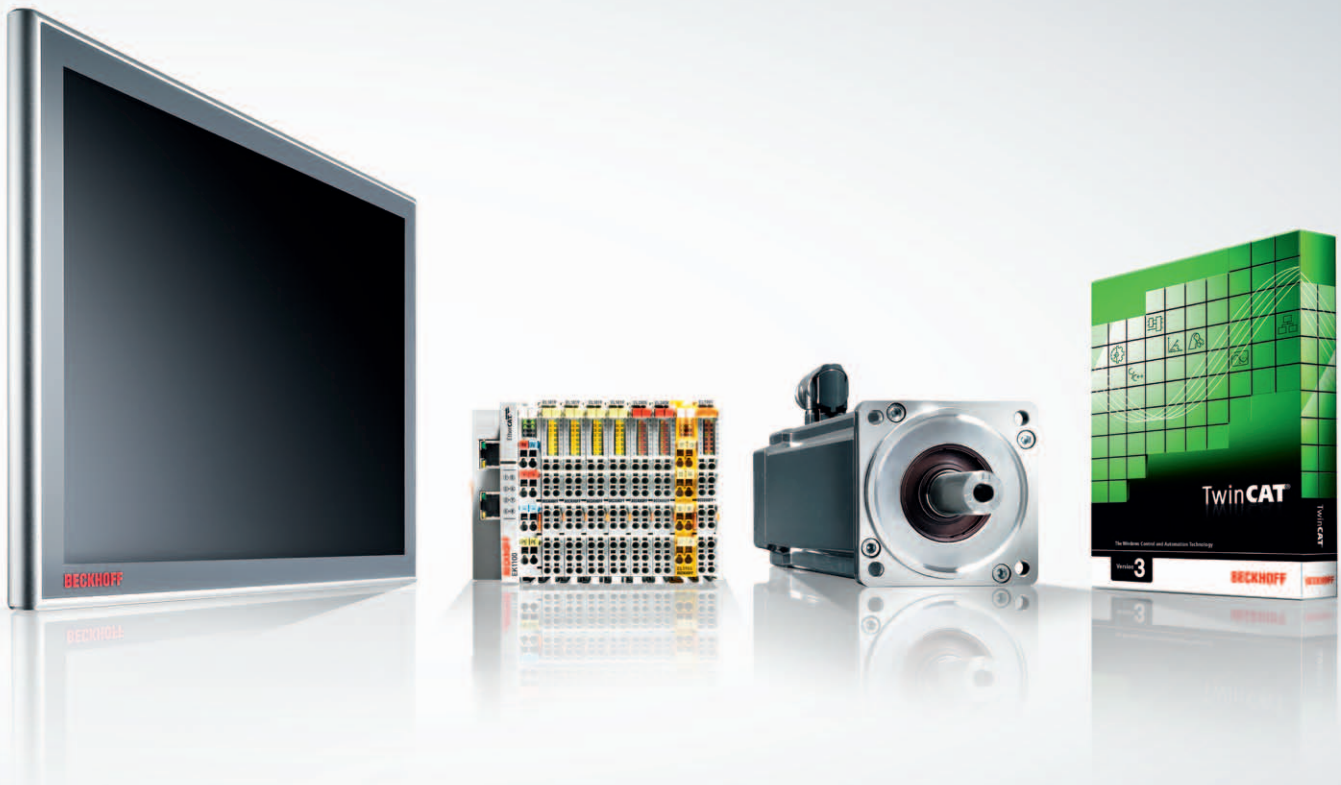


**BECKHOFF** New Automation Technology

The New Automation Technology Advantage.



IPC Industrial PC | Embedded PC

I/O EtherCAT | EtherCAT Terminal | EtherCAT Box | Bus Terminal | Fieldbus Box | Infrastructure Components

