

Logimat 2025 preview: CAN in intralogistics



Figure 1: At Logimat, EK Robotics presents customized and standardized transport robots with customer-specific load handling devices (Source: EK Robotics)

The international Logimat trade show for intralogistics solutions and process management takes place in Stuttgart (Germany) from March 11 to 13. In 2024 it saw nearly 70000 visitors. This year, more than 1500 exhibitors, also for CAN-based solutions, are expected.

The Logimat trade show covers most of the intralogistics solutions focusing on automation, digitalization, and sustainability in logistics processes. This year, Logimat is once again filling over 120 000 m² square meters in all ten exhibit halls of the Messe Stuttgart convention center. Expected is the intralogistics community from over 80 countries with more than 1500 exhibitors, including 200 attending the trade show for the first time. The Logimat Exhibition Director Michael Ruchty reflects: “The key themes of artificial intelligence (AI), sustainability, and skilled labor shortages are creating various challenges as the dominant global trends. At Logimat, exhibitors representing all industry sectors will present solutions and their latest developments to confront these challenges effectively.” The Logimat organizers have established similar trade shows in China (Shenzhen), India (Mumbai), and Thailand (Bangkok).

In the CAN Newsletter magazine 2-2024 we reported about CAN-based products and solutions presented at the [Logimat 2024 trade show](#). The companies Framo Morat, Gefeg-Neckar, EBM-Papst, Oceaneering, and Jungheinrich are presenting their solutions also at this year's trade show.

AGVs, AMRs, and carrybots

In the intralogistics industry, industrial robots are considered a key factor in optimizing processes and helping to counteract the shortage of skilled labor. The latest

developments in the field of picking robots can be viewed in the gallery in Hall 1. In addition to shuttle vehicles for shelf storage systems, several machinery and equipment manufacturers present service robots for untethered intralogistical transports. These automated guided vehicles (AGVs), autonomous mobile robots (AMRs), and carrybots are concentrated in Hall 8. In addition, the Mobile Robotics User Forum returns in 2025 to the gallery level in Hall 6, where members of Forum AGV offer expert advice to AGV users and other parties interested in mobile robotics.

Many of these AGVs as well as forklifts use embedded CAN networks to interconnect sensors, actuators, and controllers. In forklifts, also the lift functions are often controlled via CAN. The next generation of AGVs, traditional industrial trucks, and assistance systems also sets the tone for forklift manufacturers, exhibiting in Halls 9 and 10. Regarding forklifts, all major international industry players are represented this year with their latest portfolio. Manufacturers announced introduction of three- and four-wheel forklifts, counterbalance forklift trucks for the up-to-two-ton segment, a new series of electric side forklifts, and the market launch of the world's first automated cobot for pallet transport. Innovations in alternative powertrains, insights into the near and distant future of intralogistics using robots, drones, and autonomous vehicles are announced. In Halls 7 and 9, visitors can also find the latest innovations from suppliers of cranes, gates, loading technology, and fire protection systems and solutions. ▶

AGVs with CANopen

EK Robotics, established in 1963, showcases in Stuttgart its practical automation solutions alongside a piece of history. Visitors of Hall 8, stand B05, can explore original automated guided vehicles (AGVs). On a 200-m² stand, the company showcases standardized vehicles with customized adaptations as well as bespoke transport robots for managing complex intralogistics tasks. According to the company, sensors and actuators in all vehicles are interconnected via CANopen.

Some of the displayed models are derived from real customer projects, highlighting the versatility of the used technologies – from simple transport tasks to complex automation solutions.

Electro-hydraulic lifting system

The hydraulics specialist Hawe Hydraulik presents the Logar system in Hall 10, stand A 45. Developed for lifting and lowering AGV and AMR platforms, the maintenance-free lifting system combines energy efficiency and a long service life with a compact design, states the CiA member company. The patented development ensures precise synchronization and self-synchronization due to the serial connection of the four differential cylinders. The solution is supplied ready for integration. Operators can implement it via plug-and-play functionality, informs the company. CANopen interconnection of devices inside the Logar is possible, as the implemented drive control system supports CANopen. Compared to electromechanical applications, Logar applies 100 % of the forces vertically from the start of the stroke. This avoids lateral forces and reduces wear. "Our customers benefit above all from 1000000 maintenance-free cycles. This is because Logar has a three-times longer service life compared to electromechanical solutions," says Ahmed Wasel, Key Market Manager at Hawe Hydraulik.

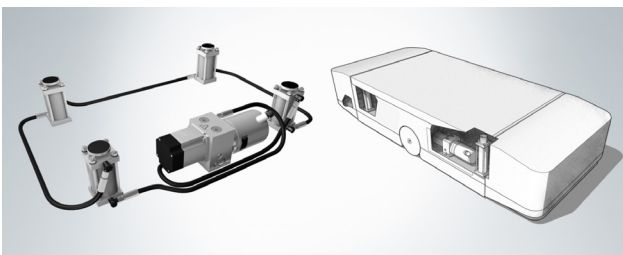


Figure 2: Logar lifting system provides compact and flexible design (Source: Hawe Hydraulik)

In addition, the efficiency of the integrated BLDC (brush-less) motor is higher than that of brushed motors, achieving 85 % to 90 % efficiency. Its pilot-controlled non-return valves hold loads of up to 1500 kg securely in position and prevent unwanted lowering. The lifting and lowering process can be switched quickly, directly and without loss, by the user changing the direction of rotation of the pump-motor unit. The system is also leak-free: the enclosed design prevents the ingress of impurities and the escape of oil, which further increases safety during operation.



