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▶ # Security rooms for data centres

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The whole is more than the sum of its parts.

The same is true of "Rittal – The System." With this in mind, we have bundled our innovative enclosure, power distribution, climate control and IT infrastructure products together into a single system platform. Complemented by our extensive range of software tools and global service, we create unique added value for all industrial applications: Production plant, test equipment, facility management and data centres. Following our simple principle, "faster – better – worldwide", we combine innovative products with efficient service for optimum results.

Faster – with our "Rittal – The System." range of modular solutions, which guarantees fast planning, assembly, conversion and commissioning thanks to system compatibility.

Better – by being quick to translate market trends into products. In this way, our innovative strength helps you to secure competitive advantages.

Worldwide – thanks to global networking across 150 locations. Rittal has over 60 subsidiaries, more than 250 service partners and over 1,000 service engineers worldwide. For more than 50 years, we have been on hand to offer advice, assistance and product solutions.
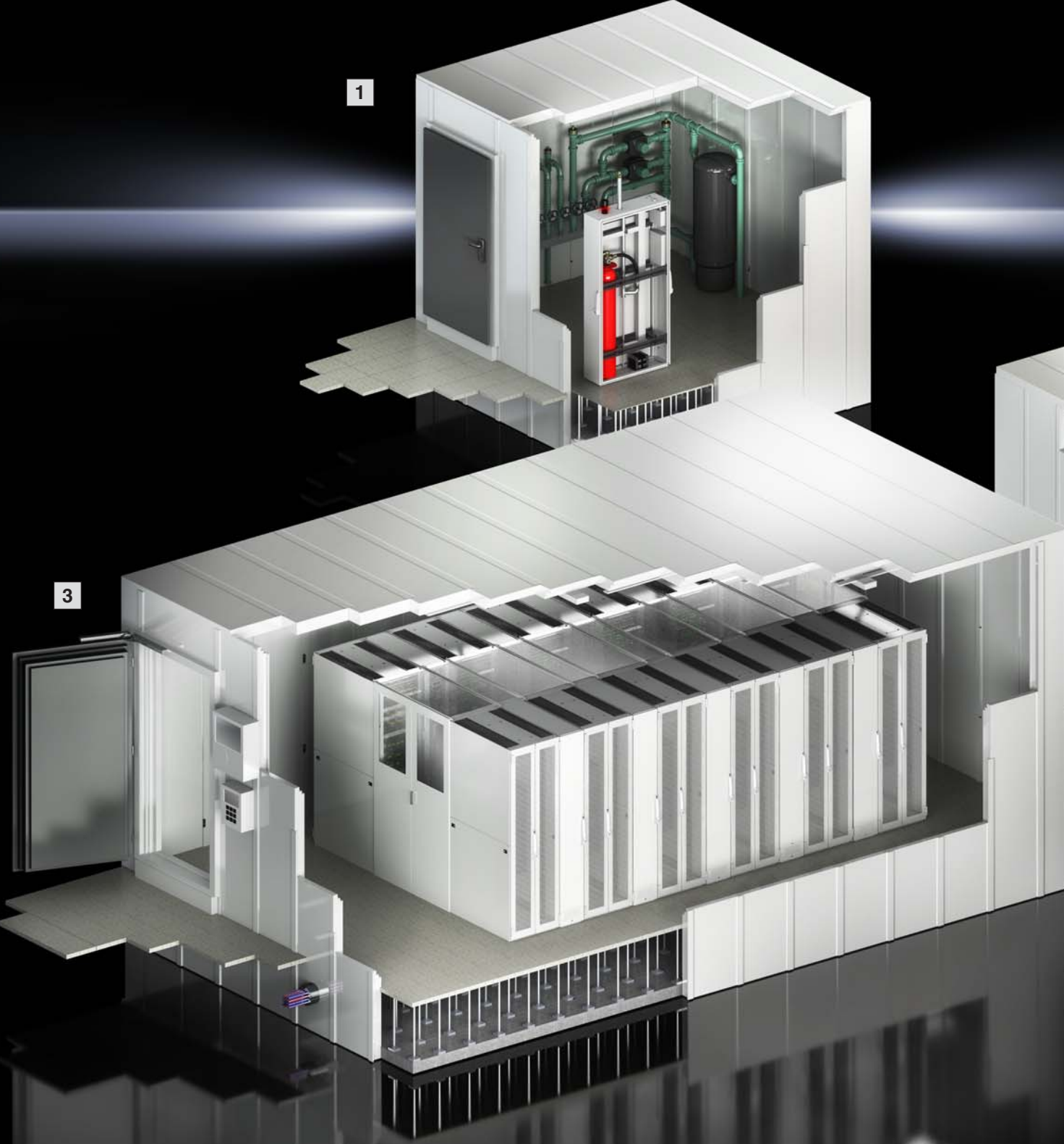
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The IT security room system.

