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
• 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 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

<table>
<thead>
<tr>
<th>Article no.: *</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard CPUs</strong></td>
</tr>
<tr>
<td>CPU 1511-1 PN</td>
</tr>
<tr>
<td>CPU 1511F-1 PN</td>
</tr>
<tr>
<td>CPU 1513-1 PN</td>
</tr>
<tr>
<td>CPU 1513F-1 PN</td>
</tr>
<tr>
<td>CPU 1515-2 PN</td>
</tr>
<tr>
<td>CPU 1515F-2 PN</td>
</tr>
<tr>
<td>CPU 1516-3 PN/DP</td>
</tr>
<tr>
<td>CPU 1516F-3 PN/DP</td>
</tr>
<tr>
<td>CPU 1517-3 PN/DP</td>
</tr>
<tr>
<td>CPU 1517F-3 PN/DP</td>
</tr>
<tr>
<td>CPU 1518-4 PN/DP</td>
</tr>
<tr>
<td>CPU 1518F-4 PN/DP</td>
</tr>
<tr>
<td>CPU 1518-4 PN/DP MFP, bundle</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1511-1 PN</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1511-1 PN</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1511-1 PN T1 RAIL</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1513-1 PN</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1513-1 PN</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1513F-1 PN</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1518-4 PN/DP</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1518-4 PN/DP MFP</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1518F-4 PN/DP</td>
</tr>
<tr>
<td><strong>Compact CPUs</strong></td>
</tr>
<tr>
<td>CPU 1511C-1 PN</td>
</tr>
<tr>
<td>CPU 1512C-1 PN</td>
</tr>
<tr>
<td><strong>Technology CPUs</strong></td>
</tr>
<tr>
<td>CPU 1511T-1 PN</td>
</tr>
<tr>
<td>CPU 1511TF-1 PN</td>
</tr>
<tr>
<td>CPU 1513T-2 PN</td>
</tr>
<tr>
<td>CPU 1513TF-2 PN</td>
</tr>
<tr>
<td>CPU 1516T-3 PN/DP</td>
</tr>
<tr>
<td>CPU 1516TF-3 PN/DP</td>
</tr>
<tr>
<td>CPU 1517T-3 PN/DP</td>
</tr>
<tr>
<td>CPU 1517TF-3 PN/DP</td>
</tr>
<tr>
<td><strong>Fault-tolerant and redundant CPUs</strong></td>
</tr>
<tr>
<td>CPU 1513R-1 PN</td>
</tr>
<tr>
<td>CPU 1515R-2 PN</td>
</tr>
<tr>
<td>CPU 1517H-3 PN</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1515R-2 PN</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1515R-2 PN TX RAIL</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CPU 1517H-3 PN</td>
</tr>
</tbody>
</table>

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

**Digital input**
- Digital input, DI 32x24VDC HF
  - Article no.: 6ES7521-1BL00-0AB0
- Digital input, DI 16x24VDC HF
  - Article no.: 6ES7521-1BH00-0AB0
- Digital input, DI 16x230VAC BA
  - Article no.: 6ES7521-1FH00-0AA0
- Digital input, DI 16x24VDC SRC BA
  - Article no.: 6ES7521-1BH50-0AA0
- Digital input, DI 16x24VDC BA; incl. front connector push-in
  - Article no.: 6ES7521-1BH10-0AA0
- Digital input, DI 32x24VDC BA; incl. front connector push-in
  - Article no.: 6ES7521-1BL10-0AA0
- SIPLUS S7-1500 DI 16X230VAC BA
  - Article no.: 6AG1521-1FH00-7AA0
- SIPLUS S7-1500 DI 16x24VDC HF
  - Article no.: 6AG1521-1FH00-7AB0
- SIPLUS S7-1500 DI 16x24VDC SRC BA
  - Article no.: 6AG1521-1FH00-7AB0
- SIPLUS S7-1500 DI 16x24VDC HF TX RAIL
  - Article no.: 6AG2521-1BH00-4AB0
- SIPLUS S7-1500 DI 32x24VDC HF
  - Article no.: 6AG1521-1BL00-7AB0
- SIPLUS S7-1500 DI 48VUC/125VDC HF
  - Article no.: 6AG1521-1BL00-7AB0

