

Rittal – Your Technology Partner



**Innovation and safety
for medical technology.**

Rittal. Your reliable partner in particularly sensitive areas of technology.



As one of the world's leading system suppliers for enclosure and case technology, system climate control, IT solutions and electronic packaging, Rittal is present throughout virtually all segments of industry and IT.

With more than 10,000 standard products available for immediate delivery and highly individual solutions, Rittal is synonymous with comprehensive, future-oriented solution-providing, service and advisory expertise. The complete Rittal product spectrum covers the areas of industrial enclosures, electronic packaging, system climate control, power distribution, IT solutions, communication systems and Rittal Global Service.

Individual solutions for manufacturers of medical technology, hospitals, laboratories and the pharmaceutical industry:

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Product overview

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Enclosure technology

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Hygiene solutions

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EMC solutions

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Climate control

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Electronic systems

The requirements placed on technology in the healthcare sector have always been higher than in other application areas. Because nowhere else does the good health and lives of so many people regularly depend on the safety and reliability of the technology used. As an international specialist in enclosures, system climate control and IT solutions, Rittal is your partner for technically demanding tasks. Numerous items of medical equipment from renowned manufacturers are equipped with innovative technical components from Rittal. Clinics and hospitals of all sizes, as well as the pharmaceuticals industry, place their trust in the safety, flexibility, cost-effectiveness and global availability of Rittal's products.

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IT infrastructure for small, medium and large data centres

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Mobile function trolleys

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Communication / terminal systems

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Service

This brochure provides an overview of the principal medical products and applications from Rittal Technologies.

Our product range at a glance

Manufacturers of medical equipment

Imaging systems



	<i>Computer tomography</i>	<i>Magnetic resonance tomography</i>	<i>Mammography</i>	<i>X-ray systems</i>	<i>Angiography</i>	<i>Nuclear medicine (e.g. PET)</i>	<i>Radiotherapy</i>	<i>Other applications</i>
Enclosure systems (EMC, 19" etc.)	●	●	●	●	●	●	●	●
Customised case solutions	●	●	●	●	●	●	●	●
Climate control	●	●	●	●	●	●	●	●
Subrack	●	●	●	●	●	●	●	●
ATCA, µTCA	●	●	●	●	●	●	●	●
Ripac, RiCase (19" instrument cases)								●
Operating housings			●	●	●			●
Support arm systems			●	●	●			●
Mobile consoles				●	●			●
Mobile workstations								
Patient trolleys								
RimatriX5 data centre								
Interactive terminal systems								

Safe enclosure systems for data, technology – and people.



We find the optimum technology packaging for your application.

As one of the world's leading manufacturers of innovative, intelligent enclosure technology, Rittal has the optimum solution for every application or problem. Our enclosures will protect your valuable technology and ensure uninterrupted operation. At the same time, they also provide optimum protection from noise and potential electromagnetic radiation. Our state-of-the-art surface finishing technology supports the hygiene management of medical equipment.

Product range

- Small enclosures
- Compact/large enclosures
- Operating housings
- Support arm systems
- Workstations

Materials

- Sheet steel
- Stainless steel
- Plastic
- Aluminium (sheet metal)
- Die-cast aluminium
- Aluminium zinc sheet metal

Rittal support arm system CP-L and Optipanel



Laborie Medical Technologies puts its trust in Rittal's expertise with its urodynamic equipment for the diagnosis and treatment of incontinence. For the product series Aquarius XLS and XLT Rittal supplies a complete solution consisting of the operating housing VIP 6000 or Optipanel, a TS 8 enclosure plus the support arm system CP-L.

Further information may be found in: the main Rittal Catalogue

To order information materials, see back page

REFERENCES

Rittal Command Panel VIP 6000



The Rittal Command Panel VIP 6000 is successfully used to accommodate control and monitoring systems at the **rheumatism clinic in Berlin-Wannsee** in the field of full-body cryogenic therapy. The Rittal system is used to house the monitoring and control system with temperature control, music system, video monitoring of the room as well as intercom system, fault display and UPS.

Rittal Optipanel – Now being used as a clinical workstation



In collaboration with IES Kierspe, we developed a new clinical workstation for intensive care and patient-related environments on behalf of **Fresenius HemoCare**. It is used as a platform for mobile and stationary patient data management. A Rittal Optipanel with modified rear panel and integral EMC partition was used as the basic enclosure.

