



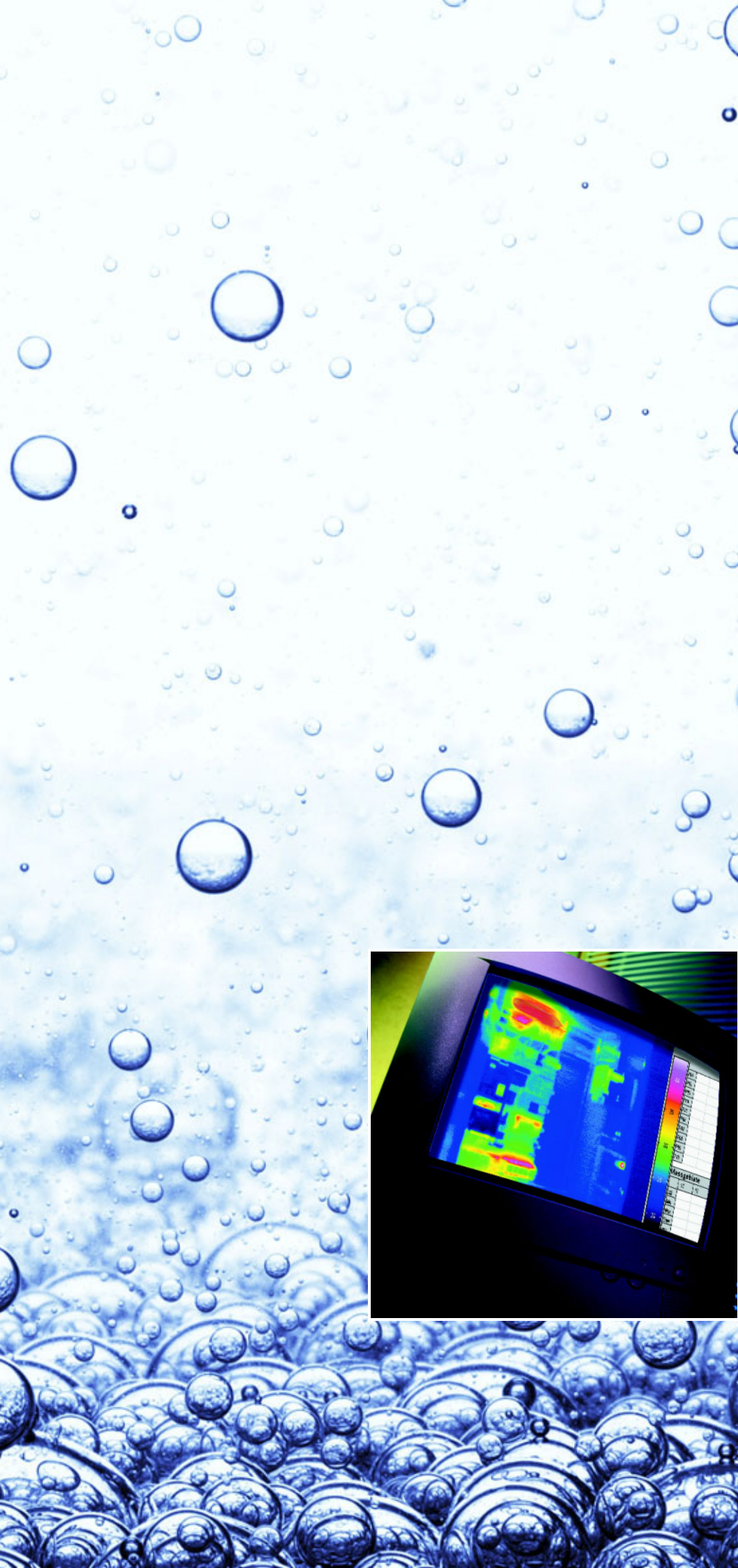
Rittal – System climate control



Safeguarding our future
with consistent energy efficiency!

