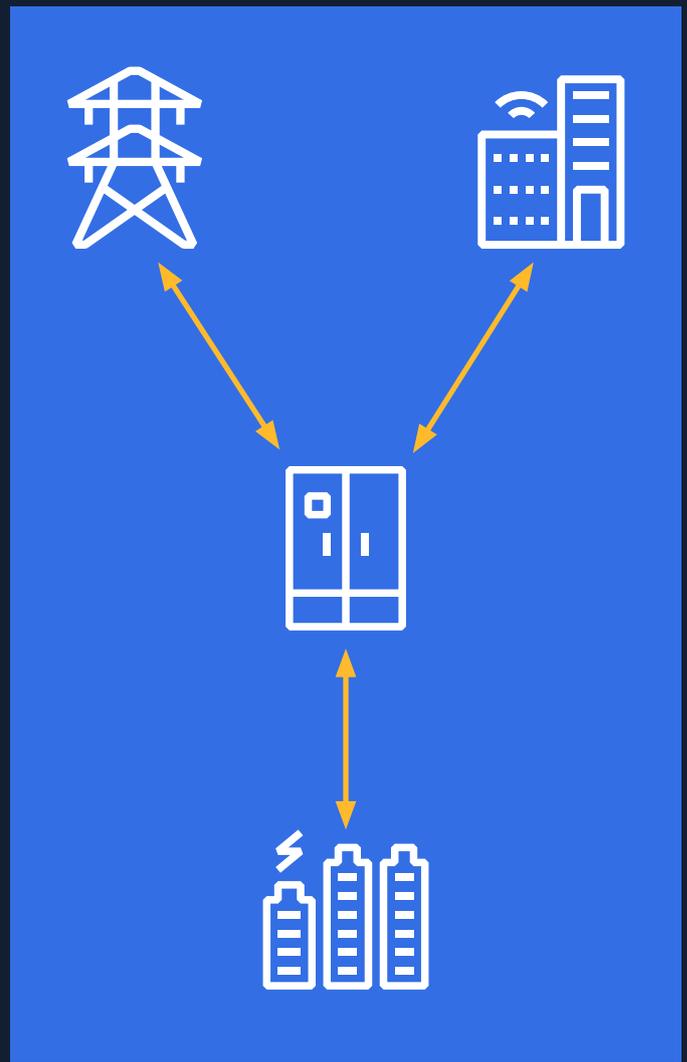
Decentralised Parallel Architecture (DPA) means each UPS module contains all the hardware and software required for full system operation. They share no common components or potential points of failure so a DPA parallel system offers extremely high availability and uptime.

As modules can be added or removed without switching to bypass this facilitates easy maintenance and changes in system capacity.

Energy efficient protection

- | Continuous online (VFI) efficiency up to 96.1%
- | Smart XtraVFI mode for secure low load efficiency

Advanced components and electronic design delivers exceptional energy efficiency. This is extended even to lower loads with XtraVFI functionality, an intelligent mode that maintains online protection while balancing load across modules to achieve optimum efficiency.



Six nines availability

| 99.9999% availability

By combining the benefits of Decentralised Parallel Architecture, parallel redundancy and hot swap modularity, the Rehlko PW 9500DPA has a high mean time between failure (MTBF) and a much reduced mean time to repair (MTTR). This means the Rehlko PW 9500DPA can provide 99.9999%, or 'six-nines' availability – the standard required by modern data centres and other demanding applications seeking zero downtime.

To further improve peace of mind and accelerate time to repair in the event of an issue, the Rehlko PW 9500DPA is fully compatible with Rehlko's PowerREPORTER remote monitoring system.

Future-ready with Grid Support functionality

The Rehlko PW 9500DPA is able to interact with the mains grid and external systems to provide:

- | Input power reduction or increase
- | Backfeed to grid
- | Fast Frequency Response
- | Island Mode operation

Capabilities will also depend on local standards and battery systems – please consult Rehlko for details.

Efficient, resilient protection



Clear and easy communications

- | System level 7" colour touchscreen display
- | Individual LED and LCD displays per module
- | Comprehensive output and connectivity options

The large touchscreen system display provides a clear overview of status and performance, whilst each module also has its own individual display to increase resilience and allow easier local interrogation whilst the cabinet door is open.

Output ports include RS232, USB and dry contacts as standard, while an optional SNMP card enables simple integration with a local network and 24/7 remote monitoring by Rehlko can provide ultimate peace of mind.

Flexible energy storage options

- | Compatible with VRLA, NiCd and lithium-ion battery types
- | Separate or common battery configuration

Rehlko's expert team will design a resilient, cost-effective energy storage solution specific to your autonomy, redundancy, space and floor loading needs.

Systems can be based upon matching black (RAL 9005) battery cabinets or racks, which may be open or cladded, and optionally fitted with Rehlko's PowerNSURE VRLA battery management system. Unlike traditional battery monitoring systems, PowerNSURE also actively manages the charge of each individual battery. As a result service life is dramatically increased, reducing costs, maintenance visits and environmental footprint.

Technical specification

General Data	
System power range	100 kVA/kW – 3 MVA/MW
Max power per module	100 kVA/kW
Max power per frame	500 kVA/kW
Topology	Modular, transformerless, online double conversion, Class 1 VFI-SS-111
Parallelability, as Decentralised Parallel Architecture	Up to 5 modules in one frame (500 kW)/up to 6 frames in parallel (3 MW)
Cable entry	Bottom or top as standard
Serviceability	Fully front serviceable
Back-feed protection	Built-in as standard
Input	
Nominal input voltage	3 x 380 / 220 V + N, 3 x 400 / 230 V + N, 3 x 415 / 240 V + N
Voltage tolerance, referred to 400 / 230 V	Load <100% (-10%, +15%); <80% (-20%, +15%); <60% (-30%, +15%)
Input distortion THDi	< 3.5% at 100% load
Frequency range	45 – 70 Hz
Power factor	0.99 at 100% load
Walk in/Soft start	Yes
Output	
Output power factor	1.0
Rated output voltage	3 x 380 / 220 V + N, 3 x 400 / 230 V + N, 3 x 415 / 240 V + N
Output voltage variation, referred to 400 / 230 V	<±1% with static load, <±4% with step load
Voltage distortion	< 2% with linear load < 4% with non-linear load
Frequency	50 or 60 Hz (selectable)
Efficiency	
AC – AC, VFI mode	96.1%
In eco-mode, VFD	≥ 99%
Environment	
Protection rating	IP 20
Storage temperature	-25°C to +70°C (Max +55°C recommended to maximise capacitor life)
Operating temperature	0°C to +40°C
Altitude (above sea level)	1000 m without de-rating
Batteries	
Number of 12V blocks / string	Flexible number from 40–50 blocks
Types	VRLA, vented lead-acid, NiCd, Lithium-Ion
Battery charger	Decentralised charger per module
Communications	
User interface	Graphical touch screen (one per frame as standard) Decentralised 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
Compliance	
Safety	IEC / EN 62040-1
EMC	IEC / EN 62040-2
Performance	IEC / EN 62040-3
Manufacturing	ISO 9001, ISO 14001 OHSAS 18001
Marking	CE, UKCA
Weight/Dimensions	
Weight	Approx. 975 kg (500 kW system without batteries)
Dimensions (mm) W x D x H	1580 x 940 x 1975



Exceptional 24/7/365
Service Support

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Rehlko is the new name for Kohler Uninterruptible Power