# DRIVE
Intelligence

BAUMÜLLER

Baumüller is a pioneer in the field of drive-integrated intelligence. Our core competence is to control complex, highly dynamic and precise movements with pinpoint accuracy. Our goal is for every machine manufacturer to be able to use this high-performance motion control in their machines. That's why, over 30 years ago, we introduced intelligent converters to the market to enable these solutions to be integrated independently and flexibly into any existing machine topology. As a result, our customers achieve higher machine performance, are quicker to market, and can respond more flexibly to customer requirements.

## DRIVE INTELLIGENCE ADVANTAGES

**Performance:** If the intelligence is distributed decentrally, only preprocessed data or even only status messages are still transmitted via the fieldbus communication between the drive and central control unit. The actual target and actual values of the motion control and safety tasks are processed directly within the machine module at the much faster controller cycle.

**Modularity:** Only intelligent drive technology makes modularization possible. The superordinated control only communicates with the intelligent servo drives of the machine modules and no longer communicates with the individual system components. If the machine modules are encapsulated, commissioning can be done separately, eliminating the need for commissioning the entire system and saving time and costs.

**Simplify:** If the machine is set up decentrally, all tasks related to the respective machine module can be computed in the intelligent drive. This significantly reduces the PLC project's complexity in the central control unit.

**Connectivity and IoT:** By capturing and pre-processing data within the drive and directly communicating this via standardized interfaces, the fieldbus is less loaded. This accelerates communication within the system and reduces cycle times. By separating different communication networks, a higher level of security is possible.

**Artificial Intelligence:** Intelligent servo drives can provide data faster than the central control unit due to their proximity to the process, acting as a data hub and enabling optimal performance for AI applications. Additionally, when combined with external sensors, the drives can also serve as a sensor hub.

# DRIVE INTELLIGENCE

Because speed matters: Baumüller Drive Intelligence is the shift of intelligence from the central control unit into our servo drives

In addition to control tasks, the servo drive takes over control functions, optimizes itself during operation, and is IoT-enabled.

BE IN MOTION



## Tasks of intelligent servo drives

- Real-time monitoring (energy monitoring, condition monitoring)
- Monitoring and analysis of process characteristics in real-time
- PLC control functions
- Faster data acquisition,
- pre-processing, and data transmission
- Direct communication with other participants in the system (e.g., AI, sensors)
- Autonomous response to changes of state
- Extended safety functions

## Systems with drive-integrated control technology are particularly suitable for:

- Applications with highly synchronous motion control
- Applications with high requirements for speed and quality
- Modular machine concepts
- Applications with limited installation space

## For the relocation of control and monitoring functions into the drive, Baumüller offers two platforms:




### b maXX softdrivePLC

- For single-axis applications
- Part of the firmware
- Simple motion control
- Analytics
- Pre-programmed machine modules




### b maXX drivePLC

- For multi-axis applications
- Complex motion control
- Analytics
- Cluster-capable as a main or sub device
- IoT functions and a database for AI models
- Extensive machine templates

## Additional information

- Website b maXX drivePLC – Drive-integrated PLC for decentralized automation concepts
- Baumüller Insights: Smart and versatile – How intelligent servo drives can optimize production processes

**Interested in our system solutions?**

Scan the QR code and contact us now.
https://www.baumueller.com/en/contact

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