Motion Drive Technology

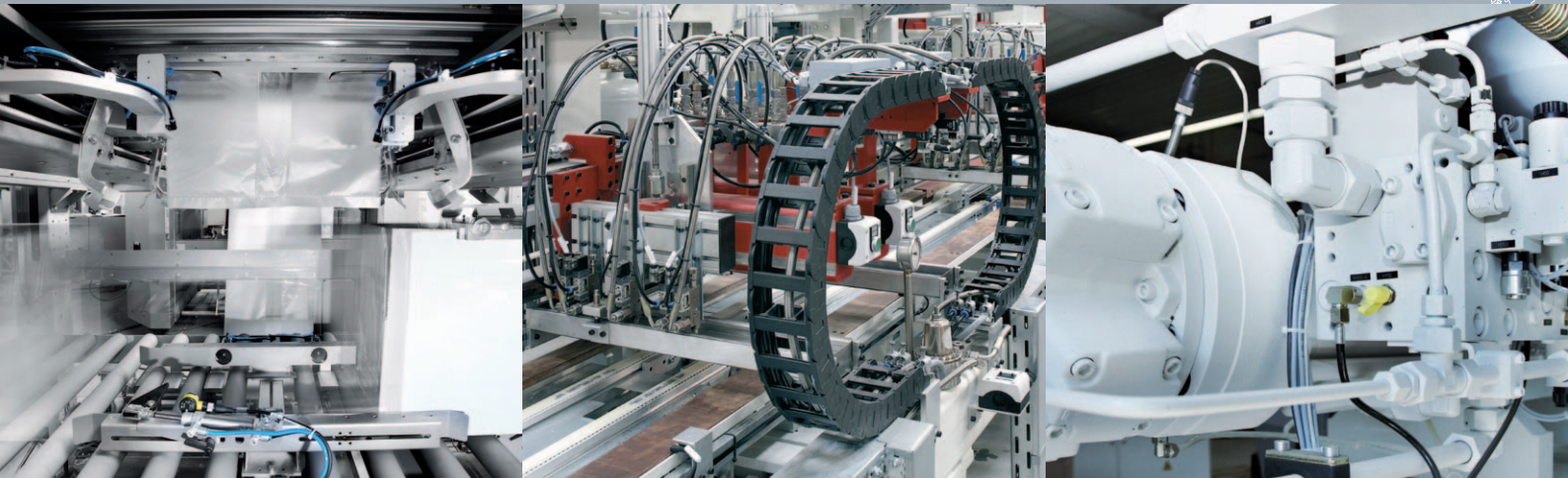
Automation TwinCAT | TwinSAFE

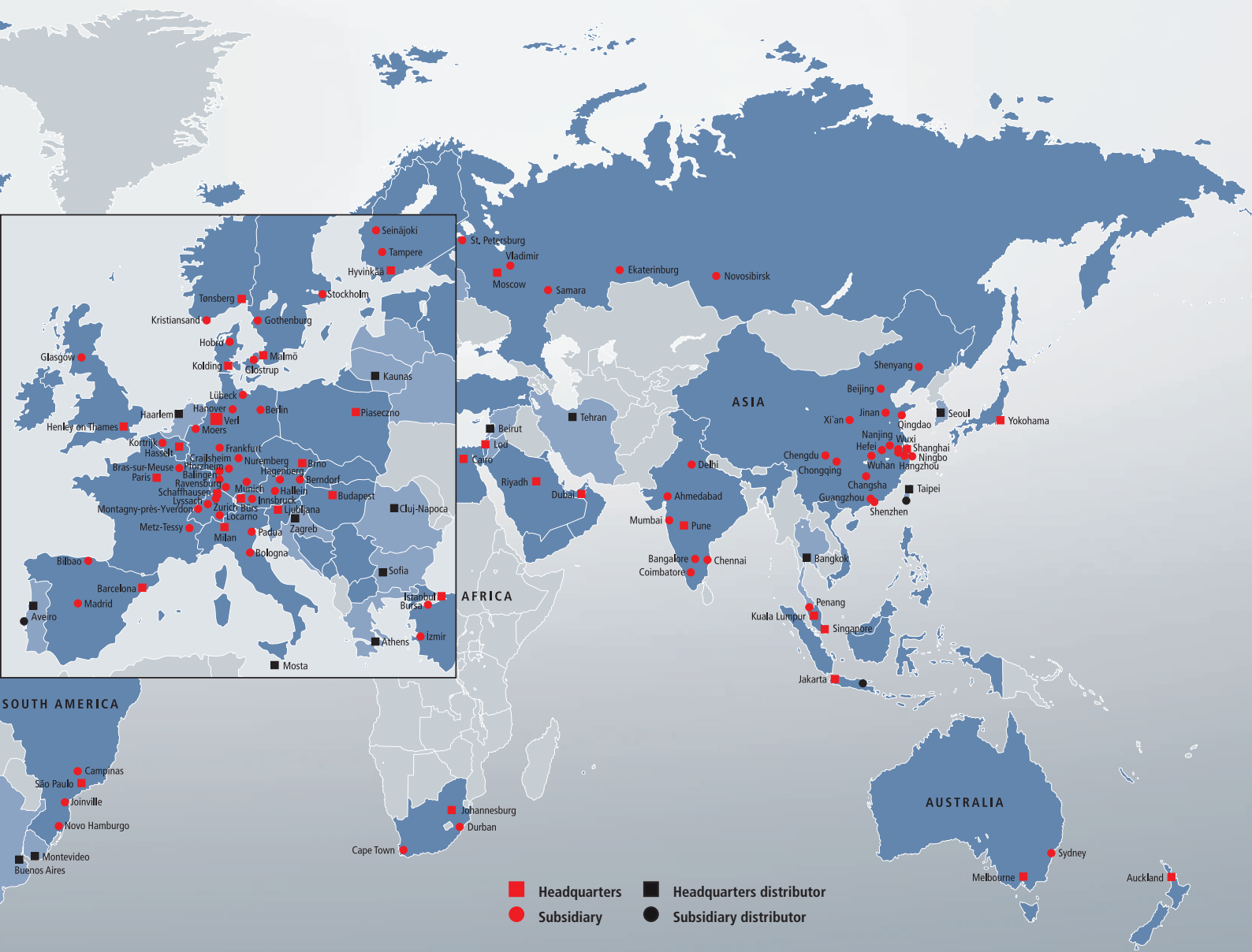
# Four components, one system: New Automation Technology.

