RITTAL AT HANOVER TRADE FAIR 2016
Our expertise. Your benefit.

NETWORKED INDUSTRY
Hanover Trade Fair 2016

FIRST-RATE COOLING
The Blue e+ series of cooling units

SMART ENGINEERING
SEAP 4.0
Innovative strength? Yes, we can!

This year, the Hanover Trade Fair had a superlative partner country in the United States. 400 US companies showcased their new Industry 4.0 technologies, in the biggest ever exhibition of its kind outside of North America. Big names from politics and industry were in attendance, most notably the 44th President of the United States, Barack Obama, who opened the Fair together with the German Chancellor Dr. Angela Merkel, and praised Rittal’s innovative strength at a visit to our stand.

Once again, Industry 4.0 was the dominant theme at the world’s leading industry fair. The aim is to become more competitive, modify production systems to reflect the latest challenges, become energy-efficient, identify the potential of digitization, and exploit it to the max.

The Blue e+ generation of cooling units unites all of these aspects to perfection. In terms of its outstanding energy consumption, Rittal has achieved a quantum leap forward which translates into daily energy savings. Service-friendly control is achieved with a convenient, intuitive app installed on a mobile device.

Workflow optimisation was another key highlight at this year’s event. The virtual prototype is at the heart of the digital workflow, linking together all process steps seamlessly and thus establishing the basis for efficiency and effectiveness.

This latest edition of Rittal News sums up these and other highlights from the fair in an easy-to-read format.

We invite you to find out more about our innovative products and solutions, and look forward to receiving your feedback.

Yours

Hans Sondermann
Managing Director Sales and Marketing
Rittal GmbH & Co. KG
The Rittal stand welcomes its first visitors.

Even President Obama was impressed by Rittal’s innovative strength. “This is a fine company”, he said.
Boost your energy efficiency.

Blue e+. World’s first.

The Blue e+ generation of cooling units, with its hybrid technology, is a pioneer in climate control, creating average energy savings of up to 75%. The active cooling circuit with speed-controlled components provides demand-based cooling. Meanwhile, passive cooling is provided by the integral heat pipe, which dissipates heat from the enclosure as soon as the ambient temperature falls below the setpoint.

See how much energy you could save with the Blue e+ efficiency calculator. The efficiency calculator allows you to calculate long-term cost savings and amortisation periods for individual applications.

Faster information, thanks to intelligent communications.
Near field communication (NFC) supports simple parametrisation of multiple cooling units from a single mobile device. In future, standardised communications interfaces will support incorporation into the control systems of production plant or data transfer via CAN-bus or Ethernet.

Enclosure cooling gets smart.
In future, Blue e+ cooling units will be able to transfer device information and parameters into superordinate systems using standard protocols such as SNMP or OPC UA. This will open up new opportunities within the context of Industry 4.0, such as asset management, condition monitoring and predictive maintenance.

Digital networking enhances operational reliability.
Together with platform providers AXOOM, who specialise in applications for the manufacturing industry, Rittal has developed an app for networking and remote monitoring of cooling units. The Rittal / AXOOM solution shows that cooling units can already be monitored and controlled in real time, either from a control room or on the road using mobile devices such as tablets.

You can count on it:
The Blue e+ efficiency calculator is available online at www.rittal.com/blue_e or via this QR code.

*By networking cooling units, operators and manufacturers can exploit new opportunities combining availability with cost-effectiveness.
Uwe Scharf
Senior Vice President
Product Management
Rittal GmbH & Co. KG

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A history of climate control.

30 years of cooling expertise.

Thirty years ago, simple vent slots were sufficient for enclosure climate control. Since then, growing demands have inspired a constant flow of new inventions. As a pioneer in the field of enclosure climate control, Rittal has unintentionally evolved into the market leader.

Here are a few of the key milestones:

1983: The first Rittal enclosure cooling unit SK 3290 dazzles users with its compressor technology and compact design.
1991: Rittal unveils the first CFC-free cooling unit Pro Ozon – for a clean environment.
2002: The Rittal TopTherm platform strategy ensures compatibility and a uniform design.
2011: Rittal Blue e cooling units boast energy savings of up to 45%.
2015: The Blue e+ series, with their clever hybrid technology, are the world’s most energy-efficient cooling units.
Sensationally bright.
LED system light.

The most innovative lighting technology, tailored to Rittal enclosures.
Do not settle for less! The new LED system light sets brand new standards in all areas.

Focus on what’s important
Innovative LED technology creates even more light in the enclosure, from the roof to the base. The special optical cover with two different Fresnel structures tailored to the enclosure geometry achieves impressive illumination. The light adjusts to the current installation situation by simply rotating the cover. In this way, the LED system light directs its enormous luminous intensity from 900 to 1,200 lumens selectively into the enclosure.

