rehlko

REHLKO *PW* 8000DPA

Modular three-phase uninterruptible power supply

(10–200 kVA/kW)
Parallelable up to 400 kVA/kW

Flexible power, *proven* dependability.

The Rehlko PW8000DPA is a modular three-phase UPS designed for low to medium load critical power applications.

High efficiency, low cost of ownership and a compact footprint give a combination proven in a wide range of critical applications.

The Rehlko PW 8000DPA is a leading-edge modular designed UPS using proven Decentralised Parallel Architecture (DPA) technology. The PW 8000DPA excels by offering broad load-range energy efficiency, "Six nines" 99.9999% availability and flexible scalability in either a tower or rack-mountable solution.

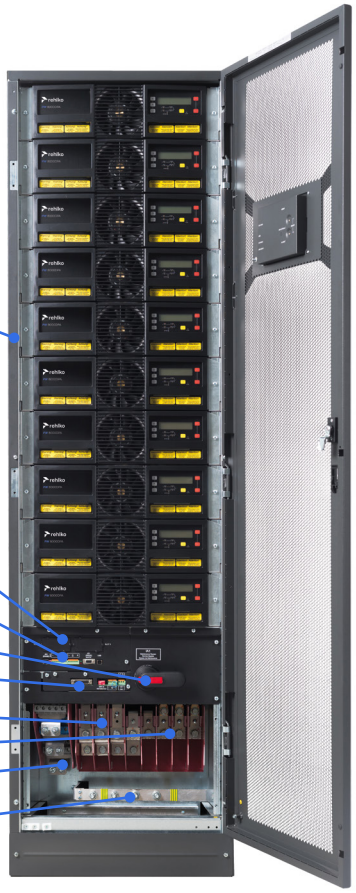
The right solution – REHLKO PW 8000DPA is available in two versions

The Rehlko PW 8000DPA ST (tower) – is available for high-density applications requiring a standard power protection solution including frame, UPS, battery and communication. This solution delivers power protection from 10–200 kVA/kW (180 kVA/kW N+1) in 10 kVA/kW or 20 kVA/kW modular steps to provide a maximum power density of 472 kW/m^2. The PW 8000DPA cabinets can be paralleled horizontally to increase the capacity up to 400 kVA/kW.

The Rehlko PW 8000DPA RI (19" rackmountable) solution includes UPS, battery and communication, which can be integrated into any 19" rack (independent of manufacturer) and provides up to 80 kVA/kW (60 kVA/kW N+1) making it ideal for integrated IT, telecom or other applications.

Features

REHLKO PW 8000DPA ST (tower)



Up to 10 UPS modules

Slot for optional SNMP card

Customer inputs and volt-free outputs / RS232 serial interface

Maintenance bypass switch

Parallel interface

AC input terminals

AC output terminals

Battery terminal rail

Earth bar

REHLKO PW 8000DPA RI (19" rack-mountable)

UPS modules

Internal battery storage

RS232 serial interface

Customer inputs and volt-free outputs

Maintenance bypass switch

Slot for optional SNMP card

Battery fuses

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 so a DPA parallel system offers extremely high availability.

In addition, potential single points of failure are eliminated and system uptime is maximised. Rehlko PW 8000DPA UPS modules can be paralleled to provide redundancy (parallel redundancy) or to increase the system's total capacity.

Easy to replace 'hot-swap' modules

- Pay-as-you-grow scalability
- Replace or add modules with no downtime
- Simple power upgrade
- Future proof investment

True 'hot-swap' modularity enables the safe removal and/or insertion of UPS modules into a Rehlko PW 8000DPA system without risk to the critical load and without the need to either transfer the critical load onto raw mains or remove power from the critical load. This directly addresses today's requirements for continuous uptime and reduced mean time to repair (MTTR).

High reliability

- Reliability maximised
- Automatic parallel redundant operation

The Rehlko PW 8000DPA is designed to automatically operate as a parallel redundant system, ensuring that the critical load always receives the highest level of power protection.

Blade friendly

- Supports blade servers
- Supports leading power factors

Blade servers typically have a leading power factor, which can present problems to UPS systems, particularly if they are not designed to power such loads. The Rehlko PW 8000DPA is designed to power all types of electrical loads, including blade servers. It can provide fully rated output power to power factors in the range of 0.9 leading to 0.8 lagging.