Following the company's establishment in 1980, Beckhoff pioneered a control principle that has since defined many of the established standards in automation technology such as PC-based control. The core idea is simple – bundling all automation processes on one CPU, with one universal software platform and one control system. The effect: a seamlessly integrated control platform that enables new application opportunities, thanks to the optimised utilisation of increasingly powerful, standard hardware. In addition, users enjoy significant efficiency improvements and a competitive edge gained through their partnership with Beckhoff.

The success of the PC-based control philosophy speaks for itself: Today Beckhoff is represented in more than 70 countries. The company provides a product portfolio that covers all areas of PC-based control technology, and can be scaled to answer all engineering requirements from simple to complex: IPC, I/O, Motion, and Automation software.

► [www.beckhoff.com](http://www.beckhoff.com)





- Beckhoff is a leading control system provider for all automation tasks.
- Development and production: "Made in Germany" quality assurance
- 2014 Sales: 510 million euros
- Staff worldwide: 2,800
- Engineers: 900
- Subsidiary companies/branch offices worldwide: 34
- Distributors worldwide: Located in more than 70 countries (As of 04/2015)

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# The IPC Company

The Industrial PC (IPC) is the hardware centrepiece of PC-based control technology. Beckhoff supplies Industrial PCs suitable for any application, which are based on open standards, enabling individual configuration to meet a wide range of control requirements.

Whether in the form of an Embedded PC with a compact form-factor for DIN rail mounting, a control cabinet IPC, or as a Panel PC, in-house motherboard development enables Beckhoff to respond quickly to IT trends and customer-specific requirements.

► [www.beckhoff.com/IPC](http://www.beckhoff.com/IPC)

## Control cabinet Industrial PCs

- Scalable performance range
- Industrial-strength housing designs
- High mechanical durability
- Simple installation
- High flexibility in terms of display connections

► [www.beckhoff.com/Control-cabinet-PC](http://www.beckhoff.com/Control-cabinet-PC)

## Panel PCs

- Scalable performance range
- Single- or multi-touch screen operation options
- Display sizes from 5.7-inch to 24-inch
- Stainless-steel variants for cleanrooms
- Easy installation in control cabinets or on mounting arms

► [www.beckhoff.com/Panel-PC](http://www.beckhoff.com/Panel-PC)

## Control Panels

- Large model variety
- Single- or multi-touch screen operation options
- Display sizes from 5.7-inch to 24-inch
- Easy installation in control cabinets or on mounting arms
- Customer-specific implementations

► [www.beckhoff.com/ControlPanel](http://www.beckhoff.com/ControlPanel)







Control cabinet Industrial PC



Embedded PC

#### Embedded PCs

- Scalable performance range
- Compact design
- Direct I/O interface
- Modular extension options
- DIN rail mounting

► [www.beckhoff.com/Embedded-PC](http://www.beckhoff.com/Embedded-PC)

