## **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

Figure similar

General information	
Product type designation	CPU 314
HW functional status	01
Firmware version	V3.3
Engineering with	
<ul> <li>Programming package</li> </ul>	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	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	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 A²·s
Power loss	
Power loss, typ.	4 W
Memory	
Work memory	
• integrated	128 kbyte
• expandable	No
Load memory	
• Plug-in (MMC)	Yes
<ul><li>Plug-in (MMC), max.</li></ul>	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	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

Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be
20	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	
<ul><li>Number, max.</li></ul>	1 024; Number range: 0 to 7999
Size, max.	64 kbyte
OB	
Number, max.	see instruction list
Size, max.	64 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	1; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	1; OB 10
<ul> <li>Number of delay alarm OBs</li> </ul>	2; OB 20, 21
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	4; OB 32, 33, 34, 35
<ul> <li>Number of process alarm OBs</li> </ul>	1; OB 40
<ul> <li>Number of startup OBs</li> </ul>	1; OB 100
<ul> <li>Number of asynchronous error OBs</li> </ul>	4; OB 80, 82, 85, 87
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	
<ul> <li>per priority class</li> </ul>	16
<ul> <li>additional within an error OB</li> </ul>	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
• Type	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
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	Chiminod (minicod only by to the outputity)
Retentive data area (incl. timers, counters, flags), max.	64 kbyte
Flag	OT NUTICE
	256 byte
Size, max.      Petentivity available.	256 byte
Retentivity available	Yes; MB 0 to MB 255
<ul><li>Retentivity preset</li><li>Number of clock memories</li></ul>	MB 0 to MB 15
■ NUMBER OF CIOCK MAMORIAS	
	8; 1 memory byte
Data blocks	
Data blocks  • Retentivity adjustable	Yes; via non-retain property on DB
Data blocks	

• per priority class, max.	32 kbyte; Max. 2 KB per block
Address area	
I/O address area	
• Inputs	1 024 byte
Outputs	1 024 byte
Process image	
• Inputs	1 024 byte
Outputs	1 024 byte
Inputs, adjustable	1 024 byte
Outputs, adjustable	1 024 byte
Inputs, default	128 byte
Outputs, default	128 byte
Digital channels	
• Inputs	1 024
— of which central	1 024
<ul> <li>Outputs</li> </ul>	1 024
— of which central	1 024
Analog channels	
• Inputs	256
— of which central	256
Outputs	256
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
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	
<ul> <li>Hardware clock (real-time)</li> </ul>	Yes
<ul> <li>retentive and synchronizable</li> </ul>	Yes
Backup time	6 wk; At 40 °C ambient temperature
<ul> <li>Deviation per day, max.</li> </ul>	10 s; Typ.: 2 s
<ul> <li>Behavior of the clock following POWER-ON</li> </ul>	Clock continues running after POWER OFF
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	
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
• on MPI, device	Yes
• in AS, master	Yes
• 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	INO
• RS 485	Yes
Output current of the interface, max.	200 mA
Protocols	200 HIA
• MPI	Yes
PROFIBUS DP master	No
PROFIBUS DP device	No
Point-to-point connection	No
MPI	110
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
<ul><li>Number of GD loops, max.</li></ul>	8
Number of GD packets, max.	8
<ul> <li>Number of GD packets, transmitter, max.</li> </ul>	8
<ul> <li>Number of GD packets, receiver, max.</li> </ul>	8
Size of GD packets, max.	22 byte
<ul> <li>Size of GD packet (of which consistent), max.</li> </ul>	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
<ul> <li>User data per job, max.</li> </ul>	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
<ul> <li>adjustable for OP communication, max.</li> </ul>	11