Hygiene – A matter of complying with regulations and using the right materials.



When it comes to hygiene-critical applications, you can place your trust in Rittal's many years of experience with a variety of stainless steel solutions. In order to offer the best possible quality, some of our enclosure and accessory solutions have been purpose-designed for hygiene and clean room requirements using the very latest findings.



Hygienic designs in the area of the food and consumables industry:

- Reduces the risk of cross-contamination
- Allows easier cleaning and disinfection
- Avoids gaps, hollows and traps



High pressure-resistant enclosure and case solutions:

- For use in areas where pressures of up to 100 bar are used for cleaning
- Protection category IP 69K
- Internal silicone seal protected by a labyrinthine pre-seal



High pressure-resistant and clean room-approved operating solutions:

- Protection category IP 69K
- External seals and multiple screw-fastenings
- Option of internal or external screw fastening



Accessories:

- Keyboards
- Support arm systems
- Hygiene-appropriate cable glands
- etc.

Further information may be found in: Hygienic Design brochure

To order information materials, see back page

REFERENCES

Rittal stainless steel solution at the Schering pharmaceuticals group



A clean solution for demanding hygiene requirements: **Schering** now uses the hygiene workstation from Rittal in the manufacture of its pharmaceuticals. IT components such as the computer and monitor are superbly protected in the dust-proof, dirt-repellent stainless steel "packaging", consisting of: Premium Panel with TFT monitor, a stainless steel-protected worktop including stainless steel keyboard, and a compact stainless steel housing.

RiNano antimicrobial

For even better hygiene

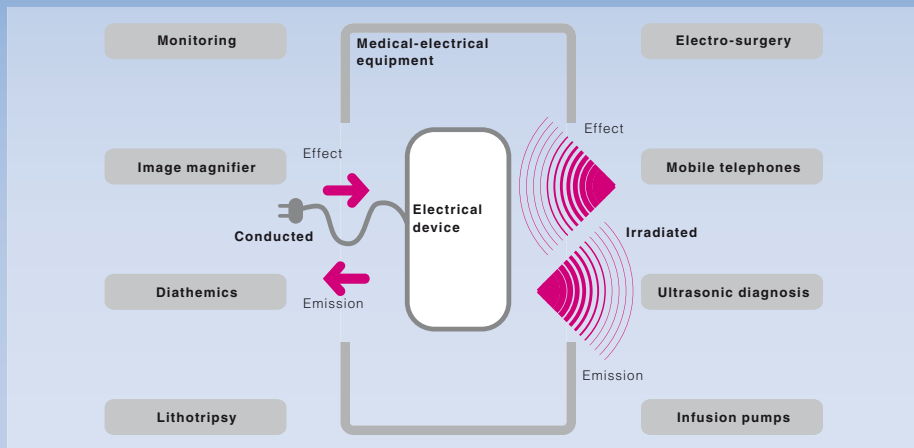


The hygienic surface finish: Thanks to the special silver coating, microbes (bacteria, viruses and fungi) are inhibited in their growth. When the surface is cleaned, they are simply flushed away. The effectiveness of the coating has already been successfully tested on *Staphylococcus aureus* and *Klebsiella pneumoniae*, to name two examples.

Indispensable – Electromagnetic compatibility (EMC).



Electromagnetic compatibility



Electromagnetic compatibility (EMC) is a generic term for the ever-growing challenge of ensuring the proper functioning of electrical equipment within narrow tolerances in an electromagnetic environment. Both incoming and outgoing electromagnetic influences must be taken into account.

◀ TS 8 enclosure system in EMC version

- 1 EMC fan
- 2 Monitor keyboard drawer
- 3 EMC subracks
- 4 EMC cable glands and shields

The EMC requirements for medical-electrical equipment are far more exacting than is usual for many other product groups. Medical technology often uses radiation in a variety of different formats and frequency ranges, and this must not be allowed to influence other equipment and vice versa.

This means that your medical technology solutions must satisfy stringent EMC requirements. With this in mind, Rittal provides expert support from trained, experienced EMC specialists from an early phase in the development. We can help you to effectively prevent both the inlet and outlet of interference fields into and from enclosures.

