

SIEMENS



# Product overview for SIMATIC S7-1500

TIA Selection Tool Web



## Advanced Controller SIMATIC S7-1500

### Our fastest controller for automation

With the SIMATIC S7-1500 controller, you can rely on maximum performance and built-in future-proofing. The modular controller enables you to implement the most demanding machine concepts and reliably accompanies you on your way through digital transformation.

The SIMATIC S7-1500 has a modular design and is scalable in its functionality. Various central processor units (CPU versions) are available, each in several performance classes. A wide variety of signal modules for input and output as well as technology modules for special technological functions such as counting and communication modules are available for central or distributed configurations as interfaces to the machine or plant. The SIMATIC S7-1500 is approved for IP20 degree of protection and is intended for installation in a control cabinet.

<https://www.siemens.com/s7-1500>

## System overview

### Efficient engineering

- The TIA Portal provides complete access to the entire digitized automation: digital planning, integrated engineering, transparent operation. Simulation tools shorten time-to-market, diagnostic and energy management functions increase productivity, and the link to the management level offers more flexibility and transparency.

### Functional design

- The SIMATIC S7-1500 offers easy handling and maximum user-friendliness in many new details: integrated potential jumpers, shielding elements that can be mounted without tools, uniform front connectors, ergonomic terminal labeling. Easy expandability, individual assembly and upward compatibility offer the highest cost efficiency and investment security.

### Highest performance

- With the SIMATIC S7-1500, you can achieve maximum performance and productivity in your manufacturing process thanks to the fast backplane bus with PROFINET performance, the shortest response times and a command processing time of up to 1 ns in the CPU. The PROFINET connection with deterministic time response ensures reproducibility and precision in the  $\mu$ s range.

### Integrated system diagnostics

- The integrated diagnostic functionality enables error messages to be visualized identically as plain text information in TIA Portal, on the HMI, on the Web server and on the CPU display based on a uniform display concept. The configuration and the message paths of the diagnostics are integrated into the system in a user-friendly manner. The trace function is supported on all CPUs.

### Safety Integrated

- One system for standard and fail-safe applications: one controller, one communication and one engineering for standard and fail-safe automation. Safety Integrated stands for simple connection of PROFIsafe devices via PROFIBUS and PROFINET, and for data consistency between standard and fail-safe program parts. Mixed operation of fail-safe and standard I/O modules is supported.

### Technology Integrated

- One system for standard and fail-safe applications: one controller, one communication and one engineering for standard and fail-safe automation. Safety Integrated stands for simple connection of PROFIsafe devices via PROFIBUS and PROFINET, and for data consistency between standard and fail-safe program parts. Mixed operation of fail-safe and standard I/O modules is supported.

### Security Integrated

- The security concept of the SIMATIC S7-1500 includes measures ranging from authorization levels to block protection and communication integrity. Security Integrated protects your investments, prevents machine replication and contributes to high plant availability.

### Five steps to the right controller:

Type of structure, system performance, programming, Motion Control, system architecture: Do you already know which functions and performance features you

controller should have? Then our function check will take you directly to the right SIMATIC controller in five steps.

<https://www.siemens.com/controller>

**Central processing units**

Article no.: \*



**Standard CPUs**

CPU 1511-1 PN	6ES7511-1AK02-0AB0
<b>CPU 1511F-1 PN</b>	6ES7511-1FK02-0AB0
CPU 1513-1 PN	6ES7513-1AL02-0AB0
<b>CPU 1513F-1 PN</b>	6ES7513-1FL02-0AB0
CPU 1515-2 PN	6ES7515-2AM02-0AB0
<b>CPU 1515F-2 PN</b>	6ES7515-2FM02-0AB0
CPU 1516-3 PN/DP	6ES7516-3AN02-0AB0
<b>CPU 1516F-3 PN/DP</b>	6ES7516-3FN02-0AB0
CPU 1517-3 PN/DP	6ES7517-3AP00-0AB0
<b>CPU 1517F-3 PN/DP</b>	6ES7517-3FP00-0AB0
CPU 1518-4 PN/DP	6ES7518-4AP00-0AB0
<b>CPU 1518F-4 PN/DP</b>	6ES7518-4FP00-0AB0
CPU 1518-4 PN/DP MFP, bundle	6ES7518-4AX00-1AC0
<b>CPU 1518F-4 PN/DP MFP, bundle</b>	6ES7518-4FX00-1AC0
SIPLUS S7-1500 CPU 1511-1 PN	6AG1511-1AK02-2AB0
SIPLUS S7-1500 CPU 1511-1 PN	6AG1511-1AK02-7AB0
SIPLUS S7-1500 CPU 1511-1 PN T1 RAIL	6AG2511-1AK02-1AB0
<b>SIPLUS S7-1500 CPU 1511F-1 PN</b>	6AG1511-1FK02-2AB0
SIPLUS S7-1500 CPU 1513-1 PN	6AG1513-1AL02-7AB0
SIPLUS S7-1500 CPU 1513-1 PN	6AG1513-1AL02-2AB0
<b>SIPLUS S7-1500 CPU 1513F-1 PN</b>	6AG1513-1FL02-2AB0
SIPLUS S7-1500 CPU 1518-4 PN/DP	6AG1518-4AP00-4AB0
SIPLUS S7-1500 CPU 1518-4 PN/DP MFP	6AG1518-4AX00-4AC0
<b>SIPLUS S7-1500 CPU 1518F-4 PN/DP</b>	6AG1518-4FP00-4AB0