**Digital output**
- Digital output, DQ 32x24VDC/0.5A HF
  - Article no.: 6ES7522-1BL01-0AB0
- Digital output, DQ 16x24VDC/0.5A HF
  - Article no.: 6ES7522-1BH01-0AB0
- Digital output, DQ 8x24VDC/2A HF
  - Article no.: 6ES7522-1BF00-0AB0
- Digital output, DQ 8x230VAC/2A ST Triac
  - Article no.: 6ES7522-5FH00-0AB0
- Digital output, DQ 8x230VAC/5A ST relay
  - Article no.: 6ES7522-5FH00-0AB0
- Digital output, DQ 16x24VDC/0.5A BA; incl. front connector push-in
  - Article no.: 6ES7522-1BL10-0AA0
- Digital output, DQ 32x24VDC/0.5A BA; incl. front connector push-in
  - Article no.: 6ES7522-1BL10-0AA0
- Digital output, DQ 16x24...48VUC/125VDC/0.5A ST
  - Article no.: 6ES7522-5EH00-0AB0
- Digital output, DQ 64x24VDC/0.3A BA
  - Article no.: 6ES7522-1BP00-0AA0
- Digital output, DQ 64x24VDC/0.3A SNK BA
  - Article no.: 6ES7522-1BP00-0AA0
- SIPLUS S7-1500 DI 16DQ 230VAC 1A ST TRIAC
  - Article no.: 6AG1522-1BH01-7AB0
- SIPLUS S7-1500 DI 16x110VDC HF TX RAIL
  - Article no.: 6AG2522-1BH00-4AB0
- SIPLUS S7-1500 DI 16x24VDC HF TX RAIL
  - Article no.: 6AG2522-1BH00-4AB0
- SIPLUS S7-1500 DI 32x24VDC HF
  - Article no.: 6AG1522-1BL00-7AB0
- SIPLUS S7-1500 DI 48VUC/125VDC HF
  - Article no.: 6AG1522-1BL00-7AB0

**Digital inputs/outputs**
- Digital input/digital output DI/DQ 16x24VDC/16xDC24V/0.5A
  - Article no.: 6ES7523-1BL00-0AA0
- Digital input/output DI 32/DQ 32 x24VDC/0.3A SNK BA
  - Article no.: 6ES7523-1BP50-0AA0

**Fail-safe digital modules**
- Digital input, F-DI 16x24VDC
  - Article no.: 6ES7526-1BH00-0AB0
- Digital output, F-DQ 8x24VDC/2A PPM
  - Article no.: 6ES7526-2BF00-0AB0
- SIPLUS S7-1500 F-DI 16x24VDC
  - Article no.: 6AG1526-1BH00-2AB0
- SIPLUS S7-1500 F-DI 16x24VDC T1 RAIL
  - Article no.: 6AG2526-1BH00-1AB0
- SIPLUS S7-1500 F-DQ 8x24VDC/2A
  - Article no.: 6AG1526-2BF00-2AB0
- SIPLUS S7-1500 F-DQ 8x24VDC 2A T1 RAIL
  - Article no.: 6AG2526-2BF00-1AB0

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

<table>
<thead>
<tr>
<th>Article no.: *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog input</td>
</tr>
<tr>
<td>Analog input, AI 8xU/I/RTD/TC BA</td>
</tr>
<tr>
<td>Analog input, AI 8xU/I/RTD/TC ST</td>
</tr>
<tr>
<td>Analog input, AI 8xU/I HS</td>
</tr>
<tr>
<td>Analog input, AI 8xU/R/RTD/TC HF</td>
</tr>
<tr>
<td>Analog input, AI 8xU/I HF</td>
</tr>
<tr>
<td>Analog input, AI 4xU/I/RTD/TC ST, incl. front connector push-in</td>
</tr>
<tr>
<td>SIPLUS S7-1500 AI 8xU/I/RTD/TC ST</td>
</tr>
<tr>
<td>SIPLUS S7-1500 AI 8xU/I HF</td>
</tr>
<tr>
<td>SIPLUS S7-1500 AI 8xU/I HS</td>
</tr>
<tr>
<td>SIPLUS S7-1500 AI 8xU/I/RTD/TC HF</td>
</tr>
<tr>
<td>SIPLUS S7-1500 AI 8xU/I HS TX RAIL</td>
</tr>
<tr>
<td>SIPLUS S7-1500 AI 4xU/I/RTD/TC ST, incl. front connector push-in</td>
</tr>
</tbody>
</table>