Rittal EMC solutions:

- EMC enclosures and cases (from sheet steel with an aluminium zinc surface finish, spray-finished on the outside, paint-free on the inside; slot-free contact between enclosure panels thanks to low-resistance EMC seals)
- EMC subracks and systems
- EMC accessories range: EMC fan, cable entry, earthing, viewing panels, ESD earthing point

**Further information may be found in:
EMC Range brochure and the main Rittal Catalogue**

To order information materials, see back page

Rittal Ripac subrack



The latest generation of the fast femtosecond laser technology from **20/10 PERFECT VISION®** for eye surgery was perfected with the aid of an EMC solution from Rittal. This system uses the Rittal Ripac, an EMC subrack for backplanes.

Rittal 6 U Ripac subrack



Dornier MedTech uses a Rittal 6 U subrack, EMC variant, in its integral, mobile kidney stone destroyer **Dornier Compact Delta II**.

Ensuring the stability and health of your technology: Efficient cooling systems from Rittal.



There is a demand for climate control solutions in conjunction with enclosures. In medical technology, too, the housings for magnetic resonance tomographs and X-ray equipment, for example, are becoming ever smaller and more compact. This is made possible thanks to ever higher computer capacity in ever smaller spaces. At the same time, heat loss is also increasing. With this in mind, Rittal offers an individual concept for your required climate control.

The options



Passive cooling:

- Slotted doors with an air throughput of up to 78 %



Active cooling:

- Fan-and-filter units
With an air throughput of 20 m³/h to 700 m³/h

- Cooling units
Useful cooling output from 225 W to 4,000 W



- Air/air heat exchangers
Specific thermal output from 17.5 W/K to 90 W/K

- Air/water heat exchangers
Useful cooling output from 600 W to 7,000 W

- DCP – Direct Cooling Package
Liquid-cooled, noiseless mounting plate



- Water/water heat exchangers
Cooling output from 25 kW to 250 kW

- Liquid Cooling Systems
LCP – Liquid Cooling Package for server racks
(cooling output up to 30 kW)

- Recooling systems
Cooling output from 1 kW to 470 kW

- Individual solutions available on request

Further information may be found in:
Rittal SK – System Climate Control and the main Rittal Catalogue

To order information materials, see back page

Rittal Liquid Cooling Package:



- Modular structure suitable for retrofitting
- Cooling output up to 30 kW
- Accurate, location-precise cooling
- Spatial separation of cooling and enclosure
- Space-saving installation thanks to the high thermal capacity of water (around 3,500 times greater than air)
- Active condensate management
- May be serviced while operational

REFERENCE

Rittal cooling at Stratec Biomedical



For the purposes of blood analysis, a constant temperature is essential to avoid destroying the samples. With this in mind, Rittal developed a special cooling unit on behalf of **Stratec Biomedical Systems AG** which keeps the temperature constant by means of a bypass valve, and which is also very low-noise, thanks to a special sound insulation system.

We provide your electronics with a safe home.



Whether in the recovery room, intensive care ward or operating theatre, electronics in any medical environment is subject to stringent requirements. The high standards of hygiene and safety are an important factor, particularly in the intensive care sector. Other key factors include protection from electromagnetic interference (EMC) and high heat loads.



The introduction of digital image processing, particularly in the field of X-ray technology, also necessitates the handling of large volumes of data and high data transmission rates in order to be able to provide the images in real time or near-real time. To this end, Rittal Electronic Systems offers complex solutions up to Level 5 based on MicroTCA or AdvancedTCA which may be individually adapted to customer requirements.

The Rittal standard range comprises

- Subracks
- Instrument cases
- Power supply units
- Backplanes
- Industrial PCs
- Complete, plug-and-play microcomputer packaging systems for VME, VME64x, CPCI, MicroTCA and AdvancedTCA
- 482.6 mm (19") TFT displays and keyboards for ergonomic operation

Further information may be found in:
RiTCA brochure and the main Rittal Catalogue

To order information materials, see back page

REFERENCES

Rittal instrument cases RiCase



Use of the Rittal RiCase in the CAD/CAM dentistry system Everest Engine, a processing unit with 5-axis technology from **KaVo**.

