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Data sheet 6ES7314-1AE04-0AB0

Spare part SIMATIC S7-300, CPU 314 Central processing unit with Integr. power supply 24 V DC Work memory 24 KB

Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	1 000 mA
Inrush current, typ.	8 A
Power loss	
Power loss, typ.	8 W
Memory	
Work memory	
● integrated	24 kbyte; 24 KB/8 K instructions RAM (integrated); 1 instruction means 3 bytes on average
Load memory	
● expandable FEPROM	Yes; Flash-EPROM
● expandable FEPROM, max.	4 Mbyte
● integrated RAM, max.	40 kbyte
Backup	
● present	Yes
● with battery	Yes; all blocks
● without battery	Yes; 4 KB: bit memory, counter, times and data
CPU processing times	
for bit operations, typ.	0.3 µs
for bit operations, max.	0.6 µs
for word operations, typ.	1 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	50 µs
for timer/counter operations, typ.	12 µs
CPU-blocks	
DB	
● Number, max.	127
● Size, max.	8 kbyte
FB	
● Number, max.	128
● Size, max.	8 kbyte
FC	
● Number, max.	128
● Size, max.	8 kbyte
OB	
● Number, max.	see instruction list
● Size, max.	8 kbyte
● Number of free cycle OBs	1; OB 1
● Number of time alarm OBs	1; OB 10
● Number of cyclic interrupt OBs	1; OB 35
● Number of process alarm OBs	1; OB 40
● Number of startup OBs	1; OB 100
Nesting depth	
● per priority class	8

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Counters, timers and their retentivity	
S7 counter	
● Number	64
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	63
Counting range	
— lower limit	1
— upper limit	999
S7 times	
● Number	128
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	127
Time range	
— lower limit	10 ms
— upper limit	9 990 s
Data areas and their retentivity	
Flag	
● Size, max.	256 byte
● Retentivity available	Yes; MB 0 to MB 255
● of which retentive with battery	0 to 2 047 (M 0.0 to M 255.7, adjustable)
● of which retentive without battery	0 to 2 047 (M 0.0 to M 255.7, adjustable)
Address area	
I/O address area	
● Inputs	512 byte
● Outputs	512 byte
Process image	
● Inputs	128 byte
● Outputs	128 byte
Digital channels	
● Inputs	1 024
● Outputs	1 024
Analog channels	
● Inputs	256
● Outputs	128
Addressing volume	
● Inputs	122 byte
● Outputs	122 byte
Hardware configuration	
Number of expansion units, max.	3
connectable programming devices/PCs	PGs/PCs with STEP 7 connectable via MPI interface
Number of modules per DP slave interface, max.	16
Number of DP masters	
● integrated	0
● via CP	1; CP 342-5
Number of operable FMs and CPs (recommended)	
● FM	4
● CP, PtP	2
● CP, LAN	1
Rack	
● Modules per rack, max.	32
Time of day	
Clock	
● Hardware clock (real-time)	Yes

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Interfaces	
MPI	
● Cable length, max.	9 100 m; without repeaters: 50 m; with 2 repeaters: 1100 m; with 10 repeaters in series: 9100 m; via fiber optic cable: 23.8 km (with 16 star hubs or OLMs)
1. Interface	
Protocols	
● MPI	Yes
MPI	
● Number of nodes, max.	32; 32 nodes on MPI bus; PG/PC, OP, additional S7-300/400, C7; per CPU max. 4 static and 4 dynamic connections
● Transmission rate, max.	187.5 kbit/s
Services	
— PG/OP communication	Yes
— Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes
Communication functions	
PG/OP communication	Yes
Global data communication	
● supported	Yes
S7 basic communication	
● supported	Yes
S7 communication	
● supported	Yes
● as server	Yes
S5 compatible communication	
● supported	Yes; via loadable blocks
Standard communication (FMS)	
● supported	Yes; via loadable blocks
Number of connections	
● overall	
— of which dynamic	8
— of which static	4
Configuration	
Configuration software	
● STEP 7	Yes; V5.0, V5.0 SP1
Programming	
● Command set	Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, jump functions
● Nesting levels	8
● Program organization	Linear, structured
● System functions (SFC)	Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— GRAPH	Yes
Software libraries	
— Process diagnostics	Yes
— Software controller	Yes; depending on the required memory space and the resulting execution time
Know-how protection	
● User program protection/password protection	Yes
Cycle time monitoring	
● lower limit	1 ms

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● upper limit	6 000 ms
● adjustable	Yes
● preset	150 ms
Dimensions	
Width	80 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	530 g; Memory card 16 g

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