



spare part SIMATIC S7-300, CPU 314 central processing unit with MPI, integrated power supply 24 V DC, work memory 128 KB, Micro Memory Card required

Figure similar

General information	
Product type designation	CPU 314
HW functional status	01
Firmware version	V3.3
Engineering with	
• Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.2 + SP1 or higher with HSP 218
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Mains buffering	
• Mains/voltage failure stored energy time	5 ms
• Repeat rate, min.	1 s
Input current	
Current consumption (rated value)	650 mA
Current consumption (in no-load operation), typ.	140 mA
Inrush current, typ.	3.5 A
I^2t	1 A ² s
Power loss	
Power loss, typ.	4 W
Storage	
Work memory	
• integrated	128 kbyte
• expandable	No
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
• Data management on MMC (after last programming), min.	10 a
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
• without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.06 μ s
for word operations, typ.	0.12 μ s
for fixed point arithmetic, typ.	0.16 μ s
for floating point arithmetic, typ.	0.59 μ s

CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
• Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
• Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
• Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
• Number, max.	see instruction list
• Size, max.	64 kbyte
• Number of free cycle OBs	1; OB 1
• Number of time alarm OBs	1; OB 10
• Number of delay alarm OBs	2; OB 20, 21
• Number of cyclic interrupt OBs	4; OB 32, 33, 34, 35
• Number of process alarm OBs	1; OB 40
• Number of startup OBs	1; OB 100
• Number of asynchronous error OBs	4; OB 80, 82, 85, 87
• Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
• per priority class	16
• additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
• Number	256
Retentivity	
— can be set	Yes
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 timer	
• Number	256
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	64 kbyte
Flag	
• Size, max.	256 byte
• Retentivity available	Yes; MB 0 to MB 255
• Retentivity preset	MB 0 to MB 15
• Number of clock memories	8; 1 memory byte
Data blocks	

<ul style="list-style-type: none"> • Retentivity adjustable 	Yes; via non-retain property on DB
<ul style="list-style-type: none"> • Retentivity preset 	Yes
Local data	
<ul style="list-style-type: none"> • per priority class, max. 	32 kbyte; Max. 2 KB per block
Address area	
I/O address area	
<ul style="list-style-type: none"> • Inputs 	1 024 byte
<ul style="list-style-type: none"> • Outputs 	1 024 byte
Process image	
<ul style="list-style-type: none"> • Inputs 	1 024 byte
<ul style="list-style-type: none"> • Outputs 	1 024 byte
<ul style="list-style-type: none"> • Inputs, adjustable 	1 024 byte
<ul style="list-style-type: none"> • Outputs, adjustable 	1 024 byte
<ul style="list-style-type: none"> • Inputs, default 	128 byte
<ul style="list-style-type: none"> • Outputs, default 	128 byte
Digital channels	
<ul style="list-style-type: none"> • Inputs 	1 024
<ul style="list-style-type: none"> — of which central 	1 024
<ul style="list-style-type: none"> • Outputs 	1 024
<ul style="list-style-type: none"> — of which central 	1 024
Analog channels	
<ul style="list-style-type: none"> • Inputs 	256
<ul style="list-style-type: none"> — of which central 	256
<ul style="list-style-type: none"> • Outputs 	256
<ul style="list-style-type: none"> — of which central 	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
<ul style="list-style-type: none"> • integrated 	0
<ul style="list-style-type: none"> • via CP 	4
Number of operable FMs and CPs (recommended)	
<ul style="list-style-type: none"> • FM 	8
<ul style="list-style-type: none"> • CP, PtP 	8
<ul style="list-style-type: none"> • CP, LAN 	10
Rack	
<ul style="list-style-type: none"> • Racks, max. 	4
<ul style="list-style-type: none"> • Modules per rack, max. 	8
Time of day	
Clock	
<ul style="list-style-type: none"> • Hardware clock (real-time) 	Yes
<ul style="list-style-type: none"> • retentive and synchronizable 	Yes
<ul style="list-style-type: none"> • Backup time 	6 wk; At 40 °C ambient temperature
<ul style="list-style-type: none"> • Deviation per day, max. 	10 s; Typ.: 2 s
<ul style="list-style-type: none"> • Behavior of the clock following POWER-ON 	Clock continues running after POWER OFF
<ul style="list-style-type: none"> • Behavior of the clock following expiry of backup period 	the clock continues at the time of day it had when power was switched off
Operating hours counter	
<ul style="list-style-type: none"> • Number 	1
<ul style="list-style-type: none"> • Number/Number range 	0
<ul style="list-style-type: none"> • Range of values 	0 to 2 ³¹ hours (when using SFC 101)
<ul style="list-style-type: none"> • Granularity 	1 h
<ul style="list-style-type: none"> • retentive 	Yes; Must be restarted at each restart
Clock synchronization	
<ul style="list-style-type: none"> • supported 	Yes
<ul style="list-style-type: none"> • to MPI, master 	Yes
<ul style="list-style-type: none"> • on MPI, device 	Yes
<ul style="list-style-type: none"> • in AS, master 	Yes
<ul style="list-style-type: none"> • in AS, device 	No
Digital inputs	
Number of digital inputs	0

Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Interfaces	
Number of PROFINET interfaces	0
Number of RS 485 interfaces	1; MPI
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	No
Interface types	
<ul style="list-style-type: none"> • RS 485 • Output current of the interface, max. 	<ul style="list-style-type: none"> Yes 200 mA
Protocols	
<ul style="list-style-type: none"> • MPI • PROFIBUS DP master • PROFIBUS DP device • Point-to-point connection 	<ul style="list-style-type: none"> Yes No No No
MPI	
<ul style="list-style-type: none"> • Transmission rate, max. 	187.5 kbit/s
Services	
<ul style="list-style-type: none"> — PG/OP communication — Routing — Global data communication — S7 basic communication — S7 communication — S7 communication, as client — S7 communication, as server 	<ul style="list-style-type: none"> Yes No Yes Yes Yes; Only server, configured on one side No Yes
Protocols	
PROFIsafe	No
Communication functions	
PG/OP communication	Yes
Data record routing	No
Global data communication	
<ul style="list-style-type: none"> • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. 	<ul style="list-style-type: none"> Yes 8 8 8 8 22 byte 22 byte
S7 basic communication	
<ul style="list-style-type: none"> • supported • User data per job, max. • User data per job (of which consistent), max. 	<ul style="list-style-type: none"> Yes 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
<ul style="list-style-type: none"> • supported • as server • as client • User data per job, max. • User data per job (of which consistent), max. 	<ul style="list-style-type: none"> Yes Yes Yes; Via CP and loadable FB 180 byte; With PUT/GET 240 byte; as server
S5 compatible communication	
<ul style="list-style-type: none"> • supported 	Yes; via CP and loadable FC
Number of connections	
<ul style="list-style-type: none"> • overall • usable for PG communication <ul style="list-style-type: none"> — reserved for PG communication 	<ul style="list-style-type: none"> 12 11 1

— adjustable for PG communication, min.	1
— adjustable for PG communication, max.	11
• usable for OP communication	11
— reserved for OP communication	1
— adjustable for OP communication, min.	1
— adjustable for OP communication, max.	11
• usable for S7 basic communication	8
— reserved for S7 basic communication	0
— adjustable for S7 basic communication, min.	0
— adjustable for S7 basic communication, max.	8
S7 message functions	
Number of login stations for message functions, max.	12; Depending on the configured connections for PG/OP and S7 basic communication
Process diagnostic messages	Yes
simultaneously active Alarm_S blocks, max.	300
Test commissioning functions	
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	
• Status/control variable	Yes
• Variables	Inputs, outputs, memory bits, DB, times, counters
• Number of variables, max.	30
— of which status variables, max.	30
— of which control variables, max.	14
Forcing	
• Forcing	Yes
• Forcing, variables	Inputs, outputs
• Number of variables, max.	10
Diagnostic buffer	
• present	Yes
• Number of entries, max.	500
— can be set	No
— of which powerfail-proof	100; Only the last 100 entries are retained
• Number of entries readable in RUN, max.	499
— can be set	Yes; From 10 to 499
— preset	10
Service data	
• Can be read out	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
Configuration	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher with HW update
Programming	
• Command set	see instruction list
• Nesting levels	8
• System functions (SFC)	see instruction list
• System function blocks (SFB)	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes

Know-how protection	
• User program protection/password protection	Yes
• Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	280 g
Classifications	

	Version	Classification
eClass	14	27-24-22-07
eClass	12	27-24-22-07
eClass	9.1	27-24-22-07
eClass	9	27-24-22-07
eClass	8	27-24-22-07
eClass	7.1	27-24-22-07
eClass	6	27-24-22-07
ETIM	10	EC000236
ETIM	9	EC000236
ETIM	8	EC000236
ETIM	7	EC000236
IDEA	4	3565
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval



[Miscellaneous](#)



[Confirmation](#)



other **Environment**



[Confirmation](#)

[Environmental Con-
firmations](#)

[Environmental Con-
firmations](#)



last modified:

4/7/2025