

Powerful, compact, and flexible drives for intralogistics

Precise sprinters make shuttles quick

Shuttle vehicles are often used to quickly and efficiently store, move, and remove different types of products in warehouses, so that picking and shipping can run smoothly. The shuttles require the use of drive systems that meet strict requirements in terms of dynamics, positioning accuracy, and service life, and that are high-torque despite their compact dimensions.

The same applies to shuttle applications as to all intralogistics: the faster the vehicles can accelerate and brake, the higher the throughput rate and the more goods can be picked or supplied. Other important prerequisites for this are accuracy when approaching the storage areas and when handling the products or product carriers, and reliability.

Modular drive system for greater flexibility

The type of drive that is used depends very much on the design of the shuttles. Drive solutions from a single source provide logistical benefits, simplify coordination, and shorten the time to market. That is why ebm-papst offers a wide selection of motors, control electronics, transmissions, and brake and sensor modules that can be combined to create a tailor-made drive. The electronically commutated ECI motors cover a continuous power range from 30 to 750 watts in sizes 42, 63, and 80 mm. Then, different transmissions matched to the drives ensure the necessary reduction ratio of the high-speed internal rotor motors. The transmissions can also be combined with the external rotor motors in the VDC series. The latter cover a power range of up to 125 watts in the smallest installation space and also boast a long service life and good control properties.

Bespoke telescopic drive

The available installation space for the telescopic drive in the shuttles is usually very tight. This is a typical area of application for the VDC 49.15 external rotor motor, for example. With a power of 110 W, it is just 52 mm long with a diameter of 63 mm and can also be easily combined with the robust Optimax planetary gear. This compact design means that one drive can be used per telescopic arm, thus two drives per telescope, which massively increases the power density of the shuttle and the throughput rate of the warehouse.

Project-specific engineering

The modular drive system has several thousand variants in total. Defined preferred types are ready for shipment within just 48 hours, making them available for sampling exceptionally quickly. In addition, the motor and transmission specialists offer project-specific engineering, e.g., when it comes to fine tuning the motors or special transmissions and when adaptations to the overall length, cable assembly, or additional encoders are required.

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30. May 2023 - Page 1 of 3

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Fig. 1: Modular drive system: All individually selected drive components are placed in a common housing.

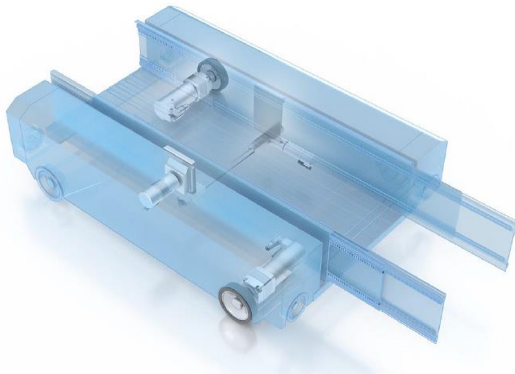


Fig. 2: The ECI internal rotor motors, for example, are ideal for use as shuttle traction drives.

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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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