

Highlights
SIMATIC S7-1500 and ET 200MP

- 1 Efficient engineering
The support of all IEC 61131-3 programming languages (LAD/FBD, STL, SCL and Graph) and of high-level languages such as C++ enable efficient programming of the Advanced Controllers in the shared engineering framework TIA Portal.
- 2 Innovative design
The onboard display of the CPU supports diagnostics and initial commissioning with functions such as check tag status and IP address assignment. Cabling is convenient thanks to pre-wiring positions of the I/O modules and jumper links.
- 3 High performance
You can achieve productivity and product quality in your manufacturing process with the advanced controller thanks to the backplane bus and shortest reaction times. The PRO-FINET connection with deterministic dynamic time response ensures reproducibility and precision in the µs range.
- 4 Reliable diagnostics
The automatic generation of system and user diagnostics enables quick error detection. Any errors can be quickly localized on-site thanks to 1:1 LED channel assignment in the I/O modules.
- 5 Safety Integrated
The Advanced Controllers combine functions for standard and fail-safe tasks. The high-density channel, fail-safe I/O modules can be directly addressed while doing the engineering.
- 6 Technology Integrated
Motion Control tasks can be programmed directly in the controller – starting with speed-controlled axes through to camming. A variety of technology functions such as pulse width modulation (PWM) can be implemented.
- 7 Security Integrated
Integrated copy and know-how protection functions protect intellectual property and protect the controller against cyber attacks.

Advanced Controllers					
Modular design		Technology-CPU		Compact design	
Standard-CPU		Technology-CPU		Compact-CPU	
CPU-types		CPU 1511T, 1515T, 1516, 1517, 1518		CPU 1511C, 1512C	
1	Efficient engineering	IEC languages C/C++	x	x	x
2	Innovative design	Onboard-I/Os PROFINET interfaces/ ports (max.)	1/2 to 3/4	1/2 to 2/3	1/2
3	High performance	Bit performance	60 ns to 1 ns	60 ns to 2 ns	1 ns
	Communication options	OPC UA, PROFINET (including PROFI-safe**, PROFIenergy and PROFIdrive), PROFIBUS ***, TCP/IP, PtP, Modbus RTU and Modbus TCP	60 ns to 1 ns	60 ns to 2 ns	1 ns
	Program memory	150 KB to 6 MB	150 KB to 3 MB	4 to 6 MB	175 to 250 KB
	Data memory	1 MB to 20 MB	1 MB to 8 MB	20 MB additional 20 MB for executing ODK applications	1 MB
4	Reliable diagnostics	Integrated system diagnostics	x	x	x
5	Safety Integrated	Fail-safe	x	x	x
6	Technology Integrated	Motion Control functions	• External encoder, output cam, measuring input • Speed and positioning axis • Relative synchronism • PID controllers (integrated) • Counters, pulse width modulation, pulse train outputs (with technology modules)	• External encoder, output cam, measuring input • Speed and positioning axis • Relative synchronism • PID controllers (integrated) • Counters, pulse width modulation, pulse train outputs (with technology modules) • Absolute synchronism, camming	• External encoder, output cam, measuring input • Speed and positioning axis • Relative synchronism • PID controllers (integrated) • Counters, pulse width modulation, pulse train outputs (integrated)
7	Security Integrated	Functions	Know-how, copy, access protection and firewall		

** Only for the modular design *** For Compact-CPU via CM

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Advanced Controllers
SIMATIC S7-1500
with ET 200MP

- New in portfolio: T-CPU, CPU 1518 ODK and Fail-safe I/Os
- Efficient engineering thanks to TIA Portal
- Latest references

Discover more:
siemens.com/s7-1500

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Engineered with TIA Portal

Increase productivity with the ultimate power

Advanced Controllers SIMATIC S7-1500 with ET 200MP

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Advanced Controllers SIMATIC S7-1500
for complex automation tasks

