



# Permanent Power



Modular power for maximum efficiency

# ▶ Rittal Power-Management – Integral protection for maximum IT performance

The miniaturisation and rising performance of hardware components places particular requirements on modern energy management designs. As energy demands escalate, so too do the requirements placed on the energy supply to racks and data centres, and on the management of power distribution.

Rittal's response to this challenge is called RimatriX5 power management. It combines the requirements of redundancy, scalability and availability in one system, with due regard for power distribution and back-up. The result?

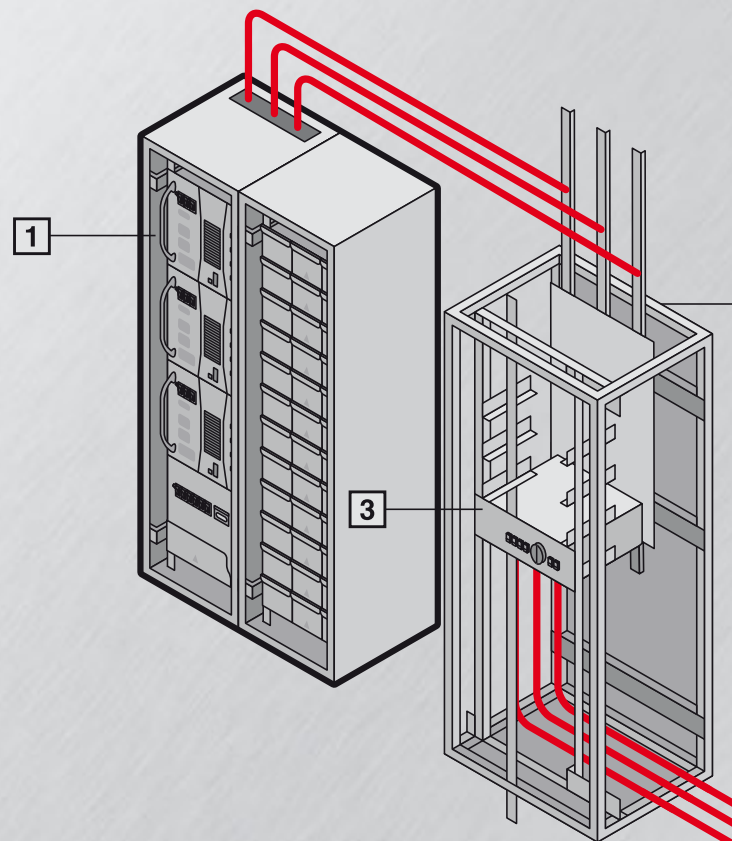
- High availability of the entire system
- Increased energy efficiency of the RimatriX5 power components
- Lasting positive effect on the TCO (Total Cost of Ownership)
- Exceptional investment flexibility
- Minimal MTTR (Mean Time to Repair)

Interruption to critical business processes due to a production failure or loss of communication can have far-reaching implications for a company. Power failures and power fluctuations are the main cause of most data losses.

## 1 Power Modular Concept PMC – guaranteed to stay on the safe side

The innovative Power Modular Concept PMC is the scalable UPS concept from Rittal, for a protected power supply. Its modularity, coupled with the unique Decentralised Parallel Architecture (DPA), ensure a high degree of availability for critical applications and requirement-oriented investments.

The modular Rittal UPS concept meets the versatile data centre requirements and is easily expanded with additional UPS modules. High initial investments for first-time installation are avoided thanks to the modular design concept, since UPS capacities may be upgraded at any time as and when required. The modular concept allows you to invest as your requirements grow.



## ▶ Convincing benefits:

- “N+1” technology in a single rack
- Genuine modularity, even with the battery blocks
- Service-friendly, thanks to the modular layout
- High level of efficiency
- 10-40 kVA modules
- 120 kVA
- Classification VFI-SS-111

