

Rittal – Systematic, modular UPS



Focus on availability.
Faster – better – worldwide.

Ensure availability



Readers of "Funkschau" magazine award the Rittal UPS the accolade "ITC Product of the Year 2009".



Sensitive electronics are not confined to the data centre. In industry, too, systems need to be protected against power failures and malfunctions. No problem for an uninterruptible power supply, provided it is tailored to that industry's specific requirements. Super-efficient UPS systems from Rittal have transformed the pricing structure in these application areas. We offer rack-mounted, modular and scalable UPS systems with maximum efficiency, combined with climate control and power distribution systems.



Protecting IT infrastructures

Modern IT infrastructures demand optimum MTBF, high redundancy, and maximum scalability – all with a high degree of energy efficiency.



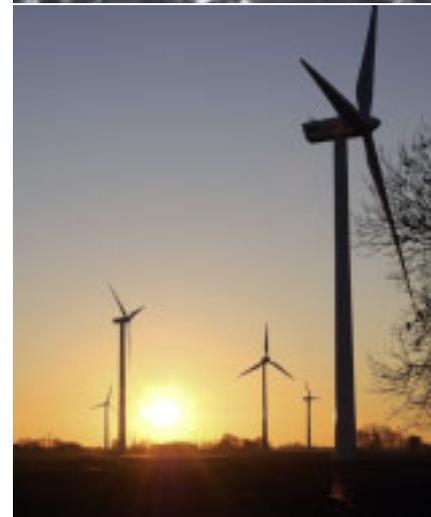
Protecting process operations

Even a power failure of just a few seconds can create massive disruption in the production process. These areas also have exacting demands in terms of filter properties and a high level of resistance and flexibility in case of overvoltage.



Renewable energies

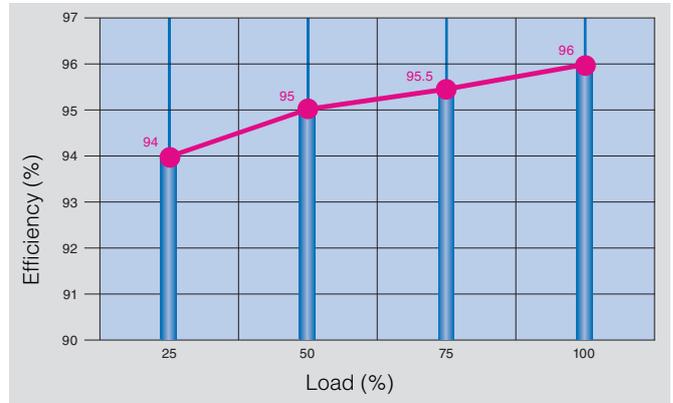
Wind turbines must be capable of withstanding the toughest conditions. Rittal UPS systems ensure safe, reliable control, monitoring and navigation lighting of the turbines.



Modular scaling

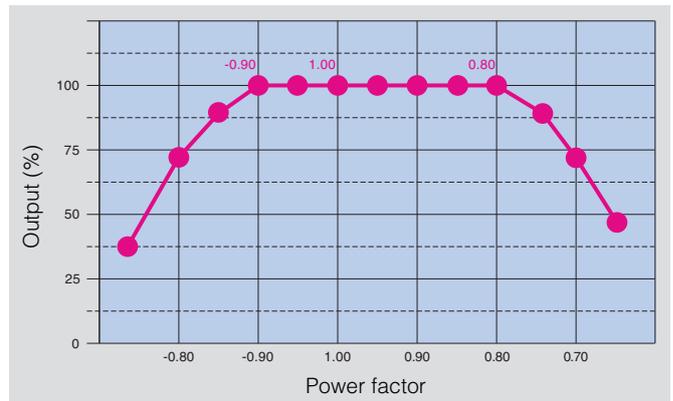


Modular rack-mounting, energy-efficient, high-MTBF – these three attributes of Rittal UPS technology help to ensure low costs. Easily adapted to suit your specific requirements, its space requirements are minimal, and maintenance work can be carried out quickly with the system operational. That's how efficient it is to ensure almost 100% availability.



Efficiency

Particularly in the lower load range, a high efficiency really comes into its own, and also ensures significantly lower heat loss dissipation.



Capacitive load

In the IT environment, the capacitive load is increasing. The UPS must be designed accordingly. The PMC 200 can emit constant and full active power from 0.9 kW capacitive to 0.8 kW inductive.

Category	UPS classification to EN 620 40-3	Rittal UPS
1	VFI: UPS output independent of mains voltage and frequency variations within the limits to IEC 61 000-2-2 (V oltage and F requency I ndependent)	PMC 800 PMC 200 PMC 40 PMC 12
2	VI: UPS output frequency dependent on mains frequency, but voltage stabilised (electronic/passive) within the limits for normal operation (V oltage I ndependent)	
3	VFD: UPS output dependent on mains voltage and frequency variations (V oltage and F requency D ependent)	

Systematic efficiency



Complete power distribution from a single source. From the power transfer point, via redundant UPS systems, to the socket in the server rack. All power supply components are adapted to suit the requirements and perfectly coordinated with one another.