- Trusted partner with decades of experience

- Conceptual design and consulting from one of the world's leading companies

- Multifunctional protection from physical threats

- Scalable, system-tested security

- Independent quality monitoring to international standards

- Modular room-within-a-room solution for targeted expansion, the option of system dismantling and reassembly, and hence a high level of investment security
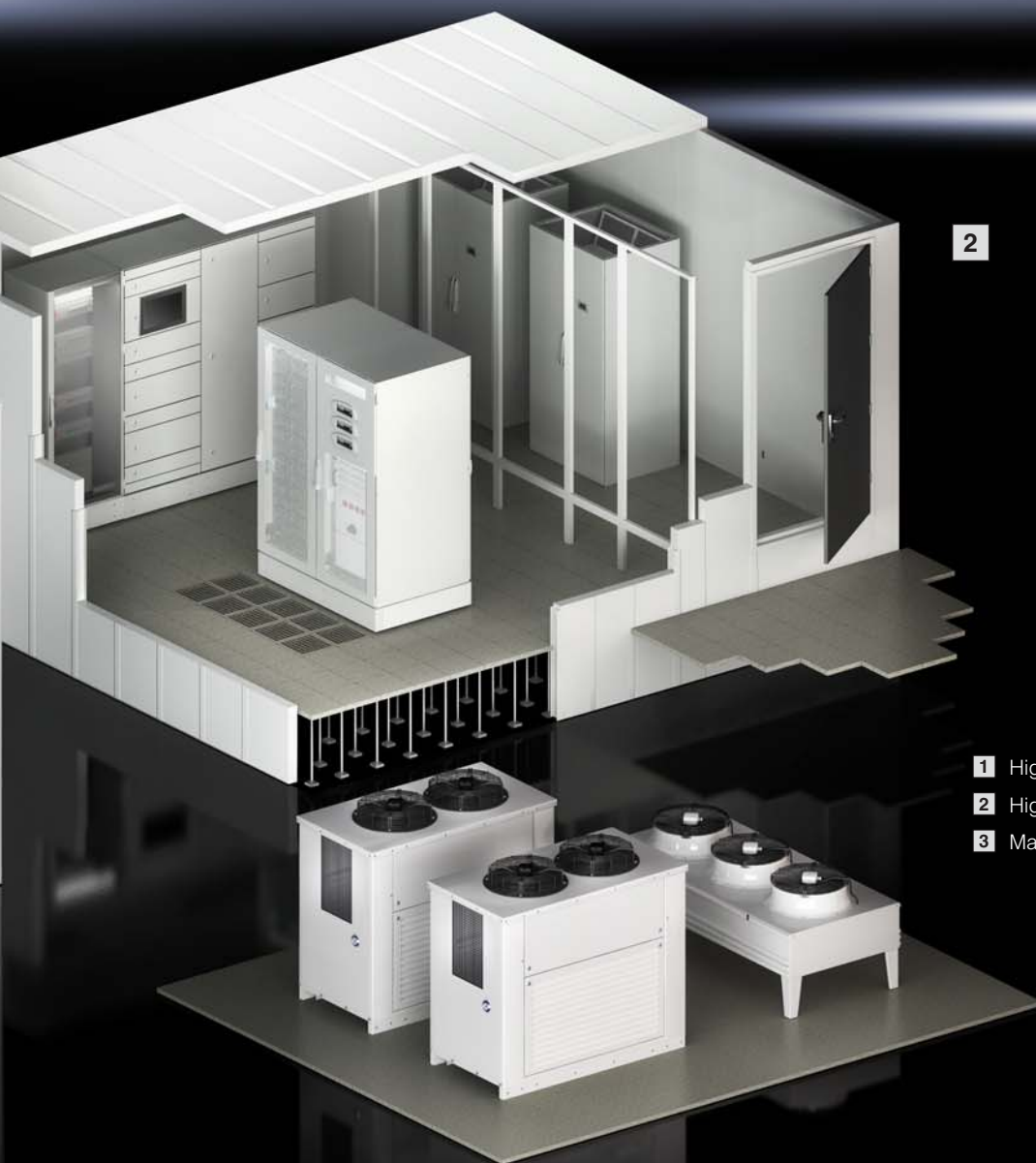
1 High security – LER Basic

