**SIEMENS**



# Information 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 µs 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

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  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 your

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 |
| CPU 1511F-1 PN | 6ES7511-1FK02-0AB0 |
| CPU 1513-1 PN | 6ES7513-1AL02-0AB0 |
| CPU 1513F-1 PN | 6ES7513-1FL02-0AB0 |
| CPU 1515-2 PN | 6ES7515-2AM01-0AB0 |
| CPU 1515F-2 PN | 6ES7515-2FM01-0AB0 |
| CPU 1516-3 PN/DP | 6ES7516-3AN01-0AB0 |
| CPU 1516F-3 PN/DP | 6ES7516-3FN01-0AB0 |
| CPU 1517-3 PN/DP | 6ES7517-3AP00-0AB0 |
| CPU 1517F-3 PN/DP | 6ES7517-3FP00-0AB0 |
| CPU 1518-4 PN/DP | 6ES7518-4AP00-0AB0 |
| CPU 1518F-4 PN/DP | 6ES7518-4FP00-0AB0 |
| CPU 1518-4 PN/DP MFP, bundle | 6ES7518-4AX00-1AC0 |
| CPU 1518F-4 PN/DP MFP, bundle | 6ES7518-4FX00-1AC0 |
| SIPLUS S7-1500 CPU 1511-1 PN | 6AG1511-1AK02-2AB0 |
| SIPLUS S7-1500 CPU 1513-1 PN | 6AG1513-1AL02-2AB0 |
| SIPLUS S7-1500 CPU 1518-4 PN/DP MFP | 6AG1518-4AX00-4AC0 |
| SIPLUS S7-1500 CPU 1518-4 PN/DP | 6AG1518-4AP00-4AB0 |
| SIPLUS S7-1500 CPU 1516-3 PN/DP | 6AG1516-3AN01-2AB0 |
| SIPLUS S7-1500 CPU 1516-3 PN/DP | 6AG1516-3AN01-7AB0 |
| SIPLUS S7-1500 CPU 1513F-1 PN | 6AG1513-1FL01-2AB0 |
| SIPLUS S7-1500 CPU-1516F-3 PN/DP | 6AG1516-3FN01-2AB0 |
| SIPLUS S7-1500 CPU 1518F-4 PN/DP | 6AG1518-4FP00-4AB0 |
| SIPLUS S7-1500 CPU 1516-3 PN/DP TX RAIL | 6AG2516-3AN01-4AB0 |
| SIPLUS S7-1500 CPU 1515F-2 PN | 6AG1515-2FM01-2AB0 |
| SIPLUS S7-1500 CPU 1511-1 PN T1 RAIL | 6AG2511-1AK02-1AB0 |
| SIPLUS S7-1500 CPU 1511-1 PN | 6AG1511-1AK02-7AB0 |
| SIPLUS S7-1500 CPU 1513-1 PN | 6AG1513-1AL02-7AB0 |

### 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 |
| CPU 1511TF-1 PN | 6ES7511-1UK01-0AB0 |
| CPU 1515T-2 PN | 6ES7515-2TM01-0AB0 |
| CPU 1515TF-2 PN | 6ES7515-2UM01-0AB0 |
| CPU 1516T-3 PN/DP | 6ES7516-3TN00-0AB0 |
| CPU 1516TF-3 PN/DP | 6ES7516-3UN00-0AB0 |
| CPU 1517T-3 PN/DP | 6ES7517-3TP00-0AB0 |
| CPU 1517TF-3 PN/DP | 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 |

☐ : 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 |
| SIPLUS S7-1500 DI 32X24VDC HF | 6AG1521-1BL00-7AB0 |
| 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 48VUC/125VDC HF | 6AG1521-7EH00-7AB0 |
| SIPLUS S7-1500 DI 16x110VDC HF TX RAIL | 6AG2521-7EH00-4AB0 |
| SIPLUS S7-1500 DI 16x24VDC HF TX RAIL | 6AG2521-1BH00-4AB0 |
| **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 |
| 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/2A ST (TRIAC) | 6AG1522-5FF00-7AB0 |
| 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 16x48VUC/125VDC ST | 6AG1522-5EH00-7AB0 |
| SIPLUS S7-1500 DQ 32X24VDC/0.5A HF | 6AG1522-1BL01-7AB0 |
| 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 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 |
| **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-DQ 8x24VDC/2A | 6AG1526-2BF00-2AB0 |
| SIPLUS S7-1500 F-DI 16x24VDC T1 RAIL | 6AG2526-1BH00-1AB0 |
| SIPLUS S7-1500 F-DQ 8x24VDC 2A T1 RAIL | 6AG2526-2BF00-1AB0 |

