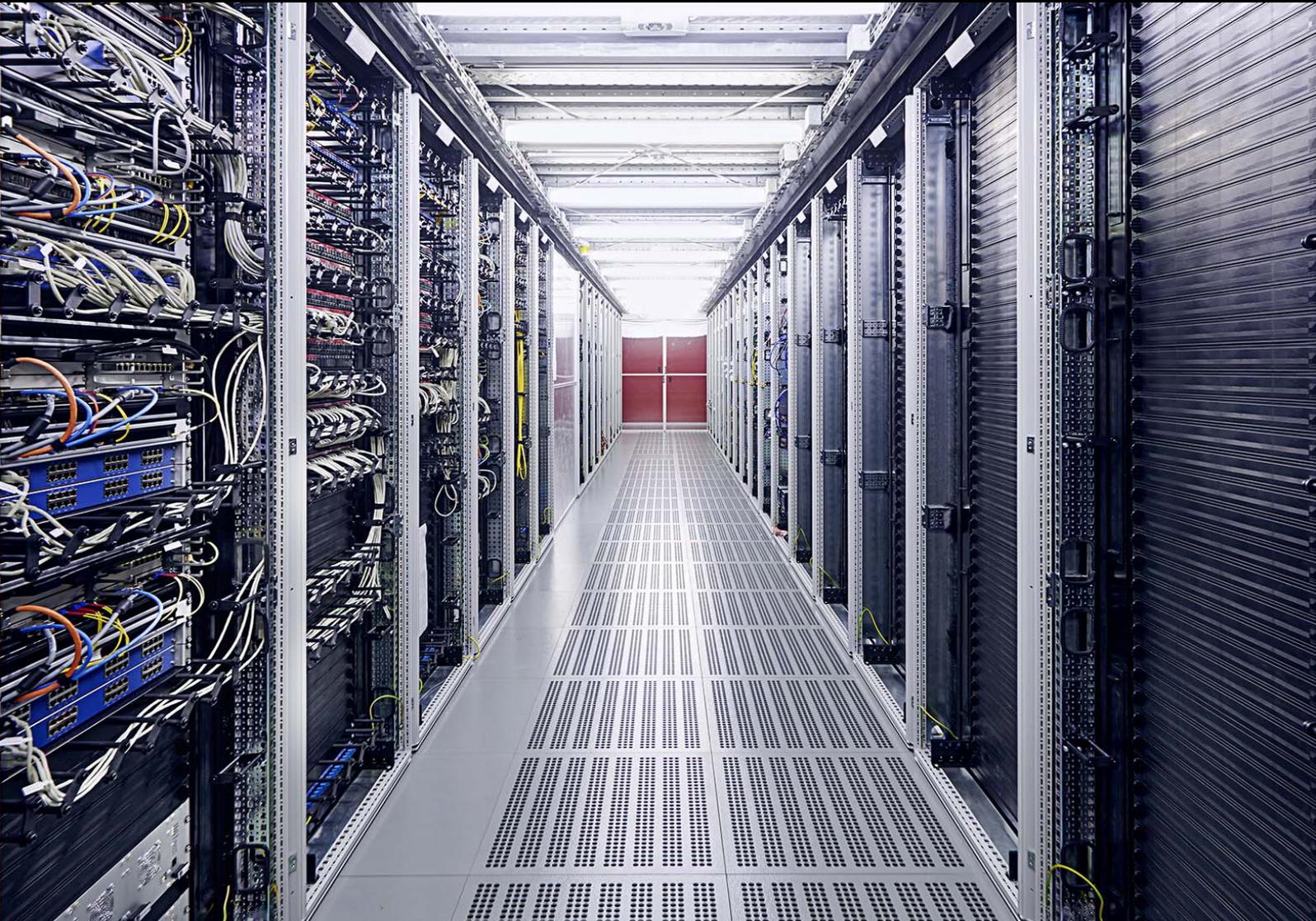


# Rittal – The System.

Faster – better – everywhere.