Low-voltage switchgear assembly

- Individually configurable busbar systems up to 5500 A
- Individual outputs (compartments) individually configurable
- Integration of measurement systems for the various works (cooling/IT load/infrastructure)
- Combination with switchgear e.g. for emergency generators (diesel generators)

Tailor-made UPS climate control concepts

- UPS cooling via air/water heat exchangers (LCP)
- No pressure on the room air-conditioning by the UPS
- Minimal noise generation thanks to the sealed and efficient cooling system

IT power distribution rack for data centres

- Configured and optimised to the respective requirements
- Modular rack-mounting thanks to pre-configured power modules, extendible with the system operational
- Integration of measurement and consumption meters

Power distribution in the server rack

- Modular configuration, convertible and extendible with the system operational (Rittal PSM system)
- Monitoring and control of each individual slot via Ethernet (SNMP) is supported



Rittal UPS systems Power Module Concept

The best UPS concept for you is an individual concept.

In your company, UPS protection of all processes whose availability is crucial is more than just a question of kilowatts, autonomy and UPS redundancy.

With this in mind, we discuss your individual requirements of a UPS at length.

The key here is to protect the critical load with a high UPS efficiency.

Our aim is to ensure maximum availability of the connected infrastructure, maximum energy efficiency, and exceptional protection for your investment.

Rittal – The System.



PMC 12 and PMC 12 compact

A compact single-phase UPS with scalable autonomy up to 55 minutes at 100% load produces a broad application spectrum.

PMC 40

Installation in racks with two 482.6 mm (19") levels from a depth of 800 mm.

Arguments at a glance

Output range (scalable)	1 – 18 kVA
	10 – 40 kW
	8 – 800 kW
	64 – 960 kW

PMC 12			
	PMC 40		
			PMC 200

Modules/output range/phases
Redundancy
Double-conversion technology
Installation, space requirements

Modules with 1/2/3/4.5 and 6 kVA single-phase
n+1
VFI-SS 111
482.6 mm (19"), 2 U or floor standing enclosure

Modules with 10 and 20 kW 3-phase
n+1
VFI-SS 111
2 x 482.6 mm (19") level, min. 800 mm enclosure depth

- With 90° swivellable LCD.
- Serial/USB interface and Emergency Power Off (EPO) contact.
- Optional SNMP monitoring card.
- Batteries "hot swap" compatible, may be replaced from the front.
- Integral batteries for 1 – 3 kVA, external batteries for 4.5 kVA and 6 kVA.

Parallel connection of 4.5kVA and 6kVA UPS modules up to 12kVA n+1 redundant.

- Redundant system (decentralised parallel architecture, DPA) for maximum possible availability.
- "Safe swap" capability with redundancy: Safe module exchange with the system operational, no need to switch to bypass mode.
- Mixed configuration (e.g. with servers) in the same rack is also supported.
- Various IP protection classes supported by the rack used.



PMC 200

Maximum availability, modularity and a compact design ensure flexible, almost unlimited scalability and redundancy.

The benefits: Low capital tie-up, cost-efficient expansion, minimal space requirements.



PMC 800

Maximum availability and output in a modular design!

The separation of modules into a power module and a control module is exemplary for UPS systems of this output category. This separation ensures a high level of service-friendliness and facilitates the precise planning of maintenance work.

PMC 800

Modules with 8/12/16/20/24/32/40 kW
3-phase

n+1

VFI-SS 111

Integrated into the rack

- Scalability up to 20 modules This facilitates a maximum output of up to 800 kW or 760 kW n+1.
- Decentralised parallel architecture, DPA (redundant protection without "single point of failure") offers optimum availability of critical applications.
- The modular concept keeps the purchasing and operating costs of redundant solutions (n+1) particularly low.
- Modular expansion of output and autonomy with the system operational!
- Super-fast service with extremely short MTTR (Mean Time To Repair).
- Rack plus UPS modules plus battery packs produce a customised UPS.
- Absolute output density up to 200 kW (160 kW redundant) in one rack translates into extremely minimal space requirements.

Modules with 64 and 80 kW
3-phase

n+1

VFI-SS 111

Integrated into the rack

- Scalability up to 12 modules This facilitates a maximum output of up to 960 kW or 880 kW n+1. Higher outputs available on request.
- The transformerless double conversion architecture ensures a high level of efficiency.
- Decentralised parallel architecture (DPA). No single point of failure influences the availability of the UPS.
- The modular architecture allows energy-efficient configuration, precisely tailored to requirements.
- The Safe Swap technology means that the UPS can be replaced (in inverter mode) or extended with the system operational.
- With a redundant configuration of the UPS, the load continues to be supplied with current while a module is being replaced.
- Every UPS module has a separate static bypass and a display, together with the control electronics and a processor.

UPS PMC 12

Single-phase, output range 1 – 12 kVA n+1



The UPS is distinguished by the use of double-conversion technology. Double-conversion technology provides the basis for an optimum supply voltage to all connected loads. This makes the Rittal PMC 12 UPS ideally

suited for all applications in the IT environment and for other requirements such as automation technology, system control etc. A scalable autonomy of up to 55 minutes at 100% load produces a broad application spectrum.

Autonomy (min.) at 100% load:

UPS type	In supplied state	Battery packs				
		1	1 (XL-Version)	2	2 (XL-Version)	3
1 kVA	7 min.	28 min.	–	55 min.	–	–
2 kVA	7 min.	17 min.	26 min.	29 min.	54 min.	–
3 kVA	5 min.	12 min.	24 min.	20 min.	46 min.	–
4.5 kVA	–	9 min.	–	23 min.	–	39 min.
6 kVA	–	8 min.	–	20 min.	–	33 min.

