

Compact centrifugal fans deliver high air flow rates

New wind for residential ventilation and switch cabinet cooling

Ever lower energy consumption is required for devices for central residential ventilation and air conditioning, switch cabinet cooling, as well as heat pumps and air purifiers. That is why compact fans that deliver high air flows with low back pressure are in demand, while operating as efficiently and quietly as possible.

It has now been over 10 years since ebm-papst launched the "RadiCal" centrifugal fan series. This has now proven itself in many ventilation and air conditioning systems. With the new RadiCal fans, the Mulfingen team is now presenting the second generation, which impresses with its high air flow rates, compact dimensions and pleasant noise characteristics.

New blade design improves aerodynamics

The opportunities in plastic production have enabled a new, innovative blade geometry, which contributes to significantly higher efficiency and lower noise levels. The "twisted" blades are mutually curved in on themselves. The shape of the inlet and outlet edges has been completely redesigned, which has a positive effect on the flow characteristics. The corrugated impeller cover plate and the struts profiled in the centrifugal module also improve the aerodynamic characteristics of the fans, and so too the air performance.

Significant noise reduction

Thanks to new production methods, it was possible to significantly reduce the air gap, i.e. the distance between the inlet ring and the impeller, depending on the size. This results in fewer losses, increases efficiency and reduces the noise. The new FlowGrid has also been optimized and lowers the noise level by up to 3 dB(A) compared to the current series version for installation-related intake-side disturbances.

New engine generation

Depending on the size of the fans, the new EC motors cover the power range for single-phase grids up to 800 W. Fans for three-phase grids and powers of up to 1.5 kW will follow at a later stage. There are no disruptive resonances when there is a change in speed. In addition to good noise characteristics, the new generation of motors also impresses with its good EMC characteristics and durability. The commutation and control electronics are tuned to the motors. The air flow and operating point can be precisely adjusted. Control and monitoring are possible from 0 - 10 V/PWM or, from the 170 W version, there is a MODBUS RTU option.

Compact and easy to integrate

Since no other installation situation is the same, the new centrifugal fans are very adaptable. They are available with or without a ready-to-install housing. The new Radical will be available in the familiar sizes 175, 190, 225, 250 and 280. Size 206 is new and improves the power rating. This means that the right centrifugal fans are available for efficient residential ventilation or switch cabinet cooling, not only delivering high air flow rates, but also operating extremely quietly.

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Fig. 1: The particularly impressive features of the new RadiCal centrifugal fans are high air flow rates, compact dimensions and good noise characteristics, and they are available in various designs.

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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 drives. Since the technology company was founded in 1963, it has continuously set the global industry standard with its core competences in motor technology, electronics, digitization and aerodynamics. With over 20,000 products in its portfolio, ebm-papst provides the best energy-efficient, intelligent solution for virtually every ventilation or drive-engineering task.

In fiscal year 2021/22, the "hidden champion" generated revenues of € 2,288 billion. The group employs roughly 15,000 people at 29 production sites (in Germany, China and the USA, to name but a few) and in 51 sales offices worldwide. ebm-papst sets the benchmark with their fan and drive solutions which are used in almost all industries, such as ventilation, air conditioning and refrigeration, heating, information technology, mechanical engineering, household appliances, intralogistics and medical engineering.

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