News | 04'2025





Content



- 1. IPC news
 - Industrial PC
 - Embedded PC
- 2. I/O news
- 3. Motion news
- 4. TwinCAT news







C6043-0090 | Ultra-compact industrial PC with NVIDIA[®] GPU





C6043-0090 | SSD change



NEW

C6043-0090 is only equipped with NVM Express[®] SSDs

Standard: 160 GB high-performance M.2 SSD, NVM Express®

Optional:

Order option	Description	
C9900-H678	320 GB high-performance SSD, NVM Express [®] , instead of 160 GB high-performance SSD, NVM Express [®]	
С9900-Н679	640 GB high-performance SSD, NVM Express [®] , instead of 160 GB high-performance SSD, NVM Express [®]	
C9900-H840	1280 GB high-performance SSD, NVM Express [®] , instead of 160 GB high-performance SSD, NVM Express [®]	
C9900-H661	160 GB high-performance M.2 SSD, NVM Express®	
C9900-H810	320 GB high-performance M.2 SSD, NVM Express®	
C9900-H817	640 GB high-performance M.2 SSD, NVM Express®	
C9900-H841	1280 GB high-performance M.2 SSD, NVM Express [®]	

Processors and industrial PCs with TwinCAT Core Boost





BPI benchmark for the 11th generation Intel[®] Core[™] i processors TwinCAT Core Boost





TwinCAT Core Boost





Beckhoff's amazing flash | Information on the website





Operating system news | Microsoft Windows





Windows 11 IoT Enterprise LTSC 2024

- official Microsoft release: 01.10.2024
- end of Support: 10.10.2034
- supported as of TwinCAT 3.1 Build 4026.15

Beckhoff Industrial PCs with Windows 11:

Beckhoff release from March	Beckhoff release pending
8 th generation Intel [®] Core [™] (C602x-0000)	Intel Atom [®] Elkhart Lake (e.g. C601x-0030)
9 th generation Intel [®] Core [™] (e.g. C603x-0070)	
11 th generation Intel [®] Core [™] (e.g. C603x-0080)	
13 th generation Intel [®] Core [™] (e.g. C604x-0090)	

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Operating system	Standard installation in our IPC production
Windows 11 IoT Enterprise LTSC 2024	TwinCAT Build 4026
Windows 10 IoT Enterprise LTSC 2021	TwinCAT Build 4024, optional: Build 4026*
Windows 10 IoT Enterprise LTSC 2019	TwinCAT Build 4024
Windows 10 IoT Enterprise LTSC 2016	TwinCAT Build 4024

*Upgrade option:

C9900-S712 Installation of the latest TwinCAT 3.1 Build 4026 or higher on PCs with Windows 10 IoT Enterprise LTSC 2021, without a TwinCAT license.



The Next multi-touch panel generation | CP4xxx/CP5xxx





The Next multi-touch panel generation

Are you ready for...





Flawless design

modern, timeless, and reliable

Top quality

- aluminum housing and hardened touchscreen
- highest EMC stability

Covers distance

 DisplayPort up to 15 m, CP-Link 5 up to 100 m distance

Excellent performance

 6-core Arm[®] CPU or 4-core Intel Atom[®] CPU



Simple installation

 built-in panel and IP65 mounting arm panel

Huge variety

7-, 10.1-, 15.6-, 18.5-, 21.5-, or 23.8-inch displays

High resolution

from 15.6-inch on Full HD display

Great visibility

 anti-glare touch and display with advanced viewing angles



High connectivity

easy wiring, standardized IP20 connectors

Facilitated mounting

 100 x 100 VESA mount, optional 48 mm rotating tube mounting arm adapter

Elevated protection

IP65-sealed connection area



Extreme flexibility

- different standardized push-button extensions
- customization possible
- **Excellent communication**
- EtherCAT and FSoE are integrated



High availability

 electronics are designed and produced in-house for longest availability

Increase your competitive edge

significant cost reduction







Next multi-touch Control Panel and Panel PCs | CP4xxx, CP5xxx

CP49xx-0000



- DisplayPort-Panel
- 7 Zoll bis 23,8 Zoll
- 15 m Distanz
- Frontseite IP65, Rückseite IP20
- optional: USB in der Front

CP49xx-0010



- CP-Link 5 panel
- 7-inch to 23.8-inch
- 100 m distance
- IP65 front, IP20 rear
- optional USB in front

CP59xx-0000



- DisplayPort panel
- 15.6-inch to 23.8-inch
- 15 m distance
- 4 x M6 VESA mount or mounting arm adapter
- opt.: push-button ext.
- opt.: USB interface

CP59xx-0010



- CP-Link 5 panel
- 15.6-inch to 23.8-inch
- 100 m distance
- 4 x M6 VESA mount or mounting arm adapter
- opt.: push-button ext.
- opt.: USB interface

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Keep the lead | Key takeaways

High-end panel for demanding humanmachine interfaces

Intuitive and safe operation with EtherCAT and FSoE

Contemporary, elegant design: made in Germany

7- to 24-inch displays in various formats



Individual adaption possibilities

Wide range of CPU performance classes

Tried-and-tested touch technology

Smart and cost-optimized design





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Embedded PC Modular DIN rail IPCs





CX72xx | New TwinCAT 3 controller generation

CX7293

- PROFINET RT device
- Arm[®] Cortex[®]-A9, 720 MHz, 512 MB RAM, TwinCAT/RTOS
- high CPU performance and PROFINETcompatible
- EtherCAT enables flexible integration of further devices into PROFINET
- flexible onboard I/Os
- E-bus/K-bus interface
- I-second UPS
- successor to CX8093





CX72xx | Neue TwinCAT-3-Controller-Generation

CX7291

- BACnet/IP device
- Arm[®] Cortex[®]-A9, 720 MHz, 512 MB RAM, TwinCAT/RTOS
- high CPU performance and more RAM for BACnet
- EtherCAT enables flexible integration of further devices into BACnet
- flexible onboard I/Os
- E-bus/K-bus interface
- I-second UPS
- successor to CX8091 and CX8191





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I/O news

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I/O news





Contents | I/O news



- 1. EtherCAT Terminals
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- 3. EtherCAT plug-in modules
- 4. Measuring transformers







Optimized I/Os EL14xx, EL24xx: Series supply





EL1264 | 4-channel digital input, 24 V DC, 1 µs, oversampling

XFC, oversampling

- 4-channel version of EL1262
- high-resolution motion detection through high oversampling factor
- temporal interaction with all other EtherCAT products with XFC functionality (I/O, drives, TwinCAT)
- detection of extremely fast/short digital signals in product transport

