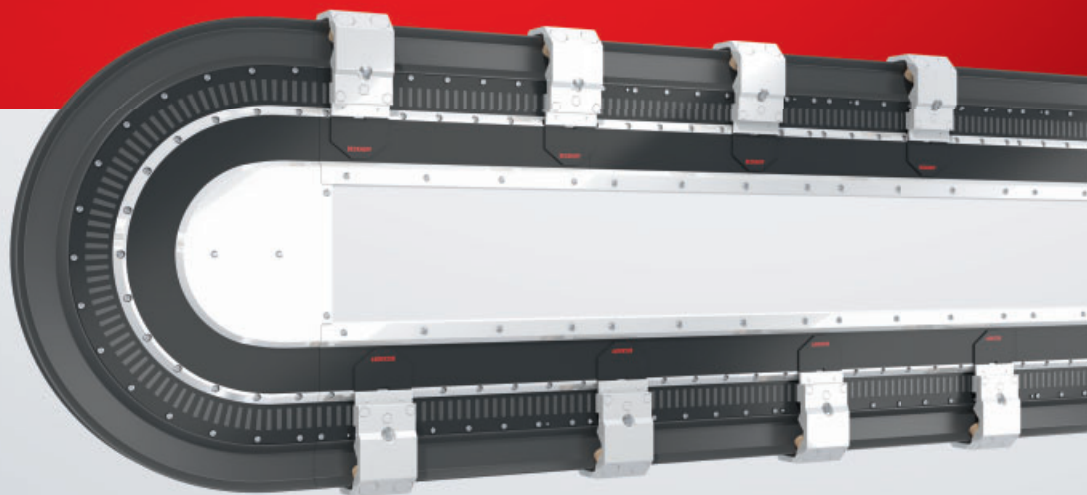
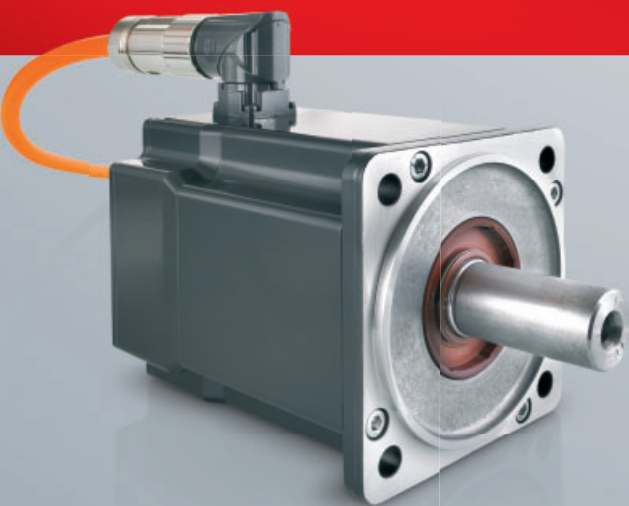


BECKHOFF New Automation Technology

News | 05'2012



NEWS



i Multi-touch Control Panel and Panel PCs CP2xxx und CP3xxx

With Windows 7, multi-finger touch screens are becoming popular with PCs. The projective-capacitive multi-touch technology is used for this in industrial applications. A pane of glass with an antireflection coating forms the front of the display. Operation with gloves is possible. Five fingers are recognised separately, even if the distance between the fingers is only 1 cm. Beckhoff presents two new Panel PC and Control Panel families here: the CP2xxx for wall installation and the CP3xxx for mounting arm installation. There are new widescreen display sizes: 7-inch with a resolution of 800 x 480, 15.6-inch with 1366 x 768, 18.5-inch with 1366 x 768 and 24-inch with the full HD resolution of 1920 x 1080.

Moreover, the known display sizes 12-inch with a resolution of 800 x 600 and 15-inch with a resolution of 1024 x 768 in 4:3 format as well as 19-inch with a resolution of 1280 x 1024 in 5:4 format are available in the new series. The displays are also all offered with the option C9900-M575 in portrait format.

The CP29xx and CP39xx Control Panel series with DVI/USB extended input will be available first; these can be operated at distances of up to 50 m from the Industrial PC. In addition, the built-in Panel PCs from the CP22xx series will subsequently be presented. CP32xx Panel PCs for mounting arm installation with Intel® Core™ processor, CP27xx and CP37xx Panel PCs with Intel® Atom™ processor, and CP26xx and CP36xx devices with an ARM processor are in development.