**2 3 Power distribution rack/module PDR/PDM –  
Perfect power distribution**

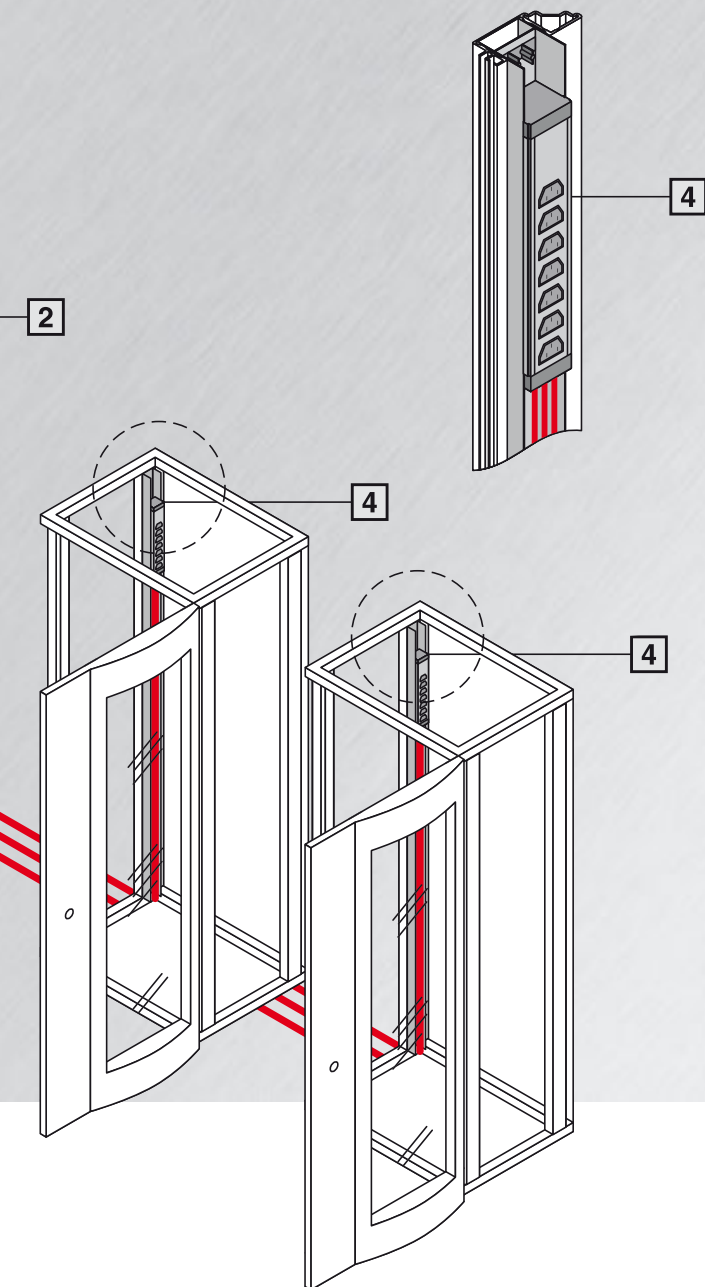
► **Convincing benefits:**

- Cable expansion
- Shock-hazard protected plug & play system
- Keyable connection
- Modules may also be replaced by staff who have received appropriate instruction
- Modules may be upgraded with the system operational
- VDE-certified

**4 Power System Modul PSM –  
Intelligent power distribution inside the rack**

► **Convincing benefits:**

- Three-phase, redundant layout
- Installation without loss of U
- Modules may be upgraded with the system operational
- Remote monitoring via web server and SNMP



*The Rittal power management system allows integrated, secure, space-saving energy supply and back-up for individual racks through to complete data centres.*



# ▶ Rittal Power Modular Concept PMC – Guaranteed to stay on the safe side

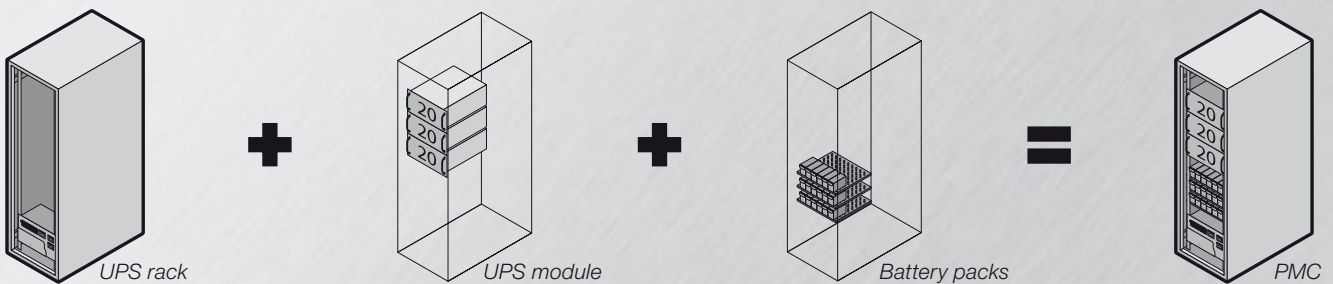
## Maximum availability, modularity and compact design!

Rittal PMC ensures a high level of availability for critical applications by combining modularity (flexible, unlimited scalability and redundancy) with decentralised parallel architecture or DPA (redundant protection without “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 makes the purchase and operating costs of redundant solutions particularly cost-effective. 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. Your benefits: Less capital tie-up, inexpensive expansion, and minimal space requirements.



