

FanGrid for precision technology

30 percent energy savings, 100 percent safety

A South German parts manufacturer has optimized its ventilation systems using innovative technology. Experts at AIRnorm GmbH have demonstrated that a retrofit with the latest generation of ebm-papst fans and a FanGrid can reduce energy consumption by 30 percent and significantly increase operational reliability.

FanScout supports fan selection

The previous systems, which were operated with multi-speed motors and V-belts, displayed a number of weaknesses in terms of wear, maintenance and control, for example. AIRnorm analyzed the operating data, determined the current operating parameters and used the ebm-papst FanScout program to select suitable fans and demonstrate savings potential. The outcome was that replacing the fans and the design of the new pressure wall would reduce the differential pressures, improve the flow and increase energy efficiency. AIRnorm calculated that the investment would be amortized in less than four years.

Double the expertise for fast results

AIRnorm planned the project in close collaboration with Breuell & Hilgenfeldt, the ebm-papst sales partner for retrofits. The retrofit specialists opted for the RadiPac C EC centrifugal fan from ebm-papst as the new fan type. It features a compact 6 kW drive, which is highly efficient even in partial-load operation. Thanks to its plug & play capability and support bracket, the fan is already prepared for wall mounting. The automatic resonance detection in the RadiPac C helps prevent harmful vibration and premature bearing damage.

Implemented in just three days

There are four production buildings with similar ventilation systems. As the exhaust air from the machinery in Hall 2 is extracted via the ventilation system, operational reliability plays a particularly important role. Any failure of the system would result in a production stoppage. That is why the retrofit began here, taking just three-and-a-half days during the summer shutdown. Removing the old motor, which weighed 320 kilograms, was achieved safely using hoisting equipment provided by the customer.

Focus on plant availability

In addition to the energy savings, a crucial factor in favor of the implementation was the maximized operational reliability thanks to the redundancy ensured by installing a FanGrid. This allows several fans to be operated in parallel, which maintains output if one of the fans fails and prevents production stoppages. Two control cabinets with MDC control the fans, replacing the variable frequency drives that were previously in use. After commissioning of the system, all values were confirmed. In the future, the annual energy saving will amount to around 54,000 kWh.

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July 24, 2025 - Page 1 of 3

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Fig. 1: In Hall 2, the exhaust air from the machinery is extracted via the ventilation system. This places special demands on its operational reliability.



Figs. 2 and 3: The FanGrid was designed to make it easy to install another fan at any time. The opening for this is covered by a flap. The five RadiPac C EC fans ensure the necessary system redundancy.

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About ebm-papst

The ebm-papst Group, a family-run company headquartered in Mulfingen, Germany, is the world's leading manufacturer of fans and motors. Since it was founded in 1963, the technological leader has set international industry standards with its core competencies in motor technology, electronics, digitalization, and aerodynamics.

ebm-papst offers sustainable, intelligent, and tailor-made solutions for virtually every requirement in ventilation and heating technology. ebm-papst sets the benchmark in almost all sectors, such as ventilation, air conditioning and refrigeration technology, heating technology, information technology, mechanical engineering, and medical technology.

In the 2024/25 financial year, the ebm-papst Group generated a turnover of 2.1 billion euros. It employs just around 13,500 people at 30 production sites, including in Germany, China, and the U.S., as well as 50 sales offices worldwide.

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July 24, 2025 - Page 3 of 3

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