► www.beckhoff.com/multitouch



Control Panels in 4:3 format in 12- and 15-inch as well as in 5:4 format in 19-inch



Built-in Panel PC CP22xx



Control Panel for vertical installation (portrait)



Control Panels in widescreen format in 7, 15.6, 18.5 and 24-inch sizes



News | Industrial PC

Industrial PCs with second generation Intel® Core™ i3, i5 and i7

The new Intel® Core™ i3, Core™ i5 and Core™ i7 processors of the second generation are making inroads into the Industrial PC-based control technology from Beckhoff. The graphics processor with improved performance was integrated in the CPU. The memory access speed of 1,333 MHz also increases the data throughput of the Industrial PCs. The new IPCs with second-generation Intel® Core™ i3, i5 and i7 processors are based on the CB1056 (ATX) and CB3056 (3½-inch) Industrial Motherboards from Beckhoff.

TwinCAT 3, the latest version of the Beckhoff automation software which was specially developed for multi-core processors, can make full use of the two- and four-core processors of this PC generation.

Beckhoff only uses processors of the Embedded line with guaranteed long-term availability and is introducing them in all Industrial PC series: the C5102, C6140, C6150, C6240, C6250 and C66xx control cabinet Industrial PCs as well as

the CP65xx and C3xxx built-in Panel PCs with ATX motherboard.

In the series with 3½-inch motherboard, the C65xx, C6920, C6930 and C5210 control cabinet PCs, the CP62xx built-in Panel PCs and CP72xx Panel PCs as well as the new CP22xx multi-touch built-in Panel PCs are equipped with the new processor generation.



i Possibilities on the DIN rail: CX2000 with multi-core CPU and PCI Express

In the CX2000 series, Beckhoff presented the second generation of its Embedded PC family which was brought onto the market in 2002. The CX2030 and CX2040 Embedded PCs implement an essential feature of the new CX controllers: multi-core processors. This way, these embedded controllers also cover performance areas that had previously been reserved for the larger Industrial PCs. A further essential feature of the new Embedded PC series is the internal extension bus, which is based on PCI Express and with which the system interfaces are connected with the full bandwidth of a PCI Express lane (5 GT/s per PCIe TX/RX channel).


The CX2000 devices are based on Intel® processors from the second generation of the 32 nm series ("Sandy Bridge"). The single- and dual-core processors enable fanless operation. The operating system benefits from the fast, integrated graphic core as well as faster DDR3 memory.

Three devices from the new CX2000 series will be presented:

- CX2020 | 2nd Generation Intel® Celeron®
@1.4 GHz, single-core
- CX2030 | 2nd Generation Intel® Core™ i7
@1.5 GHz, dual-core
- CX2040 | 2nd Generation Intel® Core™ i7
@2.1 GHz, quad-core

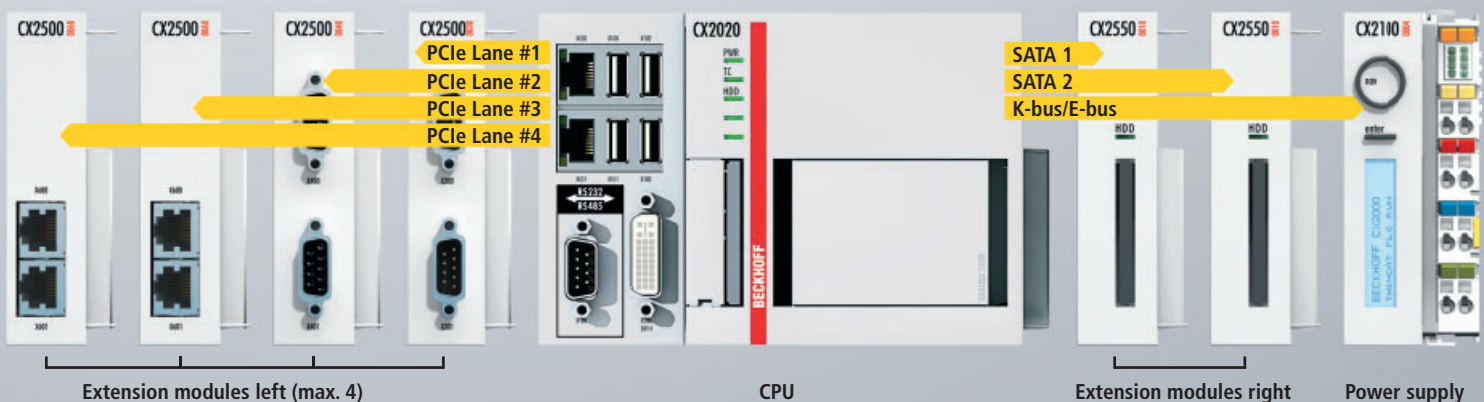
As in the first generation of Embedded PCs, the new CX2000 devices consist of individual components which the user can order separately and assemble in the field by simply plugging them together. The housing concept combines a metallic basic body with front panels made of a special screening plastic.