Engineering partners



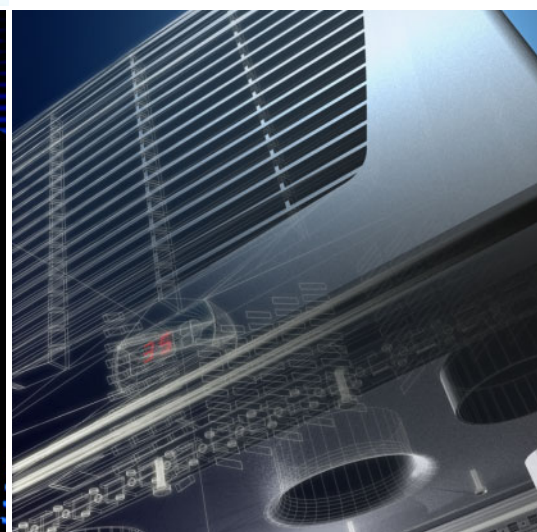
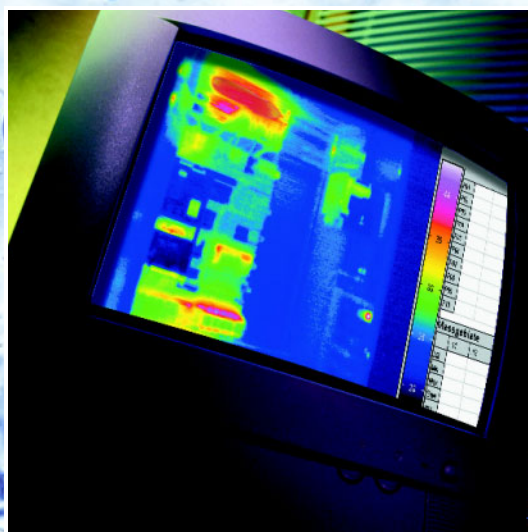


Rittal engineering – Building on cooperation for a shared future.

Whether you require analysis of an existing climate control concept, or help planning a new one, Rittal is a partner you can rely on. As well as manufacturing system components, Rittal also collaborates closely with customers in the research and development field.

We act as engineering partners to our clients. A combination of practical experience and project planning leads to innovative, comprehensive climate control concepts.

Rittal's customer service and maintenance divisions guarantee complete customer satisfaction from start to finish.



Service packages for every aspect of system climate control



Load tests as the optimum basis for planning.

Load tests

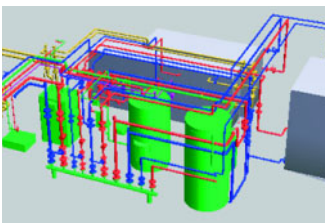
482.6 mm (19") slide-in equipment which simulates the thermodynamic response of servers allows you to determine in advance whether your cooling system is adequate for any planned extensions. Furthermore, after installing the LCP family, the cooling response can be tested directly, without the presence of a server.



With sensor technology for 3D analyses.

Intelligent wireless sensor technology

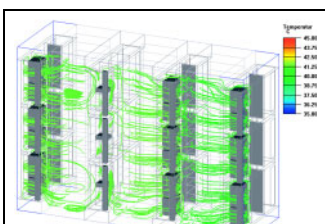
Sensors the size of a button record the temperature and humidity at specified locations in the rack. The location and time-dependent readings are extracted and displayed. The result is a 3D analysis of the data centre's cooling response.



Perfect dimensioning of pipe networks.

Piping network calculation

The Rittal specialists use a software package to design and dimension the pipe networks of liquid cooling systems, taking into consideration the architectural conditions. The specifications created allow the local installation engineer to start work immediately.



Forward planning with CFD.

CFD (Computational Fluid Dynamics)

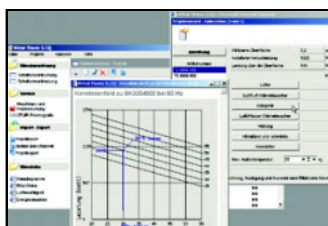
A 3D computer simulation is used to visualise the thermodynamic response of the planned data centre with server racks and climate control system. Predicting the temperature, speed, pressure and hence flow conditions in the data centre facilitates fast response times.



