



Press Release

Tuesday, 12. September 2017

Perfect Motion for Agricultural Machinery

Baumüller is presenting individual drive concepts and industry-specific components for mobile working machines at Agritechnica 2017

From November 12–18, 2017 Baumüller will participate in Agritechnica in Hanover. The Nuremberg-based drive and automatization specialist will present its motors and systems in hall 17 at booth H05. Experts at the trade fair will present their services for the design, engineering and development of individual drive solutions for agricultural technology.

Baumüller utilizes decades of experience from motor development as well as the production of electric motors and offers energy-efficient components and complete solutions for hybrid and fully-electric drive systems. The low-noise and low-emissions drive solutions are used, among other things, in hybrid agricultural machines, snow groomers or fully-electric city buses.

Intelligent Drive Solutions

The drive system of a fully-electric municipal vehicle can be seen as an exhibit at the Baumüller trade fair booth. With this solution, two electric drives were mounted to the rear axle of the vehicle. Each drive system consists of a Baumüller DSA synchronous external rotor motor with integrated inverter.

Baumüller also designed and implemented the drives for a loader. The loaders typically driven with combustion engines also operate hydraulic cylinders via the diesel drive, for the bucket for example. For one order, both the traction drive as well as the drive of the hydraulic cylinders were completely converted to be fully electric.

Product Highlights

Designed for four-quadrant operation, the b maXX mobil controller can break in both directions and recover energy in addition to generating drive. For mobile use, the controller is vibration resistant and can be used in temperatures between -25° and $+65^{\circ}$ Celsius. For example, the B maXX mobile is suitable for use as a wheel-hub drive with DSM disc motors, which excel thanks to their compact design, highly dynamic running characteristics and low maintenance requirements. Baumüller thus provides a space-saving and high-performance solution.

With its high power density, compact and sturdy design and recuperative ability, the drive concept powerMELA® meets all the requirements of the electric mobile drive technology. The compactness is due to the integration of the inverter on the one hand and the compact design of the electric motor on the other. The motor offers a high power density thanks to its innovative direct cooling concept. The drive system thus requires minimum installation space and only weighs around 300 kg with the

motor, inverter and transmission. In addition, Baumüller has designed the permanent magnet synchronous motor with deeply buried magnets. The drive is thus particularly robust on the one hand and powerful on the other with high torques beyond the entire speed range. The motor is available in the performance classes of 40, 80 and 140 kW.

BAUDIS IoT increases availability

BAUDIS IoT is an innovation in the field of mobile working machines. The system optimization tool helps to improve the efficiency of the drives. The networked system consists of sensors, a BAUDIS IoT box and an easy-to-use software with smart data algorithms. BAUDIS IoT monitors the process data of the drive, such as the motor status, power peaks and runtime. The data is collected in the BAUDIS IoT box and passed on to a local server or a cloud server. The performance data is analyzed and visualized there with the BAUDIS IoT software. By using BAUDIS IoT, for example, benchmarks can be set and the electric drive and load cycles can be optimized. The evaluation always occurs with the latest available algorithms. The system is thus continuously made more intelligent and increases performance through self-regulating processes. The system can be used independently of the manufacturer of the motor and automation components and the sensors and therefore can easily be retrofitted and upgraded.



Fig. 1: Baumüller offers energy-efficient components and complete solutions for hybrid and fully electric drive systems. The low-noise and low-emissions drive solutions are used, among other things, in hybrid agricultural machines



Fig. 2: The drive concept powerMELA® consists of a combination of permanent magnet synchronous motor and power inverter for the four-quadrant operation and is suitable as a hybrid or purely electric drive system for commercial vehicles and mobile working machines



eTruck – E-Mobility for functional vehicles & agricultural machines <https://youtu.be/nl8l-1E99bA>



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Based in Nuremberg, Baumüller is a leading manufacturer of electric automation and drive systems. Around 1,750 employees are planning, developing, fabricating and installing intelligent system solutions for mechanical engineering and e-mobility at six production locations and 40 branches worldwide – from the user interface to motion control software as per PLCopen, software modules and controls all the way to converters, electric motors and the entire service program for automation solutions.

Baumüller's full range of services also includes the areas of service, installation, assembly and relocation. Baumüller is one of the leading automation partners in mechanical engineering worldwide.

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