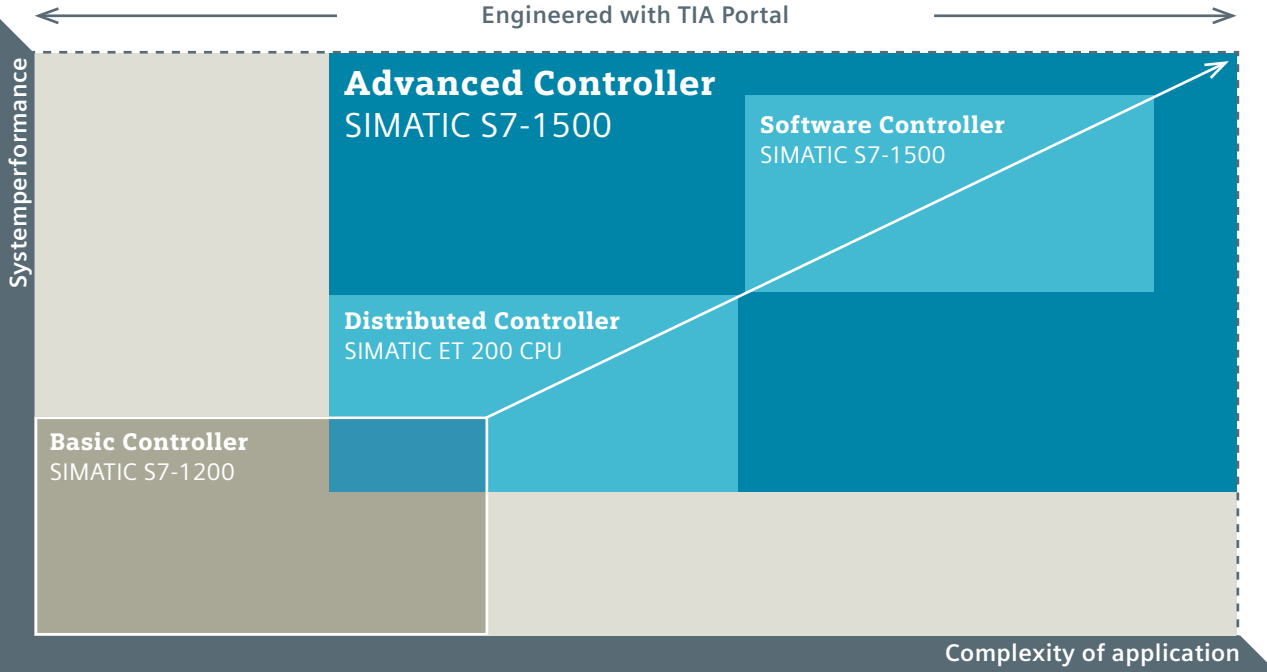
SIMATIC S7-1500 plus TIA Portal
The SIMATIC® S7-1500 Advanced Controller sets new standards in system performance and usability. The seamless integration of the SIMATIC S7-1500 controller into the Totally Integrated Automation Portal (TIA Portal) offers advantages such as shared data management, a uniform operating concept and centralized services. This makes the use of universal functions particularly easy. The controller is quick and easy to install and connect, and with its quick system response times, it boosts productivity at the wave of a hand. For you, this means more flexibility in handling, shorter time-to-market, and a fast rate of return on your plant.

Scalable performance and functionality
There are various CPU versions in several performance classes available for the SIMATIC S7-1500. The portfolio includes standard CPUs and standard CPUs with the option of integrating C/C++ code. With the compact CPUs, the digital and analog I/Os are integrated, counter inputs and pulse inputs can be directly recorded on the CPU. Standard and safety programs can be run on the same controller with the help of the fail-safe CPUs. The Technology CPUs extend the Motion Control functions available in all SIMATIC S7-1500 controllers for demanding solutions.

The integration of the SIMATIC S7-1500 Technology-CPU (T-CPU) into the TIA Portal is an advantage that the machine manufacturer Sollas passes on to its customers. They can configure the T-CPU in the TIA Portal themselves in the event of changes, without having to commission a packaging machine specialist.



»The main advantage of the S7- 1500 T-CPU is that it offers a host of Motion Control functions which can be used without the need for specialist knowledge of motion.«
Dirk Verbeek, Technical Manager of Sollas



Siemens offers the right controller for an extremely wide range of automation requirements. The new generation of SIMATIC Controllers, comprising Basic, Advanced, Distributed and Software Controllers, leaves a lasting impression with its scalability and continuous functionality.