► **We've got the power –  
modular UPS systems**



ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

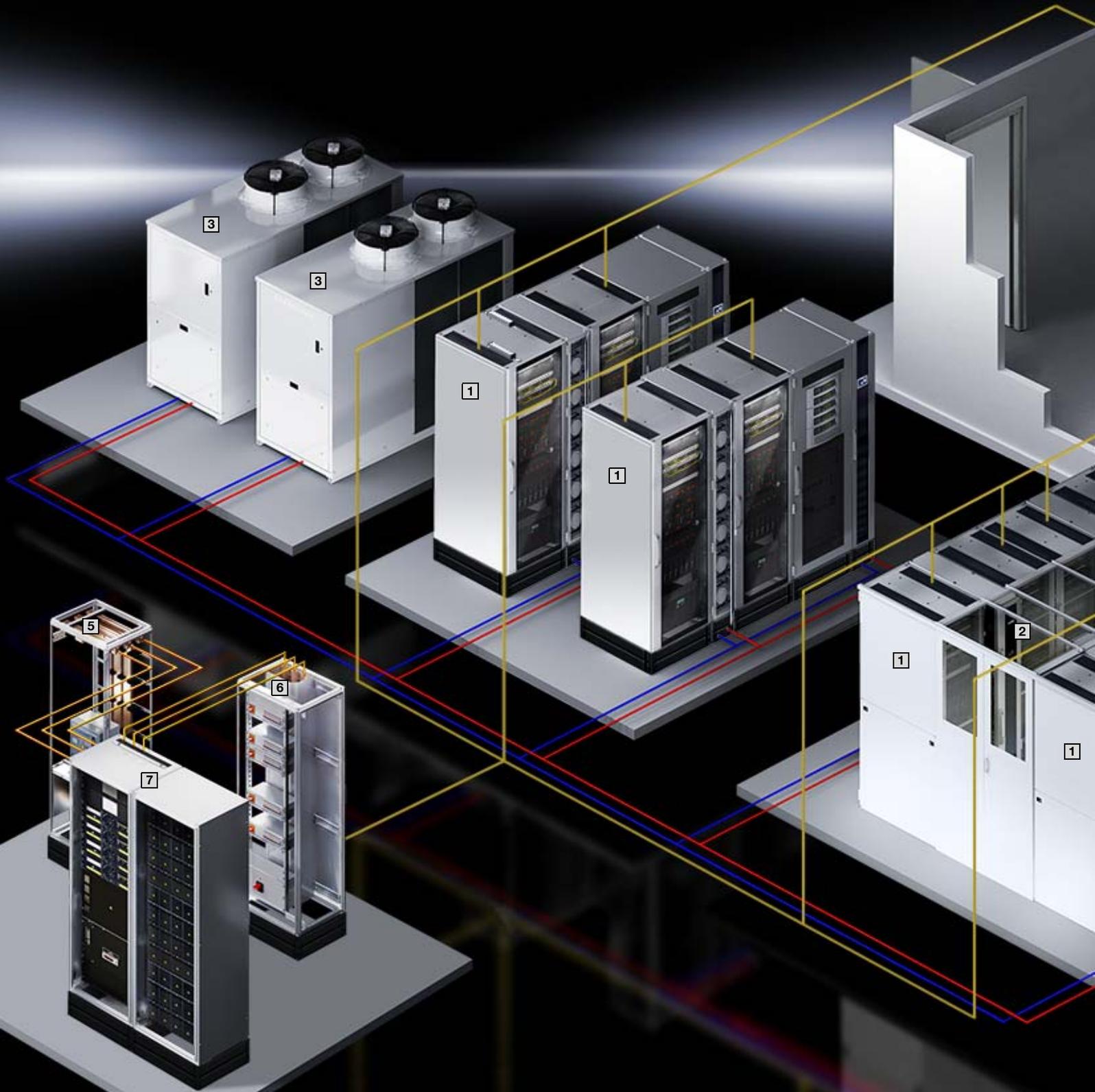
SOFTWARE & SERVICES

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# Rittal – The System.

Faster – better – everywhere.

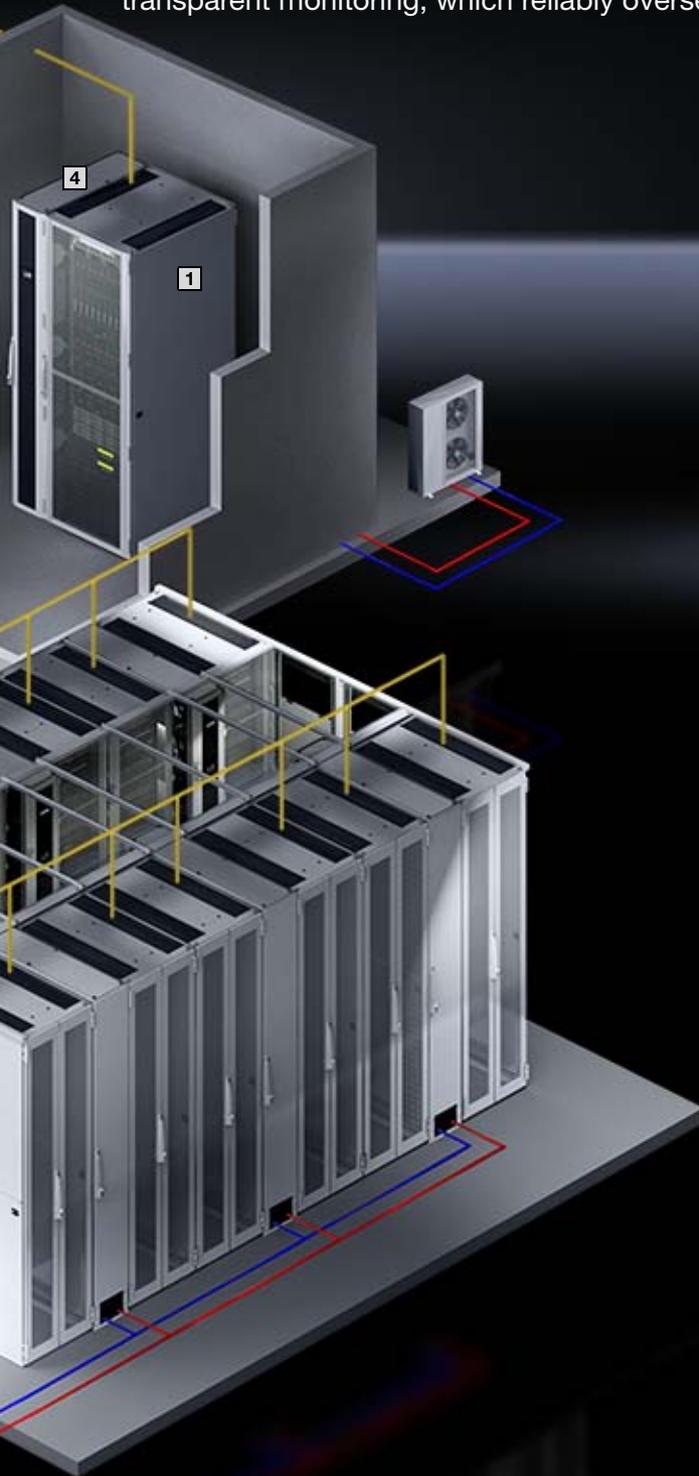


ENCLOSURES      POWER DISTRIBUTION      CLIMATE CONTROL

FRIEDHELM LOH GROUP

# Always play it safe

IT solutions are increasingly the heart of the company. As such, it is becoming more important to use high-quality, scalable solutions which cover all requirements in the IT environment as well as in the industrial environment to optimum effect, and which are perfectly coordinated with one another. Rittal offers a complete range, from TS IT, the global standard in network and server enclosures, through to transparent monitoring, which reliably oversees the functioning and efficiency of all components.