Ripac Vario+RiCase



Use of the subrack Ripac Vario+RiCase in the medical laser system for use in urology from **biolitec**.

**Secure, flexible and efficient –
the optimum IT infrastructure.**





The most important factor of any IT performance is security, and the second-most important is cost-effectiveness. In the healthcare sector in particular, these two factors are pivotal, and of equal priority. This apparent contradiction in terms demands a solution which achieves an optimum balance of security and cost-effectiveness – as successfully provided by Rittal RimatriX5. The result is greater efficiency.

RimatriX5 is an integral, complete solution for small, medium and large data centres, not only in the healthcare sector. The main focus here is on IT performance. There are five hardware modules embedded in a perfectly coordinated concept: Racks, Power, Cooling, Security, Monitoring & Remote Management, completed by a comprehensive range of services.



Rack: Server and network enclosures with added clearance, flexibility and safety.

Power: Plug-and-play power back-up and distribution in the rack including UPS.

Cooling: Climate control concepts, configured to your requirements, from fans through to active liquid cooling.

Security: Physical rack and room security, from temperature sensors through to access control.

Monitoring & Remote management: Monitor, measure, control via Computer Multi Control (CMC) for maximum availability.

Rittal International – A powerful alliance

Under the umbrella of Rittal International, we create optimum synergies for our customers. This is thanks to the powerful alliance of Rittal with its sister companies and market leaders Lampertz (a leading supplier of physical data and system protection) and Litcos (a supplier of innovative security concepts for data systems). True to the mottos of the three companies – “Switch to perfection” (Rittal), “Authority with security” (Lampertz) and “More security. More efficiency. For your data center” (Litcos) – Rittal International provides customers with future-oriented, comprehensive solutions and services with a high added value.



Further information may be found in: IT Catalogue and RimatriX5 brochure

To order information materials, see back page

REFERENCE

Rittal RimatriX5 in the clinic Kemperhof



The **Kemperhof Clinic** in Koblenz trusts the security of its new data centre to Rittal's expertise. As well as TS 8 server enclosures, two liquid cooling packages provide the required climate control, while a modular online UPS ensures an uninterrupted power supply. This efficient system is controlled and monitored by the Rittal monitoring system CMC-TC. Allowance was also made for extensibility, to accommodate the planned introduction of a Picture Archiving and Communication System (PACS).

The multi-talented units for medical use: Mobile function trolleys from Rittal.



In a medical environment, Rittal mobile workstations are ideal for positioning sensitive equipment securely whilst remaining flexible in terms of location.

An expedient range of installation accessories turn the mobile workstation into a veritable chameleon, capable of adapting to a diverse range of applications in the doctor's surgery, in the operating theatre, or as a supply trolley for consumables on the ward.



RiLab: One system – many opportunities

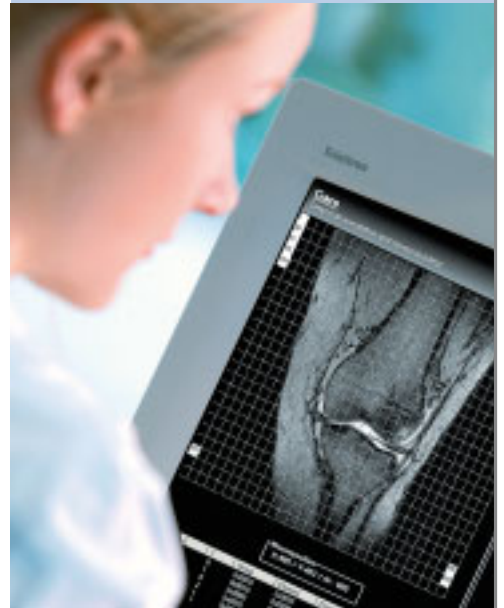
Flexibility: The application decides: The requirements placed on professional electrification solutions for mobile medical workstations are as diverse as the applications themselves. The modular concept facilitates infinitely variable scaling of the electrical equipment – to suit the tasks of the mobile assistant.

