

\*\*\*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	
<ul style="list-style-type: none"> <li>integrated</li> </ul>	24 kbyte; 24 KB/8 K instructions RAM (integrated); 1 instruction means 3 bytes on average
Load memory	
<ul style="list-style-type: none"> <li>expandable FEPRM</li> <li>expandable FEPRM, max.</li> <li>integrated RAM, max.</li> </ul>	Yes; Flash-EPRM 4 Mbyte 40 kbyte
Backup	
<ul style="list-style-type: none"> <li>present</li> <li>with battery</li> <li>without battery</li> </ul>	Yes Yes; all blocks Yes; 4 KB: bit memory, counter, times and data
CPU processing times	
for bit operations, typ.	0.3 $\mu$ s
for bit operations, max.	0.6 $\mu$ s
for word operations, typ.	1 $\mu$ s
for fixed point arithmetic, typ.	2 $\mu$ s
for floating point arithmetic, typ.	50 $\mu$ s
for timer/counter operations, typ.	12 $\mu$ s
CPU-blocks	
DB	
<ul style="list-style-type: none"> <li>Number, max.</li> <li>Size, max.</li> </ul>	127 8 kbyte
FB	
<ul style="list-style-type: none"> <li>Number, max.</li> <li>Size, max.</li> </ul>	128 8 kbyte
FC	
<ul style="list-style-type: none"> <li>Number, max.</li> <li>Size, max.</li> </ul>	128 8 kbyte
OB	
<ul style="list-style-type: none"> <li>Number, max.</li> <li>Size, max.</li> <li>Number of free cycle OBs</li> <li>Number of time alarm OBs</li> <li>Number of cyclic interrupt OBs</li> <li>Number of process alarm OBs</li> <li>Number of startup OBs</li> </ul>	see instruction list 8 kbyte 1; OB 1 1; OB 10 1; OB 35 1; OB 40 1; OB 100
Nesting depth	
<ul style="list-style-type: none"> <li>per priority class</li> </ul>	8
Counters, timers and their retentivity	
S7 counter	

• Number	64
<b>Retentivity</b>	
— adjustable	Yes
— lower limit	0
— upper limit	63
<b>Counting range</b>	
— lower limit	1
— upper limit	999
<b>S7 times</b>	
• Number	128
<b>Retentivity</b>	
— adjustable	Yes
— lower limit	0
— upper limit	127
<b>Time range</b>	
— lower limit	10 ms
— upper limit	9 990 s
<b>Data areas and their retentivity</b>	
<b>Flag</b>	
• 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)
<b>Address area</b>	
<b>I/O address area</b>	
• Inputs	512 byte
• Outputs	512 byte
<b>Process image</b>	
• Inputs	128 byte
• Outputs	128 byte
<b>Digital channels</b>	
• Inputs	1 024
• Outputs	1 024
<b>Analog channels</b>	
• Inputs	256
• Outputs	128
<b>Addressing volume</b>	
• Inputs	122 byte
• Outputs	122 byte
<b>Hardware configuration</b>	
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
<b>Number of DP masters</b>	
• integrated	0
• via CP	1; CP 342-5
<b>Number of operable FMs and CPs (recommended)</b>	
• FM	4
• CP, PtP	2
• CP, LAN	1
<b>Rack</b>	
• Modules per rack, max.	32
<b>Time of day</b>	
<b>Clock</b>	
• Hardware clock (real-time)	Yes
<b>Interfaces</b>	
<b>MPI</b>	
• Cable length, max.	9 100 m; without repeaters: 50 m; with 2 repeaters: 1 100 m; with 10 repeaters in series: 9 100 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 / 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, V5.0 SP1
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
• System function blocks (SFB)	1
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
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
<b>Weights</b>	
Weight, approx.	530 g; Memory card 16 g
<b>last modified:</b>	7/28/2021 