## 1 TS IT network/server enclosures

The intelligent modular system with flexible network and server enclosures is in use around the globe. The ideal racks for data centres of any size.

## 2 Aisle containment

Door and roof components separate hot and cold air in the data centre, for improved energy efficiency.

## 3 Chiller for IT cooling

Supplies the cold water for IT cooling units in the data centre, such as Liquid Cooling Packages (LCP) or Computer Room Air Conditioning (CRAC).

## 4 Liquid Cooling Package

For efficient rack and suite cooling, available as a CW and DX variant.

## 5 Ri4Power

The heart: Low-voltage switchgear manages the various infeed sources (A, B and emergency power) and ensures their subsequent distribution.

## 6 Power Distribution Rack

For sub-distribution among the individual enclosure suites in the data centre.

## 7 IT power

UPS systems ensure an uninterruptible power supply in the data centre.

IT INFRASTRUCTURE

SOFTWARE & SERVICES

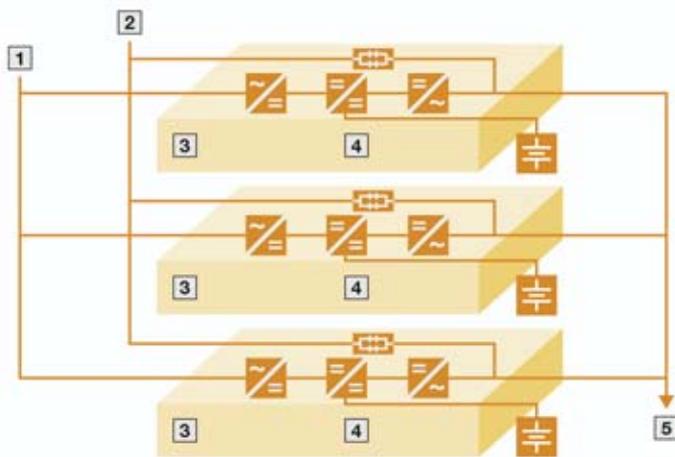


# Modular for perfect solutions

Critical loads need to be protected with the best possible UPS design. The UPS design from ABB optimises availability and total cost of ownership (TCO), and is based on a complete redundancy concept. In the modular UPS series, each UPS module has all the hardware and software needed for autonomous operation. All critical components are available in each individual module, thereby eliminating weak points altogether. ABB calls this modular approach “decentralised parallel architecture (DPA™)”.

## Decentralised parallel architecture

With DPA, each UPS module has all the hardware and software needed for autonomous operation.

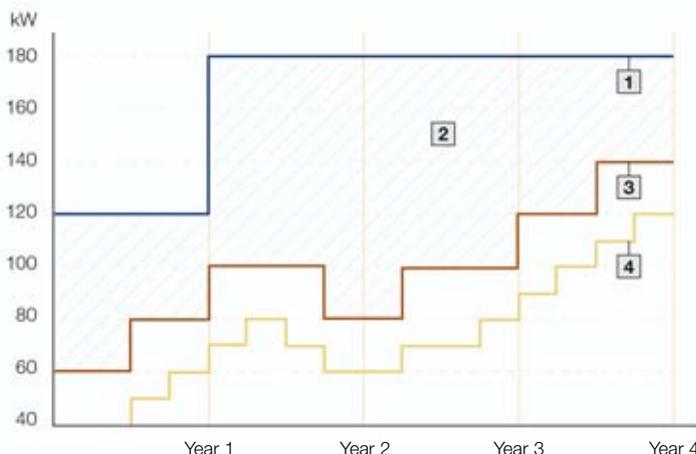


**“Only a genuinely redundant architecture like DPA allows switched modules to be replaced whilst the system is operational”.**

- 1 Rectifier input
- 2 Bypass input
- 3 UPS module
- 4 Control logic display
- 5 Output to critical load

## Optimised investments and energy savings

The UPS capacity can be modified to accommodate changing loads. This reduces the need for overdimensioning.



## Standalone solution

- 1 1 × 60 kW (+60 kW) until year 1  
2 × 60 kW (+60 kW) year 1 – 4
- 2 Overdimensioned capacity

## Modular solution

- 3 20 kW UPS modules may be added or removed at any time
- 4 Typical 4-year load curve for a medium-sized EDP centre

ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

# High availability and low total cost of ownership (TCO)

## High availability

For all critical applications, availability is the key parameter of any UPS. The following approaches are best for optimising power availability:

### ■ Add redundancy

The safest way of improving power availability is by ensuring redundancy in the UPS system. In a redundant system (DPA), all modules are active, and the load is distributed evenly among the modules. If one of the modules should fail, the remaining modules seamlessly take over its load.

### ■ Choose high-quality equipment

Quality and reliability are the defining features of the Swiss-made DPA uninterruptible power supplies from ABB. They are designed with the utmost care and subjected to stringent testing. Each product is tested individually before it leaves the factory. All modules are individually tested to 100 percent, and all modular and standalone uninterruptible power supplies undergo sign-off testing.

### ■ Use the best topology

With DPA UPSs from ABB, the incoming AC current is first converted into DC current. This DC current in turn generates the outgoing AC current with a pure sine wave voltage. The term “double conversion” is derived from these two conversion stages. They protect the wave form of the outgoing voltage from all interference on the AC input side.

### ■ Minimise waiting times

Because the UPS modules are independent of one another in a DPA system, they may be replaced whilst the system is operational without the risk of a critical load, and without the need to shut down or switch to mains power. This means that engineers can work on the UPS without interrupting operation.

Replacement with the system operational minimises the amount of time needed for maintenance and repair. The procedure is quick and easy, and does not pose a threat to system operation.

### ■ Standardised maintenance concept

The DPA modules are standardised, helping to keep costs low. The stocking of spare parts is reduced, and data processing centres can be assembled with the same pre-configured, tested sub-systems in block form.