Engineering Software		Article no.
	PLC Programming	
	SIMATIC STEP 7 V14 Professional	Download: 6ES7822-1AE04-0YA5 DVD: 6ES7822-1AA04-0YA5
	SIMATIC STEP 7 V14 Safety Advanced	Download: 6ES7833-1FA14-0YH5 DVD: 6ES7833-1FA14-0YA5
	TIA Portal Multiuser V14	Download: 6ES7823-1AE04-0YA5 DVD: 6ES7823-1AA04-0YA5
	SIMATIC ODK 1500S V2.0	Download: 6ES7806-2CD02-0YGO DVD: 6ES7806-2CD02-0YA0
	SIMATIC S7-PLCSIM Advanced	Download: 6ES7823-1FE00-0YA0 DVD: 6ES7823-1FA00-0YA0
	SIMATIC Energy Suite V14 Engineering including 10 Energy Objects*	Download: 6AV2108-0AA04-0AH5 DVD: 6AV2108-0AA04-0AA5
	SIMATIC Target 1500S™ for Simulink® V1.0	Download: 6ES7823-1BE00-0YA5 DVD: -

Runtime Software on CPU		Article no.
	SIMATIC Energy Suite 5 Energy Objects*	Download: 6AV2108-0CF00-0BH0 DVD: 6AV2108-0CF00-0BB0
	SIMATIC Energy Suite 10 Energy Objects*	Download: 6AV2108-0DF00-0BH0 DVD: 6AV2108-0DF00-0BB0
	SIMATIC Energy Suite 50 Energy Objects*	Download: 6AV2108-0FH00-0BH0 DVD: 6AV2108-0FH00-0BB0
	SIMATIC Energy Suite 100 Energy Objects*	Download: 6AV2108-0HH00-0BH0 DVD: 6AV2108-0HH00-0BB0
	SIMATIC ProDiag S7-1500 for 250 Supervisions	Download: 6ES7823-0AE00-1AA0 DVD: 6ES7823-0AA00-1AA0
	OPC UA S7-1500 small (≤ CPU 1513 (F))	Download: 6ES7823-0BE00-1BA0 DVD: 6ES7823-0BA00-1BA0
	OPC UA S7-1500 medium (CPU 1515/1516 (F))	Download: 6ES7823-0BE00-1CA0 DVD: 6ES7823-0BA00-1CA0
	OPC UA S7-1500 large (CPU 1517/1518 (F))	Download: 6ES7823-0BE00-1DA0 DVD: 6ES7823-0BA00-1DA0

CPUs		Article no.
	Standard-CPUs	
	CPU 1511-1 PN	6ES7511-1AK01-0AB0
	CPU 1513-1 PN	6ES7513-1AL01-0AB0
	CPU 1515-2 PN	6ES7515-2AM01-0AB0
	CPU 1516-3 PN/DP	6ES7516-3AN01-0AB0
	CPU 1517-3 PN/DP	6ES7517-3AP00-0AB0
	CPU 1518-4 PN/DP	6ES7518-4AP00-0AB0
	CPU 1518-4 PN/DP ODK	6ES7518-4AP00-3AB0
	Compact-CPUs	
	CPU 1511C-1 PN	6ES7511-1CK00-0AB0
	F-CPUs	
	CPU 1511F-1 PN	6ES7511-1FK01-0AB0
	CPU 1513F-1 PN	6ES7513-1FL01-0AB0
	CPU 1515F-2 PN	6ES7515-2FM01-0AB0
	CPU 1516F-3 PN/DP	6ES7516-3FN01-0AB0
	CPU 1517F-3 PN/DP	6ES7517-3FP00-0AB0
	CPU 1518F-4 PN/DP	6ES7518-4FP00-0AB0
	CPU 1518F-4 PN/DP ODK	6ES7518-4FP00-3AB0
	T-CPUs	
	CPU 1511T-1 PN	6ES7511-1TK01-0AB0
	CPU 1515T-2 PN	6ES7515-2TM01-0AB0
	CPU 1517T-3 PN/DP	6ES7517-3TP00-0AB0
	CPU 1517TF-3 PN/DP	6ES7517-3UP00-0AB0