## ▶ The modular UPS: Rittal PMC



## Your individual UPS based on standard modules

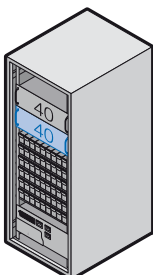
Rack plus UPS modules plus battery packs produce the customised UPS you need today. With a performance density of up to 120 kVA (80 kVA redundant) in one rack.

## Will you be needing more in future?

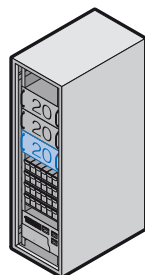
Not a problem: The system supports modular expansion of performance and autonomy whilst operational.

## ▶ N + 1 = Perfect redundancy in a rack with PMC

Example 1



Example 2



Example 1:

1 + 1 (40 kVA + 40 kVA) Advantage: Just two UPS modules, minimal space requirements. Disadvantage: 100 % of the required output must be provided as redundancy.

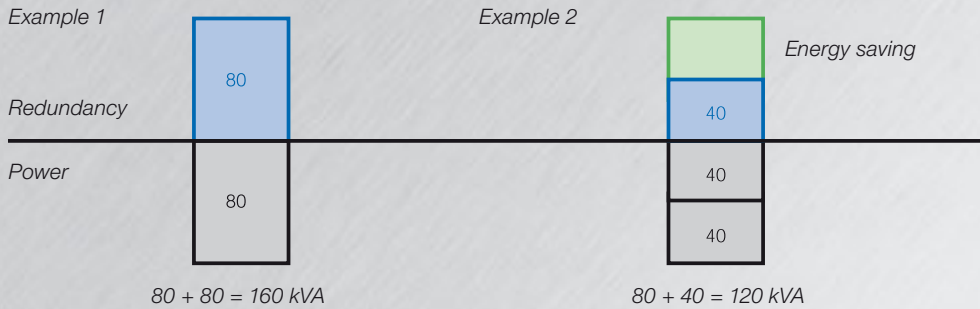
Example 2:

2 + 1 (2 x 20 kVA + 20 kVA) Advantage: Compact and energy-efficient.

## Two examples of a 40 kVA UPS with redundancy

All modules operate in parallel mode. In all cases, one module may fail without impairing the connected load. **We will be happy to work with you to project-plan precisely the correct solution for your individual requirements.**

► **Maximum energy efficiency with PMC**



Example 1:  
This 80 kVA + 80 kVA requires the greatest performance for redundancy.

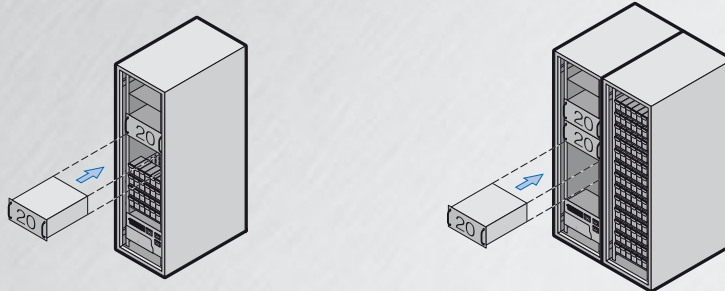
Example 2:  
This variant with three 40 kVA modules only requires half of the output compared with example 1 for redundancy purposes.

**Minimal energy requirement means low ongoing costs and minimal pollution**

With the PMC concept, you not only protect the critical load, but also safeguard the operating ratio of the UPS.

**Example 2 is a very good overall solution with consideration for energy and space requirements and performance expansion.**

► **Flexible scalability with PMC**



The autonomy may also be adapted flexibly to suit your requirements. The Rittal PMC modular system combines flexible adaptation to customer-specific requirements with investment reliability and a high level of availability.

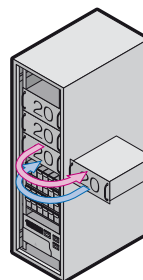
**Simple expansion with the system operational**

Output may be expanded from 1 to 2 or 3 UPS modules via “hot swap” with the system operational, without having to switch the machine to bypass mode. For three modules or more, an additional battery case will be needed.

► **Super-fast service with PMC**

**Extremely short MTTR (Mean Time To Repair)**

In the event of servicing, a 40 kVA module may be used to replace a 10 or 20 or 30 kVA module. This simplifies the logistics and ensures fast, flexible, cost-effective servicing.



The comprehensive Rittal Postsales Service guarantees optimum operating times and system availability. You can choose from four different RimatriX5 safety packs or individual maintenance contracts. A key element is the remote management software, which allows the efficient monitoring and control of your data centre through to automated escalation management.