Advantage

 cost benefits for multi-channel applications





EL3008-xxxx | Cell voltage measurement







EL3008-0005 | 8-channel analog input, voltage, ±5 V, 16-bit, cascaded

- expansion of the product portfolio for cell voltage measurements
 - NEW with ±5 V measurement range
 - measurement of small voltage differences at high potentials up to 1500 V CAT II
 - with protection cover

Applications

- single cell measurements in electrochemical processes
- accumulator monitoring, cell chemistry
- for anomaly detection and efficiency monitoring for systems



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EL3008-0005 | 8-channel analog input, voltage, ±5 V, 16-bit, cascaded

Advantages

- high-channel multi-cell measurement in the EtherCAT I/O system
- simplified wiring through cascaded connection
- Iong-term stable measurement
- high operational safety due to high isolation voltage
- easy commissioning with floating point process data



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Distributed power measurement





Pluggable distributed power measurement





EL3475 | 12-channel analog input, 4-port, multi-function, 333 mV, 24-bit, distributed power measurement, RJ45

- connection of low power transformers
- 4 x RJ45 connectors
- three current and/or voltage transformers each
- automatic configuration through readable sensors
- 1 x voltage transformer, n x EL3475
- EL3475-0200
 - additional recording of instantaneous value traces for detailed analyses



Pluggable distributed power measurement Application: Local substation





Position measurement







SSI absolute encoder	 rotary encoders, linear encoders, glass scales, magnetostrictive position sensors, etc. master-to-slave communication 	□ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Simulation	 NEW EL5001-0012 1-channel encoder interface, SSI, simulation 	
Master	 EL5001 1-channel encoder interface, SSI EL5002 2-channel encoder interface, SSI 	clock

Position measurement Encoder simulation

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Hardware-in-the-loop (HIL)

- system: hardware & software components
- simulation: counterpart for replicating real environments
 - flexible counterpart for simulating movements (transport system shuttling, axis movements, etc.)

Advantage

 simple and reproducible test scenarios including hardware test



Transport systems without internal feedback

- position distribution via NC simulation axis
- simulation of absolute position
- synchronization of multiple drive axes

Advantage

 cost-efficient and space-saving as external encoders can be eliminated

EL5001-0012 | 1-channel encoder interface, SSI, simulation

- simulation of all common SSI encoders
- settings
 - encoding: gray or binary
 - data length: up to 64 bits
 - flexibly adjustable in single-turn and multi-turn
 - parity bit (even/odd) can be optionally activated
- separate output of status/error bits in process data
- predefined motion profiles via motion control





NEW

Position measurement Encoder simulation



Application	 hardware-in-the-loop tests (HiL testing) position specification for transport systems without integrated feedback encoder simulation for virtual commissioning
Advantages	 cost-efficient, saves space by eliminating external encoders flexible machine development without physical sensors less programming work thanks to direct signal utilization faster development through virtual commissioning and testing
Portfolio	 EL2521 1-channel pulse train output, RS422, 50 mA EL2521-0024 1-channel pulse train output, 24 V DC, 1 A EL2521-0025 1-channel pulse train output, 24 V DC, 1 A, ground switching EL2522 2-channel pulse train output, RS422, 50 mA NEW EL5001-0012 1-channel encoder interface, SSI, simulation

EL6233 | 2-channel communication interface, Ethernet-APL

- integration of sensors via 2-wire Ethernet
- 10 Mbit/s up to the sensor, up to 1 km long cable
- designed for Ex areas, increasingly used in non-Ex applications

Advantages

- additional measurement values, higher resolution
- simpler parameterization and diagnostics (e.g., via web server)
- higher data rate and greater range for sensor connections
- cost-efficient system design through adapted hardware variants





EL625x | 1-/4-port communication interface, Modbus TCP, client/server

- EL6251: 1-port communication interface
- EL6254: 4-port communication interface
- connection to any Modbus TCP devices in industrial and building automation
- separate network
- Modbus TCP and/or Modbus UDP
- Modbus client and server
- Iess work for the CPU
 - protocol runs on the terminal
- up to 8 connections



Time-critical applications



EL6685 | Reference clock, high-precision, distributed clocks

- oscillator has high basic accuracy to meet the highest demands on the distributed clocks system
- EL6685-0010
 - oscillator is trimmable so that it can be adapted to external reference clocks
- holdover capability for EL6689 (GNSS)





Application example EL6685: Time-critical applications



Explosion protection





ELX3632 | 2-channel analog input, IEPE/accelerometer, 16-bit, Ex i

- for intrinsically safe IEPE sensors (zones 0/20 and 1/21)
- measurement signal evaluation via TwinCAT or user software
- adjustable filters for individual customization
- monitoring of motors, pumps, etc.





NEW

ELX3632 | 2-channel analog input, IEPE/accelerometer, 16-bit, Ex i

Advantages

- seamless integration into the ELX terminal system
- familiar, powerful, and flexible PC-based signal processing, standard evaluation
- direct connection of acceleration sensors from Ex areas (without barriers)
- condition monitoring can easily be integrated into the controller, now also for Ex zones







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Explosion protection





EPX2004-0022 | 4-channel digital output, 24 V DC, 50 mA, M12, Ex i

- activation of solenoid valves, lights etc. in hazardous areas
- output current up to 50 mA per channel
- compact solution with four channels for distributed I/O









EPX3204-0022 | 4-channel analog input, temperature, RTD (Pt100), 16-bit, M12, Ex i

- temperature recording in hazardous zones with RTDs
- supports 2-, 3-, and 4-wire technology
- can be implemented for temperature monitoring in production processes and on test benches





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NEW

EPX3314-0022 | 4-channel analog input, temperature, thermocouple, 16bit, M12, Ex i

- temperature recording in hazardous zones with thermocouples
- voltage measurement can be set up to ±75 mV
- compact solution with four channels for distributed I/O
- can be implemented for temperature monitoring in production processes and on test benches







NEW



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EtherCAT plug-in modules



EJ1321 | 1-port junction, EtherCAT P







EJ1321 | 1-port junction, EtherCAT P

- connection technology: 1 x P-coded M8 socket
- conversion of EtherCAT to EtherCAT P
- extension of an EtherCAT P network in line topology

Advantages

- connects compact EJ modules with EtherCAT P participants
- EtherCAT P technology integrated onto a circuit board
- ideal addition to EtherCAT P Box modules with ID switches for the semiconductor industry