2 High security – LER Extend

3 Maximum security – LSR 18.6 E

IT INFRASTRUCTURE   SOFTWARE & SERVICES

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Targeted physical protection for your IT

Criterion		Standards	
System testing	SYSTEMGEPRÜFT	Testing of the following quality ratings as complete system or structure	
Fire protection	ECB·S	ECB·S certification to EN 1047-2, 50 K temperature increase and 85% rel. humidity up to 24 hours (reheat period), 60 minutes flame impingement time	
		50 K temperature increase and 85% rel. humidity without reheat period, 30 minutes flame impingement time	
		F 120 to DIN 4102	
		F 90 to DIN 4102	
Corrosive fire gases		Acrid gas-tightness based on DIN 18 095	
Falling debris		Shock test of 200 kg	
Water		IP x6 to IEC 60 529	
Dust		IP 5x to IEC 60 529	
Unauthorised access		WK IV to DIN V ENV 1630, door system only	
		WK III to DIN V ENV 1630, or DIN V 18 103 (ET2)	
		WK II to DIN V ENV 1630	
Explosion		Detonation test	
EMC		Protection against high-frequency irradiation and radiation	

System-tested facilities are tested as a complete construction. This comprises the cellular structure and installation modules such as doors, cable bushing or ventilation units. By contrast, generic component testing only refers to individual parts.

Conventional constructions refer to room structures of plasterboard, concrete and other standard construction materials which do not offer sufficient protection for data centre applications. Conventional constructions are generally unsuitable for use as fire walls, and are therefore only type-tested.

	High security	High security	Maximum security
	LER Basic	**LER** Extend	**LSR** 18.6 E
	■	■	■
	–	–	■
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IT security rooms LER Basic/LER Extend
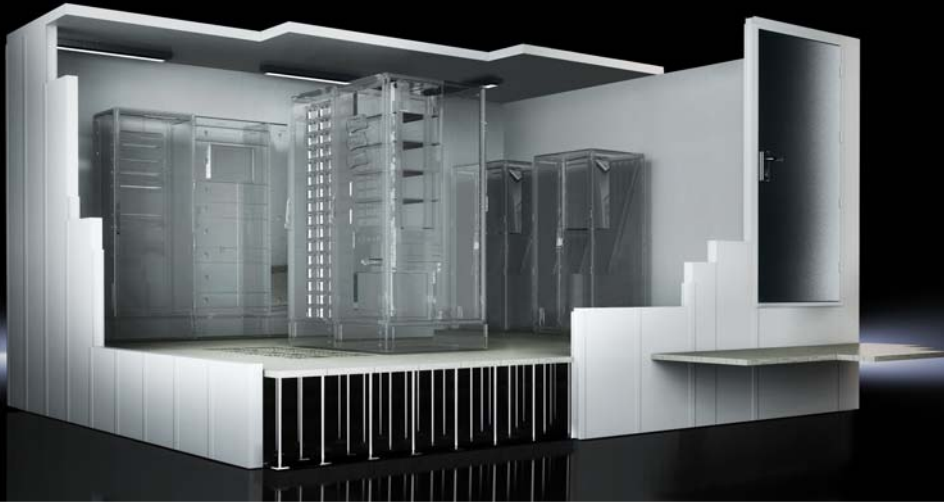
High security
The security rooms LER Basic and LER Extend offer high-quality, system-tested solutions. As basic and extended solutions, LER Basic and LER Extend are optimum security rooms for the protection of infrastructure components such as extinguisher systems, uninterrupted power supply and climate control.

