6ES7512-1SM03-0AB0

Data sheet



SIMATIC DP, CPU 1512SP F-1 PN for ET 200SP, central processing unit with work memory 600 KB for program and 2 MB for data, 1st interface: PROFINET IRT with 3-port switch, 25 ns bit performance, SIMATIC Memory Card required, BusAdapter required for port 1 and 2 * *** approvals and certificates according to entry 109817615 at support.industry.siemens.com to be observed! ****

Figure similar

Product type designation	* \$1110/110	
FS01 Firmware version	General information	
Firmware version • FW update possible Product function • (RM data) • Module swapping during operation (hot swapping) • Isochronous mode • Step 7 TIA Portal configurable/integrated from version configuration control via dataset Control eloments Mode selector switch 1 Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit	Product type designation	CPU 1512SP F-1 PN
FW update possible Product function I & M data Module swapping during operation (hot swapping) I sochronous mode Fengineering with STEP 7 TIA Portal configurable/integrated from version V18 (FW V3.0); with older TIA Portal versions configurable as 6ES7 512-15K01-0AB0 Configuration control via dataset Yes Control elements Mode selector switch 1 Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, upper limit (DC) Perse polarity protection Mains/voltage failure stored energy time Mains/voltage failure stored energy time Input current Current consumption, max. Inrush current, max. Powor Infleed power to the backplane bus Power loss, typ. Memory Number of slots for SIMATIC memory card Integrated (for program) Integrated (for program) Integrated (for fotat) ERM Vas. (SMATIC memory card Integrated (for fotat)	HW functional status	FS01
Product function Name Nam	Firmware version	V3.0
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STEP 7 TIA Portal configurable/integrated from version Configuration control via dataset Yes Control elements Mode selector switch Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Mains buffering Mains/voltage failure stored energy time Inrush current Current consumption (rated value) O.51 A Current consumption, max. In 34 A; Rated value Pewer loss Power loss Power loss, typ. Memory Number of slots for SIMATIC memory card Integrated (for program) integrated (for data) Ves Work memory Integrated (for data) Vals (FW V3.0); with older TIA Portal versions configurable as 6ES7 512-15X(01-	Isochronous mode	Yes; only with PROFINET; with minimum OB 6x cycle of 500 µs
Configuration control via dataset Control elements Mode selector switch I Supply voltage Rated value (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) Reverse polarity protection Mains buffering • Mains/voltage failure stored energy time Input current Current consumption (rated value) Current consumption (rated value) Current consumption, max. Inrush current, max. Inrush current, max. Inrush current, max. Power Infeed power to the backplane bus Power loss Power loss Power loss, typ. 6.5 W Memory Number of slots for SIMATIC memory card I SIMATIC memory card required Yes Work memory • integrated (for program) • integrated (for data) 600 kbyte	Engineering with	
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Mains/voltage failure stored energy time Input current Current consumption (rated value) Current consumption, max. Inrush current, max. It and a second secon	Reverse polarity protection	Yes
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Power loss Power loss, typ. Remory Number of slots for SIMATIC memory card SIMATIC memory card required Work memory • integrated (for program) • integrated (for data) 8.05 W 8.05 W 6.5 W 1 Contact the backplane bus 8.05 W 6.5 W	Inrush current, max.	1.34 A; Rated value
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SIMATIC memory card required Work memory • integrated (for program) • integrated (for data) 2 Mbyte		1
Work memory • integrated (for program) • integrated (for data) 600 kbyte 2 Mbyte		Yes
• integrated (for data) 2 Mbyte		
• integrated (for data) 2 Mbyte	·	600 kbyte

Plug-in (SIMATIC Memory Card), max.	32 Gbyte
Backup	
maintenance-free	Yes
CPU processing times	
for bit operations, typ.	25 ns
for word operations, typ.	32 ns
for fixed point arithmetic, typ.	42 ns
for floating point arithmetic, typ.	170 ns
CPU-blocks	
Number of elements (total)	4 000; Blocks (OB, FB, FC, DB) and UDTs
DB	
Number range	1 60 999; subdivided into: number range that can be used by the user: 1 59 999, and number range of DBs created via SFC 86: 60 000 60 999
• Size, max.	2 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	2 Mbyte, 1 of bbs with absolute addressing, the max. Size is 04 Kb
Number range	0 65 535
• Size, max.	600 kbyte
FC	000 kbyte
Number range	0 65 535
• Size, max.	600 kbyte
• Size, max.	ooo nbyto
• Size, max.	600 kbyte
Number of free cycle OBs	100
Number of fime alarm OBs	20
Number of delay alarm OBs	20
Number of delay alarm OBs Number of cyclic interrupt OBs	
	20; With minimum OB 3x cycle of 250 μs
Number of process alarm OBsNumber of DPV1 alarm OBs	50 3
	1
Number of isochronous mode OBs Number of technology purchase and compact of tech	
Number of technology synchronous alarm OBs Number of startus OBs	2
Number of startup OBs Number of source OBs	100
Number of asynchronous error OBs	4
Number of synchronous error OBs	2
Number of diagnostic alarm OBs	1
Nesting depth	24: Un to 9 pagaible for E blocks
• per priority class	24; Up to 8 possible for F-blocks
Counters, timers and their retentivity	
S7 counter	0.040
• Number	2 048
Retentivity	Von
— adjustable	Yes
IEC counter	Any (only limited by the main
Number Potentivity	Any (only limited by the main memory)
Retentivity	Von
— adjustable	Yes
S7 times	2.040
Number Patentivity	2 048
Retentivity	Von
— adjustable	Yes
IEC timer	Any (only limited by the main
Number Potentivity	Any (only limited by the main memory)
Retentivity	V
— adjustable	Yes
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	256 kbyte; in total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 216 KB
Flag	ovalitors, DDS, and toorniology data (axes). 210 ND
• Size, max.	16 kbyte
Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	o, a stock memory bit, grouped into one stock memory byte
Retentivity adjustable	Yes
■ INCIGNITY IN AUJUSTADIC	100