NEW

EJ5152 | 2-channel encoder interface, incremental, 24 V DC HTL, 100 kHz BECKHOFF

- evaluation of two 24 V HTL encoders with A/B track
- limit frequency at 400,000 increments/sec, corresponding to 100 kHz
- configurable per channel
- optional function to set counters via process data
- integrated frequency and period measurement
- optionally usable as a 24 V forward/reverse counter



NEW

EJ5152 | 2-Kanal-Encoder-Interface, inkremental, 24 V DC HTL, 100 kHz BECKHOFF

Advantages

- highly accurate axis positions through interpolated micro-increments
- synchronous reading of encoder values via distributed clocks
- simple and fast linking of process data using encoder profiles



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Pluggable distributed power measurement





SVL1323 | Low power transformer, 3-channel voltage interface, 400 V AC, electronic nameplate, RJ45

- RJ45 connection
- simultaneous acquisition of all three primary conductor voltages
- automatic configuration with electronic nameplates and EL3475

Advantages

- flexible retrofitting
- simple connection of all measurement transformers via patch cable







SCL6xxx | Low power split-core transformer, 3-channel current interface, accuracy class 0.5, size 1, electronic nameplate, RJ45

- divisible 3-phase measurement system
- no interruption of primary conductors
- four sizes, RJ45 connection
- no additional short-circuit terminal
- electronic nameplates

Advantages

- flexible retrofitting
- highest accuracy
- simple connection of all measurement transformers via patch cable





SCL6xxx | Low power split-core transformer, 3-channel current interface, accuracy class 0.5, size 1, electronic nameplate, RJ45

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SCL6023

-0015 | 15 A AC -0030 | 30 A AC -0060 | 60 A AC -0075 | 75 A AC

SCL6123 -0020 | 20 A AC -0040 | 40 A AC -0060 | 60 A AC

SCL6223 -0010 | 10 A AC -0080 | 80 A AC -0100 | 100 A AC

SCL6323 -0100 | 100 A AC -0200 | 200 A AC -0400 | 400 A AC



Pluggable distributed power measurement





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- Drive technology
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AX1000 and AF1000 | Economy Drive System




AX1000 and AF1000 | Economy Drive System





Product of the Year 2025



AX1000 economy servo drive impresses in the drive technology category





It impressed readers of INDUSTRIAL Production with its compact design, cost optimization, and complete integration into TwinCAT.

First questions from our customers...

DC link connection

- devices are in the lower power range
 - expected kinetic energy is low
- devices have a very high DC link capacity
 - the drives are able to store high kinetic energy
- energy exchange takes place within the dual-axis amplifiers
- load on the DC link voltage due to 24V generation





First questions from our customers...

- No feedback interface on the AF1000?
 - AX1000 can be used to provide this, as a cost-effective alternative
 - feedback via multi-feedback card
- Third-party motors on the AX1000?
 - feedback via multi-feedback card
 - development from Q3 (Endat[®] 2.2, BiSS[®] C; SinCos, TTL)





AM8300 | Servomotors with water cooling

- optimized connection technology
- new pre-assembled cables for all power classes up to 50 mm² and currents up to 125 A
- simple connection and installation of all AM8300 with terminal boxes
 - no crimping tool required
 - easy connection with one cable from 3 sides





ASI8100 | Compact, integrated stepper motor drives

Stepper motor drive in NEMA 23/56mm – extremely compact

- four stack lengths at 0.75 up to 2.5 Nm
- integrated power stages
- improved protection class: IP54

Typical applications:

- adjustment axes in woodworking machines, e.g. for changing edge bands
- auxiliary drives in storage and retrieval machines



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Software updates





TE5960 | TwinCAT 3 Autotuning

Autotuning

- available with new firmware 1.07
- new TwinCAT Drive Manager 2 setup in April on our website
- we'll start with AX5000, AX8000 and AMP8000
 - AX1000, ELM7200, AMI8100, and ASI8100 will follow
- start Autotuning with just one click
- Bode plot and filter designer are integrated



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TE5910 TwinCAT 3 Motion Designer

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New version 1.9

- new integrated products:
 - AM83xx motor with water cooling
 - AX8820 energy recovery module
 - AX8128 improved performance
 - AMP8000 wide voltage range
 - simplified data import (linear and rotational)

- Company	Droducto Inductri	ac Support			
<u> </u>	Products Industrie	es Support			
公 > Company > F	Press > Version update with ne	ew functions and device options	🖭 News 🛛 🗵 Product news 🔍 Pr	oduct finder 📋 Information System 坐 Do	wnloa
TwinCAT 3 Mc	otion Designer for driv	ve dimensioning			
Version	update with	new functions and	device options		
The TwinCAT 3 Me in the latest upda The design of the machine design. 1	otion Designer is a powerfu ate. drive, particularly the dimen 'he TwinCAT 3 Motion Design	Il tool for optimally designing Beckhoff sioning of drive axes, in conjunction with ter tool has been created for this purpose	rive Technology to fit individual requirements. Eve otimal selection of the motor, gear unit, drive controll nd can be integrated in the TwinCAT automation platf	n more functions and device options are no ers, and accessories, is the foundation for effi orm or used as a stand-alone project enginee	w avai cient ring tc
drive design. The f	following new functions can	be used with the update:			
file import for	linear and rotary motors incl	uding motor inertia compensation			
 triangular load implementatio 	d case for linear applications on of variables for quick and e	easy parameter changes			
 triangular loac implementatio Other Beckhoff production modular 	d case for linear applications on of variables for quick and e oducts are also integrated in le with their extended voltag	easy parameter changes the TwinCAT 3 Motion Designer. In terms je ranges. The AX8128 single-axis module	f the AMP8000 distributed servo drive system, these i nd the AX8820 universal regenerative unit are also int	nclude the AMP8620 supply module and the A egrated.	MP88
 triangular loac implementatio Other Beckhoff pr distribution modu 	I case for linear applications on of variables for quick and o oducts are also integrated in le with their extended voltag Additional Information	easy parameter changes the TwinCAT 3 Motion Designer. In terms ye ranges. The AX8128 single-axis module Press contact	f the AMP8000 distributed servo drive system, these i nd the AX8820 universal regenerative unit are also int	nclude the AMP8620 supply module and the A egrated.	MP88
triangular loac implementatio Other Beckhoff pr distribution modu Presskit	I case for linear applications on of variables for quick and o oducts are also integrated in le with their extended voltag Additional Information	easy parameter changes the TwinCAT 3 Motion Designer. In terms je ranges. The AX8128 single-axis module Press contact	f the AMP8000 distributed servo drive system, these i nd the AX8820 universal regenerative unit are also int	nclude the AMP8620 supply module and the A egrated.	MP88
triangular loac implementatic Other Beckhoff pr distribution modu Presskit	d case for linear applications on of variables for quick and o oducts are also integrated in le with their extended voltag Additional Information	easy parameter changes the TwinCAT 3 Motion Designer. In terms je ranges. The AX8128 single-axis module Press contact	f the AMP8000 distributed servo drive system, these i nd the AX8820 universal regenerative unit are also int	nclude the AMP8620 supply module and the A egrated.	MP88

↓ ZIP (7.0 MB)

functionality has been further enhanced with the latest update.