## Low total cost of ownership

The modular UPS approach from ABB ensures optimum performance for maintenance, scalability and flexibility.

Together, these features make a decisive contribution to the low total cost of ownership (TCO).

The best way to minimise TCO:

### ■ Optimise investments

If the UPS output requirements change, for example if an EDP centre is expanded, the modular structure means that additional modules are easily added to increase the electricity supply.

### ■ Optimise battery performance

The autonomy and battery size may be tailored to your system's precise requirements. A separate battery makes it possible to upgrade and preserve the system's autonomy without limiting availability.

### ■ Save on space

The modular design keeps space requirements for the UPS system to a minimum. This is ideal, particularly if the available space is limited and expensive. A modular UPS rack does not take up too much space, and if additional modules are added, extra space is not usually required.

### ■ Cut installation and maintenance costs

The modular layout makes installation and commissioning simple. Standardised modules mean that fewer spare parts need to be kept in stock, and system upgrades are simplified.

### ■ Save energy

The modularity and scalability of the UPS system contribute to low overall operating costs, but the exceptionally energy-efficient design also helps to cut costs. For example, the UPS system Conceptpower DPA 500 from ABB boasts an operating ratio of up to 96 percent. The operating ratio curve is very flat, meaning minimal losses at any load.

# Overview of modular UPS systems



The rack-independent DPA UPScale RI is one of the most compact UPS systems on the market, and is particularly well-suited to customised solutions. The modular, rack-independent system is ideal for creating flexible solutions, both technically and commercially. The DPA UPScale RI is suitable for applications in the lower and medium output range in controlled environments.

Output range kW	DPA UPScale RI							
	RI10	RI11	RI12	RI20	RI22	RI24	RI40	
10	■	■	■	■	■	■	■	
20	■	■	■	■	■	■	■	
30							■	
40				■	■	■	■	
50								
60							■	
80							■	
90								
100								
120								
150								
160								
200								

General specifications		
Output kW	10/20/40/80	
Output per module kW	10/20	
Max. number of system enclosures connected in parallel	1 subrack	
Max. number of modules connected in parallel, per enclosure	4 modules	
Rated input voltage V AC	220/380, 230/400, 240/415	
Rated output voltage V AC	220/380, 230/400, 240/415	
User interface	Module level LCD + mimic diagram	

# Overview of modular UPS systems



The DPA UPScale ST TS 8 series from ABB is a UPS system developed for applications in the low to medium output range. The flexible design permits a scalable output system in increments of 10 or 20 kW and a range of enclosure sizes. The redundant N+x design ensures absolute operational continuity with no weak points. Additionally, the system is suitable for the installation of internal battery modules, depending on the output requirements. The DPA UPScale ST is the ideal solution for medium-sized infrastructures which are constantly expanding.

The Conceptpower DPA TS 8 enclosure is a genuine double conversion UPS system developed for applications in the medium to high output range. The modular architecture of the Conceptpower DPA allows a very flexible output configuration with 30/40/50 kVA rack-mounted modules, which may be retrofitted if the power demand rises. This helps to avoid excessive up-front investment. You pay as you grow. The Conceptpower DPA serves a range of different market segments, such as medium to large EDP centres and telecommunications, transport and production infrastructures in a clean, controlled environment.

	DPA UPScale ST TS 8				Conceptpower DPA TS 8					
	ST60/up to 3 modules		ST120/up to 6 modules		DPA 150/up to 3 modules			DPA 250/up to 5 modules		
	10 kW	20 kW	10 kW	20 kW	24 kW	32 kW	40 kW	24 kW	32 kW	40 kW
	■		■							
	■	■	■	■	■			■		
	■		■		■	■		■	■	
		■	■	■	■	■	■	■	■	■
				■		■	■	■	■	■
				■		■	■	■	■	■
				■			■	■	■	■
									■	■
									■	■
										■

	60/120	80/120/200
	10/20	24/32/40
	1 enclosure	Up to 6 enclosures
	6 modules	30 modules
	220/380, 230/400, 240/415	220/380, 230/400, 240/415
	220/380, 230/400, 240/415	220/380, 230/400, 240/415
	Module level LCD + mimic diagram	Module level LCD + mimic diagram

# Modular UPS systems



## Network cards Page 15

### Highlights:

- Genuine double-conversion UPS with an operating ratio of up to 96%
- 482.6 mm (19") rack-mountable, modular UPS system
- Compact, lightweight design for configuring customised solutions
- Online swap modularity (OSM) for replacement with the system operational
- N+x redundancy supported
- Adapted battery configuration

### Basic configuration of the system:

- The UPS system DPA UPScale RI is accommodated in seven sub-racks of varying sizes, and comprises the following:
- Up to four genuine double conversion UPS modules, each with mimic diagram and LCD display, showing information in five languages
  - Slow fuses for input, bypass and battery
  - Manual bypass switch

- Rectifier and bypass terminals (available with single or double mains power connection) and terminals at the UPS output
- Free space for the installation of internal battery modules (only for UPScale RI11/12/22/24)
- COM ports: RS-232 port, five floating contacts at the input/output (including EPO and GEN On)

### Options:

- Built-in backfeed protection
- Internal battery modules
- Temperature sensor battery
- Connectivity (Modbus RS-485, Modbus TCP/IP, SNMP)
- Software for monitoring and shutdown

### Conformity and certifications:

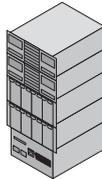
- Certifications and third-party test reports for the following standards:
- IEC/EN 62040-1
  - IEC/EN 62040-2
  - IEC/EN 62040-3