**Compact CPUs**

CPU 1511C-1 PN	6ES7511-1CK01-0AB0
CPU 1512C-1 PN	6ES7512-1CK01-0AB0

**Technology CPUs**

CPU 1511T-1 PN	6ES7511-1TK01-0AB0
<b>CPU 1511TF-1 PN</b>	6ES7511-1UK01-0AB0
CPU 1515T-2 PN	6ES7515-2TM01-0AB0
<b>CPU 1515TF-2 PN</b>	6ES7515-2UM01-0AB0
CPU 1516T-3 PN/DP	6ES7516-3TN00-0AB0
<b>CPU 1516TF-3 PN/DP</b>	6ES7516-3UN00-0AB0
CPU 1517T-3 PN/DP	6ES7517-3TP00-0AB0
<b>CPU 1517TF-3 PN/DP</b>	6ES7517-3UP00-0AB0

**Fault-tolerant and redundant CPUs**

CPU 1513R-1 PN	6ES7513-1RL00-0AB0
CPU 1515R-2 PN	6ES7515-2RM00-0AB0
CPU 1517H-3 PN	6ES7517-3HP00-0AB0
SIPLUS S7-1500 CPU 1515R-2 PN	6AG1515-2RM00-7AB0
SIPLUS S7-1500 CPU 1515R-2 PN TX RAIL	6AG2515-2RM00-4AB0
SIPLUS S7-1500 CPU 1517H-3 PN	6AG1517-3HP00-4AB0

: Safety-related component

\* By clicking on the article number, you will be taken to the product in the TIA Selection Tool cloud.

**Digital modules**

Article no.: \*



**Digital input**

Digital input, DI 32x24VDC HF	6ES7521-1BL00-0AB0
Digital input, DI 16x24VDC HF	6ES7521-1BH00-0AB0
Digital input, DI 16x230VAC BA	6ES7521-1FH00-0AA0
Digital input, DI 16x24VDC SRC BA	6ES7521-1BH50-0AA0
Digital input, DI 16x24VDC BA; incl. front connector push-in	6ES7521-1BH10-0AA0
Digital input, DI 32x24VDC BA; incl. front connector push-in	6ES7521-1BL10-0AA0
Digital input, DI 16x24...125VUC HF	6ES7521-7EH00-0AB0
Digital input, DI 64x24VDC SNC/SRC BA	6ES7521-1BP00-0AA0
SIPLUS S7-1500 DI 16x230VAC BA	6AG1521-1FH00-7AA0
SIPLUS S7-1500 DI 16x24VDC HF	6AG1521-1BH00-7AB0
SIPLUS S7-1500 DI 16x24VDC SRC BA	6AG1521-1BH50-7AA0
SIPLUS S7-1500 DI 16x110VDC HF TX RAIL	6AG2521-7EH00-4AB0
SIPLUS S7-1500 DI 16x24VDC HF TX RAIL	6AG2521-1BH00-4AB0
SIPLUS S7-1500 DI 32x24VDC HF	6AG1521-1BL00-7AB0
SIPLUS S7-1500 DI 48VUC/125VDC HF	6AG1521-7EH00-7AB0