Time savings under control
A latching hook system on a 25 mm pitch pattern of holes enables fast, tool-free assembly; simply latch and secure. The LED system light may also be optionally screw-fastened either horizontally or vertically with no loss of space, or opt for complete flexibility with a magnetic attachment which is freely positionable inside the enclosure. Lights with motion detectors are equipped with a rotating LED board as standard, allowing the direction of light to be perfectly adapted to any installation situation.

Uncompromising switching
Rotating connectors support installation in the most confined spaces. Through-wiring is easily achieved with the plug & play system. Variants with integral motion detectors eliminate the need for installing separate door-operated switches. A socket provides electricity whenever it is needed for maintenance work.
Simple installation
The enclosure lights may optionally be switched on and off via an integral switch, a door-operated switch or a motion sensor.

Optimum illumination
The optical cover made from transparent plastic with a Fresnel structure ensures optimum illumination of the enclosure.
Boost your competitive lead with a digital workflow.

Control and switchgear manufacturing 4.0 – The digital workflow for your company.

The consistent implementation of Industry 4.0 concepts is now a key factor in the ongoing optimisation of processes designed to save time and money while remaining competitive. Eplan’s engineering expertise, plus Rittal’s system and automation expertise, is a winning combination for control and switchgear engineering 4.0. It all centres around a seamless flow of digital data throughout every process in the value chain. The virtual prototype, as a complete data model of the controlgear and switchgear, makes it possible.

Our digital workflow expertise:
- Top data quality for your engineering processes:
  - M-CAD data for mechanical design via the Rittal website
  - E-CAD data for electrical engineering design with Eplan via the EPLAN Data Portal
- Data consistency, due to platform-based, coordinated interfaces between the engineering systems and tools from Eplan and Rittal
- System components from Rittal are integrated into the digital workflow by digitising component data and linking it to the design tools and configurators, right through to commercial and logistical processes
- All workshop operations are supported by digital data for manual, partially automated and fully automated processes with individual solutions from Rittal Automation Systems

Your digital workflow benefits:
- The intelligent engineering behind controlgear and switchgear manufacturing 4.0 allows you to create a powerful virtual prototype, and thereby boost efficiency and control in all downstream processes.
- The Rittal system components in controlgear and switchgear manufacturing 4.0 support the digital workflow, for easy planning and enhanced the operational reliability. Extensive flexibility allows you to create individual variants with minimal planning and manufacturing effort. Intelligent components, digital item descriptions and special planning software are integral parts of the digital workflow in controlgear and switchgear manufacturing 4.0, and a further boost to your efficiency.
- Throughput times are minimised, while at the same time, error sources are reduced, with automation solutions and seamless integration into the digital workflow.
The virtual prototype – a control centre for all process steps

- Concept development
- Engineering
- Technological development
- Verification and optimisation
- Calculation/quotes/order placement
- Preproduction and ordering
- Material logistics
- Machining
- Operation/maintenance
Smart Engineering and Production 4.0

Seamless virtual engineering: The pre-requisite for Industry 4.0

Eplan, Rittal and Phoenix Contact present complete, three-dimensional data integration into product manufacturing: vertically via business processes, horizontally across the value chain, and in the data depth via the product lifecycle.

Smart Engineering and Production 4.0 shows how uniform, standardised data, data formats, models and interfaces can be used cost-effectively for engineering tools and manufacturing projects. The engineering outcome – the virtual prototype – is supplied in AutomationML data format for subsequent use. Intelligent manufacturing systems such as the ClipX demonstrator from Phoenix Contact are then able to autonomously generate a suitable manufacturing plan for the respective machine based on the virtual prototype.

1 Digital item

A digital description of the item is crucial for a seamlessly automated process. This is created during the design process, by marking and describing production-relevant item features.

2 Virtual engineering

The EPLAN Data Portal supplies digital item data, from which the virtual prototype is created. This “digital switchgear” supplies information for the product lifecycle with the aid of PDM/PLM concepts and systems.

3 Conventional production

Standardised digital data plays an increasingly important role in both manual and automated enclosure manufacturing processes, and provides vital workflow support.
Digital pre-certification

Conventional production

Intelligent production

The intelligent control system uses the digital product description to identify the required production stations, and in this way, reduces complexity for the operator.

Digital pre-certification

Many product characteristics can be checked prior to production, thanks to the digital product description, and used for digital pre-certification.
Mechatronic engineering.

The premiere of Syngineer.

At the Hanover Trade Fair, Eplan and its sister company Cideon unveiled Syngineer – an innovative communications and information platform offering optimum mechatronic engineering requirements for mechanical and plant engineering companies. M-CAD, E-CAD and SPC software are directly interlinked via the mechatronic structure, which facilitates synchronisation of the disciplines, and speeds up design and development processes in mechanical engineering, control technology and SPC software.