#### Industrial motherboards

- Developed and manufactured by Beckhoff
- Long-term availability
- Optimised for EtherCAT
- Numerous interfaces
- Customer-specific BIOS solutions

► [www.beckhoff.com/Motherboards](http://www.beckhoff.com/Motherboards)

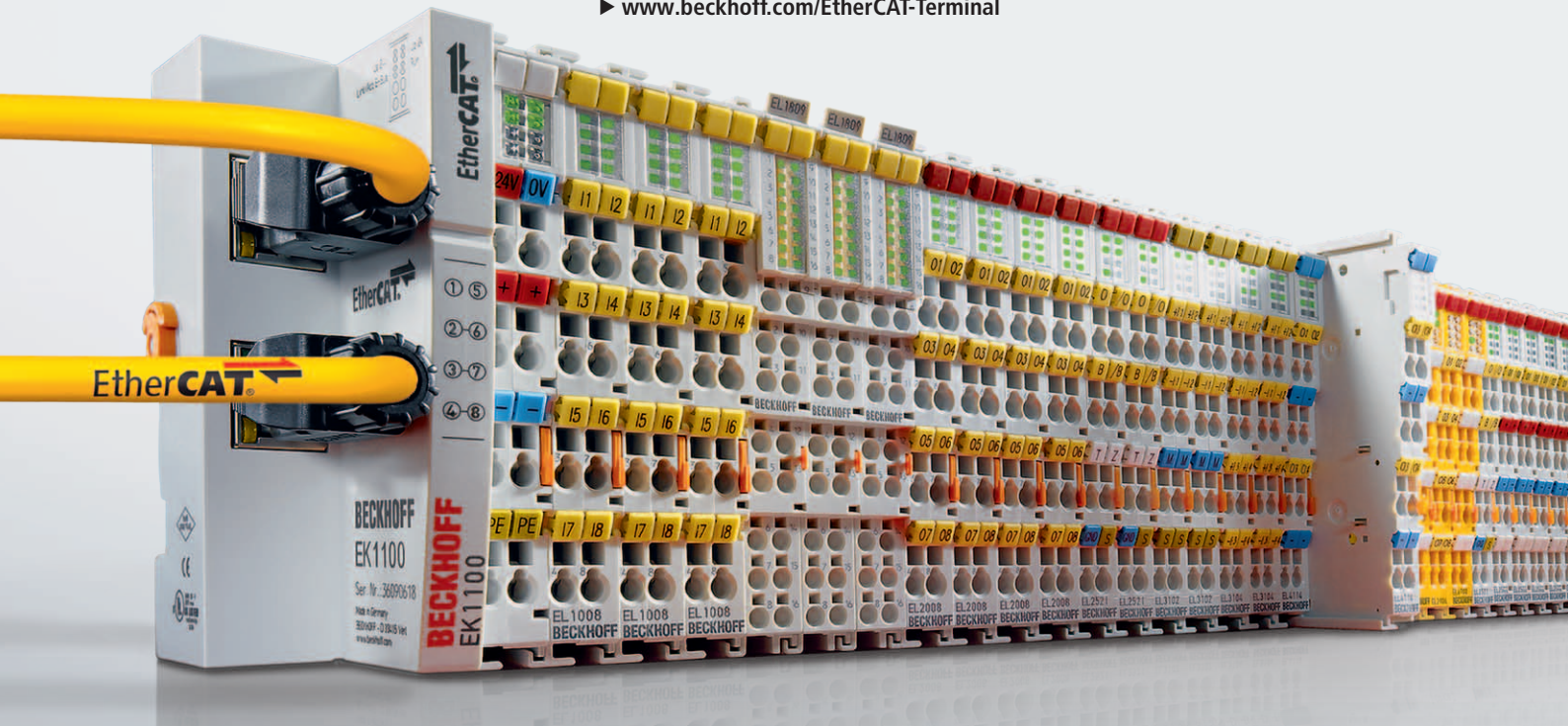


- Highly scalable range of IPCs and Embedded PCs
- High-performance PCs, featuring a wide range of processors, from Intel® Celeron® to top of the line Core™ i7 processors
- Long-term availability and support of the entire product portfolio
- As the inventor of PC-based control technology, Beckhoff closely cooperates with global technology partners Intel and Microsoft.