**Digital output**

Digital output, DQ 32x24VDC/0.5A HF	6ES7522-1BL01-0AB0
Digital output, DQ 16x24VDC/0.5A HF	6ES7522-1BH01-0AB0
Digital output, DQ 8x24VDC/2A HF	6ES7522-1BF00-0AB0
Digital output, DQ 8x230VAC/2A ST Triac	6ES7522-5FF00-0AB0
Digital output, DQ 8x230VAC/5A ST relay	6ES7522-5HF00-0AB0
Digital output, DQ 16x230VAC/1A Triac	6ES7522-5FH00-0AB0
Digital output, DQ 16x230VAC/2A relay	6ES7522-5HH00-0AB0
Digital output, DQ 16x24VDC/0.5A BA; incl. front connector push-in	6ES7522-1BH10-0AA0
Digital output, DQ 32x24VDC/0.5A BA; incl. front connector push-in	6ES7522-1BL10-0AA0
Digital output, DQ 16x24...48VUC/125VDC/0.5A ST	6ES7522-5EH00-0AB0
Digital output, DQ 64x24VDC/0.3A BA	6ES7522-1BP00-0AA0
Digital output, DQ 64x24VDC/0.3A SNK BA	6ES7522-1BP50-0AA0
SIPLUS S7-1500 16DQ 230VAC 1A ST TRIAC	6AG1522-5FH00-7AB0
SIPLUS S7-1500 16DQ 230VAC 2A RLY	6AG1522-5HH00-7AB0
SIPLUS S7-1500 DQ 16x24VDC/0.5A HF	6AG1522-1BH01-7AB0
SIPLUS S7-1500 DQ 16x110VDC ST TX RAIL	6AG2522-5EH00-4AB0
SIPLUS S7-1500 DQ 16x24VDC HF TX RAIL	6AG2522-1BH01-4AB0
SIPLUS S7-1500 DQ 16x48VUC/125VDC ST	6AG1522-5EH00-7AB0
SIPLUS S7-1500 DQ 32x24VDC/0.5A HF	6AG1522-1BL01-7AB0
SIPLUS S7-1500 DQ 8x230VAC/2A ST (TRIAC)	6AG1522-5FF00-7AB0
SIPLUS S7-1500 DQ 8x230VAC/5A ST (RELAY)	6AG1522-5HF00-2AB0
SIPLUS S7-1500 DQ 8x24VDC/2A HF	6AG1522-1BF00-7AB0
SIPLUS S7-1500 DQ 8x230VAC ST 5A T1 RAIL	6AG2522-5HF00-1AB0

**Digital inputs/outputs**

Digital input/digital output DI/DQ 16x24VDC/16xDC24V/0.5A BA; incl. front connector push-in	6ES7523-1BL00-0AA0
Digital input/output DI 32/DQ 32 x24VDC/0.3A SNK BA	6ES7523-1BP50-0AA0

**Fail-safe digital modules**

Digital input, F-DI 16x24VDC	6ES7526-1BH00-0AB0
Digital output, F-DQ 8x24VDC/2A PPM	6ES7526-2BF00-0AB0
SIPLUS S7-1500 F-DI 16x24VDC	6AG1526-1BH00-2AB0
SIPLUS S7-1500 F-DI 16x24VDC T1 RAIL	6AG2526-1BH00-1AB0
SIPLUS S7-1500 F-DQ 8x24VDC/2A	6AG1526-2BF00-2AB0
SIPLUS S7-1500 F-DQ 8x24VDC 2A T1 RAIL	6AG2526-2BF00-1AB0

: Safety-related component

\* By clicking on the article number, you will be taken to the product in the TIA Selection Tool cloud.

## Analog modules

Article no.: \*

**Analog input**

Analog input, AI 8xU/I/R/RTD BA	6ES7531-7QF00-0AB0
Analog input, AI 8xU/I/RTD/TC ST	6ES7531-7KF00-0AB0
Analog input, AI 8xU/I HS	6ES7531-7NF10-0AB0
Analog input, AI 8xU/R/RTD/TC HF	6ES7531-7PF00-0AB0
Analog input, AI 8xU/I HF	6ES7531-7NF00-0AB0
Analog input, AI 4xU/I/RTD/TC ST; incl. front connector push-in	6ES7531-7QD00-0AB0
S7-1500, AI 16xU BA	6ES7531-7LH00-0AB0
S7-1500, AI 16xI BA	6ES7531-7MH00-0AB0
SIPLUS S7-1500 AI 8XU/I/RTD/TC ST	6AG1531-7KF00-7AB0
SIPLUS S7-1500 AI 8XU/I HF	6AG1531-7NF00-7AB0
SIPLUS S7-1500 AI 8XU/I HS	6AG1531-7NF10-7AB0
SIPLUS S7-1500 AI 8 X U/R/RTD/TC HF	6AG1531-7PF00-4AB0
SIPLUS S7-1500 AI 8xU/I/RTD/TC TX RAIL	6AG2531-7KF00-4AB0
SIPLUS S7-1500 AI 8xU/I HS TX RAIL	6AG2531-7NF10-4AB0