Your benefits
- System-tested protection
- Multi-functional risk coverage
- Dust- and noise-reduced installation
- Dismantling and reassembly plus expansion = investment security
- Can be adapted for use with other room systems, e.g. LSR 18.6 E

LER Basic protection
- Fire resistance F 90 to DIN 4102, system-tested
- Fire resistance F 120 to DIN 4102, type-tested
- Dust- and watertight to IP 56 to EN 60 529
- Protection against external access – resistance class II to DIN V ENV 1630
- EMC basic protection
- Acrid gas-tightness based on DIN 18 095
- Shock test with 3,000 Nm energy after 30 minutes flame impingement over standard temperature curve

LER Extend protection
- Extended protection for data centres based on the LER Basic
- Fire resistance according to the limits of EN 1047-2, max. 50 K temperature increase and 85% rel. humidity, 30 minutes flame impingement time
- Optionally resistance class III to EN 1630

LER room system construction
- Element core made of thermally effective insulation substance
- Robust, encapsulated sheet steel cassette panels
- Innovative connection technology using patented profile technology
- Use of temperature- and humidity-resistant seals
- Use of fire protection valves and sliding climate control doors (Extend)
- Dismantling and reassembly is possible at any time

Standard protection from:

Fire	Extinguishing water	Corrosive gases	Vandalism	Unauthorised access	Electromagnetic interference	Dust	Falling debris	Theft/burglary

Maximum security

The security room LSR 18.6 E offers maximum physical protection for data centres and IT system locations. The system was certified by ESSA (European Security Systems Association) to ECB·S regulations.
This certification confirms that the LSR 18.6 E meets the requirements of EN 1047-2 without restriction. Moreover, construction of the security room is subject to constant, independent quality monitoring.

Your benefits

- System-tested high-MTBF protection
- Multi-functional risk coverage
- Dust- and noise-reduced installation
- Dismantling and reassembly plus expansion = investment security
- ECB·S certification
- Independent quality monitoring
- Can be adapted for use with other room systems, e.g. LER Basic/Extend

LSR 18.6 E protection

- Fire resistance to quality class R60D to EN 1047-2 (fire resistance testing, shock testing, floor testing), system-tested
- Fire resistance EI 120/F 120 to EN 1363/DIN 4102, type-tested
- Protection against external access – resistance class WK III to EN 1630 system-tested for cellular structure and its built-in modules
- Extended protection against external access WK IV to EN 1630 for high-security door
- Protection against standing water, 72 h, 40 cm, maximum 20 drops
- Explosion testing subject to detonation test of 200 kg TNT from 40 m
- Protection against falling debris
- Dust- and water-tight to IP 56, category 1 (underpressure) to IEC 60 529
- EMC basic protection
- Optionally extendible EMC shielding to BSI TL-03304, including a shield attenuation measurement to IEEE standard 299
- Acrid gas-tightness based on DIN 18 095

LSR 18.6 E construction

- Complex 4-layer element core made of thermally effective insulation substances
- Robust, encapsulated sheet steel cassette panels
- High-security door, ECB·S tested, multiple lock, with panic release
- Patented connection system
- Fireproof floor elements
- Use of extremely temperature- and humidity-resistant seals
- Use of climate control dampers and cable bushing systems
- Dismantling or reassembly is possible at any time

Standard protection from:

Fire	Extinguishing water	Corrosive gases	Vandalism	Unauthorised access	Electromagnetic interference	Dust	Explosion	Falling debris	Theft/burglary	Mechanical access

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Better.

Protection for your IT systems

Are you aware of the weak points in your IT systems? Are you aware of the dangers they are exposed to? It is vitally important for your company to have all data permanently available, and to be able to process it at all times.

