SIEMENS

Data sheet

6ES7314-1AF11-0AB0

SIMATIC S7-300, CPU 314 CPU WITH MPI INTERFACE INTEGRATED 24 V DC POWER SUPPLY 64 KBYTE WORKING MEMORY MICRO MEMORY CARD NECESSARY

General information	
HW functional status	01
Firmware version	V2.0.0
Engineering with	
 Programming package 	STEP 7 V5.2 + SP1 or higher with HW update
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
external protection for power supply lines	2 A min.
(recommendation)	
Input current	
Current consumption (rated value)	0.6 A
Current consumption (in no-load operation), typ.	60 mA
Inrush current, typ.	2.5 A
l²t	0.5 A²·s
Power loss	
Power loss, typ.	2.5 W
Memory	
Work memory	
• integrated	64 kbyte
• expandable	No
Load memory	
• Plug-in (MMC)	Yes
● Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last 	10 у
programming), min.	
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
• without battery	Yes; Program and data
Battery	

Backup battery



• Backup time, max.	10 y; At 40 °C ambient temperature
CPU processing times	
for bit operations, typ.	0.1 µs
for bit operations, max.	0.2 µs
for word operations, typ.	0.2 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	3 µs
CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs OBs, SDBs); the maximum number of loadable blocks can be reduced by the MMC being used.
DB	
• Number, max.	511; Number range: 1 to 511
• Size, max.	16 kbyte
FB	
• Number, max.	512; Number range: 0 to 2047
• Size, max.	16 kbyte
FC	
• Number, max.	512; Number range: 0 to 2047
● Size, max.	16 kbyte
OB	
● Number, max.	see instruction list
• Size, max.	16 kbyte
 Number of free cycle OBs 	1; OB 1
 Number of time alarm OBs 	1; OB 10
 Number of delay alarm OBs 	1; OB 20
 Number of cyclic interrupt OBs 	1; OB 35
 Number of process alarm OBs 	1; OB 40
Number of startup OBs	1; OB 100
 Number of asynchronous error OBs 	1; OB 80
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
per priority class	8
 additional within an error OB 	4
Counters, timers and their retentivity	
S7 counter	
Number	256
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes



05/22/2020

	— lower limit	0
IEC counter • present Yes • Type SFB • Number Unlimited (limited only by RAM capacity) S7 times 256 Retentivity - - adjustable Yes - preset No retentivity Time range - - lower limit 9 990 s IEC timer - • present Yes - 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 in total all (incl. memory bits, times, counters) Flig Number, max. 256 byte • Number of clock memories 8; 1 memory byte Data areas and their retentivity adjustable No • Retentivity adjustable No • Retentivity adjustable No • Retentivity adjustable No • Retentivity adjustable No		
• present Yes Type SFB • Number Unimited (limited only by RAM capacity) S7 times 256 Retentivity 256 - adjustable Yes - preset No retentivity - adjustable Yes - preset No retentivity - over limit 10 ms - upper limit 9 990 s IEC timer Yes • present Yes • Type SFB • Number Unlimited (limited only by RAM capacity) Data areas and their retentivity at an (incl. memory bits, times, counters) Flag • Number, max. 256 byte • Retentivity preset MB 0 to MB 15 • Number of clock memories 8: 1 memory byte Data blocks • Retentivity adjustable No • Retentivity preset Yes Address area I kbyte • Inputs 1 kbyte • Outputs 1 kbyte • Outputs 1 28 byte Outputs 1 024 - of which central <		
• TypeSFB• NumberUnlimited (limited only by RAM capacity)S7 times256Retentivity- adjustable- adjustableYes- presetNo retentivityTime range lower limit9 990 sIEC timerYes• presentYes· upper limit9 990 sIEC timerVes• presentYes• NumberUnlimited (limited only by RAM capacity)Data areas and their retentivity-retentive data area in totalall (incl. memory bits, times, counters)Flag-• Number of clock memories8; 1 memory byteData blocks-• Retentivity presetMB 0 to MB 15• Number of clock memories1 memory byteData blocks-• Retentivity presetYes• Retentivity presetYesAddress area-• Inputs1 kbyte• Outputs128 byte• Outputs128 byte• Outputs1024- of which central1024- of which central1024- of which central1024- of which central1024- of which central1024		Yes
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S7 times 256 Retentivity 256 Retentivity Ves		
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		200
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Analog channels	Outputs	1 024
	— of which central	1 024
Inputs 256	Analog channels	
	Inputs	256



— of which central	256
Outputs	256
— of which central	256
Hardware configuration	
Number of DP masters	
• integrated	0
● via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	10
Rack	
• Racks, max.	4
 Modules per rack, max. 	8
Time of day	
Clock	
 Hardware clock (real-time) 	Yes
 retentive and synchronizable 	Yes
Backup time	6 wk; At 40 °C ambient temperature
 Deviation per day, max. 	10 s
Operating hours counter	
Number	1
 Number/Number range 	0
 Range of values 	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
supported	Yes
● to MPI, master	Yes
• to MPI, slave	Yes
• in AS, master	Yes
Analog inputs	
integrated channels (AI)	0
Analog outputs	
integrated channels (AO)	0
1. Interface	
Interface type	Integrated RS 485 interface
Physics	RS 485
Isolated	No
Power supply to interface (15 to 30 V DC), max.	200 mA



Protocols	
• MPI	Yes
PROFIBUS DP master	No
PROFIBUS DP slave	No
 Point-to-point connection 	No
MPI	
Number of connections	12
 Transmission rate, max. 	187.5 kbit/s
Services	
— PG/OP communication	Yes
— Routing	No
— Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes
Communication functions	
PG/OP communication	Yes
Global data communication	
supported	Yes
 Number of GD loops, max. 	4
 Number of GD packets, max. 	4
 Number of GD packets, transmitter, max. 	4
 Number of GD packets, receiver, max. 	4
 Size of GD packets, max. 	22 byte
 Size of GD packet (of which consistent), max. 	22 byte
S7 basic communication	
supported	Yes
 User data per job, max. 	76 byte
 User data per job (of which consistent), max. 	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes; Via CP and loadable FB
 User data per job, max. 	180 byte; With PUT/GET
 User data per job (of which consistent), max. 	64 byte
S5 compatible communication	
• supported	Yes; via CP and loadable FC
Number of connections	
• overall	12



usable for PG communication	11
 reserved for PG communication 	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	8
 adjustable for S7 basic communication, 	0
min.	
 adjustable for S7 basic communication, 	8
max.	
S7 message functions	
Number of login stations for message functions, max.	12; Depending on the configured connections for PG/OP and S7 basic communication
Drassa diagnastia massagas	
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	40
Test commissioning functions	
Status block	Yes
Single step	Yes
Number of breakpoints	2
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. 	100
— adjustable	No
Configuration	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher with HW update



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
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	280 g
last modified:	05/09/2020

