



## Significantly increasing productivity

Automation technology in the 21st century offers perfection in speed, precision and quality – and is flexible, smart and intuitive, too. In addition to pneumatic automation technology, applications with electric automation technology, and above all those featuring customer-specific combinations of the two technologies, are bringing the automation of the future into new dimensions of productivity.

Festo research projects, such as the Bionic Learning Network, Industry 4.0, or the industrial use of superconductors, will allow completely new applications for the contactless transport of workpieces within self-learning, self-adapting and totally flexible systems. Let's point out three enablers of productivity increase and three Industry 4.0 hotspots:

### IE and Industry 4.0

Even today, Festo is a market leader in networked and intelligent components and system solutions which make it an enabler of productivity. Only with sophisticated automation solutions will it be possible to meet the challenges of the future such as the desire for individualized and personalized products, the diversification and atomization of markets, rising energy costs and the enormous pressure on costs resulting from globalization and continuous technological change.

As a global player, Festo supports various Industrial Ethernet protocols as well as the established fieldbus protocols. But they hope to see a more harmonized standard like OPC UA as part of the Industry 4.0 discussion and standardization processes. I/O link and AS-Interface support on the sensor-actuator level.

### CPX terminal goes Industry 4.0

With its latest update, the famous CPX remote I/O terminal from Festo features an optional CODESYS controller on version 3, which gives the terminal a full 3-D motion control including CNC editor for small applications, plus an Industry 4.0 connection via an OPC UA client-server integration. All six major Industrial Ethernet protocols received major updates (Sercos® III, Profinet, EtherNet/IP, Ethercat, Powerlink and Modbus/TCP).

### Multicarrier system for Industry 4.0

The new multicarrier system makes your production processes significantly more flexible. This configurable transport system can be freely integrated into your existing intralogistics and precisely synchronized with the process. It supplements traditional materials handling solutions exactly where it is needed in the process. The other conveyors stay unchanged. The integrated control concept allows control of the transport motions and motion control functions and the coordination of additional machine modules. The result is maximum machine flexibility. Industry 4.0 connection is also an option via an OPC UA client-server integration.

### Productivity increase: Electric automation as a core business

Festo is constantly making life easier for users with regard to electric automation. In addition to pneumatics, Festo is also continuously expanding its portfolio of electric axes, motors and controllers. Software allows electric actuators to be configured quickly and easily. Festo's automation platform CPX provides a simple means of networking several levels of the automation pyramid.

Customers' design engineers can draw on the extensive Festo product portfolio, including mechanical drive components, motors, axis controllers and firmware, as well as diagnostic and operating equipment for motion control systems or their PLC. There is a wide range of toothed belts, spindles, recirculating ball bearing guides, and linear motor axes available in the case of electric drives. The multicarrier system is one of the latest highlights. Everything comes from a single source and is perfectly coordinated. This means there are no interface problems.

### Productivity increase: Ready-to-install robotics and Handling Guide online (HGO)

In recent years, Festo has surprised the automation market with groundbreaking ready-to-install innovations for handling and assembly operations based on electric drive technology. This include the delta robot EXPT, the high-speed H-gantry EXCH, the high-speed T-gantry EXCT and the mini H-gantry EXCM. A common feature of all of Festo's ready-to-install handling solutions is their highly dynamic operation thanks to low moving masses, and the fact that the solutions are built using standard Festo components. A modular axis system allows customers to configure and order their systems – including IE integration.