## DPA UPScale RI, 1 module

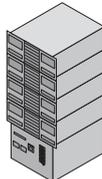
			
Subrack type	RI10	RI11	RI12
Dimensions (W x H x D) mm	448 x 310 (7 U) x 565	448 x 487 (11 U) x 735	448 x 665 (15 U) x 735
Internal battery output	–	Up to 40 blocks 7 Ah	Up to 80 blocks 7 Ah
<b>Model No.</b>	<b>04-0780</b>	<b>04-0410</b>	<b>04-0411</b>
Output per subrack kW	10/20	10/20	10/20
Output per module kW	10/20	10/20	10/20
Power factor	1.0	1.0	1.0
Max. number of system enclosures connected in parallel	1 subrack	1 subrack	1 subrack
Max. power output kW	20	20	20
Network topology (I/O)	3 ph + N + PE	3 ph + N + PE	3 ph + N + PE
Rated input voltage V AC	220/380, 230/400, 240/415	220/380, 230/400, 240/415	220/380, 230/400, 240/415
Input voltage range V AC (load-dependent)	150/204 – 264/460	150/204 – 264/460	150/204 – 264/460
Frequency range Hz	35 – 70	35 – 70	35 – 70
Distortion factor at 100% load	< 3%	< 3%	< 3%
Power factor 100% load	≥ 0.99	≥ 0.99	≥ 0.99
Rated output voltage V AC	220/380, 230/400, 240/415	220/380, 230/400, 240/415	220/380, 230/400, 240/415
Total harmonic distortion THD (with linear load)	< 1.5%	< 1.5%	< 1.5%
Output frequency Hz (selectable)	50/60	50/60	50/60
Eco-mode	98%	98%	98%

# Modular UPS systems

## DPA UPScale RI, 2 modules

			
Subrack type	RI20	RI22	RI24
Dimensions (W x H x D) mm	448 x 440 (10 U) x 565	448 x 798 (18 U) x 735	448 x 1153 (26 U) x 735
Internal battery output	–	Up to 80 blocks 7 Ah	Up to 160 blocks 7 Ah
<b>Model No.</b>	<b>04-0781</b>	<b>04-0412</b>	<b>04-0413</b>
Output per subrack kW	10/20/40	10/20/40	10/20/40
Output per module kW	10/20	10/20	10/20
Power factor	1.0	1.0	1.0
Max. number of system enclosures connected in parallel	1 subrack	1 subrack	1 subrack
Max. power output kW	40	40	40
Network topology (I/O)	3 ph + N + PE	3 ph + N + PE	3 ph + N + PE
Rated input voltage V AC	220/380, 230/400, 240/415	220/380, 230/400, 240/415	220/380, 230/400, 240/415
Input voltage range V AC (load-dependent)	150/204 – 264/460	150/204 – 264/460	150/204 – 264/460
Frequency range Hz	35 – 70	35 – 70	35 – 70
Distortion factor at 100% load	< 3%	< 3%	< 3%
Power factor 100% load	≥ 0.99	≥ 0.99	≥ 0.99
Rated output voltage V AC	220/380, 230/400, 240/415	220/380, 230/400, 240/415	220/380, 230/400, 240/415
Total harmonic distortion THD (with linear load)	< 1.5%	< 1.5%	< 1.5%
Output frequency Hz (selectable)	50/60	50/60	50/60
Eco-mode	98%	98%	98%

## DPA UPScale RI, 4 modules

	
Subrack type	RI40
Dimensions (W x H x D) mm	448 x 798 (18 U) x 735
Internal battery output	–
<b>Model No.</b>	<b>04-1170</b>
Output per subrack kW	10/20/40/80
Output per module kW	10/20
Power factor	1.0
Max. number of system enclosures connected in parallel	1 subrack
Max. power output kW	80
Network topology (I/O)	3 ph + N + PE
Rated input voltage V AC	220/380, 230/400, 240/415
Input voltage range V AC (load-dependent)	150/204 – 264/460
Frequency range Hz	35 – 70
Distortion factor at 100% load	< 3%
Power factor 100% load	≥ 0.99
Rated output voltage V AC	220/380, 230/400, 240/415
Total harmonic distortion THD (with linear load)	< 1.5%
Output frequency Hz (selectable)	50/60
Eco-mode	98%

# Modular UPS systems



Battery cases Page 12 Network cards Page 15

## Highlights:

- Genuine double-conversion UPS with an operating ratio of up to 96%
- Highly flexible, scalable system
- Online swap modularity (OSM) for replacement with the system operational
- N+x redundancy supported
- Adapted battery configuration
- Parallel connection of up to four systems

## Basic configuration of the system:

- The UPS system DPA UPScale ST is accommodated in five enclosures of varying sizes, and comprises the following:
- Up to six genuine double conversion UPS modules, each with mimic diagram and LCD display, showing information in five languages
  - Slow fuses for input, bypass and battery
  - Manual bypass switch

- Rectifier and bypass terminals (available with single or double mains power connection) and terminals at the UPS output
- Free space for the installation of internal battery modules (only for ST60)
- COM ports: RS-232 port, five floating contacts at the input/output (including EPO and GEN On)

## Options:

- Built-in backfeed protection
- Internal battery modules
- Temperature sensor battery
- Connectivity: Modbus RS-485, Modbus TCP/IP, SNMP
- Software for monitoring and shutdown

## Conformity and certifications:

- Certifications and third-party test reports for the following standards:
- IEC/EN 62040-1
  - IEC/EN 62040-2
  - IEC/EN 62040-3