### EtherCAT Terminals

- IP 20 EtherCAT I/O system
- Real-time Ethernet performance retained into each terminal
- Integration of highly precise measurement technology, condition monitoring and drive technology
- Gateways for subordinate fieldbus systems
- TwinSAFE PLC and safety I/Os

► [www.beckhoff.com/EtherCAT-Terminal](http://www.beckhoff.com/EtherCAT-Terminal)



### Bus Terminals

- Open, fieldbus-neutral IP 20 I/O system
- More than 400 different Bus Terminals
- Support for more than 20 fieldbus systems
- Gateways for subordinate bus systems
- System-integrated safety I/O terminals available

► [www.beckhoff.com/BusTerminal](http://www.beckhoff.com/BusTerminal)

### Fieldbus Box

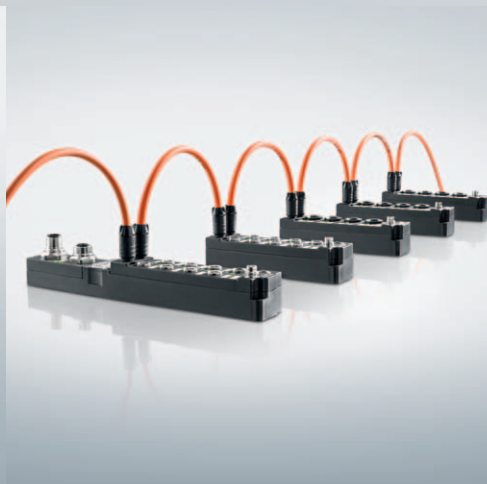
- Open, fieldbus-neutral IP 67 I/O system
- 12 fieldbus systems, 24 signal types
- Compact and robust
- Can be mounted directly on machines, outside of control cabinets and terminal boxes while reducing machine footprint
- IO-Link box modules for inexpensive point-to-point connections

► [www.beckhoff.com/FieldbusBox](http://www.beckhoff.com/FieldbusBox)

### EtherCAT Plug-in Modules

- Very compact EtherCAT I/O system in IP 20 for plug-in into a circuit board (signal distribution board)
- Optimised for high-volume production
- Application-specific connector interface
- Use of cable harnesses avoids wiring errors.

► [www.beckhoff.com/EtherCAT-Plug-in-Modules](http://www.beckhoff.com/EtherCAT-Plug-in-Modules)





# The I/O Company

Beckhoff supplies a complete range of fieldbus components for all common I/O and bus systems. With Bus Terminals offering IP 20 protection and Fieldbus Box modules in IP 67, a comprehensive range of devices is available for a wide variety of signal types and fieldbus systems. In addition to components for conventional bus systems, Beckhoff offers an integrated product range optimised for EtherCAT. Invented by Beckhoff, this real-time Ethernet solution for industrial automation has global acceptance and is characterised by outstanding performance and simple handling. The result is high-precision machine and plant control and significantly increased production efficiency.

► [www.beckhoff.com/IO](http://www.beckhoff.com/IO)

► [www.beckhoff.com/EtherCAT](http://www.beckhoff.com/EtherCAT)



## EtherCAT Box

- IP 67 EtherCAT I/O system
- High performance for harsh environments
- Compact and robust
- Can be mounted directly on machines, outside of control cabinets and terminal boxes

► [www.beckhoff.com/EtherCAT-Box](http://www.beckhoff.com/EtherCAT-Box)

## Infrastructure Components

- PC cards for all common fieldbus systems
- Industrial Ethernet switches
- EtherCAT junctions and media converters in IP 20 and IP 67 ratings

► [www.beckhoff.com/Infrastructure-components](http://www.beckhoff.com/Infrastructure-components)



- Comprehensive, modular I/O system for all signal types and fieldbus systems
- Universal product range optimised for EtherCAT
- High investment security: Mature I/O technology based on more than 20 years of success in the field
- Beckhoff is the I/O pioneer, developing the Bus Terminal concept and EtherCAT.



