

ebm-papst at SPS Nuremberg 2023

Robust compact fans protect power electronics efficiently

The SPS automation trade fair will take place from November 14 to 16, 2023 in Nuremberg. ebm-papst will be presenting its smart and innovative solutions for drive and air technology in Hall 1 at Stand 1-324. In Nuremberg, the technology leader will focus on its solutions for control cabinet and electronics cooling, industrial drive technology and automation. An expert presentation on drives in AGVs rounds off the range of solutions for a networked future.

Axial compact fans resistant to high back pressures

ebm-papst has now expanded its AxiForce compact fan series with a smaller fan, which it is presenting in Nuremberg. The AxiForce 40 is extremely compact (40 x 40 x 28 mm) and, with a maximum static pressure increase of 1400 Pa, enables reliable operation in the diverse applications of high-performance electronics. With PWM control input, it is infinitely variable in the speed range from 3,000 to 27,000 rpm. The optional full encapsulation provides protection against salt spray, ingress of water and foreign bodies in accordance with IP68 and ATEX EN 60079-7 (Group IIC, T3). The robust compact fan easily withstands continual temperature changes and other weather conditions.

Blade design improves centrifugal fan aerodynamics

Another product highlight is the second generation of the RadiCal series. Its most impressive features are its high air flow rates, compact dimensions and pleasant noise characteristics. The capabilities in plastic production enabled a new, innovative blade geometry to be achieved and the tip gap to be significantly reduced. 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 intake-side disturbances related to installation. The new generation of motors in the RadiCal also impresses with its good EMC behavior. The fans are available with or without a ready-to-install housing in the familiar sizes 175, 190, 225, 250 and 280. Size 206 is new and improves the power rating.

Intelligent drives with EtherCAT interface

Reliable and intelligent networking solutions are the focus of the drive technology specialists. Within the ECI series, drives, for example in the size 63 modular drive system, are already established with an integrated BUS interface called K5 electronics functionality. Now the internal rotor motors can also be addressed via EtherCAT using high-performance interface electronics. The main advantages for decentralized drives are synchronizing several axes, the reduced time and effort required for integration, and a space-saving design within the machine. EtherCAT is real-time capable and offers high synchronization accuracy to the nanosecond. The electronically commutated ECI motors of the modular drive system cover a power range from 30 to 750 watts in sizes 42, 63 and 80 mm, for example. Different transmissions matched to the drives then ensure the necessary reduction ratio for the high-speed internal rotors.

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Crown gearhead technology: economical and efficient

For many applications, it is necessary to transmit the force "around the corner". A particularly economical and efficient angular gearbox can be realized with crown gearhead technology. This high-efficiency transmission technology has now come to the fore in areas such as decentralized drive technology. The right combination of efficient motors, transmissions, and control systems enables high energy savings even in the power range below 250 W. The transmission specialists at ebm-papst have redefined traditional crown gearboxes of various sizes cover the reductions in the single-stage range up to 10:1, two-stage to 113:1 and three-stage to 289:1. Due to the cylindrical design of the involute drive pinion and the rolling contact between the pinion and the crown gear, there is hardly any friction loss. Therefore, even at high reduction ratios, the efficiency is in the range of 90% – over 90% in the single-stage range – and can be produced more economically than bevel gears.

Expert presentation on intelligent use of AGVs

In an expert presentation entitled "The right drive solution for automated guided vehicles", Steffen Schmidt, Market Manager Intralogistics at ebm-papst, focuses on the simple integration of the ArgoDrive driving/steering system in AGVs. As part of this, he emphasizes the contribution of omnidirectional AGVs in OEE (Overall Equipment Effectiveness). The presentation will take place on Wednesday, November 15, 2023, at 10 am in the Forum Hall 8 (Stand 8-410).

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Fig. 1: The RadiCal 2 and AxiForce 40 compact fans are perfect for the requirements of control cabinet and electronics cooling.

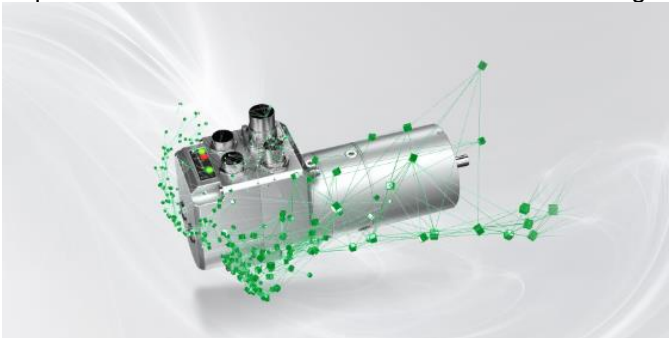


Fig. 2: The drive technology experts at ebm-papst will be presenting their solutions with EtherCAT interface and Optimax angular gearboxes.

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Fig. 3: In his presentation, Steffen Schmidt, Market Manager Intralogistics at ebm-papst, brings the simple integration of the ArgoDrive driving/steering system in AGVs into focus.

Images	ebm-papst
Characters	approx. 5,000 in total, including headings and sub-headings approx. 3,200 intro + drive technology field approx. 2,200 intro + air technology field
Tags	EtherCAT, modular drive system, ECI, Optimax, planetary gear, centrifugal fan, RadiPac, electronics, switch cabinet cooling, energy efficiency, compact fan
Link	www.ebmpapst.com/sps

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.

In the 2022/23 financial year, the Group generated turnover of EUR 2.54 billion. It employs just under 15,000 people at 30 production sites (including in Germany, China and the U.S.) and in 50 sales offices worldwide. ebm-papst sets the benchmark in almost all sectors, such as ventilation, air conditioning, and refrigeration technology, heating technology, information technology, mechanical engineering, intralogistics, and medical technology.

In St. Georgen, ebm-papst develops intelligent solutions for sectors such as intralogistics, electronics and medical technology. ebm-papst St. Georgen includes the Herbolzheim plant, the site in Lauf in Franconia and a production site in Oradea, Romania.

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