

Press Release

Innovations for sustainable textile production: Lenze presents the IE5/IE6 motor drive system at ITMA Asia

Singapore/Aerzen, October 28, 2025 - The demands for sustainability in the industry are increasing rapidly. Particularly for new systems and modernizations, the focus is shifting to reducing grid connection power and operating costs. Lenze is meeting this global demand with a solution that sets standards: The Motor Drive System IE5/IE6. With efficiency classes up to IE6 and a sensorless control concept, Lenze offers a technology that can be used internationally. The combination of high energy efficiency, simple integration and robust performance makes the system the ideal choice for machine builders and end customers looking for eligible solutions to sustainably reduce their energy costs and CO₂ emissions. Lenze will be presenting this solution at the world's largest trade fair for textile and clothing technology, ITMA Asia (October 28-31, 2025 in Singapore), in Hall 7, Stand B201.

With innovative drive technology, Lenze is setting new standards in sensorless control of industrial applications. The open-loop control of the IE5/IE6 motors offers a highly efficient solution for applications that rely on high precision. Thanks to a starting torque of up to 300 % from 0 rpm and high-resolution rotor position detection, the motors enable exact torque control without additional hardware. The technology reduces motor losses by over 60 % compared to IE2/IE3 and at the same time cuts system costs by up to 50 %. The open-loop concept is particularly impressive in dynamic applications such as textile machines thanks to its energy efficiency, robustness and ease of integration.

Impressive performance: 300 percent starting torque (overload torque)

The IE5/IE6 motor drive system enables an overload torque of up to 300% directly from standstill. Starting at full load is reliable and completely without

motor feedback - a powerful combination of efficiency and simplicity. This means that the system can be designed more precisely for continuous operation, as it is not oversized, and then delivers the required power immediately.

Lenze offers the new m550 synchronous motor in outputs of 0.25 - 11 kilowatts (kW) and m650 for dynamic applications in 0.75 - 22 kW. Both can be seamlessly combined with gearboxes from the Lenze modular system. Helical, angular or bevel gearboxes are available for a wide range of requirements.

Sensorless and safe

Thanks to the precise control of the m550/m650 synchronous motor, encoderless positioning is possible with the i550. The integrated safety functions such as Safe Torque Off (STO) ensure machine and personal protection. In future, the system will be supplemented with additional encoderless safety functions such as Safe Limited Speed (SLS).

Energy efficiency and transparency included

The solution's integrated energy recovery system automatically feeds excess energy back into the mains - without any additional hardware. Machine operators also receive high-quality information from the machine sensors via the IO-Link interface and benefit from increased system transparency.

Efficiency meets scalability

The IE5/IE6 motor drive system meets all current and future energy efficiency standards and offers an excellent price-performance ratio. Thanks to the innovative control process, many applications for which servo systems are traditionally used can be solved without external feedback, such as goods transport in the finishing area. This makes the system particularly robust, low-maintenance and cost-efficient - ideal for the requirements of the textile industry.

"Our functional model with two stylized machine elements demonstrates this extremely impressively and dynamically using movement tasks in the area of

speed synchronization and positioning," says Klaus Dierkes. The combination consists of the m550/m650 motors, the g500 gearboxes and the current i550 and i650 inverter generation. The first synchronous motor that is as easy to use as an asynchronous motor.

About Lenze

Lenze is a leading drive specialist for machine and plant engineering. For more than 75 years, the company has been a pacemaker and strong partner at its customers' side. With the help of the triad of electromechanics, electronics and software, Lenze accompanies its customers and helps them to optimize production and logistics processes, cut costs and reduce their energy consumption.

The Lenze Group, based in Aerzen, employs more than 3,600 people worldwide and is represented in 45 countries. Group-wide, the company generated a turnover of 828 million euros in the 2023/2024 financial year.

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