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TwinCAT news





TwinCAT operating system support overview

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	CE	WES7	W10	W11 24H2	TwinCAT/ BSD	Beckhoff RT Linux [®]
Microsoft EOL(0)	2028	2025	LTSB: 2026 LTSC-2019: 2028 LTSC-2021: 2031	2034	-	-
TwinCAT 3.1 Build 4024	Yes	Yes	Yes	No(2)	No	No
TwinCAT 3.1 Build 4026	No(1)	No(1)	Yes(3)	Yes(4)	Yes	Yes

TwinCAT operating system support overview



- See <u>https://www.beckhoff.com/en-en/products/ipc/software-and-tools/operating-systems/tabular-product-overview/</u>
- Can be used with Build 4026: 4024.x Remote Manager packages
- From 4024.66, we will inhibit the RUN mode (XAE only possible)
- XAE Shell 64 requires W10-64b 20H2, but useable with XAE Shell on older Win and 32-bit
- Available for XAE for 2 years; NEW for XAR
- Infosys TwinCAT 3 requirements: <u>https://infosys.beckhoff.com/english.php?content=./content/1033/tc3_overv</u> <u>iew/6162419083.html&id=6164016218175045418</u> Additional requirements could be in the TwinCAT Functions – e.g. "no CE", "only 64-bit OS" etc.

TwinCAT operating system support overview



System requirements

TwinCAT 3 Engineering (XAE) and TwinCAT 3 Runtime (XAR) have different system requirements. If you install XAE and XAR on one computer, the requirements for both components must be met.

Some components (such as TcXaeShell64 or TwinCAT Functions) have their own system requirements, which must be considered in combination and can be found in the respective documentation.

TwinCAT 3 eXtended Automation Engineering (XAE)

TwinCAT 3 XAE is an extension for Visual Studio, so that the requirements of Visual Studio must essentially be met.

System requirements for the Visual Studio 2017 Shell ("TcXaeShell") or Visual Studio 2022 Shell ("TcXaeShell64") supplied:

Operating systems	Windows 10 (TcXaeShell64: min. Windows 10 20H2) Windows 11
Hardware	 Processor speed 1.8 GHz or faster; dual-core or better is recommended Main memory: at least 4 GB RAM (with TcXaeShell64: 16GB RAM recommended) Hard disk space: 10 GB of available memory if Visual Studio is not yet installed. Hard disk speed: the use of a solid-state drive (SSD) is recommended. Graphics card: the minimum supported resolution should be 720p (1208 x 720). Recommended: support for FullHD resolution (1920 x 1080) or higher.

TwinCAT 3 eXtended Automation Runtime (XAR)

System requirements for TwinCAT 3 XAR depending on the program to be executed:

Operating systems	 Windows Embedded Standard 7 (WES7): supported up to TwinCAT 3.1 Build 4024 Windows 10 Windows 10 LTSB, LTSC Windows 11: supported from TwinCAT 3.1 Build 4026 	63
Beckhoff Embedded PC with TwinCAT 3 image	 Windows Embedded Compact 7 (WEC7): supported up to TwinCAT 3.1 Build 4024 TwinCAT/BSD 	
Hardware	 Hard disk space: at least 2 GB Main memory depends on the activated configuration 	

TwinCAT software updates for customers







TwinCAT 3 | Software updates Overview of the latest TwinCAT 3 software updates

Learn more →

TwinCAT for Linux[®]





Beckhoff RT Linux[®] and TwinCAT for Linux[®] Recap

- Linux[®]-based operating system as a host for TwinCAT control and Linux[®] applications on Arm[®] and x86 IPCs
- hypervisor support with device passthrough for Windows and TwinCAT on Linux[®]
- TwinCAT in Linux[®] containers for multiple TwinCAT runtime targets on one IPC and new control architectures









Beckhoff RT Linux[®] and TwinCAT für Linux[®] Current state

- Beckhoff Linux[®] package servers are online for beta access
- registration form for customers and colleagues: <u>https://forms.office.com/e/JiuDsNdNkR</u>
- beta program will be continued and updated
 - new beta package with installation images for Arm[®] and x86 IPCs
 - getting started documentation has been updated
 - sample for containerized TwinCAT applications
 - updated beta package will automatically be sent out to all registered contacts and new contacts









Virtual PLC based on TwinCAT for Linux[®]





Virtual PLC based on TwinCAT for Linux[®]

- we demonstrate how existing technologies can be combined to execute virtual PLC use cases with Beckhoff
- key messages:
 - virtual control is a topic that we are very familiar with
 - PC-based control from Beckhoff has always been designed with IT technology in mind
 - we are the right partner to discuss virtual control use cases





- target demographic: companies with huge on-premise production and IT expertise
- motivation:
 - flexibility: virtual controllers can easily be scaled and adapted to different requirements.
 - cost reduction: reduces the need for physical hardware in the field and associated costs
 - maintenance and upgrades: easier to perform maintenance and software upgrades as no physical hardware is involved
- less focus on demanding real-time tasks

TwinCAT Package Manager





TwinCAT Package Manager General



- new feed is outdated
 - new disclaimer
 - Remote Manager version, TwinCAT 2 x64 Engineering, TwinCAT 2
 Project Converter



TwinCAT Package Manager General



- new feed is outdated
- CLI: remote connection between two TwinCAT Package Managers



