

SIMATIC S7-1500

Central processing units

Standard CPUs

Overview CPU 1515-2 PN

- The CPU for applications with medium to high requirements for program/data storage in the S7-1500 controller product range
- Medium to high processing speed for binary and floating-point arithmetic
- Used as central controller in production lines with central and distributed I/O
- PROFINET IO IRT interface with 2-port switch
- Additional PROFINET interface with separate IP address
- PROFINET IO Controller for operating distributed I/O on PROFINET
- PROFINET I-Device for connecting the CPU as an intelligent PROFINET device under a SIMATIC or non-Siemens PROFINET I/O controller
- Isochronous mode
- Integrated Motion Control functionalities for controlling speed-controlled and positioning axes, support for external encoders
- Integrated web server with the option of creating user-defined web pages
- SIMATIC memory card required for operation of the CPU

Overview CPU 1518-4 PN/DP

- The CPU with a very large program and data memory in the S7-1500 controller product range for demanding applications with extremely high requirements regarding program scope, performance and networking
- Extremely high processing speed for binary and floating-point arithmetic
- For cross-industry automation tasks in series machine, special machine and plant construction
- Used as central controller in production lines with central and distributed I/O
- PROFINET IO IRT interface with 2-port switch
- Two additional PROFINET interfaces with separate IP address
- PROFINET IO controller for operating distributed I/O on PROFINET.
- PROFINET I-Device for connecting the CPU as an intelligent PROFINET device under a SIMATIC or non-Siemens PROFINET IO controller.
- PROFIBUS DP master interface
- Isochronous mode on PROFIBUS and PROFINET
- Integrated Motion Control functionalities for controlling speed-controlled and positioning axes, support for external encoders
- Integrated web server with the option of creating user-defined web pages
- SIMATIC memory card required for operation of the CPU

Technical specifications

	6ES7515-2AM00-0AB0 CPU 1515-2 PN	6ES7518-4AP00-0AB0 CPU 1518-4 PN/DP
General information		
Engineering with • STEP 7 TIA Portal can be configured/integrated as of version	V13	V13
Display		
Screen diagonal (cm)	6.1 cm	6.1 cm
Supply voltage		
Type of supply voltage	24 V DC	24 V DC
Power losses		
Power loss, typ.	6.3 W	24 W
Memory		
Work memory • integrated (for program) • integrated (for data)	500 kbyte 3 Mbyte	3 Mbyte 10 Mbyte
Load memory • Plug-in (SIMATIC Memory Card), max.	32 Gbyte	32 Gbyte
CPU processing times		
for bit operations, typ.	30 ns	1 ns
for word operations, typ.	36 ns	2 ns
for fixed point arithmetic, typ.	48 ns	2 ns
for floating point arithmetic, typ.	192 ns	6 ns
Counters, timers and their retentivity		
S7 counter • Number	2 048	2 048
IEC counter • Number	Any (only limited by the main memory)	Any (only limited by the main memory)
S7 times • Number	2 048	2 048
IEC timer • Number	Any (only limited by the main memory)	Any (only limited by the main memory)

Ordering data	Article No.	Article No.
CPU 1515-2 PN Work memory 500 KB for program, 3 MB for data, PROFINET IO IRT interface, PROFINET interface; SIMATIC memory card required	6ES7515-2AM00-0AB0	PROFIBUS FC Standard Cable GP 6XV1830-0EH10 Standard type with special design for fast mounting, 2-core, shielded; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m
CPU 1518-4 PN/DP Work memory 3 MB for program, 10 MB for data, PROFINET IO IRT interface, 2 PROFINET/PROFIBUS interfaces; SIMATIC memory card required	6ES7518-4AP00-0AB0	PROFIBUS FC Robust Cable 6XV1830-0JH10 2-wire, shielded; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m
Accessories		
SIMATIC memory card		
4 MB	6ES7954-8LC02-0AA0	PROFIBUS FC Flexible Cable 6XV1831-2K 2-wire, shielded; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m
12 MB	6ES7954-8LE02-0AA0	
24 MB	6ES7954-8LF02-0AA0	
2 GB	6ES7954-8LP01-0AA0	
SIMATIC S7-1500 mounting rail		
Fixed lengths, with grounding elements <ul style="list-style-type: none"> • 160 mm • 482 mm • 530 mm • 830 mm For cutting to length by customer, without drill holes; grounding elements must be ordered separately <ul style="list-style-type: none"> • 2000 mm 	6ES7590-1AB60-0AA0 6ES7590-1AE80-0AA0 6ES7590-1AF30-0AA0 6ES7590-1AJ30-0AA0	PROFIBUS FC Trailing Cable 2-wire, shielded; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m Sheath color: Petrol 6XV1830-3EH10 Sheath color: Violet 6XV1831-2L
PE connection element for mounting rail 2000 mm 20 units	6ES7590-1BC00-0AA0	
Power supply		
For supplying the backplane bus of the S7-1500 <ul style="list-style-type: none"> 24 V DC input voltage, power 25 W 6ES7505-0KA00-0AB0 24/48/60 V DC input voltage, power 60 W 6ES7505-0RA00-0AB0 120/230 V AC input voltage, power 60 W 6ES7507-0RA00-0AB0 	PROFIBUS FC Ground Cable 6XV1830-3FH10 2-wire, shielded; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m	PROFIBUS FC FRNC Cable GP 6XV1830-0LH10 2-wire, shielded, flame-retardant, with copolymer outer sheath FRNC; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m
Power connector 6ES7590-8AA00-0AA0 With coding element for power supply module; spare part, 10 units	6ES7590-8AA00-0AA0	
Load power supply		
24 V DC/3A 6EP1332-4BA00 24 V DC/8A 6EP1333-4BA00	6EP1332-4BA00 6EP1333-4BA00	PROFIBUS FastConnect Stripping Tool 6GK1905-6AA00 Preadjusted stripping tool for fast stripping of PROFIBUS FastConnect bus cables
Power supply connector		
Spare part; for connecting the 24 V DC supply voltage <ul style="list-style-type: none"> • with push-in terminals 6ES7193-4JB00-0AA0 	6ES7193-4JB00-0AA0	IE FC RJ45 plugs RJ45 plug connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables
PROFIBUS FastConnect bus connector RS485 with 90° cable outlet		
with insulation displacement, max. transmission rate 12 Mbit/s without PG interface, grounding via control cabinet contact surface; 1 unit 6ES7972-0BA70-0XA0 with PG interface, grounding via control cabinet contact surface; 1 unit 6ES7972-0BB70-0XA0	6ES7972-0BA70-0XA0 6ES7972-0BB70-0XA0	IE FC RJ45 Plug 180 180° cable outlet 1 unit 6GK1901-1BB10-2AA0 10 units 6GK1901-1BB10-2AB0 50 units 6GK1901-1BB10-2AE0
PROFIBUS TP Standard Cable GP 2x2 6XV1840-2AH10		
4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/ IE FC RJ45 Plug; PROFINET-compliant; with UL approval; sold by the meter; max. delivery unit 1000 m, minimum order quantity 20 m		