Rittal offers cost-effectively expandable designs and structures, with ecologically and economically optimised data centres offering a host of other benefits.

Your benefits

- Protection ranging from basic protection to high-MTBF
- Simple, flexible integration into existing building structures
- Expandability and lasting cost-effectiveness
- Optimum space utilisation, thanks to the flexible modular system
- Flexibility, by enclosing existing IT and infrastructure solutions
- System-tested protection from potential physical threats
- Room-within-a-room concept with the associated depreciation benefits
- Compatibility with cross-facility IT infrastructures
- High level of pre-manufacturing – fast assembly times
- May be constructed and extended with the IT systems operational

An ECB·S certified solution offers more than a type-tested solution

As one of the leading suppliers of security rooms, Rittal has received ECB certification for its security room LSR 18.6 E.

With this certification, the European Certification Body GmbH (ECB) confirms that the Rittal IT security room fully complies with the criteria set by the European standard EN 1047-2. The prerequisite for ECB·S certification is a system-tested room. This includes testing the walls, the ceiling and the floor, as well as the door and the cable bushing, as a system-tested room with all transitions. During a fire resistance inspection, criteria such as temperature increase and relative humidity are evaluated. The room is also subject to a shock test, which simulates falling components.

Rittal is a professional supplier, backed up by many years of expertise. The ECB·S certified solutions have been in place since 2003, and are constantly being adapted to the optimised requirements of EN 1047-2.

Benefits of ECB·S certification

- System-tested room
- Optimum quality protection thanks to independent quality monitoring
- Improvement in the rating situation for loan applications and residual risk insurance
- Transparency for banks and insurance companies
- Compliance with European standards on IT protection

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System-tested accessories

For IT security rooms

Door and access systems

Rittal IT security rooms are equipped with security door systems. These vary depending on the room system, ranging from the LER Basic, to the LER Extend through to the LSR 18.6 E. In order to provide the highest level of security, the security door system displays the following features.

The security door system features a highly fire-resistant, multi-walled steel door panel with surrounding door frame and all-round fire and seal fold. The door rebate area includes hollow-body rubber gaskets and expanding high-temperature seals, among other features. The lock system, which is equipped with a high-security bolt mechanism, locking bolts and panic release, is an essential component. The high-security bolt mechanism has a lock housing seat. Anyone still in the room in the event of an alarm (while the door is closed) can leave at any time by using the standardised panic release.

Door closing delay
An automatic door closing delay time in the event of an alarm can be adjusted.

Door monitoring systems
The floating contacts of the door monitoring systems are provided in a VdS interface distributor.

Door signal contact
There is a door signal contact for displaying the door opening status remotely, e.g. for routing a signal to a security control centre.

Bolt mechanism monitoring
There is a latch monitoring option for monitoring the bolt mechanism's lock bolts, e.g. for routing a signal to a burglar alarm system or security control centre.

Cable bushing systems

For larger quantities of cables or plug-in cable harnesses with large cross sections (e.g. bulk storage systems/peripherals).

For routing:
- mains supply cables
- signal and control lines of door and damper systems
- data and control lines of the customer's infrastructure

Variants:
- Hard duct systems DN 200 or KS-B
  There is an enhanced level of protection against tampering in the vicinity of the cable entry.
- Round duct DN 200
  Filled with sealing modules. For on-site cables, pipes and cable routes.
  Also for retrofitting data and power supply cables.
- Hard duct KS-B open at the bottom
  For installing a security room on top of the customer's existing data and power supply cables. Closed with sealing modules.
- Soft duct
  Basic configuration. Filled with flexible sealing material. Also for retrofitting data and power supply cables.

Note
- It is recommended that closing of the duct systems is carried out by authorised Rittal professionals.
- Other hard and soft duct systems are optional, depending on the requirements profile and the security room equipment.

Climate and overpressure control dampers

For the closure of openings for fire prevention. Made from highly fire-resistant materials. Closure of the damper is current-independent.

Climate control dampers
With electromagnetic drive.