TwinCAT Package Manager GUI – new design

BECKHOFF

🕖 TwinCA	T Package Manager	- 0	×			
BEC	KHOFF New Automation Technology					
≡	Browse Installed Updates ²					
	Updates are available for 2 product(s) Celect all updates	Variant Engineering Uninstall v4026.14.0				
Ç	X Search X Variant: Engineering + Runtime	TwinCAT Standard	B			
	∧ General	Id: TwinCAT.Standard.XAE	R			
	TwinCAT Standard The workload TwinCAT Standard combines the components needed for the standard scope of function of TwinCAT	Published: Friday, February 14, 2025 at 8:00:12 AM Author: Beckhoff Automation Feed: Beckhoff Experimental Feed				
- 1	Engineering - TwinCAT Standard	<u>Description</u> Versions				
- 1	Runtime - TwinCAT Standard	The workload TwinCAT Standard combines the components needed for the standard scope of function of TwinCAT				
	Engineering - TwinCAT Standard Remote Manager Andres development environment on the same computer.					
	Beckhoff Device Manager The Beckhoff Device Manager can be used for device diagnostics. It can provide a variety of system values. They can be accessed via standard functions of the operating system and via special functions of the Beckhoff BIOS. The functions available for individual IPCs depend on the hardware, the BIOS, the operating system, and the Device Manager version. They may therefore differ between different Beckhoff IPCs.					
- 1	Runtime - Beckhoff Device Manager					
	↑ TCxxxx Base					
()	TC1000 TwinCAT 3 ADS The Automation Device Specification (ADS) is the communication protocol of TwinCAT. It enables the data exchange and the control of TwinCAT systems. ADS is media- independent and can communicate via serial or network connections.					
1		-				

TwinCAT Package Manager **GUI – advanced update handling**



🔞 Twin0	7 TwinCAT Package Manager	- 0	×
BE	BECKHOFF New Automation Technology		
≡	Browse Installed Updates		(î
()	Updates are available for 1 product(s) Separat	eparate updates tab	
	Select all updates at once		
	A TExxxx Engilieering Id: Publishe	TwinCAT.Standard.XAE d: Monday, February 24, 2025 at 3:18:24 PM	₽
	TE1300 TwinCAT 3 Scope View Professional Author: software oscilloscope for the graphical display of data captured from several target systems Feed:	Beckhoff Automation Beckhoff Stable Feed	
	Engineering - TE1300 TwinCAT 3 Scope View Professional	Description Versions	
	The work of the second se	rkload TwinCAT Standard combines the components	
i			
1			

100

TwinCAT Package Manager GUI – advanced handling of Remote Manager versions



BECKHOFF New Automation Technology Image: Search Search Search	ſ
Browse Installed Updates Search Search Variant: Engineering + Runtime Variant: Engineering + Runtime Updates	r e ,
Search X Variant: Engineering + Runtime Variant Engineering AllowMultiple 2	
	í (†
TwinCAT Standard Remote Manager	
TwinCAT Standard Remote Manager Id: TwinCAT.StandardRM.XAE The TwinCAT Standard Remote Manager Id: TwinCAT.StandardRM.XAE	Ę
Author: Beckhoff Automation Feed: Beckhoff Outdated Feed	
Engineering - TwinCAT Standard Remote Manager	
Shows multiple versions	
Feed: LOCAL_INSTALLED	
V 4024.05.2 Feed: Beckhoff Outdated Feed	
✓ 4024.64.1 Feed: Beckhoff Outdated Feed 🔛	
→ 4024.62.35 Feed: Beckhoff Outdated Feed	
4024.56.0 Feed: LOCAL_INSTALLED	
Separate handling of all available versions	
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TwinCAT Package Manager GUI – integrated download option



👘 TwinC/	AT Package Manager		- D	×
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	TE1410 TwinCAT 3 Interface for MATLAB®/Simulink® communication interface between MATLAB®/Simulink® and the TwinCAT 3 runtime		List of downloads	
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	TE1610 TwinCAT 3 EAP Configurator Tool for illustrating and configuring communication networks in which data exchange takes place with the aid of the EtherCAT Automation Protocol (EAP).			
	Engineering - TE1610 TwinCAT 3 EAP Configurator	:		
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TwinCAT Package Manager GUI – new package view



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TwinCAT Package Manager GUI – upgrade via TwinCAT Package Manager





TwinCAT PLC++: The next generation of PLC technology



NEW



TwinCAT PLC++: The next generation of PLC technology





TwinCAT PLC++: The next generation of PLC technology



TwinCAT PLC

proven and continued

Twin**CAT[®] PLC+**+

- major technology leap
 - better runtime performance
 - more efficient engineering







+⁺ Runtime performance

- faster execution of the PLC code







+⁺ Runtime performance

- faster execution of the PLC code
 - standard: faster by a factor of up to 1.5





+⁺ Runtime performance

- faster execution of the PLC code
 - standard: faster by a factor of up to 1.5
 - optimized: faster by a factor of up to 3




+⁺ Runtime performance

- faster execution of the PLC code
 - standard: faster by a factor of up to 1.5
 - optimized: faster by a factor of up to 3



✓ Save costs: more functionality on the same PC or smaller PC



+⁺ Runtime performance

- faster execution of the PLC code
 - standard: faster by a factor of up to 1.5
 - optimized: faster by a factor of up to 3



- ✓ Save costs: more functionality on the same PC or smaller PC
- ✓ Increase machine productivity

Twin**CAT[®] PLC+**⁺ Key features





Twin**CAT[®] PLC+⁺** Key features

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++ Efficient engineering

- improved engineering performance
- high usability

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Twin**CAT[®] PLC+**⁺ Key features



++ Efficient engineering

- improved engineering performance
- high usability
- deeper integration into the existing TwinCAT functions



Twin**CAT[®] PLC+**+ Key features

BECKHOFF

++ Efficient engineering

- improved engineering performance
- high usability
- deeper integration into the existing TwinCAT functions
- better application code quality and easier management

✓ Increased productivity in engineering

✓ Increased reliability for machines and systems

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		26	nCounterValue := nCounterValue - 1;
		27	
		28	END_METHOD
		29	
		30	END_FUNCTION_BLOCK

Twin**CAT[®] PLC+**+ Key features

++ Compatibility and deep integration

- fully integrated in TwinCAT directly alongside the existing TwinCAT PLC
- option of converting existing knowledge

✓ Low changeover and training costs



BECKHOFF

Twin**CAT[®] PLC+⁺** New features since SPS exhibition



++ New offline features

- mini map
- tab function for code snippets
- sticky scrolling

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Þ 🖾 I/O	25	IF nCounterValue > 10000 THEN		
	26	<pre>eCounter := E_Counter#eState2;</pre>		
	27	END_IF		
	28			
	29	E_Counter#eState2:		
	30	IF nCounterValue > 30000 THEN		
	31	eCounter := E_Counter#eState3;		
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Twin**CAT[®] PLC+⁺** New features since SPS exhibition