Localisation of hot-spots via thermography.

Thermography

Using a thermal imaging camera illustrates the temperature conditions (surface) inside the data centre with colour coding, hot-spots can be located and eliminated.



Therm Software

Rittal Therm is a calculation program for enclosure climate control.

All electrical and electronic components have a certain power loss which is dissipated to the environment in the form of heat. Because an increasing number of components are now being housed in ever smaller spaces, the heat produced can soon reach levels which are harmful to electronic components and may severely curtail their useful lives.

The Therm software package takes care of the complex calculation of climate control requirements. A user-friendly interface guides the operator to the most suitable, correctly dimensioned climate control component.

All evaluations are closely based on the requirements of IEC/TR 60 890 AMD 1/02.95 and DIN 3168 for enclosure cooling units.

Supply includes

CD-ROM

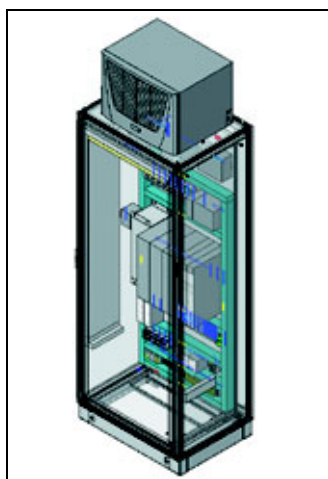
Languages: Available in 13 languages

Model No. SK

3121.000

Note:

Your free 30-day trial version may be downloaded at www.rittal.com



EPLAN Cabinet

Boost your productivity at every stage, from electrical planning, to enclosure population, through to production

The electrical planning and mechanical installation of an enclosure are combined into an integrated workflow with EPLAN Cabinet.

Equipment and component data is transferred from the wiring schematic in EPLAN Electric P8 or earlier versions of EPLAN into the layout plan. Rittal enclosures are integrated as original 3D models via component libraries (Rittal RiCAD-3D). Cable trunking, support rails, terminals and devices may be positioned in the 3D representation of the enclosure at a click of the mouse. Collision controls ensure compliance with distances and blocked surfaces, and help to avoid design errors.

Automatic generation of bills of materials and order lists are, of course, included, as are high-quality, dimensioned drawings for plant documentation.

Supplementary modules such as routing or NC generate drilling plans and programs, optimised wiring paths and lists, as well as information for drilling and milling machines. The simple planning and detailed documentation of EPLAN Cabinet support an optimum workflow, from the wiring schematic through to the populated enclosure.

EPLAN Cabinet is available from:
www.eplan.com



RiDiag II

RiDiag II is a tool for diagnosing the operating behaviour of Comfort controller-regulated cooling units. By connecting a PC, it is possible to retrieve error messages, temperatures and capacity utilisation levels of the cooling units which are stored in the Comfort controller. The system includes integrated temperature measurement from four sensors in the cooling unit, and also features graphical representation of the temperature development over time.