Syngineer supports mechatronic working methods in teams and across different disciplines. The communications platform offers a scalable entry for any company, whatever its size, which is looking for inter-departmental collaboration solutions in mechanical engineering, control technology and SPC software. It depicts the mechatronic structure of the machine, comprised of its requirements, functions and components. Maximilian Brandl, President of Eplan and Cideon, explains: “Syngineer creates a shared view of the machine we are designing. Coordination and administrative work between the various engineering processes is minimised, while design and development processes are parallelised and significantly shortened”.

Benefits of Syngineer at a glance:

- **Complete transparency**: The status and completion level in product development is transparent across all participating engineering disciplines.
- **Optimum collaboration**: By incorporating authoring systems, components can be linked to the mechatronic structure.
- **Deep integration**: M-CAD, E-CAD and SPC systems are directly interlinked via the mechatronic structure.
- **Direct communication**: Designers can communicate in real time with other disciplines involved in the engineering process via Syngineer.
- **Openness**: The software architecture is designed to make Syngineer open to other authoring and PDM/PLM systems.

Add-in for authoring systems

The various authoring systems, i.e. Eplan, M-CAD and SPC software, are linked via a browser add-in and connected to the communications platform. The same communications process is also supported for a range of M-CAD systems. In a second stage, the engineering processes of the various disciplines, many of which are currently sequential, can now be parallelised to a much greater extent.

The authoring system components are linked to the mechatronic structure in Syngineer by simply dragging & dropping. In an initial collaboration, 3S Codesys has synchronised the SPC program modules and control simulation as an add-in. The communications platform, which launches on the market at the end of the year, is designed as an open system, to enable integration of other authoring systems in future.

Further information can be found at: www.houseofmechatronics.com

Your one-stop workshop supplier.

Rittal Automation Systems.

The comprehensive Rittal Automation Systems range is comprised of tools and machines for control and switchgear engineering. The spectrum ranges from simple screwdrivers, pliers and other hand tools, to semi-automated machines for cable assembly, through to automated machining centres for enclosures and panels. The range also includes handling systems for ergonomic working.

With a brand new portfolio of hand tools such as screwdrivers, hydraulic punches and hole punches, interchangeable sets, cutting and crimping tools, Rittal can now meet all your requirements for processes that involve manual assembly and production activities. Machining of the enclosure and of flat panels such as the mounting plate can also be carried out fully automatically in the workshop with Perforex machining centers for milling and laser machining from Rittal.

The addition of hand tools to its product portfolio has expanded the Rittal Automation Systems division into a one-stop supplier for controlgear and switchgear manufacturing. Rittal supports controlgear and switchgear manufacturers at every stage of the process chain, from engineering, to the workshop, through to production.
Maintaining an overview.

Smart Monitoring System.

The monitoring system facilitates continuous logging and monitoring of the power consumption of equipment and machinery. Data is visualised via the display or Web interface, and measurement data may be logged and communicated.

Your benefit:
A continuous improvement process (CIP)
As well as identifying potential savings, you can permanently boost your energy efficiency, enhance your competitiveness and reduce carbon dioxide emissions. Additionally, you can also benefit from tax concessions.

Transparency and seamless data management
The Smart Monitoring System features several interfaces for communicating and transferring measurement data on variables such as electricity, voltage, power and efficiency. The NH measurement module may be linked to a superordinate control system via Modbus RTU, a CAN bus interface connects to the Rittal monitoring unit (CMC III), which can also convert data into alternative protocols as a gateway. Meanwhile, the USB interface is used for configuration, importing updates and logging data.

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A model technical initiative.
10 years of Tec2You.

Tec2You, the joint initiative by industry, science and politics to get young people interested in technology, had plenty to offer at this year’s trade fair in Hanover. The students took the opportunity to test out the technology and talk to young exhibitors about their future prospects, in a year which marks the scheme’s 10th anniversary.

Since 2006, Rittal has organised annual bus trips to the Hanover Trade Fair for up to 700 pupils from the Mittelhessne region, with a view to inspiring interest in the world of technology. Ten years ago, Rittal was instrumental in helping to set up this young people’s initiative. Rittal understands that live demonstrations in full colour are often the best advert for a technical vocation.

Commitment wins Rittal a well-deserved award
At the Hanover Trade Fair, Rittal was presented with the Tec2You trophy for its long-standing commitment to the scheme. Hans Sondermann, Managing Director Sales and Marketing at Rittal, accepted the trophy on the company’s behalf: “With Tec2You, we want to make young people curious about technical professions and technology companies. We give pupils and students their first introduction to companies, products and solutions”.

Top Employer Germany 2016
The Friedhelm Loh Group currently has around 200 trainees in 20 vocations, and around 60 students on cooperative degree courses. Each year, some 2,400 people attend the Loh Academy, our in-house training academy. Rittal’s annual education and training budget is around 10 million euros. This led to Rittal winning the highly respected accolade of Top Employer again this year.
Rittal – The System.

Faster – better – everywhere.

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