BECKHOFF

+⁺ New offline features

- mini map
- tab function for code snippets
- sticky scrolling

+⁺ New online features

- System Manager online/offline comparison
- flow control

File Edit View Git Project Window Help	Build Debug	TwinCAT TwinSA	FE PLC PL	C++ Tools	,⊅ Search +	Counter	-		×
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Global watchlist

- data recording via ADS
- complex filter options to influence the current view
- group variables
- individual line-by-line display mode: dec, hex, bin etc.
- save and load configurations

Abl Aa 📕 Enter filter (e.g. Name=MySy	ymbol and Value>42)							
	Value	Prepared Value 🖆	Min	Max	Snapshot 19.03.2025 08:25:37.458	Snapshot (1) 19.03.2025 08:25:51.108	Data Type	Comment
▲ Milling								
fSpindleSpeed	6059,855		0	6060,442	6000,132 🔻	5999,871 🔻	REAL64	
fMotorCurrent	2,01 A		0 A	2,093 A	1,961 A 🛛 🔻	1,823 A 🛛 🔻	REAL64	
bJobStarted	0ь0		0ь0	0b1	0ь0	0ь0	BIT	
bJobFinished	FALSE		FALSE	TRUE	FALSE	FALSE	BIT	
blsReady	TRUE		FALSE	TRUE	TRUE	TRUE	BIT	
nState	5	2	1	100	6	4 🔻	UINT32	
nCntUp	0x1A8	0x8EE	0x0	0x8EE	0x352	0x1B1	UINT64	
nNumToolChanges	0o301		0o261	0o301	0o261 🔻	0o264 🔻	UINT32	
bSkipLevel4	FALSE		FALSE	TRUE	FALSE	TRUE 🔺	BIT	
aMaxTemperatures	32,1 39,3 55,5 62,2		23,4 37 39 41	35 40,7 55,5 65,6	32,1 39,3 55,	35 37 39 41	REAL64	
aTemperatureStep	20 6,5 5,5 6,5		8 4,5 5,5 6,5	20 8,5 7,5 6,5	20 6,5 5,5 6,5	20 8,5 7,5 6,5	REAL64	
aCurrentStep	0,15 0,2 -0,05 0,2		0,15 -0,05 -0,05 0,1	0,15 0,2 0,1 0,2	0,15 0,2 -0,0	0,15 0,2 -0,0	REAL64	
▲ Depot								
nRawMaterialInStock	0x15F	0x163	0x15F	0x164	0x163	0x163	UINT32	
▲ ToolTurret								
nToolPending	0		0	3	0	0	UINT32	
nToolInUse	1	4	0	3	1	2	UINT32	
aToolTemperature	41,983 25,973 21,346		21,266 21,276 21,275	41,983 44,76 55,408	47,031 21,343	21,311 29,988	REAL64	Temperatur of the diff
▲ ValveTerminal								
bCoolantValveState	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	BIT	
bWorkPieceFixtureValveState	1		0	1	1	1	BIT	



Global watchlist

- write variables
- save and compare values in snapshots

- open snapshots of compare window to define drafts for writing values in groups
- generate a complete measurement project with watchlist as line chart

6 Aa 💻 Enter filter (e.g. Name=MvS	Symbol and Value>42)									
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TE1700 | TwinCAT CoAgent







TwinCAT CoAgent for automation engineering

- smart AI-based agents to
 - shorten development cycles
 - improve software quality
 - increase productivity

TwinCAT CoAgent for automation runtime

- smart AI-based agent to
 - shorten downtime
 - increase productivity
 - translate from machine to human





























TwinCAT CoAgent Smart agents for automation runtime





TwinCAT CoAgent Smart agents for automation runtime





TwinCAT CoAgent Key facts



Comprehensive support

Combines advanced AI models and agents to speed up PLC programming, I/O configuration, HMI design, and knowledge management.

Advanced AI technology

Uses optimized generative AI agents to accurately process natural language, images, and complex technical contexts.

Human-centered

Engineers maintain control over AI-suggested solutions; AI handles routine tasks, allowing engineers to focus on more complex activities.

TwinCAT CoAgent Key facts



Competitive advantages

Accelerates engineering processes, improving quality as well as productivity. Automated unit tests for PLC code enhance software quality and detect errors early.

TE3850 TwinCAT 3 Machine Learning Creator





TwinCAT Machine Learning Creator

- automated AI training environment
 - enabler for automation engineers
 - efficient version-zero generator for data scientists
- optimized for low latency applications and deployment at control level or edge









democratization

- empowers automation engineers to create task-specific AI models
- accuracy
 - creates the most effective solution for a customer-specific task
- efficiency
 - creates solutions over 10 x faster than hand-crafted AI models
- scalability
 - no own infrastructure needed, uses scalable AWS resources
- standardization
 - structured and well-documented AI model training simplifies reviewing processes







TwinCAT MC3 | Modular engineering

BECKHOFF



Target position Touch probe control

Advantages:

- switch to simulation mode during runtime
- custom-specific configuration same interface for PLC
- openness for integration of further interfaces
- improved communication for a faster response

TwinCAT MC3 UI | HTML-based user interface for commissioning

BECKHOFF

Axis 1	Axis 2 Create scope directly (like a template for scope)
Axis1 (Axis) TINC^MC Project1^Axes^Axis1 Axis1 (Axis) Save Position Velocity Error 0.00 0 Create Scope Halt Reset H	× Axis2 (Axis) ⇒ × C TINC^MC Project1^Axes^Axis2 ∨ Axis2 (Axis) Save Position Velocity Error 0.00 0.00 0 <<<>>>>
Basic Controls . Worden minormation . Denation (mm) Enable Dialog Enable All Set-Act Information (mm) . Move Absolute (mm) Positive Negative Set-Act Information (mm) 0.00 0.00 Positive Negative Set Velocity Act Velocity 0 0 Online 100 0 0.00 0.00 0.00 Halt Dialog Set Actual Position (mm) Set Reference Position Act Reference Position 0.00 0 Mode Position Lag Information (mm) Lag 0 0 0 Mode Position 0 0.00 0.00 0 0 0 Mode Position 0 0 0 0 0 0 0 Mode Position 0 0 0 0 0 0 0 Mode Position 0 0 0 0 0 0 0 Mode Position 0 0 0 0 0 0 0	Basic Controls . Wordon micromation . Deradit Wovenients . Enable Dialog Enable All Set-Act Information (mm) . Move Absolute (mm) Positive Negative . . Move Absolute (mm) Override 0.00 0.00 0.00 Online 100 . Act Acceleration 0.00 Move Command 1 . Move Command 2 . Basic Controls Override 0.00 . 0.00 0.00 Online 100 . . . Move Command 1 . Move Command 2 . Position Mode Position . . . Mode Position . . . Mode Position . . . Mode Mode Mode </td
Send View of n at the same	nultiple axes ne time View can be configured individually for each axis



modular design

- improved engineering
- same commissioning tool for all motion control parts
- flexibility
 - functional extensions for axes when using TcCOM objects and interfaces
 - same functionalities and objects can be used by different axis types

gain in performance

- no fixed limit on the number of axes
- improved efficiency through the distribution of CPU utilization
- new algorithms for better process performance