Overpressure control dampers
With electropneumatic drive. In the event of an alarm, the pressure is discharged by briefly opening the damper. Integration into the fresh air supply is also possible.
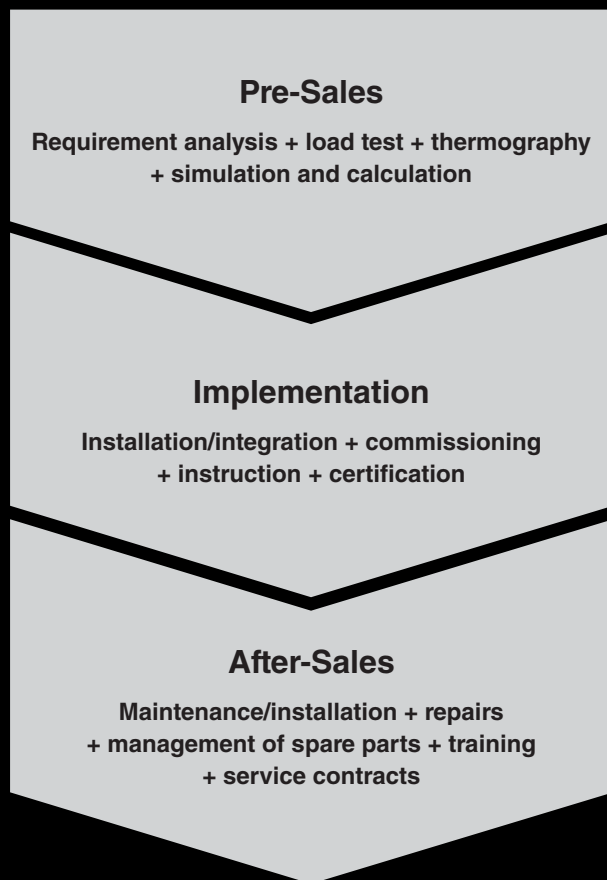

Fire protection valves

For the closure of openings in the security room for fire prevention. With highly effective seals for optimal closing of the valve.

- With electrical drive system (ventilation): for closing ventilation and air-conditioning openings.
- With pneumatic drive system: for overpressure discharge and for flue gas disposal.

Engineering,
service & support

Pre-Sales

**Requirement analysis + load test + thermography
+ simulation and calculation**

Implementation

**Installation/integration + commissioning
+ instruction + certification**

After-Sales

**Maintenance/installation + repairs
+ management of spare parts + training
+ service contracts**

Rittal International Services

– Installations are carried out by internationally trained staff
(Haiger training centre, SuperVisor system)

– Experienced staff with many years of expertise are constantly
travelling all over the world

– Quality management (independent testing by outside ex-
perts, as well as internal quality testing covering laboratory
and production inspections through to cross-facility system
acceptance)

– Proven expertise in all areas (research and development,
purchasing, sales, project planning, project management,
servicing)

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Security rooms
and IT infrastructures