The devices from the the CX2000 series offer full support for the Beckhoff Bus Terminals and EtherCAT Terminals. A new item is the automatic recognition of the respective I/O system in the power supply module.

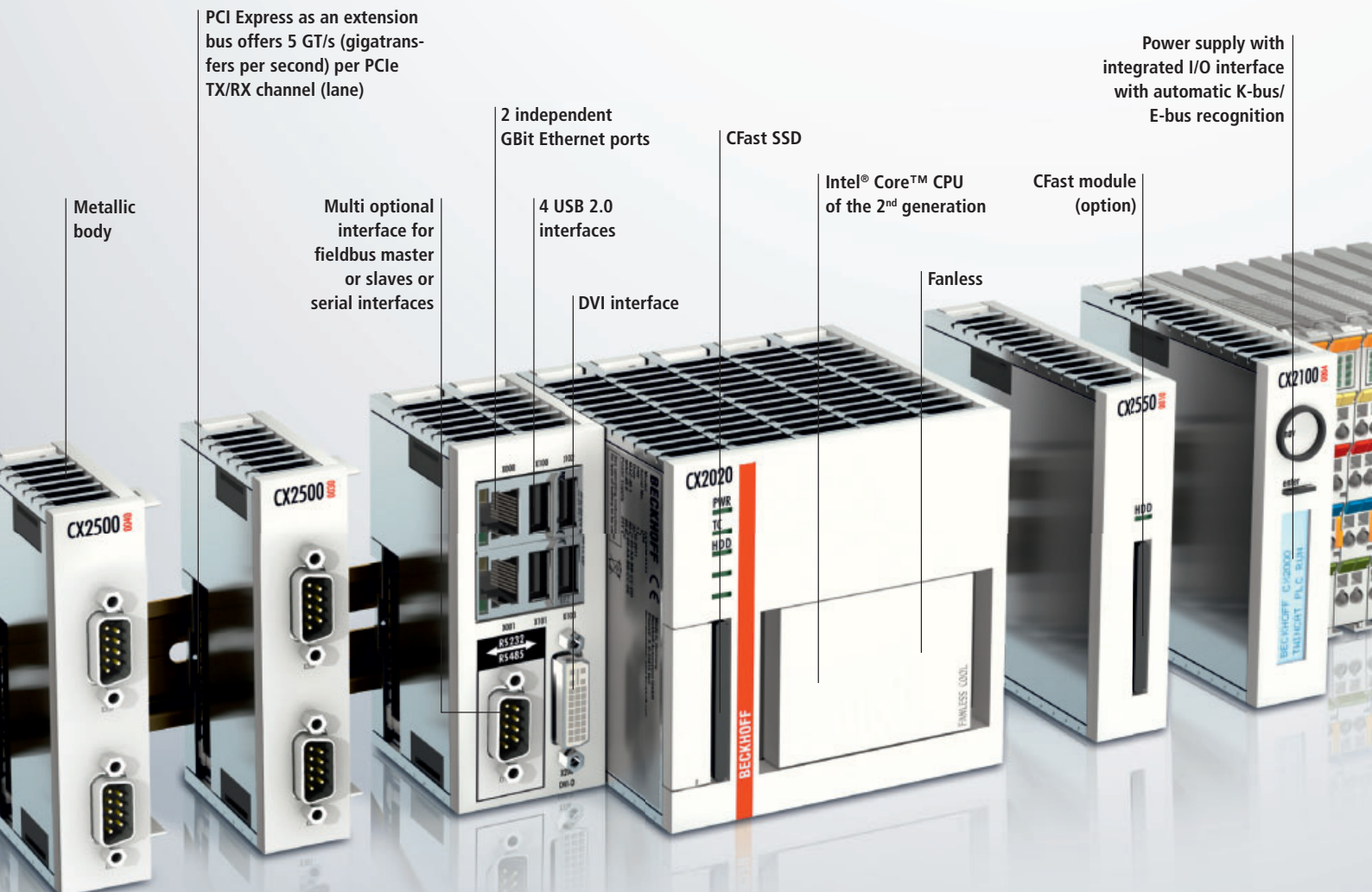
 +60 °C
-25 °C The extended operating temperature range between -25 °C and +60 °C enables application in climatically demanding situations.



