

Planned servicing at Airbus: Failures are a thing of the past with Rittal's IoT Interface!



"If the cooling of the simulation computers were to fail, we would not be able to perform the tests. Rittal's IoT interface in the Blue e+ cooling units enables us to collect all statuses in real time."

Volker Jacobs,
Department Manager of the Functional Testing Group at Airbus

The company

- Europe's largest aircraft manufacturer
- Based in Toulouse with assembly plants in France, Germany, Spain, the UK, China and the US

The challenge

- Simulate flights for an intensive aircraft check
- Ensure the correct functioning and efficiency of cooling units at all times; prompt maintenance is crucial

Customer benefits

- Rittal Blue e+ series cooling units devices are interlinked with an IoT interface, through which all device statuses are forwarded to the higher-level system
- Prompt and planned maintenance

An aircraft cannot simply pull over and wait for a tow truck if it encounters a problem. Safety and reliability are therefore an absolute priority. Before an A320 can take off, a variety of tests and simulations need to be successfully performed. And the powerful servers and other hardware components in enclosures must be cooled to ensure they do not overheat and fail. After experiencing problems, in particular during the warm summer months, Airbus decided to equip its enclosures with Blue e+ chillers from Rittal.

High-performance servers for simulation

"Depending on its exact configuration, we may have to perform around 400 hours of tests on a single A320," explains Volker Jacobs, Head of Ground Testing for the Fourth Final Assembly Line for the A320. This team is responsible for verifying all procedures that take place both in-flight and on the ground to ensure utmost safety. The three servers needed to execute the sophisticated simulation programs are connected to the aircraft's sensors and actuators via input and output modules. Bundles of cables weave their way from the hardware enclosure to the interior of the fuselage. These allow measurement of, for example, engine rpm or the capture of other important operational parameters. The servers are also used to generate and monitor output signals. "Together, the hardware components create a lot of heat and need to be actively cooled," says Jacobs. "We switch the Blue e+ chillers on in the morning, and they then run with total reliability."

Dependability is essential

The 28 testing stations at the Airbus factory in Germany all have similar equipment – and with all of them, dependability is essential. To overcome over-heating challenges, Airbus decided to install Blue e+ chillers with IoT modules from Rittal in the server enclosures. These devices provide the sensitive components with robust protection against thermal stresses. This is vital to guaranteeing tests can be performed for a minimum of five days a week with two-shift operation. The chillers are continuously monitored, and a warning light alerts staff should one of them fail.

Retrofits to production plants in China and the US

Airbus was also impressed by how user-friendly the Blue e+ cooling units are. All their functions can be set via two buttons on the control panel. Moreover, the screen displays plain-text status and error messages. "We have the quality we need, and the support we get from Rittal is very good," states Jacobs. Airbus's positive experience has prompted the company to retrofit the new Blue e+ at its identical testing facilities in the US and China.



See IoT Flyer on next page!



Rittal – The System.

Faster – better – everywhere.

▶ IoT interface – allows devices and systems to communicate face to face.

Cooling units can be equipped with a wide range of communication technology and are playing an increasingly important role in Industry 4.0.

Remotely-accessed devices and predictive maintenance are based on the provision of data and networked communications. For this to happen, IoT-compatible devices equipped with the necessary communication options are required. With our Blue e+ platform and the new IoT interface, Rittal is laying the foundation for the optimal integration of cooling units and chillers in Industry 4.0 applications. This makes continuous communication from the sensor to the cloud possible, as well as connection to external monitoring or energy management systems.

Rittal's IoT interface supports: OPC-UA, Profinet, SNMP, Modbus TCP and CANopen – allowing climate control solutions to be easily integrated into IoT applications and paving the way for new applications and smart service solutions.

- With the CMC sensors and the IoT interface, temperature, humidity, access, smoke, energy and many other physical environmental parameters can be monitored.
- The system has a modular structure and can be easily adapted to the monitoring.
- Network monitoring and automation of security processes provide benefits such as improved machine availability and reduced maintenance costs.

For more information contact customer service at 800-399-0748 or email marketing@rittal.ca



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IoT Interface

The IoT interface is used to link Rittal components such as Blue e+ cooling units, Blue e+ chillers, smart monitoring systems etc. to the customer's own monitoring and/or energy management systems. Data may be integrated both horizontally and vertically into data collectors and processors, to allow the long-term logging and evaluation of device data, statuses and system messages.

Communication protocols:

SNMPv1, SNMPv2c, SNMPv3, OPC-UA, Modbus/ TCP, CAN bus, Profinet

Network protocols:

Telnet, SSH, FTP, SFTP, HTTP, HTTPS, NTP, DHCP, DNS, SMTP, Syslog, LDAP, RADIUS

Benefits:

– The IoT interface is middleware, whose interfaces allow a variety of devices and systems to communicate with one another. The data can then be forwarded into superordinate systems.

Material:

– Plastic to UL 94-V0

Color:

– RAL 7016 Anthracite grey

Protection category IP to IEC 60529:

– IP 20

Supply includes:

– Connection cable (1 m) with RJ 45 connector
– Angle bracket for Blue e+ cooling unit



Assembly instruction:

– The IoT interface can be secured on a 35 x 7.5 top hat rail to DIN EN 60 715 using a springloaded metal clip, or to the rear of a Blue e+ cooling unit using the angle bracket.

Model No.	3124.300
W x H x D in. (mm)	0.07 x 4.6 x 4.72 (18 x 117 x 120)
For	Blue e+ cooling units Blue e+ chillers Smart monitoring system CMC III sensors
Operating temperature range °F (°C)	+32°F...+158°F (+0°C...+70°C)
Protocols	SNMP OPC-US Modbus/TCP CAN bus Profinet
Interfaces	1 x Micro USB type B (device) for USB 2.0 1 x Micro-SD memory card slot for SD 2.0 1 x USB 2.0 high-speed functions (EHCI) 1 x acknowledgement button 1 x 3-pole push-in spring connection terminal for NTC sensor 2 x RJ45 jack for RS 485 interface (climate control unit interface)
Network interface	Ethernet IPv4/IPv6 Ethernet to IEEE 802.3 via 10BASE-T, 100BASE-T and 1000BASE-T
Type of electrical connection	3-pole push-in spring connection terminal (24 V DC)



Please note: Blue e adaptor for IoT interface - SK 3124.310 is also needed to connect the Blue e units with the IoT interface. Please talk to your Rittal sales rep about this.

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