TwinCAT 3 Scope und Analytics





TwinCAT 3 Scope The graphical data analysis method – TwinCAT Scope View

BECKHOFF



TwinCAT 3 Scope | New Scope table chart

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Explorer	□ I X Table Scope Project + ×								
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olution Explorer (Ctrl+ü)	Start: 08:48:24,401:000 End: 08:56:36,572	2:000 Pos: 0,00:00:00,000:000 Time:	08:48:24,401:000 Date: Freitag, 7. M	Närz 2025					
ution 'TwinCAT Measurement Project' (1 project)	III 0,00:10:00,000:000	N 0.00:00:00:000 5	🕅 🥋 🙅 🖉 MS 🕼						
TwinCAT Measurement Project	Ab Aa Enter filter (e.g. Name=MvS	wmbol and Value>42)							Р×
Table Scope Project				1	- Spanshot	_ Spanshot (1)	1		
💂 DataPool		Value	Min	Max	07.03.2025	07.03.2025	Data Type	Comment	
					08:48:35.519	08:48:40.169			
K fSpindleSpeed	▲ Milling								
fMotorCurrent	 fSpindleSpeed 	6000,164	0	6060,383	0	6000,098	REAL64		
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bJobFinished	 bJobStarted 	FALSE	FALSE	TRUE	FALSE	FALSE	BIT		
blsReady	 bJobFinished 	FALSE	FALSE	TRUE	FALSE	FALSE	BIT		
	- blsReady	TRUE	TRUE	TRUE	TRUE	TRUE	BIT		
nentop NumToolChanges	- nState	5	1	99	99 🔺	4	UINT32		
k bSkipLevel4	- nCntUp	33	0	2286	300 🔺	741 🔺	UINT64		
aMaxTemperatures	 nNumToolChanges 	394	385	394	388 🔻	389 🔻	UINT32		
aTemperatureStep	 bSkipLevel4 	FALSE	FALSE	TRUE	TRUE 🔺	FALSE	BIT		
aCurrentStep	 aMaxTemperatures 	27,3 28,4 44,2 57	23,4 28,4 39 41	35 40,7 55,5 65,6	35 37 39 41	32,1 39,3 55	REAL64		
EDepot	 aTemperatureStep 	9 8,5 9,5 8,5	8 4,5 5,5 6,5	20 8,5 9,5 8,5	20 8,5 7,5	20 6,5 5,5	REAL64		
	 aCurrentStep 	0,15 0,15 0,05 -0,1	0,15 -0,05 -0,05 -0,1	0,15 0,2 0,1 0,2	0,15 0,2 -0,0	0,15 0,2 -0,0	REAL64		
	 Depot 								
M nToolInUse	 nRawMaterialInStock 	301	301	303	303 🔺	302 🔺	UINT32		
aToolTemperature	▲ ToolTurret								
▲	- nToolPending	0	0	3	2	0	UINT32		
bCoolantValveState	- nToolInUse	2	0	3	0 🔻	1 🔻	UINT32		
bWorkPieceFixtureValveState	 aToolTemperature 	48,846 28,567 21,336	21,264 21,264 21,257	62,919 57,017 55,407	21,33 21,315	34,313 29,41	REAL64	Temperatur of the different Tools	
EDURand	▲ ValveTerminal								
FRadNum	 bCoolantValveState 	TRUE	FALSE	TRUE	FALSE	TRUE	BIT		
R250 Index	 bWorkPieceFixtureValveState 	TRUE	FALSE	TRUE	TRUE	TRUE	BIT		
Trigger	▲ fbDRand								
	- Num	0,64	0	1	0,335	0,818	REAL64		
	- fRndNum	0.64	0	1	0.335	0.818	REAL64		
	- P250 Index	0×6	0~0	0,450	0,70	0×40	INIT16		

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NEW

TwinCAT 3 Scope | New Scope table chart

- Scope: basic and professional
- clear, structured representation
- values are comparable via snapshots
- statistics values
- snapshots can be saved and loaded
- base for TwinCAT global watchlist
- helpful for machine commissioning and service

Table Chart Start: 09:18:54,601:000 End: 09:19:04	1,200:000 Pos: 0,00:00:05,020:424	Time: 09:18:59,621:424 D)ate: Freitag, 7. M	ärz 2025
0,00:00:01,472:830	0,00:00:05,020:424	🖱 🗙 🕷 🖝 🖉 🖉	S 📴	
Aa Enter filter (e.g. Name=	/lySymbol and Value>42)			
	Value	Min	Max	Data Type
Axis Group				
- nToolInUse	0ь100	0ь0	0b101	UINT8
- State	0o177773	0o177773	0o177773	INT8
 fSpindleSpeed 	0xFF9C	0xFE0C	0x1F4	INT16
 Infotext 	He_o Wor_d	-	-	STRING(255)
 Additional Info 	Hello, TwinCAT!	-	-	STRING(50)
 bDigitalOut 	FALSE	FALSE	TRUE	BIT
 CurrentWarningLevel 	Caution	Warning	Caution	WarningLeve

