

Spare part SIMATIC S7-300, CPU 316-2DP Central processing unit with integr. Power supply 24 V DC, Work memory 128 KB 2nd interface DP master/slave

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.	10 W
Memory	
Work memory	
<ul style="list-style-type: none"> integrated 	128 kbyte; 128 KB / 42K instructions RAM (integrated)
Load memory	
<ul style="list-style-type: none"> expandable FEPRM expandable FEPRM, max. integrated RAM, max. 	Yes; Flash-EPROM 4 Mbyte 192 kbyte
Backup	
<ul style="list-style-type: none"> present with battery without battery 	Yes Yes; all blocks Yes; 4 KB: bit memory, counter, times and data
CPU processing times	
for bit operations, typ.	0.3 μ s
for bit operations, max.	0.6 μ s
for word operations, typ.	1 μ s
for fixed point arithmetic, typ.	2 μ s
for floating point arithmetic, typ.	50 μ s
for timer/counter operations, typ.	12 μ s
CPU-blocks	
DB	
<ul style="list-style-type: none"> Number, max. Size, max. 	511 16 kbyte
FB	
<ul style="list-style-type: none"> Number, max. Size, max. 	256 16 kbyte
FC	
<ul style="list-style-type: none"> Number, max. Size, max. 	256 16 kbyte
OB	
<ul style="list-style-type: none"> Number, max. Size, max. Number of free cycle OBs Number of time alarm OBs Number of cyclic interrupt OBs Number of process alarm OBs Number of startup OBs 	see instruction list 16 kbyte 1; OB 1 1; OB 10 1; OB 35 1; OB 40 1; OB 100
Nesting depth	
<ul style="list-style-type: none"> per priority class 	8
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	2 kbyte
• Outputs	2 kbyte
Process image	
• Inputs	128 byte
• Outputs	128 byte
Digital channels	
• Inputs	16 384
— of which central	1 024
• Outputs	16 384
— of which central	1 024
Analog channels	
• Inputs	1 024
— of which central	256
• Outputs	1 024
— of which central	128
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.	64
Number of DP masters	
• integrated	1
• via CP	1; CP 342-5
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	4
• CP, LAN	2
Rack	
• Modules per rack, max.	32
Time of day	
Clock	
• Hardware clock (real-time)	Yes
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

1. Interface

Protocols

- MPI Yes

MPI

- Number of nodes, max. 32
- Transmission rate, max. 187.5 kbit/s

Services

- PG/OP communication Yes
- Global data communication Yes
- S7 basic communication Yes
- S7 communication Yes

2. Interface

Protocols

- PROFIBUS DP master Yes
- PROFIBUS DP slave Yes

PROFIBUS DP master

- Number of DP slaves, max. 124

Services

- Equidistance Yes
- Activation/deactivation of DP slaves Yes
- Direct data exchange (slave-to-slave communication) Yes; Transmitter and receiver

User data per DP slave

- User data per DP slave, max. 244 byte

communication functions / header

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 / header

Configuration software

- STEP 7 Yes; V5.0

configuration / programming / header

- 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
- CFC Yes
- GRAPH Yes

— HiGraph®	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
programming / cycle time monitoring / header	
• lower limit	1 ms
• 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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