- unsate for 37 batic communication 5   - research for 57 batic communication 0   - adjustable for 57 batic communication, min. 5   - adjustable for 57 batic communication, min. 5   - adjustable for 57 batic communication, max. 8    57 message functions 12, Depending on the configured connections for PG/OP and 57 basic communication.   Process diagnostic message functions, max. 500   - Frocess diagnostic message functions, max. 500   - Status block		
adjustable for ST basic communication, max Adjustable for ST basic communication for BGIOP and ST basic communication for BGIOP and ST basic communication The Commission in Basic for State St	usable for S7 basic communication	8
adjustable for 27 basic communication, max.  72 messages (Limitations)  Number of login stations for message functions, max.  Process diagnostic messages  yes  simultaneously active Atom's blocks, max.  Text commiss Soling's functions  Status block  Yes; Up to 2 simultaneously  Status block  Yes; Up to 2 simultaneously  Status block  Yes  Number of breakpoints  Number of variables, max.  of which status variables, max.  of which powerfailers of the status of entires, max.  of which powerfailers of the status variables of entires, max.  of which powerfailers of the status variables of entires, max.  of which powerfailers of the status variables of entires, max.  of which powerfailers of the status variables of entires, max.  of which powerfailers of the status variables of entires, max.  of which powerfailers of the entires, max.  of which powerfailers of the entires readable in RUN, max.  adjustable of which powerfailers of the entires readable in RUN, max.  adjustable of which powerfailers of the entires readable in RUN, max.  adjustable of which powerfailers of the entires readable in RUN, max.  adjustable of which powerfailers of the entires readable in RUN, max.  adjustable of which powerfailers of the entires readable in RUN, max.  adjustable of which powerfailers of the entires readable in RUN, max.  adjustable of the read out		
S7 message functions   12: Departing on the configured connections for PGIOP and S7 basic communication of communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication from the configured connections for PGIOP and S7 basic communication for PGIOP and S7 basic communication from the configuration for PGIOP and S7 basic communications for PGIOP and S7 basic communication for PGIOP and S7 basic communications for PGIOP and S7 basic communications for PGIOP and S7 basic communication for PGIOP and S7 basic communications for PGIOP and S7 basic connections for P	•	
Number of login stations for message functions, max.  Process diagnostic messages Proc	·	8
process diagnostic messages  Yes simultaneously achiev Alami-S blocks, mix.  300  Test commissioning functions  Status block  Yes: Up to 2 simultaneously  Yes  Number of breakpoints  4  Situatscontrol variables  Variables  Variables  Number of variables, max.  - of which status variables, max.  - of which control variables, max.  14  Forcing	S7 message functions	
	Number of login stations for message functions, max.	
Sistus block Single step Yes Number of breakpoints Sistus/control variable Sistus/control variable Ves Number of variables, max. Or which control variables, max. Or which control variables, max. Or which status variables, max. Or which control variables, max. Or which powerfaile, max. Or which powerfaile, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries variable in RUN, max. Or which powerfaile proof Number of entries are retained Or which powerfaile proof Number of entries are retained Or which powerfaile proof Number of entries are retained Or which powerfaile proof Number of entries are retained Or which powerfaile proof Number of entries are retained Or which powerfaile proof Number of entries are retained Or which powerfaile proof Or Configuration or structure	Process diagnostic messages	Yes
Status block	simultaneously active Alarm-S blocks, max.	300
Single step	Test commissioning functions	
Number of breakpoints	Status block	Yes; Up to 2 simultaneously
Status/control variable  Status/control variable  Ves Variables Inputs, outputs, memory bits, DB, times, counters  Number of variables, max.  of which satists variables, max.  14  Forcing Fo	Single step	Yes
Status/control variable     Variables     Variables, max.     Number of variables, max.     Of which status variables, max.     Ves     Forcing     Forcing     Forcing, variables     Number of variables, max.     10  Diagnostic buffe     Opresent     Ves     Number of entries, max.     Of which powerful proof     Number of entries, max.     Of which powerful proof     Number of entries readable in RUN, max.     — adjustable     — of which powerful proof     Number of entries readable in RUN, max.     — adjustable     — preset     No     Number of entries readable in RUN, max.     Of vest of entries are retained     Of vest of entries are	Number of breakpoints	4
Variables Number of variables, max. — of which status variables, max. — of which status variables, max. — of which status variables, max.  14  Forcing Forcin	Status/control	
Number of variables, max. 30     — of which status variables, max. 14  Forcing     Forcing	<ul> <li>Status/control variable</li> </ul>	Yes
of which status variables, max of which control variables of which control variables of variables of variables of which powerfail-proof of which powerf	<ul> <li>Variables</li> </ul>	Inputs, outputs, memory bits, DB, times, counters
Forcing	<ul> <li>Number of variables, max.</li> </ul>	30
Forcing	— of which status variables, max.	30
