

OFFICIAL MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

6ES7677-2VB42-0GB0

Siemens official documentation for the exact article number.

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Selected official Siemens pages follow this cover.

SIMATIC ET 200SP Open Controller, CPU 1515SP PC2 T, 8 GB RAM, 128 GB CFast with Windows 10 IoT Enterprise 64-bit and S7-1500 Software Controller CPU 1505SP T pre-installed, Interfaces: 1x Slot CFast, 1x slot SD/MMC, 1x connection for ET 200SP bus Adapter PROFINET, 1x 10/100/1000 Mbit/s Ethernet, 2x USB 3.0, 2x USB 2.0, 1x display port, Documentation on CFast Restore image on CFast



General information	
Product type designation	CPU 1515SP PC2 T
HW functional status	FS01
Firmware version	V2.5
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V15 (FW V2.5)
Installed software	
• Visualization	No
• Control	S7-1500 Software Controller CPU 1505SP T
Configuration control	
via dataset	Yes
Control elements	
Mode selector switch	1
Supply voltage	
Type of supply voltage	24 V DC
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V

Reverse polarity protection	Yes
Mains buffering	
• Mains/voltage failure stored energy time	5 ms
Input current	
Current consumption (rated value)	1.8 A; Full processor load, incl. ET 200SP modules and using USB
Current consumption (in no-load operation), typ.	0.5 A
Current consumption, max.	2.9 A
I^2t	0.426 A ² ·s; with starting current inrush
Power	
Active power input, max.	43 W; incl. ET 200SP modules and using USB
Infeed power to the backplane bus	8.75 W
Power loss	
Power loss, typ.	16 W
Processor	
Processor type	Intel Atom E3940, 1.6 GHz, 4 cores
Memory	
Type of memory	DDR3L
Main memory	8 GB RAM
CFast memory card	Yes; 30 GB flash memory
SIMATIC memory card required	No
Work memory	
• integrated (for program)	1 Mbyte
• integrated (for data)	5 Mbyte
• integrated (for CPU function library of CPU Runtime)	20 Mbyte
Load memory	
• integrated (on PC mass storage)	320 Mbyte
Backup	
• with UPS	Yes; all memory areas declared retentive
• with non-volatile memory	Yes
CPU processing times	
for bit operations, typ.	10 ns
for word operations, typ.	12 ns
for fixed point arithmetic, typ.	16 ns
for floating point arithmetic, typ.	64 ns
CPU-blocks	
Number of elements (total)	6 000; In addition to blocks such as DBs, FBs and FCs, UDTs, global constants, etc. are also regarded as elements
DB	

• Number, max.	5 999; Number range: 1 to 65535
• Size, max.	5 Mbyte
FB	
• Number, max.	5 998; Number range: 1 to 65535
• Size, max.	1 024 kbyte
FC	
• Number, max.	5 999; Number range: 1 to 65535
• Size, max.	1 024 kbyte
OB	
• Size, max.	1 024 kbyte
• Number of free cycle OBs	100
• Number of time alarm OBs	20
• Number of delay alarm OBs	20
• Number of cyclic interrupt OBs	20
• Number of process alarm OBs	50
• Number of DPV1 alarm OBs	3
• Number of isochronous mode OBs	1
• Number of technology synchronous alarm OBs	2
• Number of startup OBs	100
• Number of asynchronous error OBs	4
• Number of synchronous error OBs	2
• Number of diagnostic alarm OBs	1
Nesting depth	
• per priority class	24
Counters, timers and their retentivity	
S7 counter	
• Number	2 048
Retentivity	
— adjustable	Yes
IEC counter	
• Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
S7 times	
• Number	2 048
Retentivity	
— adjustable	Yes
IEC timer	
• Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes

Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	410 kbyte; For storage in NVRAM; for storage in mass storage 5 242 020 bytes
Flag	
• Number, max.	16 kbyte
• Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	
• Retentivity adjustable	Yes
• Retentivity preset	No
Address area	
Number of IO modules	8 192
I/O address area	
• Inputs	32 kbyte; All inputs are in the process image
• Outputs	32 kbyte; All outputs are in the process image
Subprocess images	
• Number of subprocess images, max.	32
Hardware configuration	
Integrated power supply	Yes
Number of distributed IO systems	20
Number of DP masters	
• Via CM	1
Number of IO Controllers	
• via PC interfaces	1
Rack	
• Modules per rack, max.	64; CPU 1515SP PC + 64 modules + server module
• Number of lines, max.	1
PtP CM	
• Number of PtP CMs	the number of connectable PtP CMs is only limited by the number of available slots
Time of day	
Clock	
• Type	Hardware clock
• Hardware clock (real-time)	Yes; Resolution: 1 s
• Backup time	6 wk; At 40 °C ambient temperature, typically
• Deviation per day, max.	10 s; Typ.: 2 s
Clock synchronization	
• supported	Yes
• on Windows clock, slave	Yes
Interfaces	
Number of industrial Ethernet interfaces	2
Number of PROFINET interfaces	1