Hygiene:

- Powder-coated, impact- and scratch-resistant surface finishes
- Smooth surfaces for easy cleaning
- Resistant to disinfectant
- No open T-channel on the outside of the profile
- No edges for dirt to collect
- Hygienic cable routing: Thanks to intelligent cable routing, all cables without exception can be routed internally ▶ High level of security thanks to separation between the data network and the supply network

Further information may be found in: IT Catalogue

To order information materials, see back page



Individual solutions

Special design solutions and customised versions may be flexibly provided at any time to suit a diverse range of applications, such as diagnosis trolleys on the ward or mobile operating units for X-ray equipment etc.

Efficient visitor and patient communication just-in-time.



A modern hospital must not only have outstanding medical equipment, but also communication systems to make it easier for patients and visitors to find their way around. At the same time, it is now more important than ever to create an ambience in which people will feel comfortable. After all, every medical facility views itself as a “temporary host”.

Rittal offers the correct terminal to suit every purpose and ambience:



ITS Alpha-Line

Our lightweight, unconventional terminal made from stainless steel and aluminium.



ITS Arc-Line as a stainless steel version

For hygiene-critical areas such as laboratories.



ITS Opti-Line II

The combination of stainless steel and aluminium is sure to impress, with its timeless elegance and aesthetics. As a modular system, this terminal system accommodates all communication requirements. Flexible installation options to your specific requirements.



ITS Opti-Wall

The super-compact wall-mounted terminal can also be accessible to wheelchair users and children thanks to an additional electrical height adjustment feature. Users can adapt the terminal to their required height at the push of a button.



HD View pillar

Impresses with its simple, high-quality design and the 42" monitor, visible from a considerable distance. Available with touchscreen and high-quality glass front on request. Ideal for welcoming visitors to the foyer of your hospital, or for explaining the building structure.

Further information may be found in: Interactive Terminal Systems brochure

To order information materials, see back page

**Total Benefit of Usership:
We are at your side throughout all
phases of the project.**



Project planning

Project planning: The first step is to conduct a precise analysis of your requirements based on relevant factors such as location, function and technical status. The complete picture obtained in this way provides the basis for expert selection of suitable medico-technical components and solutions.

Application engineering

Application engineering: You outline your requirements to our application consultants, and we show you ways of achieving them. In order to develop the most efficient medico-technical solution, we will seek to clarify all key questions relating to systems and components as well as specific hygiene requirements and developments, e.g. in standardisation.

Prototyping

Prototyping: Once a suitable concept has been agreed with you, we produce a prototype. By working very closely with you, any optimisation required is implemented quickly and easily, and the prototype is manufactured to your precise requirements.

Testing

Testing: The prototype undergoes an extensive programme of trials and testing in a Rittal test laboratory. General requirements such as mechanical load capacity protection from dust and humidity are tested, together with specific requirements such as extreme climatic conditions or tough industrial environments. Your advisor will notify you immediately of the outcome of all these tests and checks. Any optimisation requirements are defined, implemented and then subjected to retesting.

Series manufacturing

Mass production: As soon as the prototype satisfies the functional reliability requirements, mass production will begin. Prior to delivery, every system undergoes further functional and safety tests in accordance with a specified plan, and is then given a test seal which guarantees Rittal quality.

