SIEMENS

Data sheet

6ES7314-1AG14-0AB0



SIMATIC S7-300, CPU 314 Central processing unit with MPI, Integr. power supply 24 V DC, work memory 128 KB, Micro Memory Card required

Fi	g	ur	e	si	m	il	ar	

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
l²t	1 A ² ·s
Power loss	
Power loss, typ.	4 W
Memory	
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 µs
for word operations, typ.	0.12 µs
for fixed point arithmetic, typ.	0.16 µs
for floating point arithmetic, typ.	0.59 µs
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	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Туре	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
IEC timer	
• present	Yes
• Туре	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	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	

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Range of values0 to 2^31 hours (when using SFC 101)Granularity1 h• retentiveYes; Must be restarted at each restartClock synchronization• supportedYes• to MPI, masterYes• on MPI, deviceYes• in AS, masterYes• in AS, deviceNoDigital inputsODigital inputsNumber of digital inputs0Digital outputsNumber of digital outputs0Analog inputs		
• Granularity 1 h • retentive Yes; Must be restarted at each restart Clock synchronization * • supported Yes • to MPI, master Yes • on MPI, device Yes • in AS, master Yes • in AS, device No Digital inputs 0 Digital outputs 0 Anaber of digital outputs 0	-	
• retentive Yes; Must be restarted at each restart Clock synchronization • • supported Yes • to MPI, master Yes • on MPI, device Yes • in AS, master Yes • in AS, device No Digital inputs 0 Digital outputs 0 Anaber of digital outputs 0		
Clock synchronization Yes • supported Yes • to MPI, master Yes • on MPI, device Yes • in AS, master Yes • in AS, device No Digital inputs 0 Digital outputs 0 Analog inputs 0	-	
• supportedYes• to MPI, masterYes• on MPI, deviceYes• in AS, masterYes• in AS, deviceNoDigital inputsNumber of digital inputs0Digital outputsNumber of digital outputs0Analog inputs0		Yes; Must be restarted at each restart
• to MPI, master Yes • on MPI, device Yes • in AS, master Yes • in AS, device No Digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0		
• on MPI, deviceYes• in AS, masterYes• in AS, deviceNoDigital inputsNumber of digital inputs0Digital outputsNumber of digital outputs0Analog inputs0		
• in AS, master Yes • in AS, device No Digital inputs 0 Number of digital inputs 0 Digital outputs 0 Analog inputs 0		
• in AS, device No Digital inputs 0 Number of digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0		
Digital inputs 0 Number of digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0		
Number of digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0		No
Digital outputs Number of digital outputs Analog inputs		
Number of digital outputs 0 Analog inputs 0		0
Analog inputs		
		0
Number of analog inputs 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	INU
• RS 485	Yes
	200 mA
Output current of the interface, max. Protocols	200 IIIA
• MPI	Yes
PROFIBUS DP master	No
PROFIBUS DP device	No
Point-to-point connection	No
MPI	
• 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; Only server, configured on one side
— S7 communication, as client	No
— S7 communication, as server	Yes
Protocols	
PROFIsafe	No
communication functions / header	
PG/OP communication	Yes
Data record routing	No
Global data communication	
supported	Yes
 Number of GD loops, max. 	8
Number of GD packets, max.	8
 Number of GD packets, transmitter, max. 	8
 Number of GD packets, receiver, max. 	8
 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, (nax.) 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.	240 byte; as server
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
usable for S7 basic communication — reserved for S7 basic communication	0
— adjustable for S7 basic communication, min.	0
— adjustable for S7 basic communication, max.	8
S7 message functions	0
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 Status/control	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	Vee
Forcing	Yes
• Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
Number of entries, max.	500
— adjustable	No
— of which powerfail-proof	100; Only the last 100 entries are retained
 Number of entries readable in RUN, max. 	499
— adjustable	Yes; From 10 to 499
— preset	10
Service data	Vez
• can be read out	Yes
Ambient conditions	
Ambient temperature during operation	0.00
• min.	0 °C 60 °C
• max.	60 °C
configuration / header	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher with HW update
configuration / programming / header	
Command set	see instruction list
Nesting levels	8
System functions (SFC)	see instruction list
System function blocks (SFB)	see instruction list
Programming language	Neg.
— 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 Weights	130 mm

Neight, approx.		28	30 g		
assifications					
				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	9	EC000236
			ETIM	8	EC000236
			ETIM	7	EC000236
			IDEA	4	3565
			UNSPSC	15	32-15-17-05
pprovals / Certificate	es				
General Product Ap	proval			Marine / Shipping	
CE EG-Konf.	UK CA		EHC	ABS	BUREAU VERITAS
other	Environment				
Confirmation	Environmental Con-				

last modified:

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