

Reduction in outlet losses with centrifugal fans Air guide modules increase efficiency

Ventilation and air conditioning fans are constantly being developed, as user demand for control options and energy efficiency in particular are increasing rapidly. Legal requirements, increasing environmental awareness, and potential for operating cost savings are all playing a role in this trend. Data centers, building air conditioning and manufacturing industries can benefit just as much as shopping malls or supermarkets around the corner.

For some time now, motor and fan specialist ebm-papst has been employing a continuous improvement process in fan technology. In recent years, the centrifugal fans in the RadiPac series, specially designed for use in air conditioning and ventilation units, have been constantly optimized, with particular emphasis on energy efficiency, noise reduction, and simple handling. With the new RadiPac C Perform fans, we have now succeeded in improving this successful product range once again. Special air guide modules reduce outlet losses and increase efficiency levels by up to 5 percentage points, while the proven support brackets remain. The mounting dimensions and mounting hole patterns remain identical, meaning that virtually no design changes are necessary in the application to benefit from the higher efficiency levels and lower current consumption.

Air guide modules increase efficiency

The new housing of the RadiPac C Perform consists of four module segments made of galvanized sheet steel and with an aerodynamic shape. Due to the special shape, the flow speed is delayed, which reduces the dynamic pressure component and increases the usable static pressure component. In addition, the new flange plate was turned by 15 degrees and provided with recesses at the flow outlet. This also contributes to reducing outlet losses. At the same operating point, for example, the fans can now run at a lower speed, meaning that less energy is required.

Different versions and sizes

The energy-saving RadiPac C Perform fans with air guide modules in a support bracket are currently available in seven sizes (BG 280 to BG 630) and with outputs from 4 to 8 kW. Versions without air guide modules are available in the same sizes with motor powers from 85 W to 8 kW. Whether users choose the new RadiPac C Perform fans with air guide modules or the tried-and-tested variants with open support bracket depends primarily on the type and duration of use, the required air performance, the desired speed range and the application's pressure ratios. The FanScout selection program helps you select the right one.

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March 2023 - Page 1 of 2

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Image: In the RadiPac C Perform centrifugal fan, the four-part air guide module reduces outlet losses, increasing the efficiency by up to 5 percentage points.

Fig. 1 ebm-papst
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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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