News | Embedded PC



Module concept CX2000 on the basis of PCI Express and SATA



i Compact high-performance controller for PLC and Motion Control

The CX9020 is a compact, DIN rail-mountable Ethernet control system with 1 GHz ARM Cortex™ A8 CPU. The connection for the Beckhoff I/O systems is directly integrated in the CPU module. The device automatically recognises the bus system that is in use (K-bus or E-bus). The CX9020 comprises the CPU with two microSD card slots, the internal RAM and 128 kB NOVRAM as non-volatile memory. The basic configuration also includes two Ethernet RJ 45 interfaces, four USB 2.0 interfaces and a DVI-D interface.

The extended operating temperature range between -25 °C and +60 °C enables application in climatically demanding situations. Thanks to the new high-performance and fanless CPUs with floating point unit, the CX9020 is predestined for automation and visualisation tasks in small and medium-sized machines and in buildings.



► www.beckhoff.com/CX9020

i XFC EtherCAT terminals with time stamp in HD housing (High Density)

Beckhoff has extended its range of XFC terminals by time stamp variants. The XFC terminals in the High Density housing have 16 terminal points on a width of 12 mm.

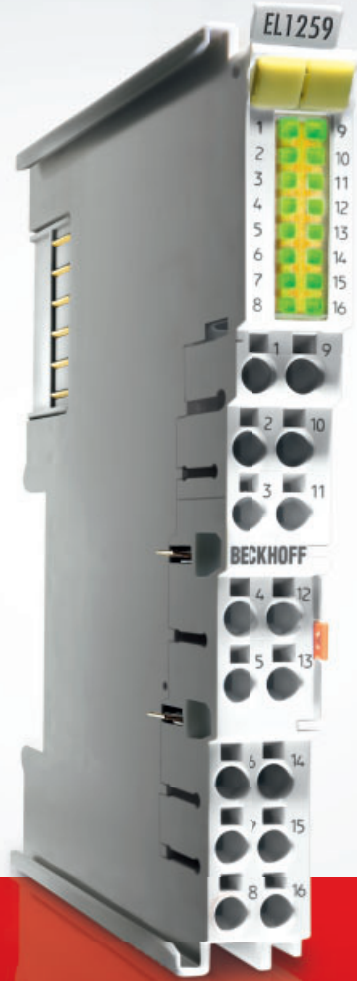
XFC terminals are dimensioned for extremely fast or highly precise applications. XFC terminals with time stamp latch the exact system time at which edge changes occur. Output of digital values can occur at exactly predefined times.

The following new variants are available:

- EL1258 | 8-channel digital input with time stamp
- EL1259 | 8-channel digital input + 8-channel-digital output with time stamp
- EL2258 | 8-channel digital output with time stamp

The 16-channel EL1259 combines the functions of the EL1258 – eight time stamp inputs – with those of the EL2258 – eight time stamp outputs. The high channel density in conjunction with time stamping of the signals enables fast, efficient processes through optimised sensor and actuator control.

► www.beckhoff.com/EL1259



News | I/O

i EtherCAT media converters in IP 20/67

The new EtherCAT media converters are optimised for use in highly deterministic EtherCAT networks. In contrast to standard Ethernet media converters, they support the comprehensive EtherCAT diagnostics. The following variants are available:



IP 20

- CU1521 | multimode glass fibre – copper 100BASE-TX
- CU1521-0010 | singlemode glass fibre – copper 100BASE-TX
- CU1561 | Plastic Optical Fibre (POF) – copper 100BASE-TX

IP 67

- EP9521-0020 | 1 x multimode glass fibre – 2 x copper 100BASE-TX
- EP9522-0020 | 2 x multimode glass fibre – 2 x copper 100BASE-TX

► www.beckhoff.com/CU1521

► www.beckhoff.com/EP9521

i Stepper motor terminal for the direct connection of powerful stepper motors up to 8 A

With the EL7051 EtherCAT Terminal it is possible to drive stepper motors up to 8 A and 80 V DC directly from the I/O system. In combination with the AS1060 stepper motor, the EL7051 offers a complete solution for price-sensitive fields of application, such as feed axes or simple transport and stroke movements.



► www.beckhoff.com/EL7051



Stainless steel EtherCAT Box in IP 69K

In addition to stainless steel servo-motors (see page 9) and stainless steel panels, Beckhoff now also offers EtherCAT Box modules in stainless steel for use in extreme, harsh and corrosive environments. Therefore, they are ideal for applications in the food, chemical or pharmaceutical industries, which require protection class IP 69K.

The modules of the EQxxxx series have an EtherCAT interface. The power supply and transfer takes place via M8 connectors or sockets.

