New generation of fan-and-filter units

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Operational security for enclosures

Heat is rarely a welcome guest in the enclosure. Accordingly, it is crucial to remove undesirable heat and to avoid further warming wherever possible to ensure trouble-free operation of the installed components. This task is frequently entrusted to a fan-and-filter unit – a cooling option which, in the past at least, has been denied the respect and appreciation it deserves. Rittal now offers a new generation of Blue e+ fan-and-filter units boasting an emergency cooling function and many other innovative features geared to smart climate control.

Herborn/Monheim/Gräfelfing/Limburg, 15. October 2023 – Fan-and-filter units are a popular and cost-effective solution wherever ambient air can be used to regulate the temperature in an enclosure. They are thus also by far the most frequent choice for enclosure climate control. Stepping out of the shadows, the new generation catches attention as a smart helper with numerous cool functions and a watchful eye for potential danger: With its emergency cooling function, for example, the new Blue e+ fan-and-filter unit responds actively to compensate for an unexpected temperature rise. This protects components from overheating and, in a worst-case scenario, avoids the costs associated with a system shutdown.

**Tool-free handling saves time**

The first benefits are already felt much earlier: The last generation of fan-and-filter units was already designed for tool-free mounting and maintenance, but the relevant mechanical components have now been given a full makeover. The snap-in hooks for unit mounting and the opening mechanism for filter replacement now function even more smoothly. Proven features such as simple reversal of the air flow direction and flexible positioning of the power connection have been retained. Further modifications relate to the overall Rittal design, with the grille slats now arranged vertically. This has all been done without affecting the protection rating.

**Intelligence packed into a minimum of space**

Blue e+ fan-and-filter units are available in five sizes, covering eight output classes from 20 m³/h to 1,160 m³/h air throughput. The AC/DC models cater to all basic requirements, while an EMC variant is available for applications that place special demands on the electromagnetic shielding of housings. EC technology permits speed control and fan monitoring via an analogue interface. Temperature regulation is adapted to the actual conditions – a smart function that saves energy and extends the service life. The new generation takes up this lead and offers further benefits such as a wide power input range (100–240 V) and a ModBus interface for monitoring, control and alarm functionalities.

**Full control via an IoT interface**

Fan-and-filter units which are integrated via the Rittal IoT interface supply information on status, capacity utilisation, operating hours and energy consumption. If several enclosures are standing nearby, therefore, it is possible to locate the exact source of critical heat build-ups and to determine the associated fan-and-filter unit. The operator is informed and the emergency cooling function of the fan-and-filter unit is activated as soon as the temperature exceeds the alarm threshold value. An increase in fan speed and thus air throughput delays possible overheating. The fan-and-filter unit returns to its normal operating mode as soon as the temperature drops back below the threshold value. The fan-and-filter unit returns to its normal operating mode as soon as the temperature drops back below the threshold value. In addition to operational security, the new generation provides an even longer service life: The automatic filter cleaning function blows dust particles out of the filter several times a day. Operators can also define a virtual operating period as the basis for a display of the time remaining until the next filter replacement is due – in a similar manner to the fuel gauge of a motor vehicle. This facilitates the planning of maintenance on demand, which saves further time and expense.

As far as the principal task of a fan-and-filter unit is concerned, namely maximum particle retention while at the same time allowing as much air as possible to pass, Rittal is setting new standards with its pleated filters. Thanks to the pleating, the surface area is six times larger, air throughput is increased by 40 per cent, and maintenance intervals can be doubled or even tripled, depending on the application. Together, these features of the new generation of Blue e+ fan-and-filter units raise this conventional form of enclosure climate control to a new level.

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**Caption(s)**

Image 1 (fri23213700.jpg): The emergency cooling function of the new fan-and-filter unit responds actively to compensate an unexpected temperature rise. This protects components from overheating and, in a worst-case scenario, avoids the costs associated with a system shutdown.

Image 2 (fri23213200.jpg): Fan-and-filter units which are integrated via the Rittal IoT interface supply information on status, capacity utilisation, operating hours and energy consumption.

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**About Rittal**

Rittal is a leading global supplier of enclosure systems, automation and infrastructure to the industrial, IT, energy and power, cooling and service sectors. Rittal products and solutions are used in over 90% of global industries – standardised, customised, and always of the very best quality.

Our approach and methodology: Rittal, Rittal Software Systems (Eplan, Cideon and German Edge Cloud) and Rittal Automation Systems (RAS, Ehrt, Alfra) combine their hardware and software expertise to streamline, optimise and digitalise processes across the entire value chain for our customers including their IT infrastructure – from control and switchgear construction, machine building to factory operators or the energy sector.

Our promise: Rittal standard products are delivered within 24 hours in Germany, and within 48 hours worldwide.

**Fully focused on our customers**

Improving efficiency and increasing productivity through automation and digitalisation is one of the biggest challenges for our customers. This requires in-depth knowledge and expertise, the combination of hardware and software, and cross-sector networking. We are convinced that creating and connecting data spaces is crucial to the success of industrial transformation. And that is exactly our speciality and field of competence.

Eplan and Rittal are driving the development of the digital twins of equipment and systems and are making the data more accessible and operationally useable. Cideon is improving digital continuity and data consistency in relation to digital product twin context with its CAD/CAM, PDM/PLM and product configuration expertise. German Edge Cloud’s ONCITE Digital Production System (DPS) makes the data from the manufacturing processes transparent and thus optimisable – right up to energy management via the digital production twin.

**Sustainability**

Environmental and climate protection, social commitment and ethical corporate management are a given for Rittal. We take our responsibility for a sustainable future seriously. Our approach to resource management and conservation involves continuous improvement of our production processes and ensuring that our products and solutions have the lowest possible Product Carbon Footprint. This supports our customers in achieving their climate targets.

**Family business and global player**

Founded in 1961, Rittal is the largest company in the owner-operated Friedhelm Loh Group. The group operates worldwide, with 12 production sites and 95 international subsidiaries. It had more than 12,000 employees and posted revenues of 3 billion euros in fiscal 2022. In 2023, the Friedhelm Loh Group was named “Best Place to Learn” and “Employer of the Future”. Rittal was awarded the Top 100 Seal as one of Germany’s most innovative medium-sized companies.

For more information, visit [www.rittal.com](http://www.rittal.com) and [www.friedhelm-loh-group.de](http://www.friedhelm-loh-group.de).