

Spare part SIMATIC S7-300, CPU 313 Central processing unit
with integr. Power supply 24 V DC, work memory 12 KB

Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
Inrush current, typ.	8 A
Power loss	
Power loss, typ.	8 W
Memory	
Work memory	
• integrated	12 kbyte; 12 KB / 4K instructions RAM (integrated)
Load memory	
• expandable FEPRM	Yes; Flash-EPRM
• expandable FEPRM, max.	4 Mbyte
• integrated RAM, max.	20 kbyte
Backup	
• with battery	Yes; all blocks
• without battery	Yes; 72 bytes: memory bits, times, counters, data
CPU processing times	
for bit operations, typ.	0.6 μ s
for bit operations, max.	1.2 μ s
for word operations, typ.	2 μ s
for fixed point arithmetic, typ.	3 μ s
for floating point arithmetic, typ.	60 μ s
for timer/counter operations, typ.	15 μ s
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	
• Description	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
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	31
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
Data areas and their retentivity	
Flag	
• Number, max.	256 byte
• Retentivity available	Yes; MB 0 to MB 255
• of which retentive with battery	0 to 576 (M 0.0 to M 71.7, adjustable)
• of which retentive without battery	0 to 576 (M 0.0 to M 71.7, adjustable)
Address area	
I/O address area	

• Inputs	128 kbyte
• Outputs	128 kbyte
Process image	
• Inputs	32 byte
• Outputs	32 byte
Digital channels	
• Inputs	256
• Outputs	256
Analog channels	
• Inputs	64
• Outputs	32
Addressing volume	
• Inputs	64 byte
• Outputs	64 byte
Hardware configuration	
Number of expansion units, max.	0
connectable programming devices/PCs	PGs/PCs with STEP 7 connectable via MPI interface
Number of modules per DP slave interface, max.	8
Number of DP masters	
• via CP	1; CP 342-5
Rack	
• Racks, max.	1
• Modules per rack, max.	8
Time of day	
Clock	
• Software clock	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 hubs or OLMs)
1. Interface	
Functionality	
• 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
— S7 communication, as server	Yes

Communication functions

PG/OP communication	Yes
---------------------	-----

S7 communication

• supported	Yes
• as server	Yes

Number of connections

• overall	
— of which dynamic	4
— of which static	4

Configuration

Configuration software

• STEP 7	Yes; V5.0
----------	-----------

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
• System function blocks (SFB)	Yes

Programming language

— SCL	Yes; Optional
-------	---------------

Know-how protection

• User program protection/password protection	Yes
---	-----

Cycle time monitoring

• 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
-----------------	-------------------------

last modified:

04/06/2018