The EQ series includes the following stainless steel modules:

- EQ1008-0002 | 8-channel digital input, filter 3.0 ms
- EQ1809-0022 | 16-channel digital input, filter 3.0 ms
- EQ2008-0002 | 8-channel digital output, $I_{MAX} = 0.5 A$
- EQ2809-0022 | 16-channel digital output, $I_{MAX} = 0.5 A$
- EQ2339-0022 | 16-channel digital input or output, freely selectable
- EQ3174-0002 | 4-channel analog input $\pm 10 V$ or $0/4 \dots 20 mA$, parameterisable
- EQ3204-0002 | 4-channel analog input PT100 (RTD)
- EQ3314-0002 | 4-channel analog input thermocouple



► www.beckhoff.com/EQxxxx



EtherCAT Coupler series with integrated digital I/Os

In addition to the fieldbus connection, the EK18xx coupler series for the Beckhoff EtherCAT terminal system integrates digital I/Os into the standard coupler. The HD (High Density) terminal, which is used at connection level, offers 16 connection points.

The new EK1914 EtherCAT Coupler has four digital inputs and four digital outputs as well as two fail-safe inputs and two fail-safe outputs.



► www.beckhoff.com/EK1914

► www.beckhoff.com/EK1814

Manual operating modules with universal fieldbus connection

The manual operating modules switch, control and observe digital and analog signals. They enable the setting and reading of data and values in case of failure of a controller. The manual operating modules can be installed in the control cabinet door using a snap-in technique; they are wired inside the control cabinet.

The following modules are available:

- KL8519 | Signal module, 16-channel digital input
- KL8528 | Output module, 8-channel digital output
- KL8524 | Output module, 4 x 2-channel digital output
- KL8548 | Analog module, 8-channel analog output



► www.beckhoff.com/KL85xx

AM8000 highly dynamic servomotors: Servomotor integrates the feedback system and power into one standard motor cable

Beckhoff presents servomotors from its own development and production in the new AM8000 series. The rotary synchronous servomotors, which are available in standard and in stainless steel designs, are characterised by high dynamics, energy efficiency and low costs. One of the highlights is the new one cable technology, with which the power and feedback system are combined in the standard motor cable. In combination with the Servo Drives from the AX series, to which

the AM8000 series is matched with regard to power rating and windings, Beckhoff can now fulfil its customers' requests even more flexibly. Apart from high availability and flexibility, development and production in Germany guarantees consistently high quality.

The sophisticated rotor and stator technology represents the actual basis for the new servomotor. Among other things, the modern salient pole winding technology is used in the motor,

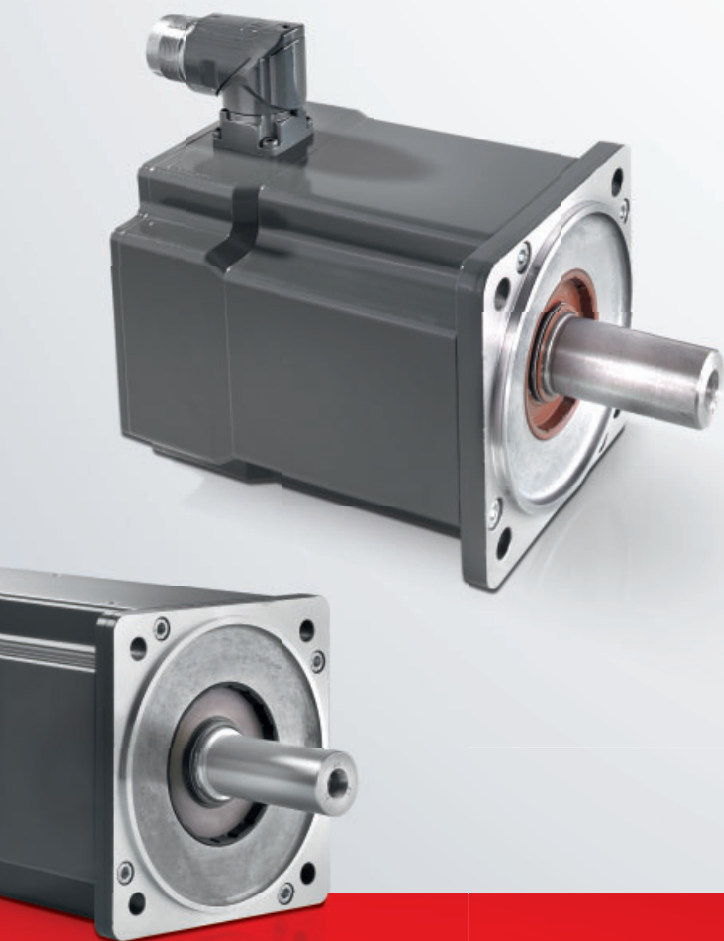
which enables an even higher slot fill factor. Small end turns in conjunction with a fully encapsulated stator provide for robustness and excellent thermal management. Through the optimised design and the use of high-quality materials it has been possible to increase the energy efficiency by more than 10 % compared to conventional servomotors.