A perfect IT environment provides the basis for perfect business. Rittal designs, builds and optimises data centres on your behalf, thereby making an effective and efficient contribution to your corporate success. We will advise you, agree the details with you, and develop solutions that fit, down to the smallest detail.
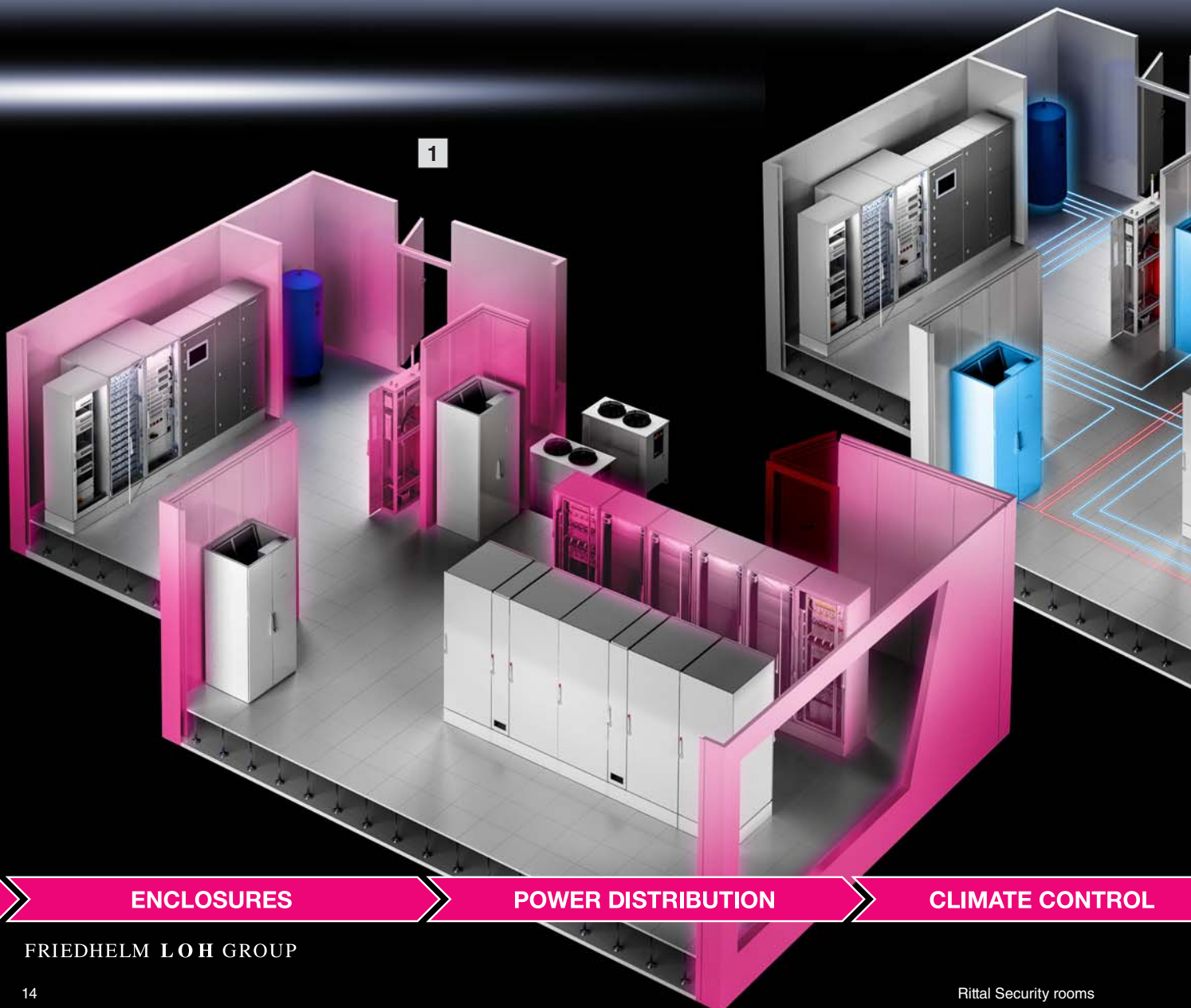
ENCLOSURES   **POWER DISTRIBUTION**   **CLIMATE CONTROL**

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The benefits to you:

- You benefit from the integrated options offered by a full-range supplier.
- From the initial draft, through to the implementation phase and commissioning, you only deal with one point of contact.
- Your data centre project is clearly structured for your convenience.
- All participants and components are precisely coordinated and attuned with the project goals.
- Every detail contributes to the high overall performance capability of the system.

Rittal endorses the European Code of Conduct and strives consistently to achieve its goals.

▣1 Data centre construction

- Cross-facility engineering for implementing complete data centres (modularity, scalability, availability)
- Project and process management of the entire workflow
- Handling of all licensing procedures (construction applications, statics and other approvals)
- Preparation of various certifications, including the relevant international certificates (safety, energy efficiency, availability)