Machining Center		00.40.04.000 00.00	17 0005								
art: 08:48:24,401:000 End: 08:56:36,57	2:000 Pos: 0,00:00:00,000:000 Time:	08:48:24,401:000 Date: Freitag, 7. N	Marz 2025								
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Milling											
 fSpindleSpeed 	6000,164	0	6060,383	0 🔻	6000,098 🔻	REAL64					
- fMotorCurrent	1,964 A	0 A	2,095 A	0 A 🗸 🔻	1,827 A 🛛 🔻	REAL64					
- bJobStarted	FALSE	FALSE	TRUE	FALSE	FALSE	BIT					
 bJobFinished 	FALSE	FALSE	TRUE	FALSE	FALSE	BIT					
 blsReady 	TRUE	TRUE	TRUE	TRUE	TRUE	BIT					
- nState	5	1	99	99 🔺	4 🔻	UINT32					
- nCntUp	33	0	2286	300 🔺	741 🔺	UINT64					
 nNumToolChanges 	394	385	394	388 🔻	389 🔻	UINT32					
 bSkipLevel4 	FALSE	FALSE	TRUE	TRUE 🔺	FALSE	BIT					
 aMaxTemperatures 	27,3 28,4 44,2 57	23,4 28,4 39 41	35 40,7 55,5 65,6	35 37 39 41	32,1 39,3 55	REAL64					
- aTemperatureStep	9 8,5 9,5 8,5	8 4,5 5,5 6,5	20 8,5 9,5 8,5	20 8,5 7,5	20 6,5 5,5	REAL64					
 aCurrentStep 	0,15 0,15 0,05 -0,1	0,15 -0,05 -0,05 -0,1	0,15 0,2 0,1 0,2	0,15 0,2 -0,0	0,15 0,2 -0,0	REAL64					
Depot											
 nRawMaterialInStock 	301	301	303	303 🔺	302 🔺	UINT32					
ToolTurret											
 nToolPending 	0	0	3	2	0	UINT32					
- nToolInUse	2	0	3	0 🔻	1 🔻	UINT32					
 aToolTemperature 	48,846 28,567 21,336	21,264 21,264 21,257	62,919 57,017 55,407	21,33 21,315	34,313 29,41	REAL64					
ValveTerminal											
 bCoolantValveState 	TRUE	FALSE	TRUE	FALSE	TRUE	BIT					
 bWorkPieceFixtureValveState 	TRUE	FALSE	TRUE	TRUE	TRUE	BIT					
fbDRand											
- Num	0,64	0	1	0,335 🔻	0,818	REAL64					
- fRndNum	0,64	0	1	0,335 🔻	0,818	REAL64					
 R250_Index 	0x6	0x0	0xF9	0x79	0xA9	INT16					



NEW

TwinCAT 3 Analytics – Beckhoff Smart System Diagnosis



NEW



Integrated in TwinCAT Analytics Engineering

PLC function block in TF3510 Analytics library

FB_ALY_AM8xxx55D	
I_TcMessage ipResultMessage	
BOOL bError	
BOOL bNewResult	
BOOL bConfigured	
ARRAY[14] OF LREAL aHumidity	
ARRAY [14] OF LREAL aTemperature —	
ARRAY[14] OF LREAL aRmsX	
ARRAY [14] OF LREAL aKurtosisX	
ARRAY [14] OF LREAL aPeakPeakX	
ARRAY[14] OF LREAL aRmsY	
ARRAY [14] OF LREAL aKurtosisY	
ARRAY[14] OF LREAL aPeakPeakY	L
TwinCAT 3 Analytics Current TwinCAT Analytics engineering licenses



Product	TE3500 Analytics Workbench	TE3520 Analytics Service Tool
Data analysis functions	Base, Condition Monitoring, Power Monitoring, Filter, Weighing, Vision, Machine Learning, Data Labeling	Base, Condition Monitoring, Power Monitoring, Filter, Weighing, Vision, Machine Learning, Data Labeling
Includes other licenses	TE1300 Scope Professional TF3300 Scope Server	TE1300 Scope Professional TF3300 Scope Server
Compares functions	Yes	Yes
Automatic PLC code generation	Yes	No
Automatic HMI dashboard generation	Yes	No





TwinCAT Analytics engineering and modular runtime licenses



TwinCAT 3 Analytics



TwinCAT Analytics modular engineering and modular runtime licenses





TwinCAT 3 Analytics Example: TwinCAT Analytics modular engineering licenses

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Product	TE3500 Analytics Workbench	TE3510 Analytics Vision		
			Toolbox 33	
Data analysis functions	Base, Condition Monitoring,	TF3510 Base + TF7xxx Vision	Search Too	lbox
-	Power Monitoring, Filter,			oving
	Weighing Vision Machine		OEE O	verall E
	Learning, Data Labeling		😕 Pr	oduct
			😕 😕 🕺	oducti
Includes other licenses	TE1300 Scope Professional	TE1300 Scope Professional	No Sig	gnal G
	TF3300 Scope Server		🔯 Ti	me Clo
	, , , , , , , , , , , , , , , , , , ,		🕕 Ti	mer 10
Compares functions	Yes	Yes	🕕 Ti	ming
			Analytic	s - Vis
Automatic PLC code generation	Yes	Yes	N Po	pinter
			et Ac	dd Ima
Automatic HMI Dashboard generation	Yes	Yes	T CI	ahe
			- Ca	olor In



MX System

MD8206-0200

ELM8911 in MX system (+ SBC)

MO7221-9018

ELM8911 in MX system (+ SBC)

MO1918-0000

• EL1918 in MX

MO2914-0000

• EL2904 in MX





EL1957

- 8 safety inputs
- 4 safety outputs up to 2A
- TwinSAFE Logic integrated
- advantages:
 - less space
 - Lower cost
 - 1 component \rightarrow 1 complete safety loop





EL2962



- 2 safe relay contacts
- TwinSAFE Logic integrated



EL3952/ELX3952

- 2 safe analog inputs
- 0–24mA or 4–20mA
- SIL-3 capable
- TwinSAFE Logic integrated





EJ1957-0001/EJ1918-0001

- 8 safety inputs
- 4 safety outputs up to 0.5A (EJ1957)
- advantages:
 - integration in third-party devices
 - flexible mounting
 - extended temperature range
 - see safety manual





EJ6910-0001

- TwinSAFE Logic
- advantages:
 - integration in third-party devices
 - arbitrary mounting
 - extended temperature range
 - see safety manual
 - compliant with MIL/STANAG standards
 - NATO approved





TwinCAT Safety PLC – porting the EL6910

Next evolution:

Porting EL6910 to the IPC world

- TwinCAT Safety PLC as runtime framework
- same functionality as EL6910
- binary compatible with HW solution
- same engineering as HW solution
- faster execution (and reaction) time through implementation of highperformance IPC



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TwinCAT Safety PLC – porting the EL6910

Evolution: Porting the EL6910 to the IPC world

increased boundaries...

EL6910	Safety PLC EL6910 Runtime
512 function blocks	4096 function blocks
128 TwinSAFE groups	1024 TwinSAFE groups
212 TwinSAFE connections	2048 TwinSAFE connections
40 TwinSAFE users	40 TwinSAFE users
Cycle time: 1 ms – 15 ms	Cycle time: 8 µs – 7 ms





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