Supply includes: DK 7857.430, DK 7857.431, DK 7857.432

Single-phase UPS systems with internal "hot-swap compatible" batteries, assembly parts, operating manual, software on CD-ROM, USB, RS232 cable and earthing-pin connection cable.

Supply includes: DK 7857.433, DK 7857.434

Single-phase UPS systems with assembly parts, operating manual, software on CD-ROM, RS232 cable and connection cable with open cable ends.



Also required:

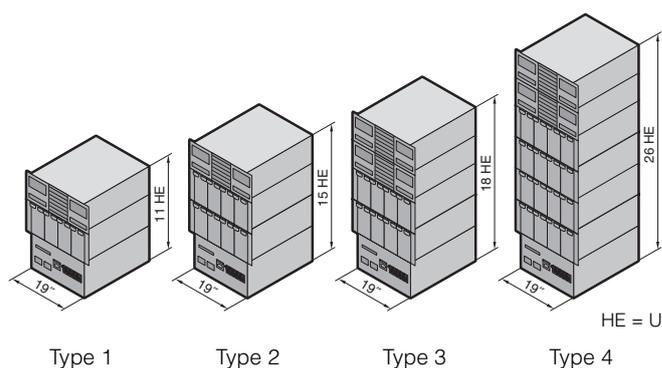
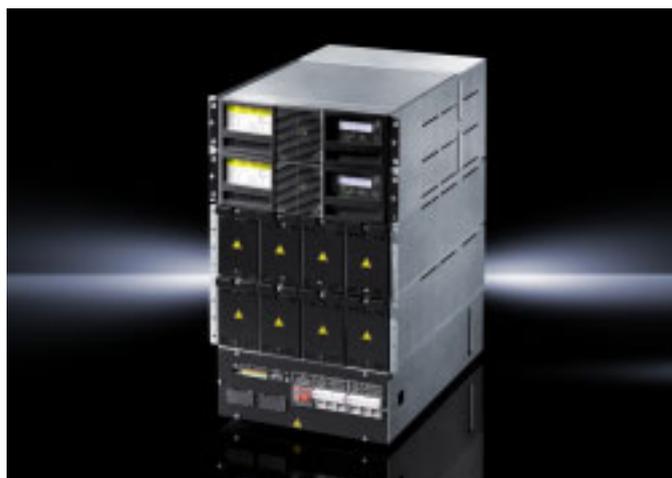
Country-specific connection cables and slide rails are required to operate the UPS systems.

UPS for 482.6 mm (19") racks or as floor-standing enclosures		UPS with integral battery			UPS control unit	
Model No. DK PMC 12, 2 U		7857.430	7857.431	7857.432	7857.433	7857.434
Width x height mm		440 (482.6 mm/19") x 88 (2 U)				
Depth ²⁾ mm		405	650	650	680	680
Weight kg		15.7	26	29	24	24
Model No. DK PMC 12 compact, 4 U		–	7857.482	7857.483	–	–
Width x height mm		440 (482.6 mm/19") x 176 (4 U)				
Depth ²⁾ mm		–	420	420	–	–
Weight kg		–	26	27	–	–
Power	VA	1000	2000	3000	4500	6000
	Watts	800	1600	2400	3500	4800
	Max. heat loss (W)	105	210	252	315	420
Input	Rated voltage	230 V (160 – 288 V)				
	Frequency	50/60 Hz ±5%				
	Power factor	> 0.99 with linear load				
Output	Voltage	230 V ≤ ±1% (200/208/220/230/240 V adjustable)				
	Frequency, synchronised	±1 Hz				
	Efficiency, AC mode	88%	88%	90%	90%	90%
	Power factor	0.8				
Battery 5 years EUROBAT	Autonomy at 100% load	≥ 7 min.	≥ 7 min.	≥ 5 min.	≥ 12 min. ¹⁾	≥ 8 min. ¹⁾
Communication	Interface	1 x USB, 1 x RS232			1 x RS232	
	SNMP	Optional network monitoring card DK 7857.420/relay card 7857.410				
	Operating systems supported	Windows, Unix, Linux, Novell, Apple; RCCMD shutdown licence DK 7857.421				
	Emergency Power Off (EPO)	■				
Connection	Input connection 230 V	10 A C14		16 A C20	Compact connector	Compact connector
	Output connection 230 V	6 x 10 A, C13, 2 units switched		4 x 10 A, C13, 2 units switched, 1 x 16 A, C19	Compact connector	Compact connector
Standards and certifications	Power	IEC/EN 62 040-3				
	EMC	EN 50 091-2/EN 62 040-2 class A, EN 61 000-4-2/-3/-4/-6-8/-11, EN 61 000-3-2/-3				
	Labelling	CE, FCC				
Accessories						
Battery pack ³⁾ PMC 12, 2 HE		7857.435 ⁵⁾	7857.437 ⁴⁾	7857.437 ⁴⁾	7857.442 ⁴⁾	7857.442 ⁴⁾
Battery pack PMC 12 compact, 4 HE / XL version		–	7857.488 ⁵⁾	7857.488 ⁵⁾	–	–
Connection cable at output end, UPS, single-phase, for PSM busbar		7856.027	7856.027	7856.030	–	–

¹⁾ With an external battery pack ²⁾ Without an external battery pack ³⁾ Autonomy (min.) at 100% load – see table.