Supply includes

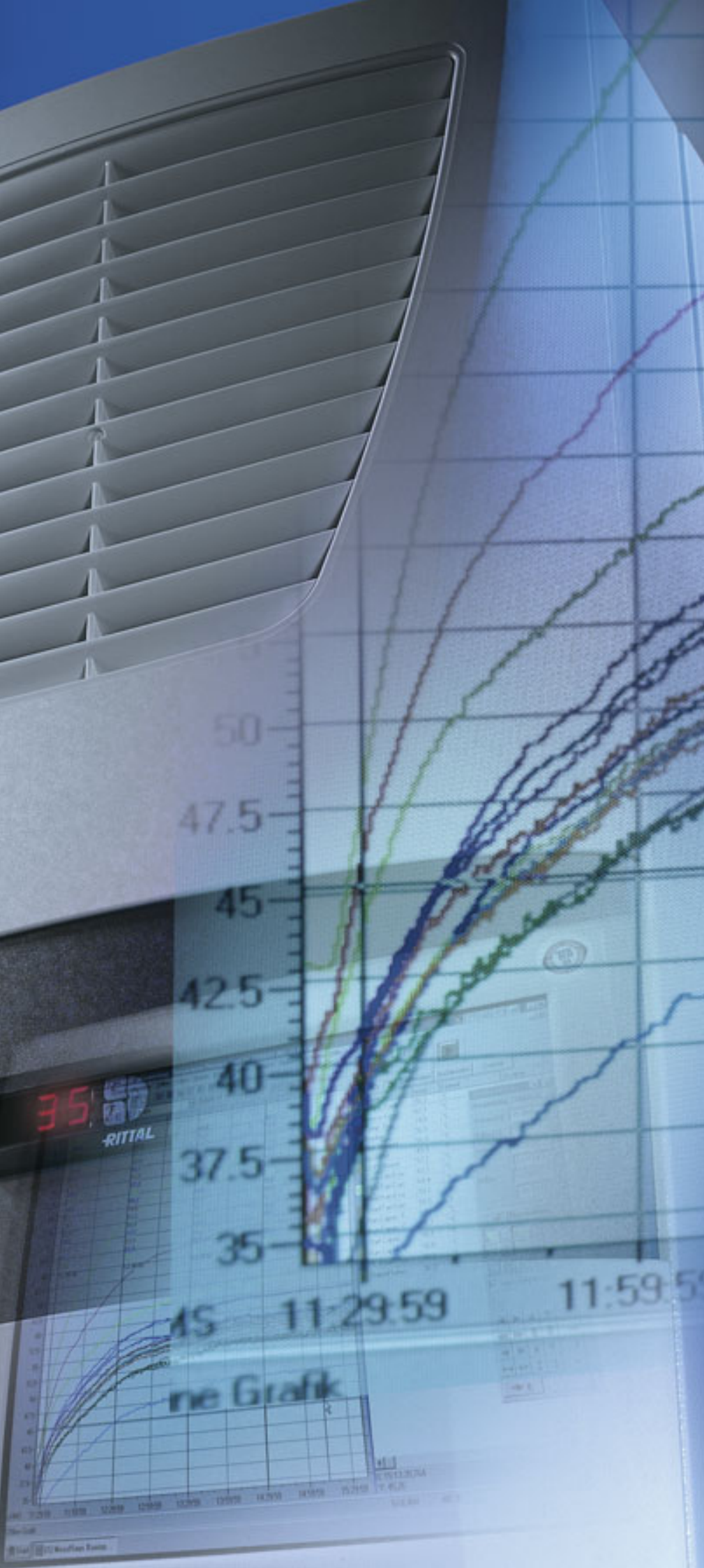
CD-ROM

Language: German/English/Italian/French

Connection cable

Model No. SK

3159.100



Efficient cooling solutions rely on an excellent infrastructure. The Rittal piping system provides the link between the equipment and the refrigeration system. An optimum design and targeted media supply ensure

efficient operation of all cooling components. This also includes safety-relevant options such as redundant pumps, emergency cooling or buffer stores.



Speed-controlled pumps are used to convey the coolant. The pumped volume may be varied by using state-of-the-art EC motors.

Your practical benefit:

Lower energy consumption thanks to "cold water on demand". Only the volume of water that is actually needed for cooling is moved through the system.

The standard hydraulic layout includes the use of a hydraulic separating filter. Different volumes of water on the producer side and equipment side for process cooling do not adversely affect the function of the cooling systems.

Your practical benefit:

Less energy consumption thanks to the use of free-cooling heat exchangers including redundancy. Chiller pumps may be switched on and off as required.