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## 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 |
| SIPLUS S7-1500 AI 8XU/I HS | 6AG1531-7NF10-7AB0 |
| SIPLUS S7-1500 AI 8XU/I/RTD/TC ST | 6AG1531-7KF00-7AB0 |
| SIPLUS S7-1500 AI 8xU/I HS TX RAIL | 6AG2531-7NF10-4AB0 |
| SIPLUS S7-1500 AI 8xU/I/RTD/TC TX RAIL | 6AG2531-7KF00-4AB0 |
| SIPLUS S7-1500 AI 8XU/I HF | 6AG1531-7NF00-7AB0 |
| SIPLUS S7-1500 AI 8 X U/R/RTD/TC HF | 6AG1531-7PF00-4AB0 |
| **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 8XU/I HS | 6AG1532-5HF00-7AB0 |
| SIPLUS S7-1500 AQ 4xU/I ST TX RAIL | 6AG2532-5HD00-4AB0 |
| **Analog inputs/outputs** | |
| Analog input/analog output AI/AQ 4xU/I/RTD/TC 2xU/I ST; incl. front connector push-in | 6ES7534-7QE00-0AB0 |

## 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 |
| TIM 1531 IRC | 6GK7543-1MX00-0XE0 |
| **SIPLUS** | |
| SIPLUS S7-1500 CM PtP RS232 HF TX RAIL | 6AG2541-1AD00-4AB0 |
| SIPLUS S7-1500 CM PTP RS422/485 TX RAIL | 6AG2541-1AB00-4AB0 |
| SIPLUS TIM 1531 IRC | 6AG1543-1MX00-7XE0 |
| 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 RS422/485 BA | 6AG1540-1AB00-7AA0 |
| SIPLUS S7-1500 CM PtP RS422/485 HF | 6AG1541-1AB00-7AB0 |
| SIPLUS S7-1500 CM 1542-5 | 6AG1542-5DX00-7XE0 |
| SIPLUS NET CP 1543-1 | 6AG1543-1AX00-2XE0 |

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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 |
| **SIPLUS** | |
| 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 |
| **SIPLUS** | |
| SIPLUS S7-1500 PS 60W 24/48/60V DC | 6AG1505-0RA00-7AB0 |
| SIPLUS S7-1500 PS 60W 120/230V AC/DC | 6AG1507-0RA00-7AB0 |
| SIPLUS S7-1500 PS 25W 24V DC | 6AG1505-0KA00-7AB0 |

## 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 |
| **SIPLUS** | |
| 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** | |
| Memory card, 4 MB | 6ES7954-8LC03-0AA0 |
| Memory card, 12 MB | 6ES7954-8LE03-0AA0 |
| Memory card, 24 MB | 6ES7954-8LF03-0AA0 |
| Memory card, 256 MB | 6ES7954-8LL03-0AA0 |
| Memory card, 2 GB | 6ES7954-8LP02-0AA0 |
| Memory card, 32 GB | 6ES7954-8LT03-0AA0 |
| **SIPLUS RIC memory cards** | |
| 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 | 6AG6003-7CF00-0LL0 |
| SIPLUS RIC library for SIMATIC S7-15xx, SMC 2GB | 6AG6003-7CF00-0LP0 |
| **Front connector** | |
| Front connector, screw-type terminal for 35mm modules, 40-pin | 6ES7592-1AM00-0XB0 |

: Safety-related component

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## Accessories

| | Article no.: * |
|---|---|
| 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 | |
| **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 S7-1500 U connector | 6AG1590-0AA00-7AA0 |
| SIPLUS DP RS485-Repeater | 6AG1972-0AA02-7XA0 |
| SIPLUS S7-1500 E-CODING ELEMENTS TYPE F | 6AG1592-6EF00-2AA0 |

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