One cable solution for power and feedback system reduces component and commissioning costs

- digital signal transmission via the existing motor cable
- digital transmission of sensor data
- no interference-susceptible analog signals
- support for the electronic name plate
- encoder cables, including expensive plugs, are dispensed with
- reduction
 - in the costs for cable, plug and assembly
 - in warehouse costs by dispensing with a cable variant
 - in space requirements in cable carrier chains
 - in space requirements on the motor (important with small sizes)
 - in the sources of error and wear
- remote diagnostics possible up to the motor
- cable lengths of up to 100 m possible
- plug 330° rotatable





- one cable solution for power and feedback for absolute encoder
- modular design
- greatest possible variability
- backlash-free permanent-magnet holding brake
- single-tooth coil technology
- fully-encapsulated stator
- powder-coated
 - scratchproof
 - durable
- high power density
- high overload capacity
- high-performance
- single and multiturn encoder, resolver
- high-quality radial bearing
 - service life 30,000 hrs
 - maximum axial and radial loadability

Motors	Standstill torque M_0	Standstill current I_0
AM802x	0.50 Nm 0.90 Nm 1.30 Nm	0.90 A 1.70 A 2.30 A
AM803x	1.38 Nm 2.37 Nm 3.22 Nm	1.95 A 2.95 A 4.10 A
AM804x	2.45 Nm 3.70 Nm 5.65 Nm	3.00 A 4.10 A 5.40 A
AM805x	4.90 Nm 8.20 Nm 11.4 Nm	4.20 A 6.30 A 8.80 A
AM806x	12.8 Nm 21.1 Nm 29.0 Nm	7.80 A 12.4 A 17.2 A
AM807x	25.0 Nm 47.0 Nm 65.0 Nm	14.0 A 18.0 A 24.0 A

News | Motion

AM8800 stainless steel servomotors in hygienic design

The AM8800 motors are manufactured with a completely hygienic design so that they can be used in extremely harsh or corrosive environments, for example in the foodstuffs, chemical or pharmaceutical industries. The series encompasses three sizes, each with four overall lengths with a standstill torque ranging from 1 to 16.7 Nm.

The stainless steel housing with IP 67 protection class is extremely robust and insensitive to scratches and mechanical damage. IP 69K protection class can also be ordered as an option. The connections are also implemented with stainless steel cable glands with a hygienic design in order to ensure permanent sealing.

Motors	Standstill torque M_0	Standstill current I_0
AM883x	1.00 Nm 1.70 Nm 2.30 Nm	0.70 A 1.20 A 1.60 A
AM884x	1.90 Nm 3.10 Nm 4.50 Nm	1.30 A 1.70 A 2.40 A
AM885x	3.30 Nm 6.00 Nm 8.10 Nm	1.90 A 2.70 A 3.50 A
AM886x	7.75 Nm 12.0 Nm 16.7 Nm	2.53 A 3.70 A 4.90 A