⁴⁾ Depth: 680 mm ⁵⁾ Depth: 420 mm

3-phase, output range scalable 10 – 40 kW



PMC 40 – compact, rack-independent UPS system (up to 40 kW, 3-phase)

This uses “double conversion” UPS technology according to the highest classification VFI-SS-111, which provides a constant output irrespective of the incoming voltage, coupled with a high overall efficiency and minimal space requirements.

The PMC 40 may be configured as a redundant system. As a general principle, it is important to ensure adequate climate control of the rack where the PMC 40 is installed. For installation purposes, the rack must have two 482.6 mm (19”) mounting levels and a minimum depth of 800 mm. Depending on the configuration, mixed population (e.g. with servers) in the same rack is also supported.

The PMC 40 (redundant design) has “safe swap” capabilities. This allows easy, safe module exchange while the system is operational, without having to switch the UPS to bypass mode. Installation, commissioning and maintenance must only be carried out by qualified personnel who have been authorised by Rittal.

Supply includes:

A PMC 40 UPS system is comprised of a basic unit for 482.6 mm (19”) installation. 1 – 2 UPS modules and, depending on the version, a maximum of two battery packs per UPS module may be integrated into this basic module. The configured complete system comes supplied with basic unit and UPS module(s). The battery packs are supplied separately.

		Type 1	Type 2	Type 3	Type 4	
Number of UPS modules		1	1	2	2	
Number of battery packs		1	2	2	4	
Maximum UPS output (with 10 kW/20 kW module)	kW	10	10/20	20	20/40	
UPS output with 1+1 redundancy (with 10 kW/20 kW module)	kW	–	–	10	10/20	
Approx. autonomies at 100% load (10 kW/20 kW modules)	min.	6/–	15/5	6/–	16/5	
Approx. autonomies at 50% load (10 kW/20 kW modules)	min.	12/–	30/10	12/–	32/10	
RS232 (D-Sub 9) and USB interface (configuration and shutdown)	Qty.	1/1	1/1	1/1	1/1	
Fault signal contacts (floating)	Qty.	5	5	5	5	
Clamping strip input (3L+N+PE) max. conductor cross-section	mm ²	10/16	10/16	10/16	10/16	
Clamping strip output (3L+N+PE) max. conductor cross-section	mm ²	10/16	10/16	10/16	10/16	
Dimensions	Width (B)	mm	485 (19”)	485 (19”)	485 (19”)	
	Height (H)	U	11	15	18	26
	Depth (T)	mm	735	735	735	735
Required distance between 482.6 mm (19”) levels (min./max.)	mm	690 – 800	690 – 800	690 – 800	690 – 800	
Weight (approx. incl. batteries and UPS modules)	kg	162	278	310	537	
Model No. DK basic unit		7040.010	7040.020	7040.030	7040.040	
Model No. DK PMC 40 10 kW module (order quantity acc. to type)		1 x 7040.110	1 x 7040.110	2 x 7040.110	2 x 7040.110	
Model No. DK PMC 40 20 kW module (order quantity acc. to type)		–	1 x 7040.120	–	2 x 7040.120	
Model No. DK PMC 40 battery pack per n x 4 x 10 batteries (12 V/7 Ah) prewired (service life 5 acc. to EUROBAT) n = 1, 2, 4		7040.211	7040.212	7040.212	7040.214	
Model No. DK PMC 40 battery preparation (for export or air freight) Drawers and battery cabling (excluding battery, quantity depending on type)		7040.201	7040.202	7040.203	7040.204	
Accessories						
SNMP monitoring card				7857.420		
RCCMD licence, bundle with 5 licences for selective shutdown of 5 computers (only available in conjunction with UPS hardware)				7857.423		
RCCMD licence, bundle with 25 licences for selective shutdown of 25 computers (only available in conjunction with UPS hardware)				7857.424		

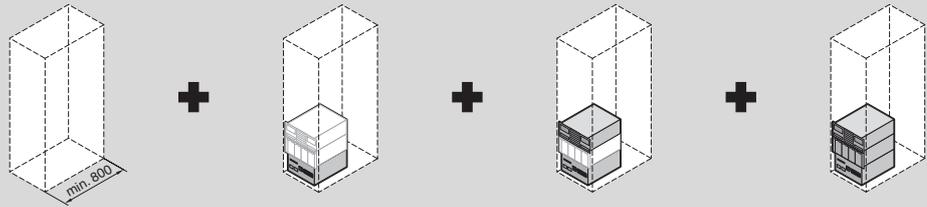
Note: Only UPS modules with an identical output may be combined.

UPS PMC 40

3-phase, output range scalable 10 – 40 kW



PMC 40 modules, rack-independent



The UPS system PMC 40 may be installed in any 482.6 mm (19") rack which is at least 800 mm deep.

Basic module ...

... plus UPS module ...

... plus battery pack produce a complete UPS system with an output of 10 – 40 kW.

Note: When installing the PMC 40 in a sealed enclosure, it is important to ensure adequate climate control.

IP protection categories of the PMC 40 UPS may be defined on a customer-specific basis via the rack used.

