Modular Motion Control Platforms accelerate development and increase flexibility

Dunkermotoren demonstrates how a modular system approach enables faster, scalable, and application-specific drive solutions

Rising demands for shorter development cycles, increasing product variants, and growing system complexity are reshaping machine design. To address these challenges, modular motion control platforms are becoming a key enabler for efficient and flexible drive system development. Dunkermotoren advances this approach with a modular system architecture that allows machine builders to configure tailored motion solutions quickly, reliably and with reduced development risk.

Instead of developing fully customized systems from scratch, OEMs can combine proven components within a standardized platform. Motors, gearboxes, encoders, brakes, electronics and software are aligned within a modular architecture, ensuring compatibility and simplifying system integration. This significantly reduces technical complexity while accelerating the transition from concept to implementation.

A faster Path to Application-Specific Drive Systems

The shift toward integrated drive systems reflects a growing need for coordinated application-ready solutions. By optimally matching mechanical and electronic components, modular systems help reduce design complexity, streamline engineering workflows and support a wide range of machine variants without increasing development overhead.

Dunkermotoren’s modular platform supports this transition by enabling preconfigured and application-specific combinations built from proven technologies. Standardized interfaces, harmonized components, and scalable configurations reduce integration work and shorten development time, while maintaining the flexibility required for both near-series production and highly customized applications.

For OEMs and machine designers, this means a faster and structured path from concept to implementation, with greater confidence in system compatibility, performance, and scalability.

Modularity built on a Broad Technology Portfolio

The foundation of this modular motion platform is Dunkermotoren's broad portfolio of drive technologies, including brushed and brushless DC motors, AC motors, linear drives, gearboxes, encoders, brake systems and integrated or external electronics.
These components can be combined into complete drive systems with integrated control, feedback and software configuration. The result is a coherent motion solution tailored to the specific requirements of the application, while benefiting from the reliability of proven components.

This modular architecture enables customers to:

- Reduce engineering and integration effort
- Adapt efficiently to changing application requirements
- Scale solutions across machine variants and product families
- Reuse validated technologies instead of redesigning systems
- Achieve consistent performance with optimized development resources

Relevant Across Diverse and Dynamic Applications

Modular drive systems from Dunkermotoren are used in applications such as conveyor and intralogistics systems, AGVs and AMRs, packaging and production machinery, agricultural equipment, door- and access systems, medical technology, laboratory automation and machine tools.
In these environments, manufacturers require flexible system concepts that can evolve alongside changing market demands. Modular concepts provide a structured way to manage increasing variant diversity while maintaining control over development time and system complexity.

Integrated Electronics and Digital Extension

An important part of the modular approach is the increasing integration of electronics directly into the drive system. Integrated control solutions reduce external components, simplify wiring, safe space and enable more decentralized machine architectures, contributing to more efficient system design.

Beyond hardware, Dunkermotoren enhances its platform with digital value-added services through nexofox. Digital twins based on Asset Administration Shell (AAS) technology provide standardized access to product, operating and condition data throughout the lifecycle. This improves transparency, simplifies engineering and commissioning and supports seamless integration into Industry 4.0 and Factory-X environments.

Data-driven services such as predictive maintenance further expand the value of the modular platform. Condition and wear data can be captured directly from the drive, enabling deviations in operating behavior to be identified early, maintenance to be planned more proactively, and unplanned downtime to be reduced.

Modularity as a Practical Business Advantage

Modular motion platforms provide more than a technical framework – it is becoming a practical business advantage. It offers a scalable approach to manage complexity in modern machine design. By combining validated components, integrated electronics and digital services, Dunkermotoren enables OEMs to reduce development effort, accelerate time-to-market and implement application-specific solutions with greater confidence.

With this holistic approach, Dunkermotoren's modular system supports both efficient development and reliable operation across the entire lifecycle of machines and systems.

Your contact Public Relations:
Dunkermotoren GmbH
Martina Jägler
Allmendstr. 11
D-79848 Bonndorf
Tel.: +49 7703 930-314
Martina.jaegler@ametek.com