**Analog output**

Analog output, AQ 8xU/I HS	6ES7532-5HF00-0AB0
Analog output, AQ 4xU/I ST	6ES7532-5HD00-0AB0
Analog output, AQ 4xU/I HF	6ES7532-5ND00-0AB0
Analog output, AQ 2xU/I ST; incl. front connector push-in	6ES7532-5NB00-0AB0
SIPLUS S7-1500 AQ 4XU/I ST	6AG1532-5HD00-7AB0
SIPLUS S7-1500 AQ 4xU/I ST TX RAIL	6AG2532-5HD00-4AB0
SIPLUS S7-1500 AQ 8XU/I HS	6AG1532-5HF00-7AB0

**Analog inputs/outputs**

Analog input/analog output AI/AQ 4xU/I/RTD/TC 2xU/I ST; incl. front connector push-in	6ES7534-7QE00-0AB0
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## Communication modules

Article no.: \*



Communication module, CM PtP, RS232, Basic	6ES7540-1AD00-0AA0
Communication module, CM PtP, RS422/485, Basic	6ES7540-1AB00-0AA0
Communication module, CM PtP, RS232, High Feature	6ES7541-1AD00-0AB0
Communication module, CM PtP, RS422/485, High Feature	6ES7541-1AB00-0AB0
Communication Module, CM 1542-5, PROFIBUS DP Master/Slave	6GK7542-5DX00-0XE0
Communication Module, CM 1542-1, PROFINET Controller	6GK7542-1AX00-0XE0
Communication module, CM 8xIO-Link	6ES7547-1JF00-0AB0
Communication processor, CP 1543-1, Industrial Ethernet	6GK7543-1AX00-0XE0
Communication Processor, CP 1542-5, PROFIBUS DP Master/Slave	6GK7542-5FX00-0XE0
Communications processor, CP 1545-1, Industrial Ethernet	6GK7545-1GX00-0XE0
<b>SIPLUS</b>	
SIPLUS NET CP 1543-1	6AG1543-1AX00-2XE0
SIPLUS S7-1500 CM 1542-5	6AG1542-5DX00-7XE0
SIPLUS S7-1500 CM PTP RS422/485 TX RAIL	6AG2541-1AB00-4AB0
SIPLUS S7-1500 CM PtP RS232 BA	6AG1540-1AD00-7AA0
SIPLUS S7-1500 CM PtP RS232 HF	6AG1541-1AD00-7AB0
SIPLUS S7-1500 CM PtP RS232 HF TX RAIL	6AG2541-1AD00-4AB0
SIPLUS S7-1500 CM PtP RS422/485 BA	6AG1540-1AB00-7AA0
SIPLUS S7-1500 CM PtP RS422/485 HF	6AG1541-1AB00-7AB0

 : Safety-related component

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**Technology modules**

	Article no.: *	
	Technology module, TM PosInput 2	6ES7551-1AB00-0AB0
	Technology module, TM Count 2x24V	6ES7550-1AA00-0AB0
	Technology module, TM Timer DIDQ 16x24V	6ES7552-1AA00-0AB0
	TM PTO 4	6ES7553-1AA00-0AB0
	Technology module, SIWAREX WP521 ST	7MH4980-1AA01
	Technology module, SIWAREX WP522 ST	7MH4980-2AA01
	<b>SIPLUS</b>	
	SIPLUS S7-1500 TM COUNT 2X24V	6AG1550-1AA00-7AB0
SIPLUS S7-1500 TM POSINPUT 2	6AG1551-1AB00-7AB0	

**System power supplies**

	Article no.: *	
	System power supply, PS 25W 24V DC	6ES7505-0KA00-0AB0
	System power supply, PS 60W 24/48/60V DC	6ES7505-0RA00-0AB0
	System power supply for data retentivity, PS 60W 24/48/60V DC HF	6ES7505-0RB00-0AB0
	System power supply, PS 60W 120/230V AC/DC	6ES7507-0RA00-0AB0
	<b>SIPLUS</b>	
	SIPLUS S7-1500 PS 25W 24V DC	6AG1505-0KA00-7AB0
	SIPLUS S7-1500 PS 60W 120/230V AC/DC	6AG1507-0RA00-7AB0
	SIPLUS S7-1500 PS 60W 24/48/60V DC	6AG1505-0RA00-7AB0