Technical specifications ¹⁾		PMC 40 UPS module	
Model No. DK		7040.110	7040.120
PMC 40 UPS module type		10 kW	20 kW
Input voltage	V	3 x 400/230 + N	
Input voltage tolerance (at < 80% load)	%	-30/+15	
Input frequency range	Hz	35 – 70	
Input power factor (at 100% load)	min.	PF = 0.99	
THDI	%	Sine-wave THDI > 4	
Output voltage	V	3 x 400/230	
Voltage stability (output)	%	+/- 4	
Distortions (output, non-linear load EN 62 040-3)	%	+/- 2	
Output frequency (configurable)	Hz	50 or 60	
Overload capacity on inverter (max. 600/60 sec.)	%	125/150	
Short-circuit resistance		Inverter: I _n during 250 ms/bypass: 10 x I _n during 10 ms	
Environmental conditions			
Ambient temperatures (operation)	°C	0 – 40	
Recommended operating conditions (batteries)	°C	20 – 25	
Efficiency (AC – AC, approx. for at least 50% load)	%	94	
Eco-mode efficiency (AC – AC, at 100% load)	%	98	
Interfaces (integrated into basic unit)		USB, RS232, floating contacts (5)	
Optional management via extension slot (remote monitoring)		1 x network monitoring card (SNMP card)	
Standards			
Safety		EN 62 040-1.1, EN 60 950-1	
Electromagnetic compatibility		EN 62 040-2, EN 61 000-3-2, EN 61 000-3-3, EN 61 000-6-2	
Certifications		CE	
Protection category	IP	20	

¹⁾ We reserve the right to make technical modifications.

Detailed technical data as well as operating manuals and software updates for our UPS systems may be found on the Internet at www.rittal.com (under the relevant Model No.)

3-phase, output range scalable 8 – 800 kW



Rittal PMC 200 ensures optimum availability for critical applications by combining modularity (flexible, unlimited scalability and redundancy, whereby up to 20 modules may be switched in parallel) with decentralised parallel architecture or DPA (redundant protection without a "single point of failure"). The UPS modules are transformerless, genuine online, double-conversion UPSs with static bypass and classification code VFI-SS-111.

This modular concept keeps the purchasing and operating costs of redundant solutions exceptionally low. As your performance requirements grow, the UPS grows with you, thanks to its flexible scalability – even in the most confined spaces, and with the system operational. The benefits to you: Less capital tie-up, inexpensive expansion, and minimal space requirements.

Module range (per rack)		Up to 100 kW				Up to 200 kW		
Module power	kW	8	12	16	20	24	32	40

1. Rectifier data		
Nominal input voltage	V	3 x 380/220 V+N, 3 x 400/230 V+N, 3 x 415/240 V+N
Input voltage tolerance	V	3 x 306/177 V to 3 x 464/264 V for < 100% load 3 x 280/161 V to 3 x 464/264 V for < 80% load 3 x 160/138 V to 3 x 464/264 V for < 60% load
Input frequency	Hz	35 – 70
Power factor input		PF = 0.99 @ 100% load
Distortion factor, THDI		Sine-wave THDI = < 3% @ 100% load

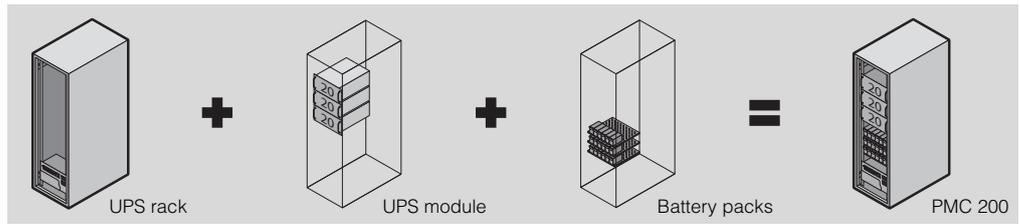
2. Battery specifications (maintenance-free lead and NiCd)						
No. of 12 V batteries		30 – 50	40 – 50	40 – 50	30 – 50	40 – 50
Battery charging curve		Ripple free; IU (DIN 41 773)				

3. Output data								
Power output per module	kVA	10	15	20	25	30	40	45
Output power per module at cos phi 0.8 ind. to cos phi 0.9 cap.	kW	8	12	16	20	24	32	40
Output voltage	V	3 x 380/220 V or 3 x 400/230 V or 3 x 415/240 V						
Output voltage stability		Static: < ± 1% /dynamic step load 0% – 100% or 100% – 0%: < ± 4%						
Output voltage distortion		With linear load: < ± 2% /with non-linear load (EN 62 040-3; 2001): < ± 4%						
Output frequency		50 Hz or 60 Hz						
Overload capacity in inverter mode		125% load: 10 min./150% load: 60 sec.						
Short-circuit capacity	A	2 x I _n during 250 ms/bypass: 10 x I _n during 10 ms						
Efficiency AC – AC at 100%/75%/50%/25% load (cos phi 1.0)	%	96/95/95/95						
Eco-mode efficiency at 100% load	%	98						

4. General technical specifications								
Safety		EN 62 040-1-1: 2003, EN 60 950-1: 2006						
EMC		2006, EN 61 000-3-2: 2000, EN 61 000-3-3: 2006, EN 61 000-6-2: 2006, EN 61 000-6-4: 2002						
Classification code VFI-SS-111		EN 62 040-3: 2002						
Product conformity		CE						
Protection category		IP 20						
Noise level at 100%/50% load	dB (A)	55/49	57/49	57/49	57/49	59/51	63/53	63/53
Parallel configuration		Up to 20 modules						
Ambient temperature UPS/batteries (recommended)	°C	0 – 40/20 – 25						
Siting		Min. 20 cm spacing from the wall (required for cooling)						
Input and output wiring		From the front, below						
Efficiency AC – AC at 100%/75%/50%/25% load (cos phi 1.0)	%	96/95/95/93.5						
Eco-mode efficiency at 100% load	%	98						