Generator friendly

- Generator compatible
- Soft start – introduces the generator load in steps

The Rehlko PW 8000DPA offers a highly effective solution when introducing a generator to the critical load. If the load exceeds 50 per cent of the generator's standby rating, switching the load in a single step presents a number of dangers. To negate this, each of the 'hot-swap' modules within the Rehlko PW 8000DPA's modular frame come equipped with 'soft start' capability. This allows the modules to be switched over sequentially, introducing the generator to the load in more manageable steps.

High energy efficiency – low total cost of ownership

- High operating efficiency
- Reduced installation and upgrade costs
- Near unity input power factor and low input (THDi) – reduces running costs

The Rehlko PW 8000DPA's high energy efficiency of up to 95.5% is delivered across a wide load range, significantly reducing system running costs and site air conditioning costs.

Additionally, the PW 8000DPA has a near unity input power factor at full load (and even partial loads) reducing the size of the input cable and fuses, thereby saving on materials and costs.

Input current total harmonic distortion (THDi) of less than 3% virtually eliminates harmonic distortion of the mains supply. This saves unnecessary oversizing of gen-sets, cabling and circuit breakers; avoids extra heating of input transformers; and extends the overall lifetime of all input components.

REHLKO PW 8000DPA ST

ST tower range – 10–200 kVA/kW

ST 40 – 2 modules

Dimensions W x D x H:
550 x 770 x 1135 mm

No. of internal batteries:
2 x 40 x 7.2/9Ah
Total 80 blocks

ST 60 – 3 modules

Dimensions W x D x H:
550 x 770 x 1975 mm

No. of internal batteries:
3 x (2x40) x 7.2/9Ah
Total 240 blocks

ST 80 – 4 modules

Dimensions W x D x H:
550 x 770 x 1135 mm

External battery ONLY

ST 120 – 6 modules

Dimensions W x D x H:
550 x 770 x 1975 mm

External battery ONLY

ST 200 – 10 modules

Dimensions W x D x H:
550 x 770 x 1975 mm

External battery ONLY

REHLKO PW 8000DPA RI

19" rack-mountable range – 10–80 kVA/kW

With batteries
RI 11 – 1 module

Dimensions W x D x H:
448 x 735 x 487 mm (11 HU)

Number of batteries: 40

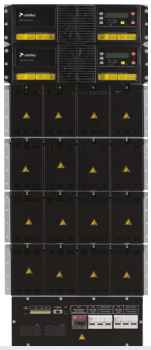
RI 12 – 1 module

Number of batteries: 80

RI 22 – 2 modules

Dimensions W x D x H:
448 x 735 x 665 mm (15 HU)

Number of batteries: 80



RI24 – 2 modules

Dimensions W x D x H:
448 x 735 x 798 mm (18 HU)

Number of batteries: 160

Without batteries
RI 10 – 1 module

Dimensions W x D x H:
448 x 735 x 310 mm (7 HU)

RI 20 – 2 modules

Dimensions W x D x H:
448 x 735 x 440 mm (10 HU)

RI 40 – 4 modules

Dimensions W x D x H:
448 x 735 x 798 mm (18 HU)

Technical specification

REHLKO PW 8000DPA ST

General Data	ST40	ST60	ST80	ST120	ST200
System power range	10–400 kVA/kW				
Max power per module	10–20 kVA/kW				
Max power per frame	40 kVA/kW	60 kVA/kW	80 kVA/kW	120 kVA/kW	200 kVA/kW
Number of UPS modules per cabinet	1 to 2	1 to 3	1 to 4	1 to 6	1 to 10
Max number of inbuilt batteries (7/9 Ah)	80	240	–	–	–
Topology	Online double conversion, Class 1 VFI-SS-111				
Max number of parallel cabinets	4			3	2
UPS type	Modular (Decentralised Parallel Architecture)				
Input					
Nominal input voltage	3 × 380 / 220 V + N, 3 × 400 / 230 V + N, 3 × 415 / 240 V + N				
Voltage tolerance (referred to 3 × 400/230 V)	For loads <100% (–20% / +15%), <80% (–26% / +15%), <60% (–35% / +15%)				
Input distortion THDi @ 100% load	<4.5% (10 kW module), <3.0% (20 kW module)				
Frequency	35–70 Hz				
Power factor	0.99 at 100% load				
Output					
Output power factor	1.0				
Rated output voltage	3 × 380 / 220 V + N, 3 × 400 / 230 V + N, 3 × 415 / 240 V + N				
Voltage distortion (referred to 3 × 400/230 V)	<1.5% linear load, <3% non-linear load (EN62040-3:2001)				
Frequency	50 Hz or 60 Hz				
Overload capability	1 min: up to 150% / 10 min: up to 125%				
Unbalanced load	100% (all three phases regulated independently)				
Crest factor	3:1 (load supported)				
Efficiency					
Overall efficiency, VFI mode	95.5% at 75–100% load, 95.0% at 50% load, 94.5% at 25% load				
In eco-mode configuration, VFD mode	98%				
Environment					
Storage temperature	–25°C to +55°C (cabinet), -20°C to +40°C (batteries)				
Operating temperature	0°C to +40°C				
Altitude configuration	1000 m without derating				
Communications					
LCD	Yes (per module); system display optional (graphical touch screen display)				
LEDs	LED for notification and alarm				
Communication ports	USB, RS-232, SNMP slot, potential-free contacts				
Standards					
Safety	IEC / EN 62040-1, EN 60950-1				
Electromagnetic compatibility (EMC)	IEC / EN 62040-2				
Performance	IEC / EN 62040-3				
Product certification	CE, UKCA				
Manufacturing	ISO 9001, ISO 14001, OHSAS18001				
Degree of protection	IP20				
Weight/Dimensions					
Weight (with modules/without batteries)	Up to 136 kg	Up to 238 kg	Up to 169 kg	Up to 263 kg	389 kg
Dimensions (mm) W x D x H	550 x 770 x 1135	550 x 770 x 1975	550 x 770 x 1135	550 x 770 x 1975	550 x 770 x 1975