### Communication modules

<table>
<thead>
<tr>
<th>Article no.: *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication module, CM PtP, RS232, Basic</td>
</tr>
<tr>
<td>Communication module, CM PtP, RS422/485, Basic</td>
</tr>
<tr>
<td>Communication module, CM PtP, RS232, High Feature</td>
</tr>
<tr>
<td>Communication module, CM PtP, RS422/485, High Feature</td>
</tr>
<tr>
<td>Communication Module, CM 1542-5, PROFIBUS DP Master/Slave</td>
</tr>
<tr>
<td>Communication Module, CM 1542-1, PROFINET Controller Master/Slave</td>
</tr>
<tr>
<td>Communication module, CM 8xIO-Link</td>
</tr>
<tr>
<td>Communication processor, CP 1543-1, Industrial Ethernet Master/Slave</td>
</tr>
<tr>
<td>Communication Processor, CP 1542-5, PROFIBUS DP Master/Slave</td>
</tr>
<tr>
<td>Communications processor, CP 1545-1, Industrial Ethernet</td>
</tr>
</tbody>
</table>

SIPLUS

<table>
<thead>
<tr>
<th>Article no.: *</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIPLUS NET CP 1543-1</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CM 1542-5</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CM PTP RS422/485 TX RAIL</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CM PTP RS232 BA</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CM PTP RS232 HF</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CM PTP RS232 HF TX RAIL</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CM PTP RS422/485 BA</td>
</tr>
<tr>
<td>SIPLUS S7-1500 CM PTP RS422/485 HF</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Article no.:</th>
<th>Technology module, TM PosInput 2</th>
<th>Technology module, TM Count 2x24V</th>
<th>Technology module, TM Timer DIDQ 16x24V</th>
<th>Technology module, SIWAREX WP521 ST</th>
<th>Technology module, SIWAREX WP522 ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>6ES7551-1AB00-0AB0</td>
<td>6ES7550-1AA00-0AB0</td>
<td>6ES7552-1AA00-0AB0</td>
<td>6ES7553-1AA00-0AB0</td>
<td>7MH4980-1AA01</td>
<td>7MH4980-2AA01</td>
</tr>
</tbody>
</table>

**SIPLUS**
- SIPLUS S7-1500 TM COUNT 2X24V
- SIPLUS S7-1500 TM POSINPUT 2

### System power supplies

<table>
<thead>
<tr>
<th>Article no.:</th>
<th>System power supply, PS 25W 24V DC</th>
<th>System power supply, PS 60W 24/48/60V DC</th>
<th>System power supply for data retentivity, PS 60W 24/48/60V DC HF</th>
<th>System power supply, PS 60W 120/230V AC/DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>6ES7505-0KA00-0AB0</td>
<td>6ES7505-0RA00-0AB0</td>
<td>6ES7505-0RB00-0AB0</td>
<td>6ES7507-0RA00-0AB0</td>
<td></td>
</tr>
</tbody>
</table>

**SIPLUS**
- SIPLUS S7-1500 PS 25W 24V DC
- SIPLUS S7-1500 PS 60W 120/230V AC/DC
- SIPLUS S7-1500 PS 60W 24/48/60V DC

### Load current supplies

<table>
<thead>
<tr>
<th>Article no.:</th>
<th>Load current supply PM 70W, 120/230 V AC, 24 V DC, 3 A</th>
<th>Load current supply PM 190W, 120/230 V AC, 24 V DC, 8 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>6EP1332-4BA00</td>
<td>6EP1333-4BA00</td>
<td></td>
</tr>
</tbody>
</table>

**SIPLUS**
- SIPLUS S7-1500 PM 1507 24V/3A
- SIPLUS S7-1500 PM 1507 24V/8A

### Accessories

<table>
<thead>
<tr>
<th>Article no.:</th>
<th>Memory card</th>
</tr>
</thead>
<tbody>
<tr>
<td>6AG6003-7CF00-0LE0</td>
<td>6AG6003-7CF00-0LF0</td>
</tr>
<tr>
<td>6AG6003-7CF00-0LL0</td>
<td>6AG6003-7CF00-0LP0</td>
</tr>
</tbody>
</table>

**SIPLUS RIC library** for SIMATIC S7-15xx, SMC 12MB
- 6AG6003-7CF00-0LE0
- 6AG6003-7CF00-0LF0
- 6AG6003-7CF00-0LL0
- 6AG6003-7CF00-0LP0

**Front connector**
- Front connector, screw-type terminal for 35mm modules, 40-pin
- Front connector, push-in system for 35mm modules, 40-pin
- Front connector, push-in system for 25mm modules, 40-pin (spare part only)
- Front connector potential bridges, 20 pcs.