# ▶ Rittal Power Distribution Rack/Module PDR/PDM – Perfect power distribution

## Power Distribution Rack PDR – Central power management for IT racks

The use of ever more powerful servers in the most confined spaces places escalating demands on safe, flexible power management. With the Power Distribution Rack PDR, Rittal offers innovative solutions for the central power supply of IT systems – cascadable, highly flexible components which grow along with your power requirements.

- Accommodation of up to eight PDM systems
- Sub-distribution (UV) up to 250 A per phase
- PDM may be retrofitted whilst the system is operational
- A maximum of 32 racks may be fitted to the sub-distributor
- Fully shock-hazard protected
- VDE-certified
- Cable connection in the PSM rail for maximum possible planning flexibility

## Power Distribution Module PDM – Energy management between IT racks

Plug & play installation of a power supply in the IT rack with complete shock hazard protection means significantly reduced assembly costs plus a high level of investment confidence.

- 482.6 mm (19") modules for power sub-distribution of 40 kW in server and network enclosures
- Four fused, three-phase outlets
- Connected load 400 V/3~, max. 63 A



The power distribution module is used for power sub-distribution of 40 kW in server and network enclosures.



Four fused 3-phase outlets are available



The PDM has a maximum connected load of 63 A per phase.

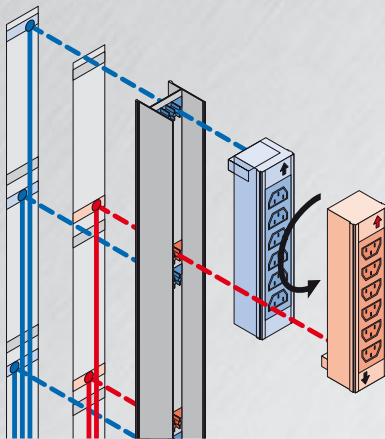


## ► Rittal Power System Modul PSM – Intelligent power distribution inside the rack

### Power System Module PSM – Power solutions that connect

The Power System Module PSM is a completely shock-hazard protected busbar which is mounted in the rack – for super-easy cable management and minimal assembly costs coupled with optimum power supply and back-up.

- Busbar fully shock-hazard protected, three-phase
- Redundant configuration thanks to two separate circuits
- Loadable up to 48 A or 96 A
- Modules may be retrofitted with the system operational
- Active modules feature individual slot switching with SNMP/HTTP and user management
- Max. 42 slots in one 2 m system
- Optimised cable management



*Power System Module PSM: By rotating the modules, two circuits may be accessed with one slot.*



*Choice of infeed by simply rotating the modules.*



*Plug & play connection of the PSM to the Rittal remote management system.*

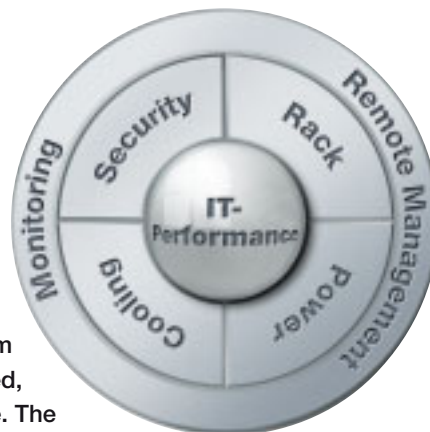


*Reliable protection against unintentional disconnection of the power supply: Cable latch for PSM modules with C13 IEC 320 connector.*



*Active 8-way PSM – the module with ammeter and display, plus individually switchable sockets.*

# ▶ RimatriX5 – Complete solution for a reliable IT infrastructure

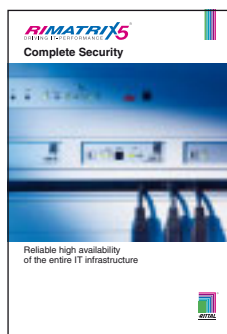


To a large extent, the performance of the IT infrastructure is reliant upon optimum interaction between individual components. Rittal RimatriX5 is the rack-optimised, holistic, scalable, super-efficient system solution for outstanding IT performance. The strategy behind the RimatriX5 concept is based on five optimum stand-alone solutions, an integral security package, plus a comprehensive range of services.



Custom-configured climate control concepts for high-performance cooling.

RimatriX5 Perfect Cooling



Physical rack and room protection are pivotal to ensuring high availability of the entire infrastructure.

RimatriX5 Complete Security



Holistic escalation management for the entire physical network infrastructure.

RimatriX5 Monitoring & Remote Management



A comprehensive range of services for optimum operational reliability and availability coupled with a high level of efficiency.

RimatriX5 Modular Services

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