Technical specification

REHLKO PW 8000DPA RI

General Data	RI10	RI11	RI12	RI20	RI22	RI24	RI40
Max power per module	10–20 kVA/kW						
Max power per frame	20 kVA/kW	20 kVA/kW	20 kVA/kW	40 kVA/kW	40 kVA/kW	40 kVA/kW	80 kVA/kW
UPS modules	1	1	1	1 to 2	1 to 2	1 to 2	1 to 4
Max number of inbuilt batteries (7/9 Ah)	–	40	80	–	80	160	–
Output power factor	1.0						
Topology	Online double conversion, Class 1 VFI-SS-111						
UPS type	Modular (Decentralised Parallel Architecture)						
Input							
Nominal input voltage	3 × 380 / 220 V + N, 3 × 400 / 230 V + N, 3 × 415 / 240 V + N						
Voltage tolerance (referred to 3 × 400/230 V)	For loads <100% (–20% / +15%), <80% (–26% / +15%), <60% (–35% / +15%)						
Input distortion THDi @ 100% load	<4.5% (10 kW module) <3.0% (20 kW module)						
Frequency	35 –70 Hz						
Power factor	0.99 at 100% load						
Output							
Output power factor	1.0						
Rated output voltage	3 × 380 / 220 V + N, 3 × 400 / 230 V + N, 3 × 415 / 240 V + N						
Voltage distortion	<1.5% linear load, <3% non-linear load (EN62040-3:2001)						
Frequency	50 Hz or 60 Hz						
Overload capability	1 min: up to 150% / 10 min: up to 125%						
Unbalanced load	100% (all three phases regulated independently)						
Crest factor	3:1 (load supported)						
Efficiency							
Overall efficiency, VFI mode	95.5% at 75-100% load, 95.0% at 50% load, 94.5% at 25% load						
In eco-mode configuration, VFD mode	98%						
Environment							
Storage temperature	–25°C to +55°C (cabinet) / -20°C to +40°C (batteries)						
Operating temperature	0°C to +40°C						
Altitude configuration	1000 m without derating						
Communications							
LCD	Yes (per module)						
LEDs	LED for notification and alarm						
Communication ports	USB, RS-232, SNMP slot, potential-free contacts						
Standards							
Safety	IEC / EN 62040-1, EN 60950-1						
Electromagnetic compatibility (EMC)	IEC / EN 62040-2						
Performance	IEC / EN 62040-3						
Product certification	CE, UKCA						
Manufacturing	ISO 9001, ISO 14001, OHSAS18001						
Weight/Dimensions							
Weight (with modules/without batteries)	≤42 kg, incl 1 module	≤62 kg, incl 1 module	≤78 kg, incl 1 module	≤68 kg, incl 2 modules	≤104 kg, incl 2 modules	≤136 kg, incl 2 modules	≤136 kg, incl 4 modules
Dimensions (mm) W x D x H	448 x 565 x 310 (7 HU)	448 x 735 x 487 (11 HU)	448 x 735 x 665 (15 HU)	448 x 565 x 440 (10 HU)	448 x 735 x 798 (18 HU)	448 x 735 x 1153 (26 HU)	448 x 735 x 798 (18 HU)

Exceptional 24/7/365 Service Support

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Rehlko is the new name for Kohler Uninterruptible Power