## DPA UPScale ST TS 8

				
Enclosure type	ST60	ST60	ST120	ST120
Maximum no. of modules	3	3	6	6
Dimensions (W x H x D) mm	600 x 2000 x 800	600 x 2000 x 1000	600 x 2000 x 800	600 x 2000 x 1000
Internal battery output	Up to 240 blocks 7 Ah	Up to 240 blocks 7 Ah	-	-
<b>Model No.</b>	<b>TS84NWP100787R0002</b>	<b>TS84NWP100787R0001</b>	<b>TS84NWP100788R0002</b>	<b>TS84NWP100788R0001</b>
Output per system enclosure kW (min. – max.)	10 – 60	10 – 60	10 – 120	10 – 120
Output per module kW	10/20	10/20	10/20	10/20
Power factor	1.0	1.0	1.0	1.0
Max. number of system enclosures connected in parallel	1 enclosure	1 enclosure	1 enclosure	1 enclosure
Max. power output kW	60	60	120	120
Network topology (I/O)	3 ph + N + PE	3 ph + N + PE	3 ph + N + PE	3 ph + N + PE
Rated input voltage V AC	220/380, 230/400, 240/415	220/380, 230/400, 240/415	220/380, 230/400, 240/415	220/380, 230/400, 240/415
Input voltage range V AC (load-dependent)	150/204 – 264/460	150/204 – 264/460	150/204 – 264/460	150/204 – 264/460
Frequency range Hz	35 – 70	35 – 70	35 – 70	35 – 70
Distortion factor at 100% load	< 3%	< 3%	< 3%	< 3%
Power factor 100% load	≥ 0.99	≥ 0.99	≥ 0.99	≥ 0.99
Rated output voltage V AC	220/380, 230/400, 240/415	220/380, 230/400, 240/415	220/380, 230/400, 240/415	220/380, 230/400, 240/415
Total harmonic distortion THD (with linear load)	< 1.5%	< 1.5%	< 1.5%	< 1.5%
Output frequency Hz (selectable)	50/60	50/60	50/60	50/60
Eco-mode	98%	98%	98%	98%



**Battery cases** Page 12 **Network cards** Page 15

### Highlights:

- Vertical and horizontal scalability (up to 5 rack-mounted modules in the enclosure and 6 enclosures in parallel, with a total of 30 modules)
- Online swap modularity (OSM) for replacement with the system operational
- Up to 96% operating ratio with double conversion in a broad load range
- High current density with up to 250 kW/m<sup>2</sup>
- Built-in backfeed protection

### Basic configuration of the system:

The Conceptpower DPA TS 8 is based on three different module sizes and two enclosure types.

The module comprises:

- Genuine double conversion UPS module
- Slow fuses for input, bypass and battery
- Built-in backfeed protection
- User interface with mimic diagram and LCD display showing information in five languages.

The enclosure comprises:

- Free space for the installation of internal battery modules (only DPA – 150 kVA enclosure)
- Manual bypass switch
- Rectifier and bypass terminals (available with single or double mains power connection) and terminals at the UPS output
- COM ports: RS-232 port, five floating contacts at the input/output (including EPO and GEN On)
- Lockable door

### Options:

- Synchronisation kit
- System configuration as stand-alone or parallel
- Temperature sensor battery
- Internal battery modules
- Software for monitoring and shutdown

### Conformity and certifications:

- Certifications and third-party test reports for the following standards:
- IEC/EN 62040-1
  - IEC/EN 62040-2
  - IEC/EN 62040-3

## Conceptpower DPA TS 8

		
Enclosure type	DPA – 150 kVA enclosure	DPA – 250 kVA enclosure
Dimensions (W x H x D) mm	800 x 2000 x 1000	800 x 2000 x 1000
Capacity	max. 3 modules and up to 240 batteries 7Ah	max. 5 modules and no batteries
Weight kg	379 (with modules, without batteries)	439 (with modules, without batteries)
<b>Model No.</b>	<b>TS84NWP100785R0001</b>	<b>TS84NWP100786R0001</b>
Output per system enclosure kW (min. – max.)	24 – 120	24 – 200
Output per module kW	24/32/40	24/32/40
Power factor	0.8	0.8
Max. number of system enclosures connected in parallel	6 enclosures	6 enclosures
Max. power output kW	1200	1200
Network topology (I/O)	3 ph + N + PE	3 ph + N + PE
Rated input voltage V AC	220/380, 230/400, 240/415	220/380, 230/400, 240/415
Input voltage range V AC (load-dependent)	150/204 – 264/460	150/204 – 264/460
Frequency range Hz	35 – 70	35 – 70
Distortion factor at 100% load	< 3%	< 3%
Power factor 100% load	≥ 0.99	≥ 0.99
Rated output voltage V AC	220/380, 230/400, 240/415	220/380, 230/400, 240/415
Total harmonic distortion THD (with linear load)	< 1.5%	< 1.5%
Output frequency Hz (selectable)	50/60	50/60
Eco-mode	98%	98%

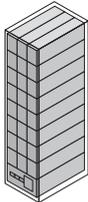
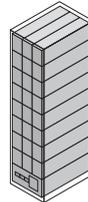
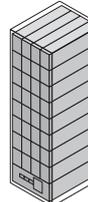
# Battery cases

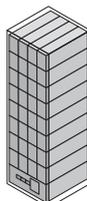


Network cards Page 15

ABB offers a complete series of battery cases for the modular UPS range in the Rittal TS 8 enclosure. This series of cases is ideal for a broad spectrum of battery configurations and has been optimised to accommodate varying autonomy requirements.

**Colour:**  
– RAL 7035

				
Battery case type	CBAT-120 C TS 8	CBAT-120 S TS 8	CBAT-150 C TS 8	CBAT-150 S TS 8
Dimensions (W x H x D) mm	600 x 2000 x 1000	600 x 2000 x 1000	800 x 2000 x 1000	800 x 2000 x 1000
Compatible UPS (only without internal battery)	DPA UPScale ST 60 TS 8, 1000 mm deep/DPA UPScale ST 120 TS 8, 1000 mm deep Conceptpower Triple DPA-150 TS 8/Conceptpower Upgrade DPA-250 TS 8			
Battery output	up to 120 VRLA 24 or 28 Ah		up to 150 VRLA 24 or 28 Ah	
Battery arrangement	together <sup>1)</sup>	separate <sup>2)</sup>	together <sup>1)</sup>	separate <sup>2)</sup>
<b>Model No.</b>	<b>TS800-7610</b>	<b>TS800-8588</b>	<b>TS800-6363</b>	<b>TS800-6578</b>