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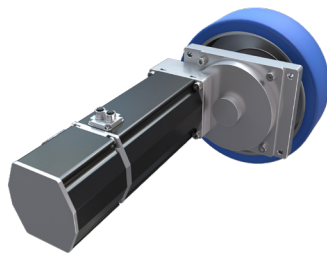
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With its compact design, Logar creates space for the installation of additional sub-systems in the vehicle. Thanks to a modular system, the solution can be customized according to requirements of the AGV and AMR platforms. "This means that our new development even exceeds some of the key requirements that are placed on AGV and AMR platforms," emphasizes Wasel.

Drives for driverless transport

Dunkermotoren, a brand of Ametek, is present in Hall 8, stand 8F09. Company's drive control solutions provide CANopen connectivity, supporting the CiA 402 profile for drives and motion control. For example, the CiA member shows the NG 1000 WO hub gearbox for driverless transport systems. In combination with the BG 95 Dpro drive, the overall solution is 95 mm high and, thanks to the axle offset, enables vehicles with a minimum width of 600 mm and a possible total weight of 4 t. Variants with reduced gear backlash also allow particularly precise positioning of the vehicle, informs Dunkermotoren. The availability of particularly low-noise versions means that mobile, self-propelled devices such as MRI (magnet resonance imaging) or X-ray machines can conquer the medical sector.

Figure 3: NG 1000 WO hub gearbox for driverless transport systems (Source: Dunkermotoren)

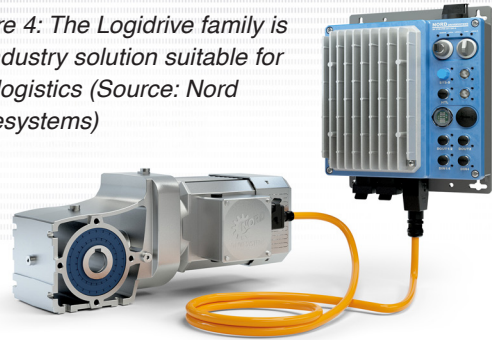


The BG 42 brushless motor is already used in various applications. Its follower BG 42 Dgo is a four-quadrant integrated controller, which can be parameterized ex works and controlled via its inputs. By integrating the controller into the motor housing and optimizing the operating parameters, a particularly efficient drive can be configured that saves valuable energy, says the manufacturer. The drive can also be integrated into belt and roller applications. The exhibited BGE 8060 Dpro is a compact four-quadrant controller for brushless and brushed DC motors with a continuous output power of up to 1800 W. With a 72-A continuous current and 175-A peak current, it offers enough power for motors such as the BG 95 Dcore and BG 75 Dcore as well as for other applications requiring currents from 10 A to 72 A. The programmable (C language) controller is adaptable to different applications. It also integrates the safe torque off (STO) function and offers connection options for encoder and brake.

The CANopen-capable Nexolink is a basic module for IIoT (industrial Internet of things) integration of all drives from the manufacturer. This enables smart diagnostics and predictive maintenance of the drives. On its stand, the manufacturer also presents the Iw.hub autonomous mobile robot (AMR) from its partner Idealworks. The AMR integrates drives from Dunkermotoren.

CiA member Nord Drivesystems shows its product portfolio in Hall 3, stand 3C41. The company offers CANopen-connectable drive solutions as well. For instance, the Logidrive product family provides drive systems for

Figure 4: The Logidrive family is an industry solution suitable for intralogistics (Source: Nord Drivesystems)



post-and-parcel, airport, and warehouse sectors. The devices are characterized by their low weight and compact installation space. The Logidrive Basic variant consists of an IE3 asynchronous motor, the Nordac-On drive, and a gear unit. This solution mainly focuses on the acquisition costs and provides a large adjustment range, says the manufacturer. The Logidrive Advanced variant consists of the IE5+ synchronous motor, the Nordac-On+, and a gear unit. It was optimized in terms of energy efficiency. The high efficiency over a large speed and load range enables variant reduction for more streamlined processes and reduced administration and warehousing costs. This is of advantage for large systems with numerous drives and further reduces downtimes.

The decentralized Nordac-On/On+ frequency inverters are characterized by their compact design, plug-and-play capability, and reliability, states the company. They also offer PLC functionality for drive-related functions (PLC onboard). The inverters are designed for power ranges from 0,37 kW to 3,7 kW.

The IE5+ synchronous motors with efficiencies of up to 95 % surpass the highest defined efficiency class and are characterized by their compact, hygienic design in a small installation space. Available versions are TENV smooth motor, TEFC motor with cooling fins and integrated Duodrive geared motor with a power range from 0,35 kW to 4 kW. The company also provides the Nord Eco service to analyze existing systems and reveal potential for saving energy. Additionally, Nord released the third version of its Windows parameterization software for setting up and monitoring drives. A customizable dashboard, a context-sensitive help function and a revised oscilloscope support application-specific control of the drive solutions. Nord develops and produces drive solutions for more than 100 industries. It supplies gear units for torques from 10 Nm up to over 282 kNm, electric motors in the power range of 0,12 kW to 1000 kW, and the required power electronics with frequency inverters of up to 160 kW. Inverter solutions are available for control cabinet installations as well as for decentralized, integrated drive units.

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