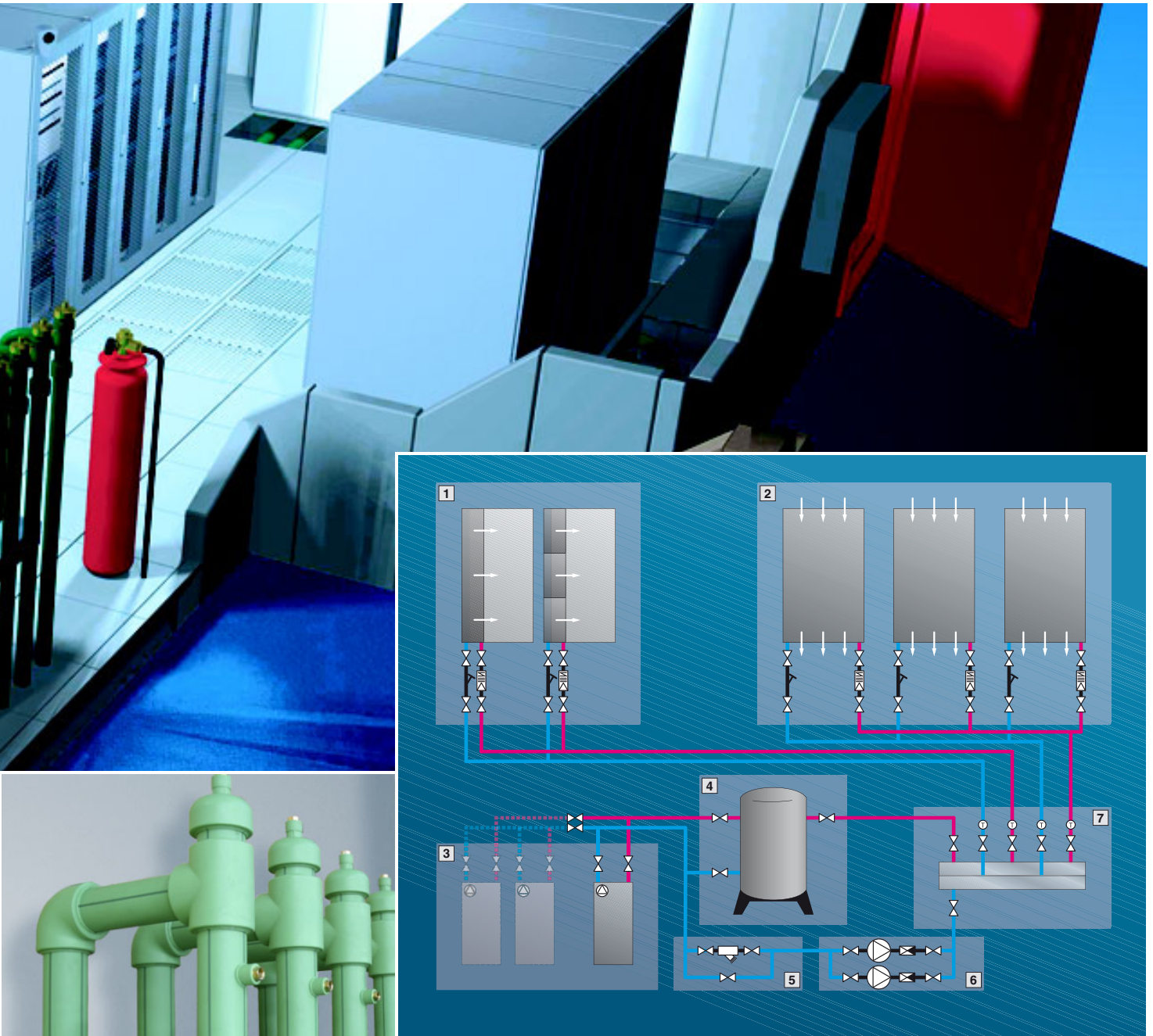
Use of compact distributors to distribute the cooling medium among different pieces of equipment.