Forcing, variables	— of which control variables, max.	14
Forcing, variables	Forcing	
Number of variables, max.   10	• Forcing	Yes
Diagnostic buffer	<ul> <li>Forcing, variables</li> </ul>	Inputs, outputs
	<ul> <li>Number of variables, max.</li> </ul>	
	Diagnostic buffer	
adjustable of which powerfall-proof 100; Only the last 100 entries are retained  • Number of entries readable in RUN, max. 499  adjustable preset 10  Service data • can be read out Yes  Ambient conditions  Ambient emperature during operation • min. 0 °C • max. 60 °C  configuration / header  Configuration / header  • 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  Programming language  LAD Yes STL Yes Yes STL Yes -		Yes
of which powerfail-proof  Number of entries readable in RUN, max.  adjustable preset 10  Service data  • can be read out Ambient conditions  Ambient conditions  Ambient conditions  Ambient with peader  • max. • 00 °C  configuration / header  Configuration / programming / header  • Command set • Nesting levels • Nesting levels • System function blocks (SFB) FBD FBD FBD FBD FBD FBD FBL SCL CFC CRAPH HiGraph®  Know-how protection User program protection/password protection User program program protection/password protection User program program protection/password protection Ves Ves Congramation User program protection/password protection Ves FSD SCL CFC CRAPH HiGraph® Ves CRAPH HiGraph® CRAPH HiGraph® Ves CRAPH HiGraph® CRAPH	Number of entries, max.	500
Number of entries readable in RUN, max.     — adjustable     — preset     10  Service data      • can be read out     Ambient conditions  Ambient temperature during operation     • min.     • max.     • 60 °C  Configuration / hoader  Configuration / programming / header     • STEP 7     Configuration software     • STEP 7     Command set     • Nesting levels     • System functions (SFC)     • System function blocks (SFB)     Brogramming language  — LAD     — FBD     — FBD     — FBD     — FBD     — STL     — SCL     — CPC     — GRAPH     — HiGraph®     Know-how protection     • Block encryption     • User program protection/password protection     • User program protection/password protection     • Block encryption     — User program protection/password protection     • User program protection/password protection     • Block encryption     — Pesp     — Height     — Stir Maximum Standard Protection     • Pes; With S7 block Privacy  Dimonsions  Width     — 40 mm  Height     — 130 mm	— adjustable	No
Number of entries readable in RUN, max.     — adjustable     — preset     10  Service data      • can be read out     Ambient conditions  Ambient temperature during operation     • min.     • max.     • 60 °C  Configuration / hoader  Configuration / programming / header     • STEP 7     Configuration software     • STEP 7     Command set     • Nesting levels     • System functions (SFC)     • System function blocks (SFB)     Brogramming language  — LAD     — FBD     — FBD     — FBD     — FBD     — STL     — SCL     — CPC     — GRAPH     — HiGraph®     Know-how protection     • Block encryption     • User program protection/password protection     • User program protection/password protection     • Block encryption     — User program protection/password protection     • User program protection/password protection     • Block encryption     — Pesp     — Height     — Stir Maximum Standard Protection     • Pes; With S7 block Privacy  Dimonsions  Width     — 40 mm  Height     — 130 mm	— of which powerfail-proof	100; Only the last 100 entries are retained
adjustable	·	
		Yes; From 10 to 499
Service data         Yes           Amblent conditions         Amblent conditions           Amblent temperature during operation         o °C           • min.         0 °C           • max.         60 °C           Configuration / header           Configuration software         STEP 7         Yes; V5.2 SP1 or higher with HW update           • STEP 7         Yes; V5.2 SP1 or higher with HW update           configuration / programming / header         See instruction list           • Command set         see instruction list           • Nesting levels         8           • System functions (SFC)         see instruction list           • System function blocks (SFB)         see instruction list           Programming language         Yes           — LAD         Yes           — FBD         Yes           — STL         Yes           — STL         Yes           — CFC         Yes           — GRAPH         Yes           — HIGraph®         Yes           Know-how protection         Yes           • Block encryption         Yes; With S7 block Privacy           Dimensions           Width         40 mm           Height         125 mm	•	
Ambient conditions  Ambient temperature during operation  • min. • max. • 60 °C  configuration / header  Configuration / programming / header  • STEP 7 • Command set • Nesting levels • System functions (SFC) • System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — SCL — CFC — GRAPH — HiGraph®  Know-how protection • User program protection/password protection • Block encryption  Dimensions  Width  Height 125 mm  Depth  100 °C  C  C  C  C  C  C  C  C  C  C  C  C		
Ambient temperature during operation  • min. • max. • max. • 60 °C  Configuration / header  Configuration software  • STEP 7  STEP 7  Yes; V5.2 SP1 or higher with HW update  • Command set • Nesting levels • Nesting levels • System function (SFC) • System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — STL — SCL — CFC — GRAPH — HiGraph® Tes  Know-how protection • User program protection/password protection • Block encryption  Dimensions  Width Height 125 mm Depth  130 mm	• can be read out	Yes