# The Motion Company



Servomotor AM8000  
with One Cable Technology (OCT)

## Compact Digital Servo Drives

- Available in 1- or 2-channel Servo Drive versions
- High-speed EtherCAT communication
- Wide range of nominal current types, up to 170 A
- Flexible motor type selection
- Optimised for multi-axis applications

► [www.beckhoff.com/Servo-Drives](http://www.beckhoff.com/Servo-Drives)

## Compact Drive Technology

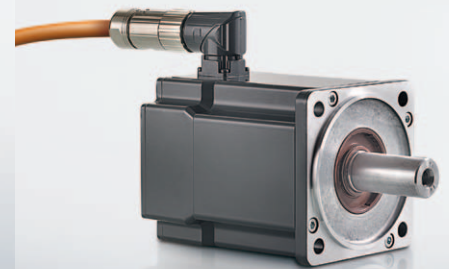
- Solutions for up to 5 A in the space-saving I/O system
- Simple connection of stepper, servo, DC or AC motors
- IP 20 or IP 67 connection options
- Matching motors and gearboxes

► [www.beckhoff.com/compact-drive-technology](http://www.beckhoff.com/compact-drive-technology)

## Synchronous Servomotors

- For demanding positioning tasks
- Highly dynamic behaviour
- Brushless three-phase motors
- Permanent magnet in the rotor

► [www.beckhoff.com/Servomotors](http://www.beckhoff.com/Servomotors)



In combination with the motion control solutions offered by the company's TwinCAT automation software, Beckhoff Drive Technology provides an advanced, all-inclusive drive system. PC-based control technology from Beckhoff is ideally suited for single- and multi-axis positioning tasks with high dynamic requirements.

The AX5000 and AX8000 Servo Drive series with high-performance EtherCAT communication offer the best-possible performance and dynamics. Servomotors with One Cable Technology (OCT), combining power and feedback systems into one standard motor cable, reduce material and commissioning costs.

► [www.beckhoff.com/DriveTechnology](http://www.beckhoff.com/DriveTechnology)

#### Linear Servomotors

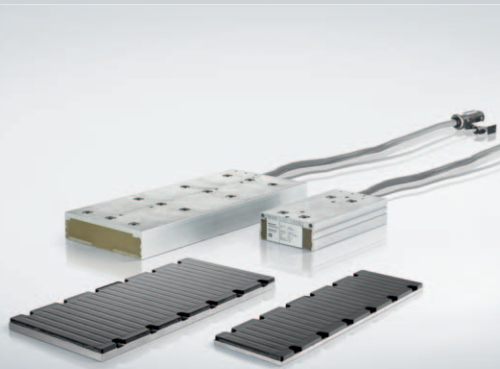
- Ideal for the highest requirements with regard to dynamics and acceleration
- Up to quadruple overload capacity
- No mechanical wear
- Maximum positioning accuracy

► [www.beckhoff.com/Linear-motors](http://www.beckhoff.com/Linear-motors)

#### eXtended Transport System XTS

- Linear motor on an endless path
- Replaces traditional mechanics with advanced mechatronic solutions
- Software-based functional changes
- Individual product transport with continuous material flow

► [www.beckhoff.com/XTS](http://www.beckhoff.com/XTS)



- Scalable product range of servo drive technology
- Integrated safety technology in compliance with safety performance level E
- As the pioneer of One Cable Technology and the eXtended Transport System, Beckhoff specialises in manufacturing efficient, space-saving motion solutions.

# The Automation Company

Beckhoff offers comprehensive system solutions in numerous performance classes for all areas of automation. The control technology is exceptionally scalable – from high-performance Industrial PCs to mini-PLCs – and can be adapted precisely to application-specific requirements. TwinCAT automation software integrates real-time control with PLC, NC and CNC functions in a single feature-filled package.

► [www.beckhoff.com/Automation](http://www.beckhoff.com/Automation)

## TwinCAT

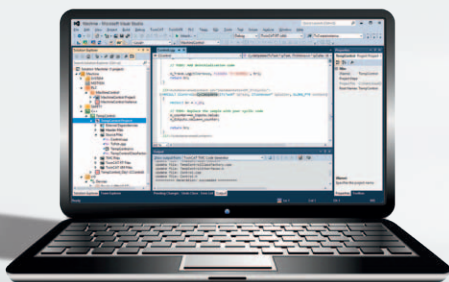
- One software platform for engineering and runtime
- Integrated real-time support
- Software modules for PLC, NC, CNC, robotics, measurement technology, safety

## Efficient engineering

- Integration into Microsoft Visual Studio®
- Wide selection of programming languages: IEC 61131-3, C/C++, MATLAB®/Simulink®, Safety C/FBD
- Modular software development
- Automatic code generation interface
- Link to source code control systems

## High performance

- Cycle times from 50 µs
- Multi-core support
- Support of 32-bit and 64-bit operating systems
- Pre-emptive multitasking







## Headquarters

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PC control magazine  
(additionally as App)



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