

\*\*\* SPARE PART\*\*\* SIMATIC S7-300, CPU 313 CPU WITH INTEGRATED 24V DC POWER SUPPLY 12 KBYTE WORKING MEMORY

### Supply voltage

Rated value (DC)	Yes
<ul style="list-style-type: none"> <li>• 24 V DC</li> </ul>	
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V

### Input current

Inrush current, typ.	8 A
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### Power loss

Power loss, typ.	8 W
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### Memory

Work memory	
<ul style="list-style-type: none"> <li>• integrated</li> </ul>	12 kbyte; 12 KB / 4K instructions RAM (integrated)
Load memory	
<ul style="list-style-type: none"> <li>• expandable FEPROGRAM</li> </ul>	Yes; Flash-EPROGRAM
<ul style="list-style-type: none"> <li>• expandable FEPROGRAM, max.</li> </ul>	4 Mbyte
<ul style="list-style-type: none"> <li>• integrated RAM, max.</li> </ul>	20 kbyte
Backup	
<ul style="list-style-type: none"> <li>• with battery</li> </ul>	Yes; all blocks
<ul style="list-style-type: none"> <li>• without battery</li> </ul>	Yes; 72 bytes: memory bits, times, counters, data

### CPU processing times

for bit operations, typ.	0.6 $\mu$ s
for bit operations, max.	1.2 $\mu$ s
for word operations, typ.	2 $\mu$ s
for fixed point arithmetic, typ.	3 $\mu$ s
for floating point arithmetic, typ.	60 $\mu$ s
for timer/counter operations, typ.	15 $\mu$ s

### CPU-blocks

DB	
<ul style="list-style-type: none"> <li>• Number, max.</li> </ul>	127
<ul style="list-style-type: none"> <li>• Size, max.</li> </ul>	8 kbyte
FB	
<ul style="list-style-type: none"> <li>• Number, max.</li> </ul>	128
<ul style="list-style-type: none"> <li>• Size, max.</li> </ul>	8 kbyte

<b>FC</b>	
• Number, max.	128
• Size, max.	8 kbyte
<b>OB</b>	
• 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
<b>Nesting depth</b>	
• per priority class	8
<b>Counters, timers and their retentivity</b>	
<b>S7 counter</b>	
• Number	64
of which retentive with battery	
— can be set	Yes
— lower limit	0
— upper limit	35
of which retentive without battery	
— can be set	Yes
— lower limit	0
— upper limit	35
<b>Counting range</b>	
— lower limit	1
— upper limit	999
<b>S7 times</b>	
• Number	128
of which retentive with battery	
— adjustable	Yes
— lower limit	0
— upper limit	35
<b>Time range</b>	
— lower limit	10 ms
— upper limit	9 990 s
<b>Data areas and their retentivity</b>	
<b>Flag</b>	
• 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:**

03/23/2017