► www.beckhoff.com/AM8800

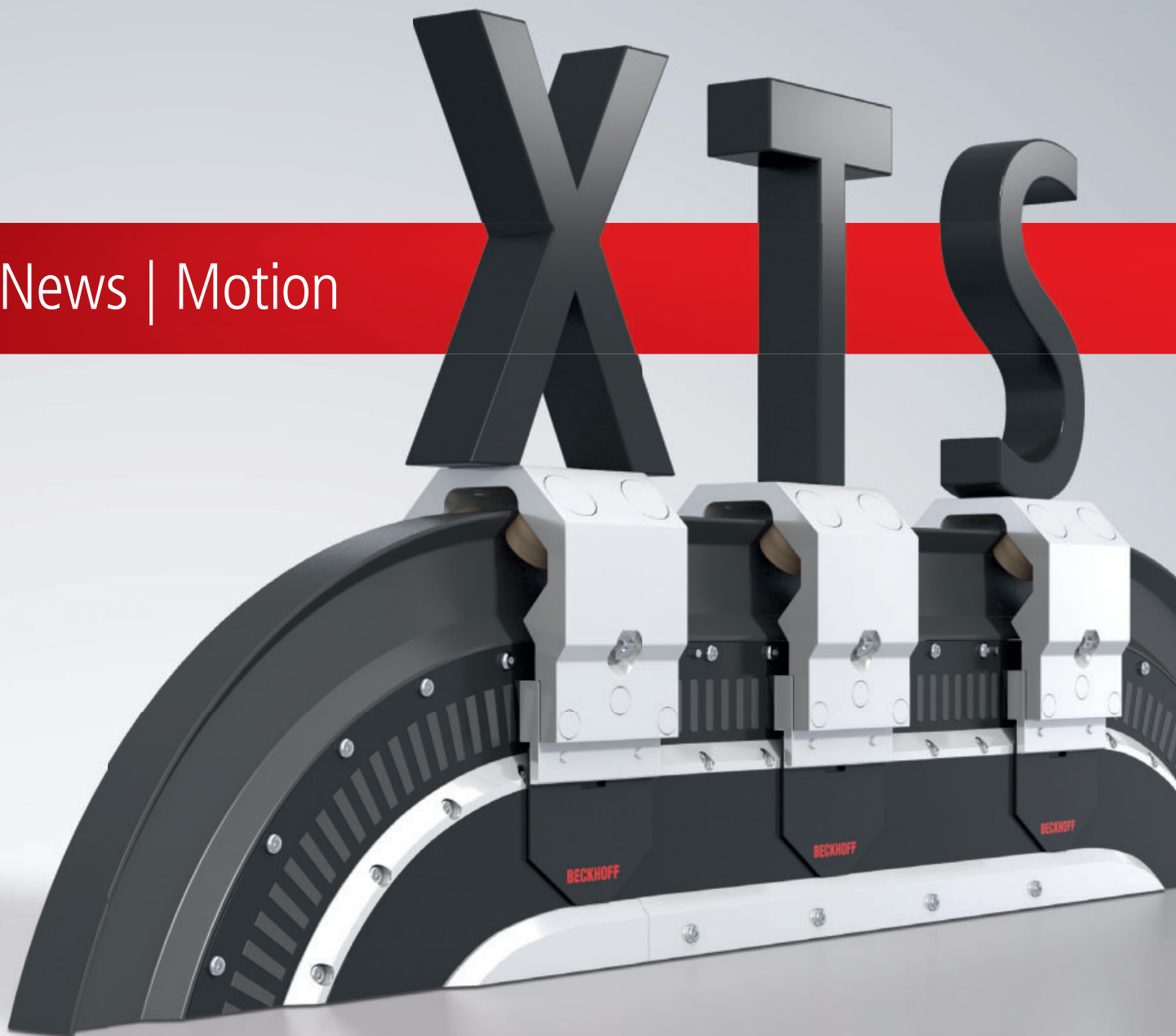
i XTS – eXtended Transport System for new machine concepts

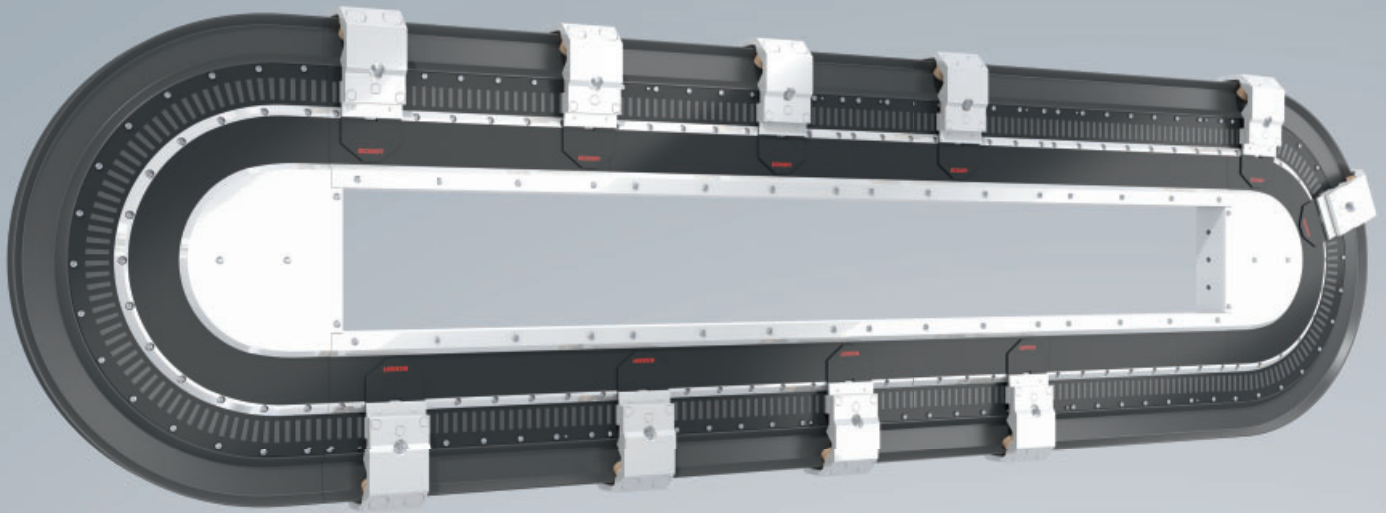
XTS (eXtended Transport System) combines the functions and characteristics that are needed for the dynamic transport of all kinds of goods. It is a logical further development of the linear motor with a mechatronic design that offers entirely new features for dispensing and transporting continuous streams of material. The distance travelled by the carriage (mover) is not restricted to the length of a magnetic monorail, it can travel any distance and any number of the wireless movers can operate in a single system.