* An energy object corresponds to an energy measuring station

SIMATIC S7-1500 and ET 200MP portfolio at a glance



Distributed systems		Article no.
	ET 200MP PROFINET	
	IM 155-5 PN ST	6ES7155-5AA00-0AB0
	IM 155-5 PN HF	6ES7155-5AA00-0AC0
	PROFIBUS	
	IM 155-5 DP ST	6ES7155-5BA00-0AB0

I/Os		Article no.
	35-mm wide modules (without front connector)	
	DI 16 x 24 VDC HF	6ES7521-1BH00-0AB0
	DI 32 x 24 VDC HF	6ES7521-1BL00-0AB0
	DI 16 x 24 VDC SRC BA	6ES7521-1BH50-0AA0
	DI 16 x 230 VAC BA	6ES7521-1FH00-0AA0
	DI 16 x 24 ... 125 VUC HF	6ES7521-7EH00-0AB0
	DQ 16 x 24 VDC/0.5A HF	6ES7522-1BH01-0AB0
	DQ 32 x 24 VDC/0.5A HF	6ES7522-1BL01-0AB0
	DQ 8 x 24 VDC/2A HF	6ES7522-1BF00-0AB0
	DQ 8 x 230 VAC/2A ST (Triac)	6ES7522-5FF00-0AB0
	DQ 8 x 230 VAC/5A ST (relay)	6ES7522-5HF00-0AB0
	DQ 16 x 230 VAC/1A ST (Triac)	6ES7522-5FH00-0AB0
	DQ 16 x 230 VAC/2A ST (relay)	6ES7522-5HH00-0AB0
	DQ 16 x 24 ... 48 VUC/125 VDC/0.5A ST	6ES7522-5EH00-0AB0
	AI 8 x U/I/RTD/TC ST	6ES7531-7KF00-0AB0
	AI 8 x U/I HS	6ES7531-7NF10-0AB0
	AI 8 x U/I/RTD/TC HF	6ES7531-7PF00-0AB0
	AI 8 x U/I HF	6ES7531-7NF00-0AB0

	AQ 4 x U/I ST	6ES7532-5HD00-0AB0
	AQ 8 x U/I HS	6ES7532-5HF00-0AB0
	AQ 4 x U/I HF	6ES7532-5ND00-0AB0
	F-DI 16 x 24 VDC	6ES7526-1BH00-0AB0
	F-DQ 8 x 24 VDC / 2A	6ES7526-2BF00-0AB0
	25-mm wide modules (including front connector)	
	DI 16 x 24 VDC BA	6ES7521-1BH10-0AA0
	DI 32 x 24 VDC BA	6ES7521-1BL10-0AA0
	DQ 16 x 24 VDC/0.5A BA	6ES7522-1BH10-0AA0
	DQ 32 x 24 VDC/0.5A BA	6ES7522-1BL10-0AA0
	DI 16 x 24 VDC/DQ 16 x 24 VDC/0.5A BA	6ES7523-1BL00-0AA0
	AI 4 x U/I/RTD/TC ST	6ES7531-7QD00-0AB0
	AQ 2 x U/I ST	6ES7532-5NB00-0AB0
	AI/AQ 4 x U/I/RTD/TC / 2 x U/I ST	6ES7534-7QE00-0AB0

Technology modules		Article no.
	TMs	
	TM Count 2 x 24 V	6ES7550-1AA00-0AB0
	TM PosInput 2	6ES7551-1AB00-0AB0
	TM Timer DIDQ 16 x 24 V	6ES7552-1AA00-0AB0
	TM SIWAREX WP521 ST	7MH4980-1AA01
	TM SIWAREX WP522 ST	7MH4980-2AA01