UPS PMC 200

3-phase, output range scalable 8 – 800 kW



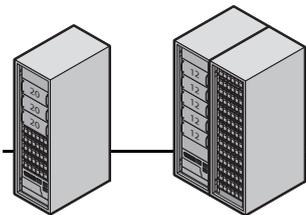
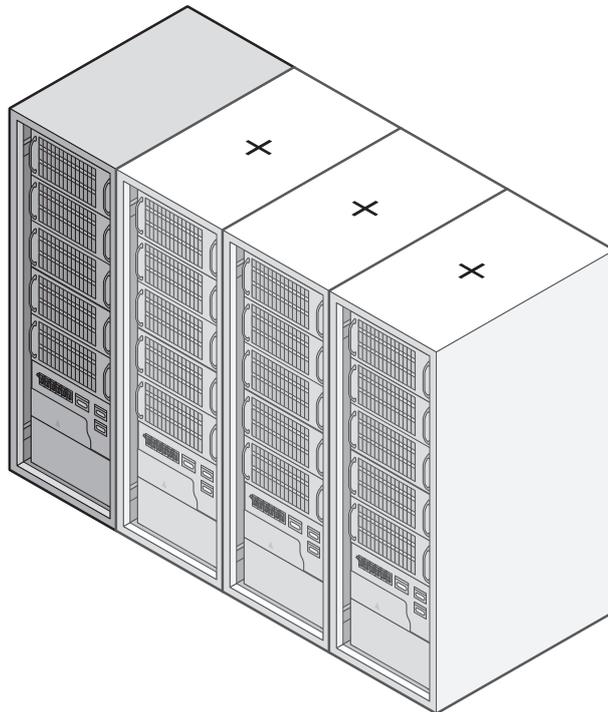
Minimum floor space is required by a rack with three modules (2+1 redundancy) and batteries with autonomy integrated into a single rack.

The Rittal PMC 200 allows the integration of up to 5 modules (4+1 redundancy) in one rack. For this configuration, an additional battery rack is required.

The autonomy may be flexibly adapted to suit your requirements.

A safe investment – almost unlimited scalability

Up to 20 PMC modules may be gradually switched in parallel e.g. in order to supply 800 kW without redundancy or 760 kW n+1 (with 40 kW modules) uninterrupted. May be upgraded with the system operational; no need to switch over to an unprotected network.



UPS racks: W 600 x H 2000 x D 1000 mm
Battery racks: W 600 x H 2000 x D 1000 mm

Examples of 12 and 20 kW module configurations and autonomies

	without	with	without	with	without	with	without	with	without	with
Redundancy	1/-	-	1/-	1/-	1/-	1/-	1/1	1/1	1/1	1/1
UPS rack/battery rack	1/-	-	1/-	1/-	1/-	1/-	1/1	1/1	1/1	1/1
Number of UPS modules	1	-	2	2	3	3	4	4	5	5
PMC 12 module type, power in kW	12	-	24	12	36	24	48	36	60	48
Battery autonomy ¹⁾	60	-	14	14	14	14	24	24	24	24
PMC 20 module type, power in kW	20	-	40	20	60	40	80	60	100	80
Battery autonomy ¹⁾	33	-	7	7	7	7	12	12	12	12

Note:

This table contains only sample configurations. We would be pleased to configure your individual solution with you.

3-phase, output range scalable 64 – 960 kW



Rittal PMC 800 is the solution for data centres with a high power consumption. The modular architecture allows optimum, tailored configuration of the UPS.

The PMC 800 may be extended to accommodate up to 12 modules, facilitating a maximum output of up to 960 kW or 880 kW (n+1), redundant. If a UPS with a higher output is required, this can of course be achieved with the PMC 800.

Rittal PMC 800 at a glance:

- Topology: On-line, double conversion, VFI
- Technology: transformerless
- Architecture: Modular, supports parallel connection
- Maximum output in standard configuration: 960 kW (higher outputs available on request)
- Efficiency at 25/50/75/100% load (cos phi = 0.8): 92/93.5/95/95%
- Use of battery racks

1. PMC 800			
Module type		64	80
Power output	kVA	80	100
Power output	kW	64	80
Nominal input voltage	V	3 x 380/220 V+N, 3 x 400/230 V+N, 3 x 415/240 V+N	
Input voltage tolerance (3 x 400 V)		Load < 100% (-23%, +15%) < 80% (-30%, +15%) < 60% (-40%, +15%)	
Input frequency	Hz	35 – 70	
Power factor, input		0.98	
Distortion factor, THDI		7 – 9% at 100% load	

2. Battery specifications (maintenance-free lead and NiCd)			
Maximum charging current per module	A	16, ripple-free	
Battery performance curve		IU (DIN 41 773)	
Number of batteries (12 V)		40 – 50	

3. Output data			
Module type		64	80
Power output per module	kVA	80	100
Power output per module	kW	64	80
Output voltage	V	3 x 380/220 V, 3 x 400/230 V, 3 x 415/240 V	
Output power factor		1	
Output voltage tolerance, static		< ± 1%	
Output voltage tolerance, dynamic		< ± 4%	
Distortion factor with non-linear load (EN 62 040-3: 2001)		< ± 3%	
Admissible load unbalance		100%	
Output voltage form		Sinusoid	
Output frequency	Hz	50 or 60	
Overload capacity		125%: 10 min./150%: 1 min.	