		
Battery case type	CBAT-150 C TS 8	CBAT-150 S TS 8
Dimensions (W x H x D) mm	800 x 2000 x 800	800 x 2000 x 800
Compatible UPS (only without internal battery)	DPA UPScale ST 60 TS 8, 800 mm deep/DPA UPScale ST 120 TS 8, 800 mm deep	
Battery output	up to 150 VRLA 24 or 28 Ah	up to 150 VRLA 24 or 28 Ah
Battery arrangement	together <sup>1)</sup>	separate <sup>2)</sup>
<b>Model No.</b>	<b>TS804-1717</b>	<b>TS804-1718</b>

<sup>1)</sup> together: Battery system for complete rack  
<sup>2)</sup> separate: Battery system for each module

## Intelligent monitoring of the power supply

**ABB offers intelligent solutions for monitoring the functioning of the UPS system and ensuring a clean, reliable power supply to the IT infrastructure in the event of a power failure. The control devices provide an overview of the UPS status in real time, helping to avoid problems before they become critical.**

### Power and environment monitoring

Network cards connect the ABB UPS systems to the network. These cards also offer the option of connecting various ambient sensors to the UPS. This combination allows the UPS system and its environment to be clearly depicted on a Web interface.

### Control software

The network cards are equipped with an extensively configurable software package providing access to the measurement values and status information of the UPS system. The status of each UPS, of each UPS module or of the system as a whole can be displayed on a separate mimic diagram. These diagrams provide the user with clear information in real time. During normal operation, all events are stored in a LOG file. In the event of a system power failure, the battery autonomy is monitored and the disconnection of protected devices from the mains is initialised.

### Data privacy

The software for remote disconnection controls a specific PC, a group of PCs or all computers in the network. Shutdowns and reboots may be carried out safely. The data remains protected in the event of a weak battery charge or power failure.

Additionally, text messages, e-mails or pop-up windows and mobile messages may be sent or displayed before the devices are shut down. This allows the user to respond flexibly and manage or abort the operation.

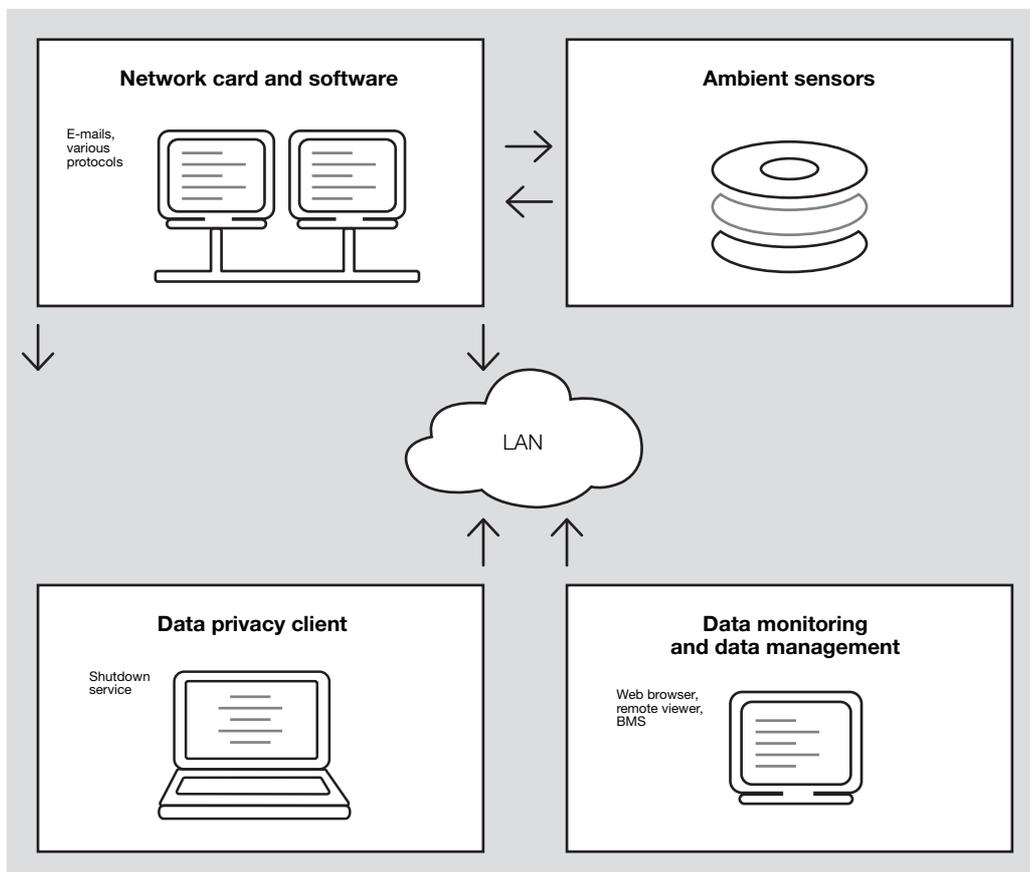
### Highlights

- Remote monitoring via the Web
- Monitoring of the environment
- Extended alarm management and sending of information
- Monitoring of redundant UPS
- Integration into the network or building management system
- Integration into multi-vendor and multi-platform environments
- Modbus interface
- Supports various standard protocols

