

SIMATIC Technology CPU 317TF-2DP

Motion controller for sophisticated machines

April 2011

Compact, triple-purpose technology controller

The SIMATIC CPU 317TF-2DP is a triple-purpose, **high-performing controller** which is positioned particularly in the area of special-purpose machine manufacturing.

Motion Control applications such as palletizers, handling systems, cross cutters, hydraulic presses, race tracks or flying shears, that often present a risk to people and machinery, can now be designed cost-effectively with **Safety Integrated** and ensure high availability of the machine in accordance with the latest safety regulations.

The advantages: All functions are engineered using **uniform procedures** which saves you time and costs in programming, commissioning and maintenance. External safety equipment and complex wiring can be omitted which can result in **considerable space savings in the control cabinet**.

Application examples

- Position-controlled positioning
- Complex, synchronized motion sequences, such as gear and curve synchronization or print-mark correction
- Coupling of synchronized axes to virtual or real master axes
- Electric or hydraulic (P valve) positioning axes, synchronous axes or path axes (activation and deactivation of force/pressure control and force/pressure limiting (as of software V4.2))

Dynamics and kinematics in motion

- Programming using PLCopen-compliant function blocks
- Linear, circular or polynomial interpolation in 2D or 3D with up to 3 axes. (as of software V4.2)

- Powerful PLCopen-compliant functions for path interpolations that support various standard kinematics (SCARA, roll picker, articulated arm robot, delta-picker 2D/3D). These enable path interpolations to be easily implemented via several interpolation points with rounding radii and handling functions.

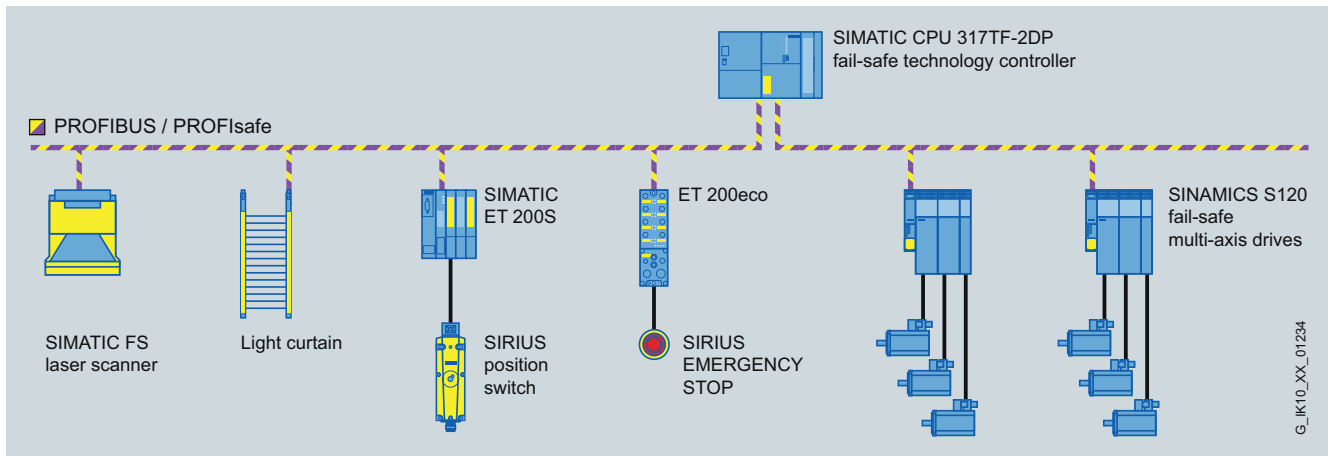
Cost-effective Safety Integrated

Safety Integrated expands the standard of the SIMATIC CPU 317TF-2DP for safety-oriented applications in the simplest way. In addition to the economic advantage and the protection of people and machines, the controller also satisfies the stringent safety requirements according to the relevant standards EN 954-1 up to Cat 4, IEC 62061 up to SIL 3, and EN ISO 13849-1 up to PL e.

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Answers for industry.

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Ready-to-use function blocks

With STEP 7 Technology you use simple function blocks for programming complex Motion control applications. You can process up to 64 technology projects at the same time. The Distributed Safety option package provides you with ready-made TÜV-certified library blocks, e.g. for Emergency Stop, two-hand control, muting and door monitoring.

Safe and secure communications

Centralized and distributed fail-safe I/Os according to PROFI-safe, the fail-safe communications standard, can be connected to SIMATIC CPU 317TF-2D. In contrast to conventional wiring, the advantages of **PROFI-safe technology** include savings in wiring costs, reduced risk of wiring errors and greater flexibility in commissioning.

Technical data	
	CPU 317TF-2 DP
Fail-safety	
Achievable level	EN 954-1 (up to Cat. 4), IEC 6206 (up to SIL 3), EN ISO 13849 (up to PL e)
Memory	
Integrated work memory	1.5 MB
Corresp. number of instructions	400 K
Load memory via Micro Memory Card (always required)	min. 4 MB, max. 8 MB
Execution times	
Bit operation, typ.	0.05 µs
Word operation, typ.	0.2 µs
Fixed-point arithmetic, typ.	0.2 µs
Floating-point arithmetic, typ.	1 µs
Integrated inputs/outputs	
Digital inputs 24 V DC	4, e.g. for proximity switch evaluation
Digital outputs 24 V DC	8, 0.5 A, for high-speed camming functions
Maximum quantitative framework for technology	
Axes	32
Cam disks	32
Output cams	32
Probes	16
External encoders	16
Can be used simultaneously	64
Ordering data	
CPU	6ES7 317-6TF14-0A00
S7-Technology	6ES7 864-1CC.

Fail-safe drives

Drives with safety functions, e.g.

- safe standstill
- safely reduced speed
- safe brake control

are also connected with PROFI-safe.

Advantages at a glance

- Motion control, safety and standard application programs in one project on one controller
- Cost savings thanks to quick, easy and uniform engineering in STEP 7
- Space savings in the control cabinet
- Direct processing of fail-safe functions from the drives
- PROFI-safe

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