XTS is changing machine construction, machines are getting smaller and more efficient. Although there is a marked increase in its breadth of function, the XTS kit enables a clear arrangement of machine construction and – by using fewer individual components – also simplifies assembly. Cost-intensive special mechanisms are replaced by the standard XTS product, making it possible to dispense with meticulous setup and optimisation procedures at start-up. And the smaller number of moving parts also reduces maintenance intervals.

XTS is made up of individual modules that can be combined to produce small, compact solutions or transportation routes several metres long. Straight lines are made up of 250 mm modules and curved pieces can be inserted to make an endless route. Motor cables are needed only every 3 metres, and assembling the modules automatically creates the necessary electrical connections. The guide rail system offers lengths of up to 6 metres.

News | Motion



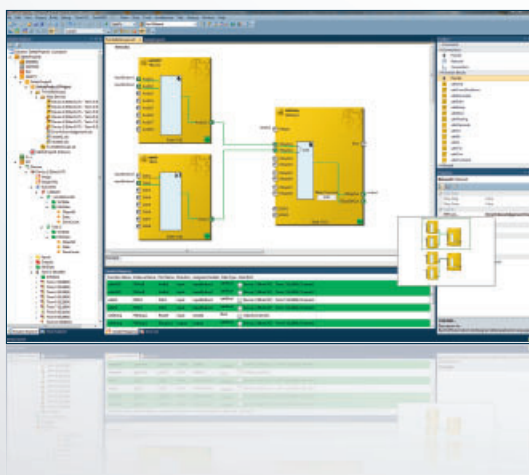


The XTS system is constructed from just a few components:

- motor modules, straights and curves
- movers with magnets and encoder flag
- guide rail system
- TwinCAT software & functional extension
- Industrial PC with EtherCAT port

► www.beckhoff.com/XTS

News | Automation

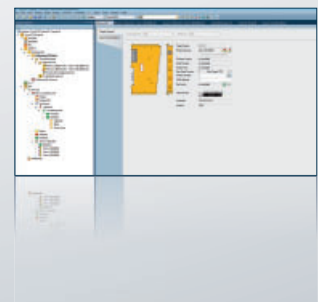


TwinCAT 3 – Safety Editor

The Safety Editor integrated in TwinCAT 3 allows the creation of a safety application in a graphical environment. The user can program the desired logic directly with function blocks. The logic can initially be developed independently of the hardware configuration, leading to increased flexibility and portability. Additionally, the editor can automatically generate documentation for the application, making both the act of documenting and commissioning significantly easier.

TwinCAT Safety Editor

- graphical programming
- fully integrated in TwinCAT 3
- convenient diagnostics through the direct display of online values in the graphical environment
- multi-level verification of the application for consistency
- automatic project download verification



► www.beckhoff.com/TwinCAT3

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This flyer gives a short overview of the new products; for further information see the Beckhoff News catalog 05'2012 or

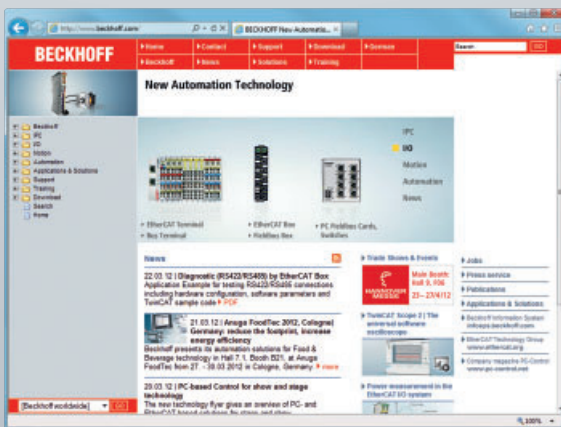
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Main catalog



PC Control magazine

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