Digitization is prevailing in all spheres of life – in addition to society, the processes in business life are also increasingly being affected. Processes within production and between several production sites worldwide are interlinked thanks to the latest information and communication technology. In addition to “smart factories”, fully networked value added chains are created in which suppliers, producers, customers, logistics and service units are equally integrated. People, machines, systems, logistics and products communicate with each other directly in Industry 4.0. The basis for this is formed by intelligent, digitally-networked components and systems, which make a largely self-organized production possible. The aim of Industry 4.0: Intelligent, efficient and flexible production. The advantage: Companies can produce tailor-made products according to individual customer requirements more easily than before – and at competitive costs.

**Market Demands**

The consumer is the source of the requirements for Industry 4.0. Producers must adapt to the constantly-changing requirements of their customers:

- Individualized products
- The rising number of product versions
- Faster product and assortment changes
- Competitive prices
- Faster delivery

**Producer requirements for mechanical and plant engineering**

The market demands must be implemented in production and the machine design:

- Easy integration of machines into existing systems (modularization and networking)
- Customizable production
- Increased productivity at competitive costs
- Optimized processes and smart monitoring for higher machine availability
### Engineering

**Simulation – Higher level of efficiency and quality in the machine’s development process**

**Challenge**
- Increasing complexity in the development of machines and systems as well as growing requirements for flexibility
- Increased engineering and commissioning extent of work for the development of new machines (personnel and financial)
- Longer time-to-market

**Baumüller solution**
- Models for the simulation of Baumüller drive components (e.g. for converter series b maXX 4000 and 5000)
- Engineering support in the design and implementation of the entire machine with common simulation tools

**Your benefits**
- **Faster time-to-market**: More efficient engineering, software can be tested on virtual machines during the development phase (different configurations, different customer cycles)
- **Machine optimization**: Errors are corrected at an early stage and the interplay of the individual components is evaluated in advance
- **Increase in efficiency**: Drives’ accuracy through simulation of the entire system saves operating costs

### Commissioning

**Guided commissioning through wizard – Fast and fault-minimized machine set-up**

**Challenge**
- Risk of incorrect input or incomplete data input during commissioning of machines and systems
- More economical time-to-market
- Specific expertise required for commissioning

**Baumüller solution**
- Operating and parameterizing tool ProDrive for the parameterization, commissioning, analysis and diagnosis
- Integrated wizard quickly and easily guides the user through the individual steps of the basic commissioning of the servo pump

**Your benefits**
- **Faster commissioning**: Selection of a motor/converter combination instead of input of parameters
- **Error prevention**: Due to the step-by-step guidance through the program, no input is forgotten and the risk of faulty inputs is minimized
- **User-friendly**: Group of employees in the company that can carry out commissioning is expanded

### Operating

**Ubiquity – Remote maintenance and programming at the highest level of safety certified according to IEC 62443-3-3**

**Challenge**
- Global access to machines and systems for quick and efficient remote maintenance and programming
- High demands on industrial security for safe connections

**Baumüller solution**
- Ubiquity runtime environment pre-installed on all Windows-based b maXX HMIs
- Can be used without additional application programs or separate hardware
- Certified according to IEC 62443-3-3, BSI basic protection catalog (Federal Office for Information Security)

**Your benefits**
- **Increased availability**: Secure, quick and global remote diagnostics and fault rectification
- **Reduced service costs**: Quick expert support for different customers at the same time is possible as well as savings of travel time and travel costs
- **Easy to use**: No advanced IT skills required for configuration and use
Consultation

IoT consultation and IoT engineering services for your competitiveness

Challenge
- Requirements for mechanical engineering are increasing (e.g., greater productivity and machine availability, predictive maintenance, etc.)
- Requirements for producers are increasing (e.g., customizable production, flexible integration of machines and plants into existing systems)

Baumüller solution
- IoT consultation for your first steps towards Industry 4.0 by specialists of the Baumüller group
- Tailor-made hardware and software solutions in the areas of preventative services, connectivity (e.g., networking of existing systems) as well as the realization of holistic IoT solutions for production

Service

BAUDIS IoT – Predictive maintenance and process optimization reduces service costs

Challenge
- Ongoing optimization of availability required in production
- High maintenance and spare parts costs due to fixed maintenance intervals
- Heterogeneous machinery with different manufacturers and years of manufacture
- Globally deployed, highly-specialized service teams

Baumüller solution
- Complete BAUDIS IoT system
- Design and consultation, sensor system, evaluation units, software, connection to the IT infrastructure
- Digitization of brownfield and greenfield plants

Your benefits
- Increased availability: Predictable maintenance measures reduce service costs and breakdown time
- Cost reduction: Maintenance and replacement only due to actual wear
- Service optimization: Resource-optimized planning of service deployments
- Increased productivity: Ongoing process analysis and optimization through customizable big data algorithms
- Scalable solution: Can be used independently of the manufacturer and year of manufacture and thus is flexible to retrofit and expand

Products and Partners for Industry 4.0

Ubiquity – Secure remote maintenance solution

Safe remote access to your machines and systems worldwide. The solution is certified according to IEC 62443-3-3 and is pre-installed on Baumüller Windows-based HMIs. The software convinces with an open and user-friendly programming platform.

BAUDIS IoT – Predictive maintenance system

The system is suitable for IoT retrofitting of existing and new machines. Using intelligent big data analyses, process data and device data, your maintenance and servicing can be intelligently planned, thus significantly reducing service and spare parts costs. The system can be used regardless of the manufacturer and year of manufacture.

Baumüller Anlagen-Systemtechnik – System engineering from a single source

The specialists for consulting, project planning and the realization of optimized and efficient automation systems implement your systems in a customized manner.

Baumüller Services – Intelligent service concepts worldwide

Increase your availability through predictive and comprehensive service concepts – from maintenance to retrofitting.

IEMTEC – IoT and engineering specialists

The consultation and engineering company IEMTEC advises you in the implementation of Industry 4.0 strategies and new business models. Our specialists are your contact partners for digitization and IoT projects.

The Ubiquity software is a product of the Italian automation specialist ASEM S.p.A. The contract regarding the use of the software license is concluded with ASEM.

www.baumueller.com
As a specialist for drive and automation technology, the Baumüller Group supports mechanical engineering and producers in all phases of value creation. In the process, our specialists cover the entire value added chain from engineering to commissioning and operation to smart service concepts. In each of these phases we offer you specifically realizable solutions in the field of Industry 4.0.

Your advantages from Industry 4.0

Optimize your value creation processes and the processes of your customers with Baumüller. Take the first steps towards Industry 4.0 together with us!

Our specialists will be happy to advise you:
Send an e-mail to enabling@baumueller.de

www.baumueller.com