Your practical benefit:

Redundancies in the supply lines to the equipment may be designed as required. For example, a layout can be designed to facilitate the automatic shut off of sub-sections in the event of pipe leaks.

- Pipeline systems are part of a turnkey solution for the targeted cooling of IT operating environments
- Media network for the connection of coolers (IT chillers) and cooling equipment (liquid cooling package and CRAC systems)
- Free scalability of chiller and equipment output via the hydraulic separation of the producer and equipment sides
- Use of a hydraulic separating filter with dual function as a buffer store

- Maximum energy efficiency thanks to the use of polypropylene piping with exceptionally low pipe friction losses
- Systems are suitable for the use of cold water and water/antifreeze mixtures (glycol)
- Media pumping redundancy by fitting every chiller with its own primary pump and via the use of redundant main pumps on the equipment side



The innovative polypropylene piping is distinguished by minimal pipe friction resistance.

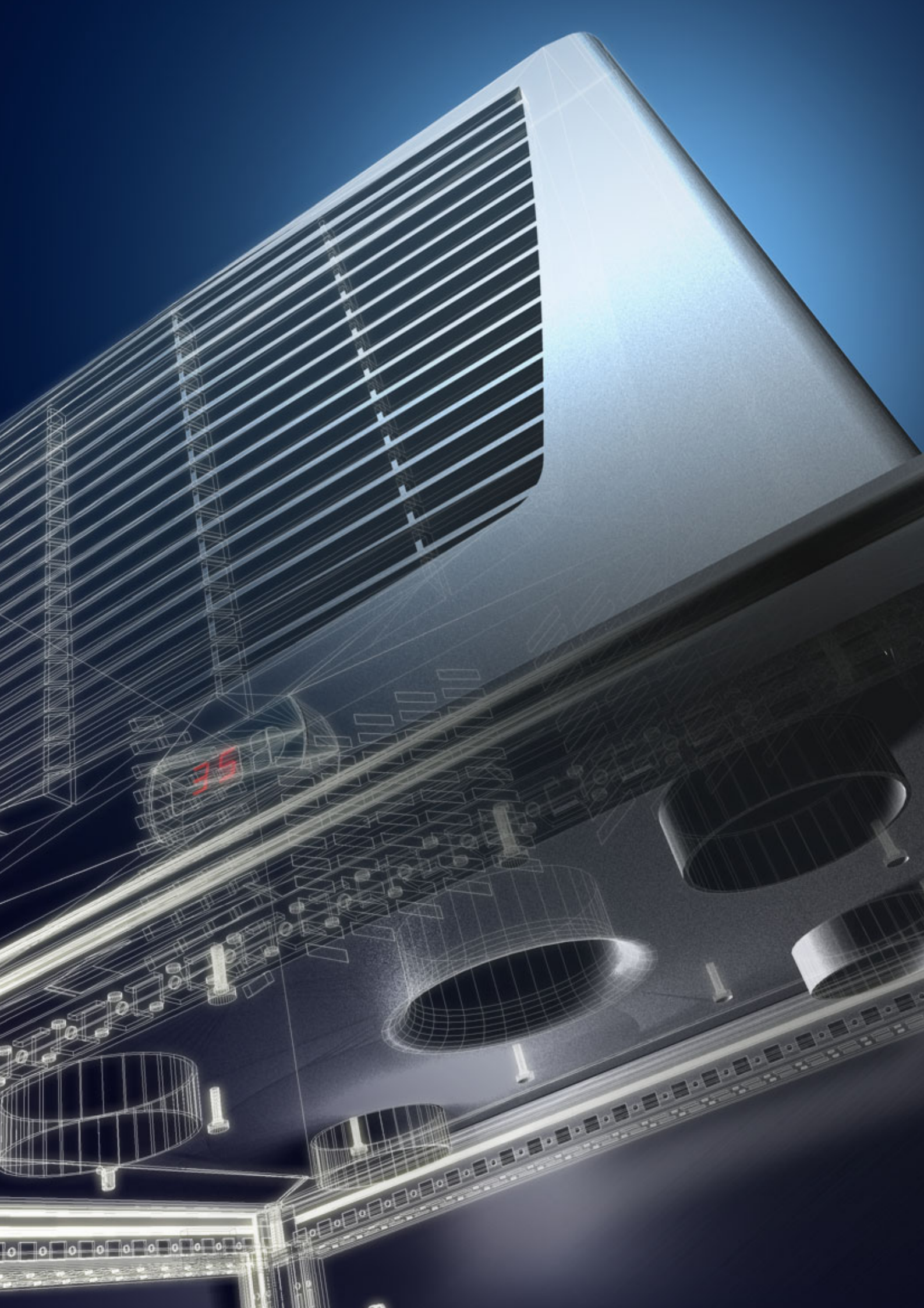
Your practical benefit:

Less energy consumption for conveying the cooling medium, thanks to lower flow resistance.

The material is corrosion-resistant and may be machined without residues.

- 1** Direct cooling systems (e.g. LCP)
- 2** CRAC systems
- 3** IT chiller
- 4** Buffer store

- 5** Dirt collector station with maintenance bypass
- 6** Main pump (redundant)
- 7** Compact distributor with lockable outlets



Service

Rittal Global Service – for system climate control

A central point of contact, decentralised implementation, short response times – this is the successful concept behind **Rittal Global Service**. High-tech system climate control must offer a permanently high level of reliability in enclosure cooling as well as in machine and process cooling.

With this in mind, we offer fast and reliable **response times** worldwide – thanks to our network of local service engineers.

Customer satisfaction from the outset

Pre-Sales

We face up to our responsibilities

- Requirement analysis
- Load tests
- Thermal imaging
- Simulation and calculation

Implementation

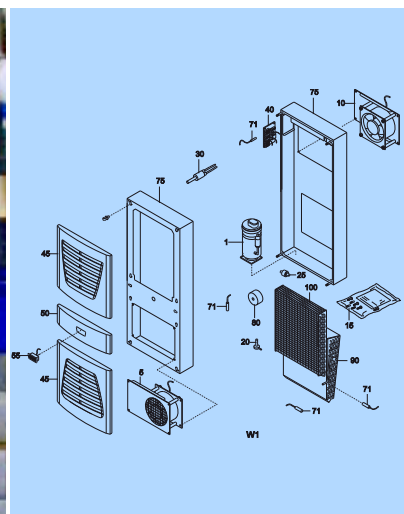
Because we are pleased to be on board when you arrive at a solution.

- Installation/integration
- Commissioning
- Instruction
- Certification

After-Sales

We smooth the way for your decision.

- Service contracts
- Maintenance/servicing
- Repairs
- Spare parts management
- Training



Rittal Global Service – always on hand, whenever you need us!

Our worldwide Rittal Global Service hubs

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Tel. +1800 477 4000

South America:

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Tel. +55 11 36 22 23 77

China:

service@rittal.cn
Tel. +86 800 820 0866

India:

service@rittal-india.com
Tel. +91 80 22 890 783

- Five global service support points in the world's major economic hubs
- Over 60 other service sites with
- more than 250 qualified partners and our own technical specialists, worldwide!

All in all – solutions from Rittal



Industrial Enclosures



Power Distribution



Electronic Packaging



System Climate Control

Cooling units · Recooling units · Heat exchangers
Fan-and-filter units · 19" climate control · Heaters · IT cooling



IT Solutions



Communication Systems

Rittal has one of the largest ranges of enclosures available for immediate delivery. However, Rittal also supplies integrated solutions – up to Level 4. This comprises mechanical installation, power supply, electronic components, climate control and central monitoring. For all of your requirements.

Fully assembled and functional. Wherever in the world you develop and implement solutions for yourself and your customers, we are close at hand. The global alliance between production, distribution and service guarantees closeness to the customer. Worldwide!

04/09 · E384