**STEP7 Software & SUS**
- 6ES7592-1AM00-0XB0
- 6ES7592-1BM00-0XB0
- 6ES7592-1BM00-0XA0
- 6ES7592-3AA00-0AA0

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

### CPU display
- Display, CPU1511/1513, 35mm
  - Article no.: 6ES7591-1AA00-0AA0
- Display, CPU1511(F)/1512C/1513(F)
  - Article no.: 6ES7591-1AA01-0AA0
- Display, CPU1515/1516/1517/1518, 70mm
  - Article no.: 6ES7591-1BA00-0AA0
- Display, CPU1515/1516/1517/1518
  - Article no.: 6ES7591-1BA01-0AA0
- SIPLUS S7-1500 FRONTKLAPPE V2 CPU 35MM
  - Article no.: 6AG1591-1AA01-2AA0
- SIPLUS S7-1500 FRONTKLAPPE V2 CPU 70MM
  - Article no.: 6AG1591-1BA01-2AA0

### Front door
- Universal front door for I/O modules (35mm), 5 pcs.
  - Article no.: 6ES7528-0AA00-7AA0
- Universal front door for I/O modules (25mm), 5 pcs.
  - Article no.: 6ES7528-0AA00-0AA0
- Universal front door for S7-1500 PS modules (70 mm), 5 pieces
  - Article no.: 6ES7528-0AA60-7AA0
- Universal front door for S7-1500 PS/CP modules (35 mm), 5 pieces
  - Article no.: 6ES7528-0AA80-7AA0
- Universal front door for S7-1500 F-I/O modules, 5 pieces
  - Article no.: 6ES7528-0AA10-7AA0

### Labeling sheets
- Sheet with labeling strips for modules 35mm wide (Al grey)
  - Article no.: 6ES7592-2AX00-0AA0
- Sheet with labeling strips for modules 25mm wide (Al grey)
  - Article no.: 6ES7592-1AX00-0AA0
- Sheets with labeling strips (yellow)
  - Article no.: 6ES7592-2CX00-0AA0

### Miscellaneous
- PE connection DIN rail
  - Article no.: 6ES7590-5AA00-0AA0
- U connector
  - Article no.: 6ES7590-0AA00-0AA0
- Shielding set for S7-1500 25mm modules
  - Article no.: 6ES7590-5CA10-0X00
- Shielding set for S7-1500 35mm modules
  - Article no.: 6ES7590-5CA00-0AA0
- Power supply connector, DC/AC
  - Article no.: 6ES7950-8AA00-0AA0
- Shield terminal element
  - Article no.: 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
  - Article no.: 6ES7972-0AA02-0X00
- 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
  - Article no.: 6ES7972-0AB01-0X00
- E coding elements type F for ET 200MP modules F-DI, F-DQ, 5 pieces
  - Article no.: 6ES7952-6EF00-1AA0
- SIPLUS DP diagnostic repeater
  - Article no.: 6AG1972-0AB01-4X00
- SIPLUS DP RS485-Repeater
  - Article no.: 6AG1972-0AA02-7X00
- SIPLUS S7-1500 E-CODING ELEMENTS TYPE F
  - Article no.: 6AG1592-6EF00-2AA0
- SIPLUS S7-1500 U connector
  - Article no.: 6AG1590-0AA00-7AA0

---

* By clicking on the article number, you will be taken to the product in the TIA Selection Tool cloud.
The TIA SELECTION TOOL and all its editions are made available to you at no charge. We therefore do not assume any warranty, in particular for the accuracy, correctness, completeness, availability or usability of this tool. Our liability for damages resulting from using the examples, help notes, programs, configuration and performance data, etc. described in this TIA SELECTION TOOL and all its editions regardless of the legal background is excluded unless required by law, e.g. in cases of willful misconduct, gross negligence, personal injury or death, failure to achieve guaranteed characteristics or fraudulent concealment of a defect or in case of breach of fundamental contractual obligations. Distribution or reproduction of this TIA SELECTION TOOL and all its editions or excerpts from it is prohibited unless expressly permitted by Siemens. The latest firmware and hardware versions are configured in the TIA Selection Tool.