Retentivity preset	No
Retentivity preset Local data	NO
	64 khyte: may 16 KR per block
per priority class, max. Address area	64 kbyte; max. 16 KB per block
	0.040 many mumb as a formatida a la submandida a
Number of IO modules	2 048; max. number of modules / submodules
I/O address area	
• Inputs	32 kbyte; All inputs are in the process image
• Outputs	32 kbyte; All outputs are in the process image
per integrated IO subsystem	0.11
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
per CM/CP	
— Inputs (volume)	8 kbyte
— Outputs (volume)	8 kbyte
Subprocess images	
Number of subprocess images, max.	32
Address space per module	
Address space per module, max.	288 byte; For input and output data respectively
Address space per station	
Address space per station, max.	2 560 byte; for central inputs and outputs; depending on configuration; 2 048 bytes for ET 200SP modules + 512 bytes for ET 200AL modules
Hardware configuration	
Number of distributed IO systems	32; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET or PROFIBUS communication modules, but also by the connection of I/O via AS-i master modules or links (e.g. IE/PB-Link)
Number of DP masters	
• Via CM	1
Number of IO Controllers	
• integrated	1
• Via CM	0
Rack	
Modules per rack, max.	82; CPU + 64 modules + server module (mounting width max. 1 m) + 16 ET 200AL modules
 Quantity of operable ET 200SP modules, max. 	64
 Quantity of operable ET 200AL modules, max. 	16
 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
Backup time	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.	10 s; Typ.: 2 s
Operating hours counter	, . //
Number	16
Clock synchronization	
• supported	Yes
• to DP, master	
J to DI , master	Yes: Via CM DP module
• to DP slave	Yes; Via CM DP module
• to DP, slave	Yes; Via CM DP module
• in AS, master	Yes; Via CM DP module Yes
in AS, masterin AS, slave	Yes; Via CM DP module Yes Yes
in AS, masterin AS, slaveon Ethernet via NTP	Yes; Via CM DP module Yes
 in AS, master in AS, slave on Ethernet via NTP Interfaces	Yes; Via CM DP module Yes Yes Yes
 in AS, master in AS, slave on Ethernet via NTP Interfaces Number of PROFINET interfaces	Yes; Via CM DP module Yes Yes Yes 1
 in AS, master in AS, slave on Ethernet via NTP Interfaces Number of PROFINET interfaces Number of PROFIBUS interfaces 	Yes; Via CM DP module Yes Yes Yes 1 1; Via CM DP module
 in AS, master in AS, slave on Ethernet via NTP Interfaces Number of PROFINET interfaces Number of PROFIBUS interfaces Optical interface 	Yes; Via CM DP module Yes Yes Yes 1
in AS, master in AS, slave on Ethernet via NTP Interfaces Number of PROFINET interfaces Number of PROFIBUS interfaces Optical interface 1. Interface	Yes; Via CM DP module Yes Yes Yes 1 1; Via CM DP module
in AS, master in AS, slave on Ethernet via NTP Interfaces Number of PROFINET interfaces Number of PROFIBUS interfaces Optical interface Interface Interface types	Yes; Via CM DP module Yes Yes Yes 1 1; Via CM DP module No
 in AS, master in AS, slave on Ethernet via NTP Interfaces Number of PROFINET interfaces Number of PROFIBUS interfaces Optical interface 1. Interface Interface types RJ 45 (Ethernet) 	Yes; Via CM DP module Yes Yes Yes 1 1; Via CM DP module No Yes; X1 P3; opt. X1 P1 and X1 P2 via BusAdapter BA 2x RJ45
 in AS, master in AS, slave on Ethernet via NTP Interfaces Number of PROFINET interfaces Number of PROFIBUS interfaces Optical interface 1. Interface Interface types	Yes; Via CM DP module Yes Yes Yes 1 1; Via CM DP module No