**Load current supplies**

	Article no.: *	
	Load current supply PM 70W, 120/230 V AC, 24 V DC, 3 A	6EP1332-4BA00
	Load current supply PM 190W, 120/230 V AC, 24 V DC, 8 A	6EP1333-4BA00
	<b>SIPLUS</b>	
	SIPLUS S7-1500 PM 1507 24V/3A	6AG1332-4BA00-7AA0
	SIPLUS S7-1500 PM 1507 24V/8A	6AG1333-4BA00-7AA0

**Accessories**

	Article no.: *	
	Memory card	
	<b>SIPLUS RIC memory cards</b>	
	SIPLUS RIC library for SIMATIC S7-15xx, SMC 12MB	6AG6003-7CF00-0LE0
	SIPLUS RIC library for SIMATIC S7-15xx, SMC 24MB	6AG6003-7CF00-0LF0
	SIPLUS RIC library for SIMATIC S7-15xx, SMC 256MB	6AG6003-7CF00-0LLO
	SIPLUS RIC library for SIMATIC S7-15xx, SMC 2GB	6AG6003-7CF00-0LP0
	<b>Front connector</b>	
	Front connector, screw-type terminal for 35mm modules, 40-pin	6ES7592-1AM00-0XB0
	Front connector, push-in system for 35mm modules, 40-pin	6ES7592-1BM00-0XB0
	Front connector, push-in system for 25mm modules, 40-pin (spare part only)	6ES7592-1BM00-0XA0
Front connector potential bridges, 20 pcs.	6ES7592-3AA00-0AA0	
STEP7 Software & SUS		

: Safety-related component

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## Accessories

Article no.: \*

**CPU display**

Display, CPU1511/1513, 35mm	6ES7591-1AA00-0AA0
Display, CPU1511(F)/1512C/1513(F)	6ES7591-1AA01-0AA0
Display, CPU1515/1516/1517/1518, 70mm	6ES7591-1BA00-0AA0
Display, CPU1515/1516/1517/1518	6ES7591-1BA01-0AA0
SIPLUS S7-1500 FRONTKLAPPE V2 CPU 35MM	6AG1591-1AA01-2AA0
SIPLUS S7-1500 FRONTKLAPPE V2 CPU 70MM	6AG1591-1BA01-2AA0

**Front door**

Universal front door for I/O modules (35mm), 5 pcs.	6ES7528-0AA00-7AA0
Universal front door for I/O modules (25mm), 5 pcs.	6ES7528-0AA00-0AA0
Universal front door for S7-1500 PS modules (70 mm), 5 pieces	6ES7528-0AA60-7AA0
Universal front door for S7-1500 PS/CP modules (35 mm), 5 pieces	6ES7528-0AA80-7AA0
Universal front door for S7-1500 F-IO modules, 5 pieces	6ES7528-0AA10-7AA0

**Labeling sheets**

Sheet with labeling strips for modules 35mm wide (Al grey)	6ES7592-2AX00-0AA0
Sheet with labeling strips for modules 25mm wide (Al grey)	6ES7592-1AX00-0AA0
Sheets with labeling strips (yellow)	6ES7592-2CX00-0AA0

**Miscellaneous**

PE connection DIN rail	6ES7590-5AA00-0AA0
U connector	6ES7590-0AA00-0AA0
Shielding set for S7-1500 25mm modules	6ES7590-5CA10-0XA0
Shielding set for S7-1500 35mm modules	6ES7590-5CA00-0AA0
Power supply connector, DC/AC	6ES7590-8AA00-0AA0
Shield terminal element	6ES7590-5BA00-0AA0
SIMATIC PD, RS485 repeater for connecting PROFIBUS DP/MPI bus systems with max. 31 nodes. Max. baud rate 12 Mbps, IP20 degree of protection, improved user handling	6ES7972-0AA02-0XA0
SIMATIC S7, diagnostic repeater for PROFIBUS DP, for online diagnostics of the PROFIBUS line, DP-NORM SLAVE up to 12 Mbps, IP20 degree of protection, FAST-CONNECT connection system	6ES7972-0AB01-0XA0
E coding elements type F for ET 200MP modules F-DI, F-DQ, 5 pieces	6ES7592-6EF00-1AA0
SIPLUS DP diagnostic repeater	6AG1972-0AB01-4XA0
SIPLUS DP RS485-Repeater	6AG1972-0AA02-7XA0
SIPLUS S7-1500 E-CODING ELEMENTS TYPE F	6AG1592-6EF00-2AA0
SIPLUS S7-1500 U connector	6AG1590-0AA00-7AA0

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