Communication		Article no.
	Serial interfaces	
	CM PtP, RS232 BA	6ES7540-1AD00-0AA0
	CM PtP, RS232 HF	6ES7541-1AD00-0AB0
	CM PtP, RS422/485 BA	6ES7540-1AB00-0AA0
	CM PtP, RS422/485 HF	6ES7 541-1AB00-0AB0
	PROFIBUS	
	CM 1542-5, PROFIBUS communication module	6GK7542-5DX00-0XE0
	CP 1542-5 communications processor (PROFIBUS)	6GK7542-5FX00-0XE0
	Ethernet	
	CP 1543-1, Ethernet Security	6GK7543-1AX00-0XE0
	CM 1542-1, PROFINET communication module	6GK7542-1AX00-0EX0

Accessories		Article no.
	Mounting rail, 160 mm (with drill hole)	6ES7590-1AB60-0AA0
	Mounting rail, 245 mm (with drill hole)	6ES7590-1AC40-0AA0
	Mounting rail, 482 mm (with drill hole)	6ES7590-1AE80-0AA0
	Mounting rail, 530 mm (with drill hole)	6ES7590-1AF30-0AA0
	Mounting rail, 830 mm (with drill hole)	6ES7590-1AJ30-0AA0
	Mounting rail, 2,000 mm (without drill hole) for customization	6ES7590-1BC00-0AA0
	Front connector for 35-mm wide modules; screw terminal, 40-pin	6ES7592-1AM00-0XB0
	Front connector for 35-mm wide modules; Push-in terminal, 40-pin	6ES7592-1BM00-0XB0
	SIMATIC Memory Card 4 MB	6ES7954-8LC02-0AA0
	SIMATIC Memory Card 12 MB	6ES7954-8LE02-0AA0
	SIMATIC Memory Card 24 MB	6ES7954-8LF02-0AA0
	SIMATIC Memory Card 256 MB	6ES7954-8LL02-0AA0
	SIMATIC Memory Card 2 GB	6ES7954-8LP02-0AA0
	SIMATIC Memory Card 32 GB	6ES7954-8LT02-0AB0
	Front cover for DP interface of the CPU 1517/1518, 1 unit	6ES7591-8AA00-0AA0
	E-coding element type F – spare part package	6ES7592-6EF00-1AA0
	Front cover for fail-safe modules – spare part package	6ES7528-0AA10-7AA0

Spare parts		Article no.
	Display	
	Display for CPU 1511(T/F), CPU 1511C, CPU 1512C and CPU 1513(F)	6ES7591-1AA00-0AA0
	Display for CPU 1515(T/F), 1516(F), 1517(T/F/TF) and 1518(F)	6ES7591-1BA00-0AA0
Power supply and system wiring		Article no.
	PM load current supply	
	PM 70 W, 120/230 VAC	6EP1332-4BA00
	PM 190 W, 120/230 VAC	6EP1332-4BA00

	PS system power supply	
	System power supply 25 W 24 VDC	6ES7505-0KA00-0AB0
	System power supply 60 W 24/48/60 VDC	6ES7505-0RA00-0AB0
	System power supply 60 W 120/230 VAC/DC	6ES7507-0RA00-0AB0

Related topics	
	SIPLUS extreme
	Specially coated automation and drive components for use under particularly demanding ambient conditions. You can find information on SIPLUS extreme in the Siemens Industry Mall or at siemens.com/siplus-extreme
	SIMATIC HMI
	The SIMATIC HMI Comfort Panels are perfectly suited for efficient implementation of demanding operator control and process monitoring solutions in conjunction with the Advanced Controllers SIMATIC S7-1500. siemens.com/comfort-panels

Promotional packages		Article no.
	SIMATIC S7-1500 Starter Kit	
	STEP 7 Professional V14, 365-day license	6ES7511-1AK04-4YB5
	SIMATIC S7-1500 CPU 1511-1 PN, SIMATIC Memory Card, 4 MB, I/O module DI 16 x 24 VDC, DQ 16 x 24 VDC/0.5 A ST, mounting rail 160 mm, front connector, power module PM 70 W 120/230 VAC	
	SIMATIC TOP connect: Front connector module, push-in, connector cable, 3-conductor connection	
	PowerPack STEP 7 Professional V14	
	Conversion of the Starter Kit to a full license: Floating license for STEP 7 Professional V14	6ES7822-1BE03-0YC5
	Only valid if ordered together with a software update	
	Prerequisite is a STEP 7 V14 Trial 365 license. License key download	