▣1 ▣2 ▣3 RiMatrix IT infrastructures

- Standardised server racks and network enclosures
- Scalable IT cooling concepts
- Modular power distribution and back-up
- High-MTBF IT security rooms, including certificates
- Complete system accessories for IT environments and data centres
- Software-based IT and infrastructure management system
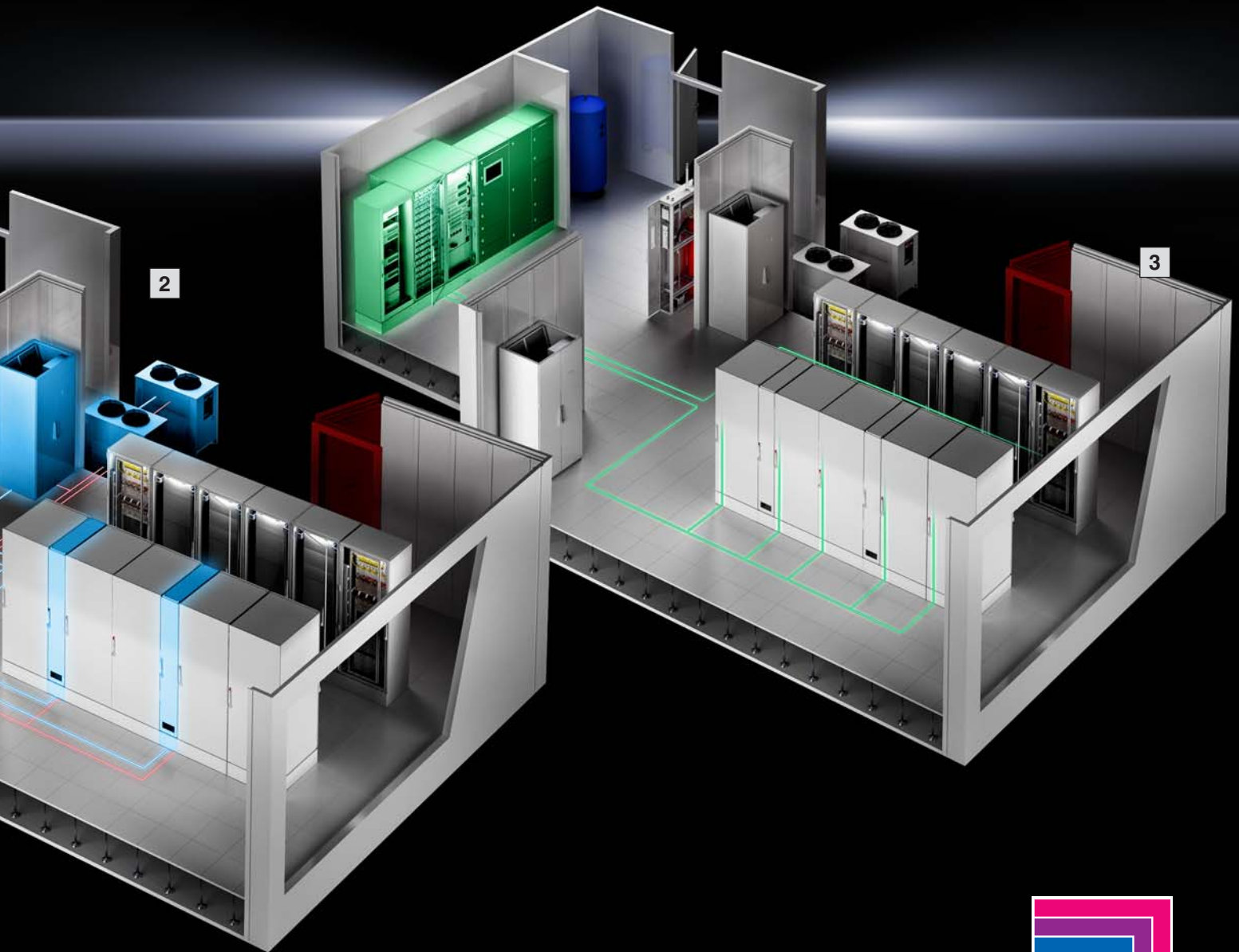
IT INFRASTRUCTURE ❯ **SOFTWARE & SERVICES** ❯

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- Enclosures
- Power Distribution
- Climate Control
- IT Infrastructure
- Software & Services

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ENCLOSURES   POWER DISTRIBUTION   CLIMATE CONTROL   IT INFRASTRUCTURE   SOFTWARE & SERVICES

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