

FanDrive DV280: 24 kW driving force

High-performance EC external rotor motor for axial and centrifugal fans

Large fans are often used in ventilation technology, in systems for generating process cooling, and in cooling towers. They are often still driven by AC motors. High-performance EC motors, which operate at high efficiency levels, offer an alternative. ebm-papst has now also developed one such alternative in the form of the FanDrive DV280.

Energy-efficient drive even for large fans

With its new FanDrive DV280, ebm-papst has developed a new high-performance EC external rotor motor whose output of up to 24 kW and impressive torque of 180 Nm make it suitable for universal use on large fans worldwide. The robust motor is designed for heavy-duty industrial applications and operates with the high efficiency of up to 95 percent that is typical of EC motors. Its integrated permanent magnets mean that the new motor does not require any rare earths, and its external rotor design and sturdy construction make for a compact unit with optimum protection against environmental influences. The special rotor geometry and an additional fan, which actively cools the electronics during operation, ensure reliable heat dissipation from the motor. As a result, the high-torque EC motor is ideal for operating centrifugal fans in HVAC systems or axial fans in cooling towers, for example.

Direct drive for complete plug & play solution

As the complete control electronics are integrated in the motor, there is no need for external devices such as variable frequency drives that have to be assembled, wired and parameterized. The electronics can be replaced for possible maintenance work without having to disassemble the motor or fan. The electrical interfaces are programmable, which reduces the number of connection terminals required and hence the wiring work.

Because it is a direct drive, one of the advantages of the FanDrive DV280 is that it eliminates the need for high-wear, high-maintenance belt drives. The fan impeller, which is centrifugal or axial depending on the application, can be mounted directly on the robust stub shaft or directly on the rotor flange. The compact external rotor design of the motor means that the entire fan unit requires little space, which simplifies transport and assembly of the complete plug & play solution. It arrives at the construction site with perfectly coordinated motor, electronics and fan technology as a fully assembled, compact unit. Even large, size 800 RadiPac centrifugal fans that convey air at up to 50,000 m³/h wide open and reach maximum pressures of 2,300 Pa, fit through normal doors in retrofit projects, for example, and do not have to be delivered by crane.

Automatic resonance detection

An integrated vibration sensor enables automatic resonance detection, which increases operational reliability. This is because premature fan failures are usually caused by vibrations due to the installation situation. The control software in the electronics automatically adjusts itself so that these speed ranges are "hidden" during further operation.

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Image: With its FanDrive DV280, ebm-papst has developed a high-performance 24kW EC motor that is suitable for universal use.

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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, automotive, information technology, mechanical engineering, household appliances, intralogistics and medical engineering.

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