Ambient temperature during operation  • min. • max. • max. • 60 °C  Configuration / header  Configuration software  • STEP 7  STEP 7  Yes; V5.2 SP1 or higher with HW update  • Command set • Nesting levels • Nesting levels • System function (SFC) • System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — STL — SCL — CFC — GRAPH — HiGraph® Tes  Know-how protection • User program protection/password protection • Block encryption  Dimensions  Width Height 125 mm Depth  130 mm		
		0 °C
Configuration / header  Configuration software  STEP 7  Yes; V5.2 SP1 or higher with HW update  Configuration / programming / header  Comfiguration / programming / header  See instruction list System functions (SFC) See instruction list System function blocks (SFB) See instruction list Programming language  LAD Yes FBD Yes STL Yes SCL Yes CFC GRAPH Yes HiGraph® Yes  Know-how protection Signal and protection yes; With S7 block Privacy  Dimensions  Width Height 125 mm Depth 130 mm		
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  LAD Yes FBD Yes STL Yes SCL Yes GRAPH Yes HiGraph® Yes  Know-how protection  User program protection/password protection Signal Si		
configuration / programming / header  Command set See instruction list Nesting levels System functions (SFC) See instruction list System function blocks (SFB) See instruction list  Programming language  LAD Yes FBD Yes STL Yes SCL Yes CFC GRAPH HiGraph® Yes  Know-how protection Slock encryption  Ves Block encryption  Petal  Ad mm Height Depth  130 mm	-	Vec: V5.2 SP1 or higher with HW undate
		res, vo.2 or r or nighter with rive appeale
Nesting levels     System functions (SFC)     see instruction list     System function blocks (SFB)     see instruction list  Programming language      — LAD     — FBD     — Yes     — STL     — Yes     — SCL     — Yes     — CFC     — Yes     — GRAPH     — HiGraph®     Yes  Know-how protection      ● User program protection/password protection     ● Block encryption  Pimensions  Width     40 mm  Height Depth  130 mm		see instruction list
System functions (SFC) System function blocks (SFB) See instruction list  Programming language  - LAD - FBD - FBD - STL - SCL - SCL - CFC - GRAPH - HiGraph®  Know-how protection  Block encryption  Ves  Width Height Depth  System functions (SFC) See instruction list See instruction		
System function blocks (SFB)  Programming language  — LAD  — FBD  — FBD  — STL  — SCL  — SCL  — CFC  — GRAPH  — HiGraph®  Know-how protection  — User program protection/password protection  — Block encryption  Width  Height  Depth  See instruction list  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Y		
Programming language         Yes           — FBD         Yes           — STL         Yes           — SCL         Yes           — CFC         Yes           — GRAPH         Yes           — HiGraph®         Yes           Know-how protection         Yes           • User program protection/password protection         Yes; With S7 block Privacy           Dimensions         40 mm           Height         125 mm           Depth         130 mm		
— LAD       Yes         — FBD       Yes         — STL       Yes         — SCL       Yes         — CFC       Yes         — GRAPH       Yes         — HiGraph®       Yes         Know-how protection       Yes         • User program protection/password protection       Yes; With S7 block Privacy         Dimensions       Yes; With S7 block Privacy         Width       40 mm         Height       125 mm         Depth       130 mm		SEC IIISUUCUOII IISU
— FBD       Yes         — STL       Yes         — SCL       Yes         — CFC       Yes         — GRAPH       Yes         — HiGraph®       Yes         Know-how protection       Yes         • User program protection/password protection       Yes; With S7 block Privacy         • Block encryption       Yes; With S7 block Privacy         Dimensions       40 mm         Height       125 mm         Depth       130 mm		Von
— STL       Yes         — SCL       Yes         — CFC       Yes         — GRAPH       Yes         — HiGraph®       Yes         Know-how protection       Yes         • User program protection/password protection       Yes; With S7 block Privacy         Dimensions       Width       40 mm         Height       125 mm         Depth       130 mm		
- SCL Yes - CFC Yes - GRAPH Yes - HiGraph® Yes  Know-how protection  • User program protection/password protection Yes; With S7 block Privacy  Dimensions  Width 40 mm  Height 125 mm  Depth 130 mm		
CFC Yes GRAPH Yes HiGraph® Yes  Know-how protection  ■ User program protection/password protection Yes; With S7 block Privacy  Dimensions  Width 40 mm  Height 125 mm  Depth 130 mm		
— GRAPH — HiGraph® Yes  Know-how protection		
— 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		
Know-how protection  • User program protection/password protection  • Block encryption  Yes; With S7 block Privacy  Dimensions  Width  40 mm  Height  125 mm  Depth  130 mm		
● User program protection/password protection  Plock encryption  Yes; With S7 block Privacy  Dimensions  Width  40 mm  Height  125 mm  Depth  130 mm	·	Yes
● Block encryption  Yes; With S7 block Privacy  Dimensions  Width 40 mm  Height 125 mm  Depth 130 mm	·	
Dimensions           Width         40 mm           Height         125 mm           Depth         130 mm		
Width         40 mm           Height         125 mm           Depth         130 mm		Yes; With S7 block Privacy
Height 125 mm Depth 130 mm	Dimensions	
Depth 130 mm	Width	40 mm
	Height	125 mm
Weights		130 mm
	Weights	

Weight, approx.	280 g

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