After-sales service

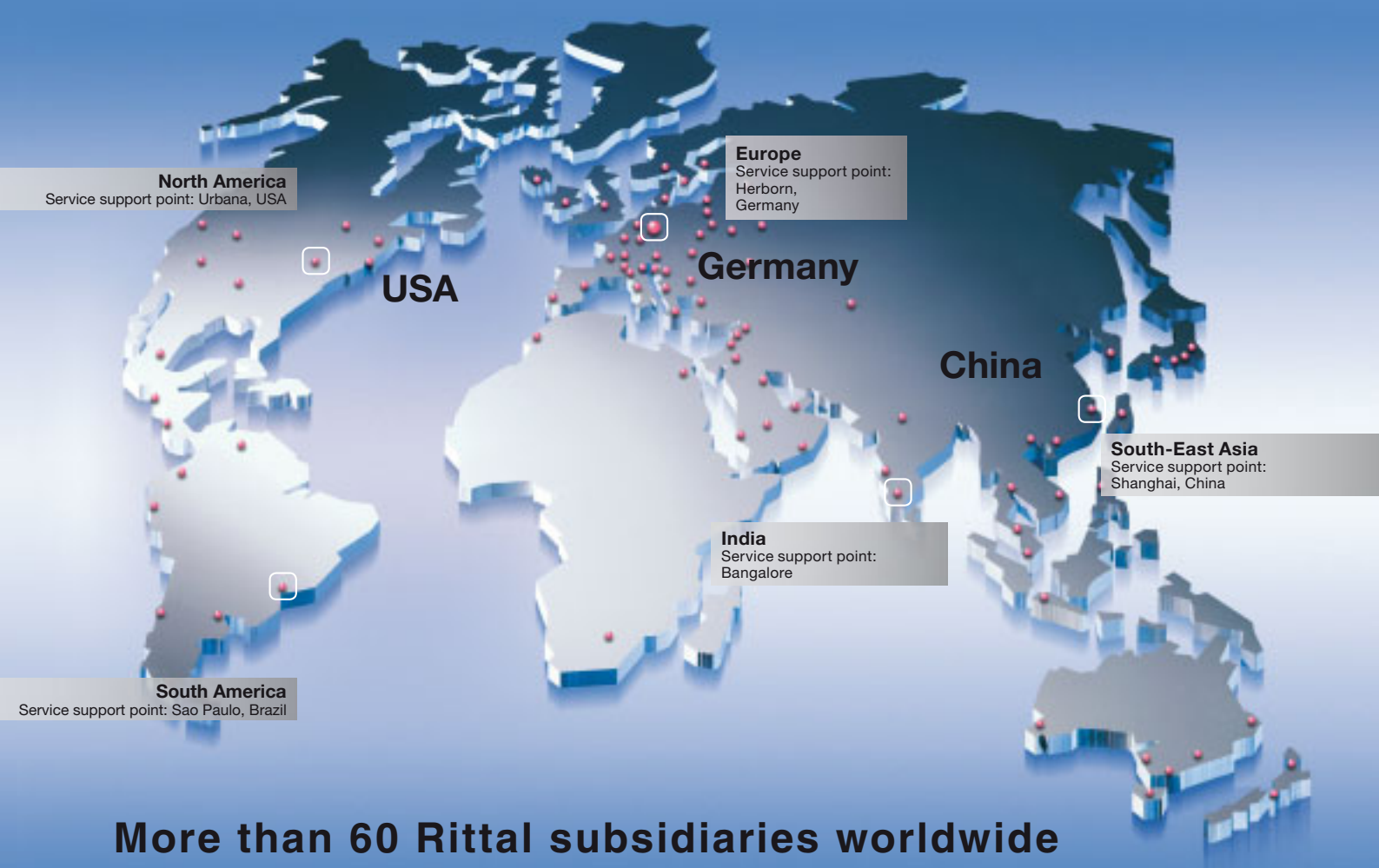
After-sales service: We remain at your service with on-site advice and support in your medico-technical application field. This means that you can take advantage of our expertise and receive answers to any questions about the systems we supply – at any time.

Rittal quality means:

- Approx. 1,500 patents worldwide
- Over 300 registered designs
- Product-specific national and international approvals
- Certification to ISO 9001
- Environmental certification to ISO 14001
- Pioneering design

Accredited Rittal test laboratory:

- Simulation of climatic conditions
- Mechanical load tests
- 3D measurement
- Particle seal testing to EN 60529, IP 54 and IP 64
- Hosed water test to EN 60529 or UL 50
- Testing of PE conductor connection and insulation resistance to EN 50298



More than 60 Rittal subsidiaries worldwide

With more than 200 locations worldwide for a truly global service.

Five global service support points in all the world's economic hubs, more than 60 subsidiaries and over 200 partners worldwide – these figures sum up the global service from Rittal. Because when it comes to service, nothing is more important than customer proximity, peace of mind and reliability.

From Europe to the USA and Canada, 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.

Information service

Please send me the following information material:

Company

Department

First name/surname

Street

Town, post code

Telephone

Date/signature

<input type="checkbox"/>	Rittal main Catalogue
<input type="checkbox"/>	Hygienic Design brochure
<input type="checkbox"/>	EMC range brochure
<input type="checkbox"/>	Rittal SK – System climate control
<input type="checkbox"/>	RiTCA brochure
<input type="checkbox"/>	RimatriX5 brochure
<input type="checkbox"/>	IT Catalogue
<input type="checkbox"/>	Interactive Terminal Systems brochure

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