4. General technical specifications			
Topology		On-line, double conversion, VFI	
Parallel configuration		For redundancy or output increase up to 10 modules	
Ambient temperature	°C	0 – 40	
Cooling		Fan-assisted	
Volume of cooling air required		1500 m ³ at 25°C	
Siting		Min. 20 cm distance from the wall	
Cablings		From the front, from below	
Efficiency cos phi = 0.8 Load: 100%, 75%, 50%, 25%	%	95/95/93.5/92	
Heat loss at 100% load cos phi = 0.8	W	3400	4200
Weight	Active module	65 kg	65 kg
	Passive module	70 kg	85 kg
Dimensions W x H x D	mm	1400 x 1900 x 870	
Standards	Safety	EN 62 040-1-1: 2003, EN 60 950-1: 2001/A11: 2004, EN 50 091-2: 1995	
	EMC	EN 61 000-3-2: 2000, EN 61 000-3-3: 1995/A1: 2001, EN 61 000-6-4: 2001	
	Power	EN 62 040-3: 2001	

PMC 12



Mechanical maintenance bypass, 2 U for PMC 12

Facilitates uninterrupted removal/maintenance of the UPS. Various designs are required depending on the UPS output category. Connection of the bypass for 1 – 3 kVA UPS models is via a connector (Plug & Play), while the 4.5 and 6 kVA UPS variant must be installed by a qualified electrician. It is important to ensure the correct prefuse of the UPS bypass depending on the UPS power used.

Dimensions:

W x H x D (mm):
465 x 88 x 80 (DK 7857.440)
465 x 88 x 350 (DK 7857.441)

		Model No. DK
1	1 – 3 kVA (incl. UPS fuse 16 A)	7857.440
2	4.5 – 6 kVA (incl. UPS fuse 32 A)	7857.441



Sub-distribution

482.6 mm (19") sub-distribution for PMC 12

Outlets 4 x C19 and 2 x 32 A CEE-conforming Single-phase, individually fused. Allows the direct connection of up to 6 pieces of equipment. A qualified electrician must carry out the installation.

Dimensions:

W x H x D (mm): 482.6 (19") x 131 (3 U) x 300

Technical specifications:

Ambient conditions:
Temperature:
5 – 40°C, humidity: 5 – 90% rel. hum.
(non-condensing)
Input (open ends with wire end ferrules):
3 x 6 mm² (2 m)
Output:
4 x C19 jack, 2 x CEE 32 A coupling
Fuses:
4 x 16 AC, 2 x 32 A C type C

Packs of	Model No. DK
1	7857.445



PMC 12 Plug & Play Sub-distribution

for PMC 12, 4.5 and 6 kVA

This sub-distribution facilitates simple installation and commissioning of the PMC 12 UPS, 4.5 and 6 kVA. All that is needed is a single-phase 32 A connection to DIN/EN 60 309.

Dimensions:

W x H x D (mm): 482.6 (19") x 88 (2 U) x 300

Technical specifications:

Ambient conditions:
Temperature:
5 – 40°C, humidity: 5 – 90% rel. hum.
(non-condensing)
UPS connection PMC 12:
Via connection cable with fitted Harting connector (1.5 m)
Input (connection cable):
3 x 4 mm² (3 m) with 32 CEE connector single-phase
Output:
2 x C19 jack, 4 x C13 jack
Fuses:
2 x 16 AC, 4 x 10 A C type C

Packs of	Model No. DK
1	7857.448



Parallel hot swap chassis

for PMC 12, 4.5 and 6 kVA

Facilitates parallel connection of 2 (or 3) PMC UPS systems to increase the output or redundancy of the UPS. A mechanical maintenance bypass is also integrated. Parallel connection is only possible with the 4.5 and 6 kVA PMC 12 version. The two UPS systems to be connected in parallel must have identical battery configurations (number/type of battery packs). The autonomy of the system will not be increased as a result of parallel connection. Installation must be carried out by a qualified electrician.

Dimensions:

W x H x D (mm): 482.6 (19") x 88 (2 U) x 300

Technical specifications:

Ambient conditions:

Temperature:

5 – 40°C, humidity: 5 – 90% rel. hum. (non-condensing)

UPS connection PMC 12:

Via connection cable with fitted Harting connector (1 m)

Input (connection cable):

3 x 10/16 mm² (2 m) with open cable end and wire end ferrules

Output (connection cable):

3 x 10/16 mm² (2 m) with open cable end and wire end ferrules

Fuses (UPS input):

2 x 2 x 32 A type C (for DK 7857.443)

3 x 2 x 32 A type C (for DK 7857.444)

	for UPS systems	Packs of	Model No. DK
1	2	1	7857.443
2	3	1	7857.444

Note:

Commissioning of a PMC 12 UPS connected in parallel must only be carried out by a member of the Rittal Service team, because the UPS may be destroyed if wrongly configured. Additionally, we recommend the use of the PMC 12 sub-distribution (DK 7857.445).



Sub-distribution

482.6 mm (19") sub-distribution for PMC 40 UPS

Allows the directly fused connection of single and 3-phase equipment. In this way, up to 4 PSM busbars may be connected directly to the PMC 40 UPS via the relevant connection cables. Additionally, there are six single-phase outlets (16 A) available via C19 jacks. Connection to the PMC 40 UPS must be carried out by a qualified electrician.