### Applications

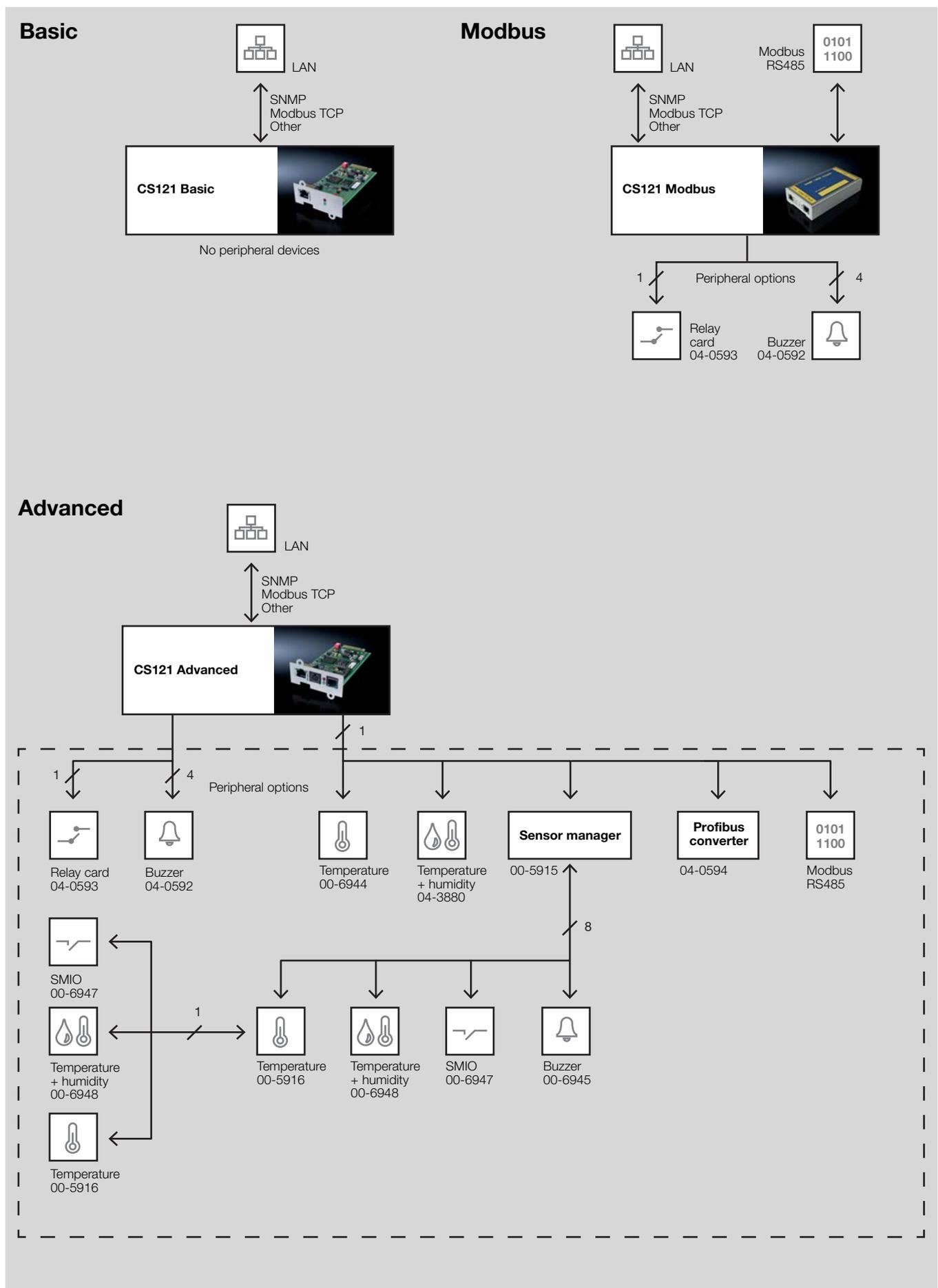
- PCs
- Server and network devices
- EDP centres
- Warehousing systems
- Industrial automation
- Power supply systems

## Connectivity components



# Connectivity and sensor options

## for CS cards and enclosures



# UPS accessories

## Network cards/software

### CS121 Basic

For connecting the UPS to the network without the need for additional sensors or interfaces. Available as a slide-in card or with an enclosure. Power supply to the slide-in cards is guaranteed by the UPS. Cards with enclosures require an additional power source.

#### Supported protocols:

- HTTP
- SNMP
- SMTP (e-mail)
- Modbus TCP
- Telnet FPT

Version	Packs of	Model No.
Slide-in card	1 pc(s).	<b>04-3866</b>
With enclosure	1 pc(s).	<b>04-3865</b>



### CS121 Advanced

For connecting the UPS to the network with the option of connecting additional sensors and I/O options, either directly on the card or via a sensor manager. Available as a slide-in card or with an enclosure. Power supply to the slide-in cards is guaranteed by the UPS. Cards with enclosures require an additional power source.

#### Supported protocols:

- HTTP
- SNMP
- SMTP (e-mail)
- Telnet FPT
- Modbus RS232
- Modbus TCP

Version	Packs of	Model No.
Slide-in card	1 pc(s).	<b>04-3862</b>
With enclosure	1 pc(s).	<b>04-3861</b>



### CS121 Modbus

For connecting the UPS to the network and the Modbus RS485 interface with the option of connecting alarm buzzers or an additional relay card. Available as a slide-in card or with an enclosure. Power supply to the slide-in cards is guaranteed by the UPS. Cards with enclosures require an additional power source.

#### Supported protocols:

- HTTP
- SNMP
- SMTP (e-mail)
- Telnet FPT
- Modbus RS485
- Modbus TCP

Version	Packs of	Model No.
Slide-in card	1 pc(s).	<b>04-3864</b>
With enclosure	1 pc(s).	<b>04-3863</b>



### RCCMD software

Client software to control server shutdowns via the UPS. The software supports all common operating systems and versions (e.g. Windows 10, 8, 7, VISTA, XP, Server 2003/2008, UNIX/LINUX and VMWARE Sphere/ESX Server, CITRIX XEN etc). One licence is required for each server to be shut down on an event-controlled basis.

Licences	Model No.
Single licence	<b>04-3869</b>
Licence bundle (10 servers)	<b>8500000151</b>

#### Note:

- Software updates and a complete list of currently supported operating systems may be found at [www.rittal.com](http://www.rittal.com).



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