Packs of	Model No. DK
1	7040.500

Dimensions

W x H x D: 482.6 (19") x 131 mm (3 U) x 300 mm

Technical specifications:

Ambient conditions:

Temperature:

5 – 40°C, humidity: 5 – 90% rel. hum. (non-condensing)

Input (open ends with wire end ferrules):

5 x 16 mm² (2 m)

Output:

4 x GST18 (3-phase), 6 x C19 (single-phase)

Fuses:

18 x 16 AC



UPS monitoring card (SNMP card)

This optional monitoring card facilitates monitoring of the UPS via web browsers. In this way, various monitoring states of the UPS (e.g. input voltage, output currents/power per phase, battery charging status, autonomies etc.) may be remotely monitored.

However, the main application is a controlled server shutdown via the network interface. To this end, a UPS shutdown client (RCCMD software) must be installed and configured on every server.

Version	Packs of	Model No. DK
SNMP card	1	7857.420
SNMP card CS121 with floating contacts	1	7857.366

Note:

Only one extension card may be installed per UPS system.

Redundant monitoring solutions for UPS systems available on request.

Accessories

PMC 12/40



RCCMD software

Client software to control the server shutdown via the PMC UPS. The software supports all common operating systems and versions (e.g. Windows 7, VISTA, XP, Server 2003/2008, UNIX/LINUX and VMWARE Sphere/ESX Server, CITRIX XEN etc). Software updates and a complete list of currently supported operating systems are available at www.rimatrix5.com (under Service/Downloads/Power).

A separate licence is needed for every server to be shut down on an event-controlled basis. The supply of the Rittal PMC UPS includes both the necessary software on CD and one licence (for one server). If other servers are to be controlled by the UPS, the following licence bundles may be ordered.

Licences	Model No. DK
Single licence	7857.421
Licence bundle (5 servers)	7857.423
Licence bundle (25 servers)	7857.424



PMC 12 relay card

for PMC 12

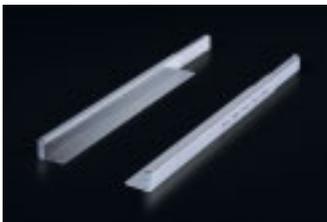
With this card the UPS alarm messages (5 UPS alarms) may be forwarded to external indicator devices (e.g. building services management) via floating contacts.

The card is plugged into the extension slot on the rear of the PMC 12 UPS.

Note:

Cannot be used together with the SNMP card.

Packs of	Model No. DK
1	7857.410



Slide rails, depth-variable, 1 U

for server and network enclosures with two 482.6 mm (19") mounting levels and L-shaped mounting angles

The slide rail is pulled out to the required length and secured between the front and rear mounting level.

Length mm	Load capacity kg	Contact surface mm	Packs of	Model No. DK
590 – 930	80	50	2	7063.883

Material:

Sheet steel, zinc plated, passivated.

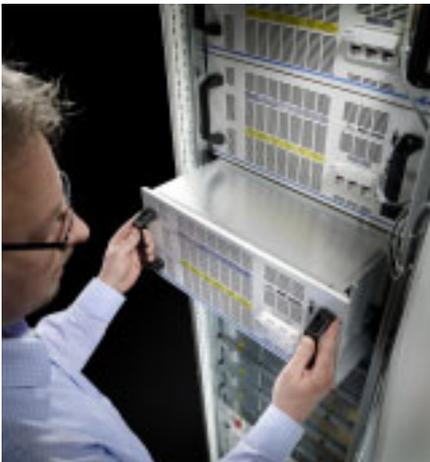
Supply includes:

Assembly parts.



Power System Module PSM

Busbars and matching modules may be found in Catalogue 32, from page 789.



With more than 200 locations worldwide for a truly global service

Our Rittal global service comprises five strategic service hubs, more than 60 service support points at our subsidiaries, and over 200 qualified and authorised service partners worldwide. Because when it comes to service, nothing is more important to us than customer proximity, safety and reliability.

From Europe, to the USA and South America, through to China and India: Wherever you are using a Rittal product, we will take care of it. Rittal service engineers around the world are all trained to the same high standards of performance and quality, and are at your service 24 hours a day.

Rittal accompanies your UPS throughout its entire lifecycle – with individual services.

- Global stocking of spare parts, including standard components and replacement modules.
- On-site module replacement in < 1.0 hour, for maximum availability.
- Minimal maintenance costs, thanks to intelligent service concepts.
- Safe swap – which means no need to switch to unprotected networks (bypass) and compliance with Tier II and Tier IV, depending on the customer infrastructure.
- Optimum plant availability thanks to pretested systems.

Rittal service contracts – the ultimate back-up

	Reachability	Response time	Spare parts availability	Maintenance	Warranty extension
BASIC	Business hours	Next working day	Standard	1 x/year	Optional
COMFORT	Business hours	Next day	Standard	1 x/year	Optional
ADVANCED	24 hours 365 days/year	Next day	24 hours	1 x/year	Yes
FULL	24 hours 365 days/year	8 hours	Individual concept	Individual (at least 1 x/year)	Yes
CUSTOMIZED	As agreed	As agreed	As agreed	As agreed	As agreed

Rittal – The System.

Faster – better – worldwide.

Maximum efficiency, reduced costs, energy savings. Rittal's strategy says think in terms of system solutions and provide a system for all applications – from power distribution and automation, to building installation, through to the IT infrastructure.

And offer your customers unprecedented benefits.

- Industrial enclosures
- Power distribution
- Electronic packaging
- System climate control
- IT systems
- Service



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