SIEMENS

Data sheet

6AG1314-1AG14-7AB0

SIPLUS S7-300 CPU314 -25 ... +70 DEGREES C WITH CONFORMAL COATING BASED ON 6ES7314-1AG14-0AB0 . CPU WITH MPI INTERFACE, INTEGRATED 24V DC POWER SUPPLY, 128 KBYTE WORKING MEMORY, MICRO MEMORY CARD NECESSARY



Figure similar

General information	
Hardware product version	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 DC	Yes
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines	2 A min.
(recommendation)	
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
• Repeat rate, min.	1 s
Input current	

	650 m A
Current consumption (rated value)	650 mA
Current consumption (in no-load operation), typ.	140 mA 3.5 A
Inrush current, typ. I²t	3.5 A 1 A ² ·s
11	1 A '5
Power loss	
Power loss, typ.	4 W
Memory	
Work memory	
• integrated	128 kbyte
• expandable	No
 Size of retentive memory for retentive data 	64 kbyte
blocks	
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
 Data management on MMC (after last 	10 y
programming), min.	
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	
Description	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
	1; OB 40
Number of process alarm OBs	1; OB 100
Number of startup OBs	
Number of asynchronous error OBs	4; OB 80, 82, 85, 87
Number of synchronous error OBs	2; OB 121, 122
Nesting depth	40
• per priority class	16
 additional within an error OB 	4
Counters, timers and their retentivity	
S7 counter	
• Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— 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
— lower limit	0
— upper limit	255
— 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 aroos and their retartivity	
Data areas and their retentivity retentive data area in total	All, max. 64 KB

• Number, max.258 byte• Retentivity availableYes; MB 0 to MB 255• Retentivity presetMB 0 to MB 255• Retentivity preset8: 1 memory byte• Data blocks• Immory byte• Data blocks• Immory byte• Number of clock memories8: 1 memory byte• Size, max.1 024; Number range: 1 to 16000• Size, max.9 k kbyte• Retentivity adjustableYes; via non-retain property on DB• Retentivity class, max.32 kbyte; Max. 2 KB per blockAddress area• Ora dress area• Inputs1 024 byte• Inputs1 024 byte• Inputs1 024 byte• Outputs, adjustable1 024 byte• Outputs, adjustable1 024 byte• Inputs, adjustable1 024 byte• Outputs, adjustable1 024 byte• Outputs1 024 byte• Outputs1 024• of which central1 024• of which central1 024• of which central256• of which central256• of which central1 024 <tr< th=""><th>Flag</th><th></th></tr<>	Flag	
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• Retentivity presetMB 0 to MB 15• Number of clock memories8; 1 memory byteData1024; Number range: 1 to 16000• Size, max.64 kbyte• Retentivity adjustableYes; via non-retain property on DB• Retentivity adjustableYes; via non-retain property on DB• DetatYesLocal dat1024 byte; Max. 2 KB per blockAddress area1024 byte; Max. 2 KB per blockProcess image1024 byte• Inputs1 024 byte• Outputs1 024 byte• Outputs1 024 byte• Outputs1 024 byte• Outputs1 024 byte• Outputs, adjustable1 024• Outputs1 024• of which central1 024• of which central1 024• of which central256• of which central256• of which central3• Outputs3• Outputs3• Outputs3• of which central3• of which central4• of which central4• of whi		Yes; MB 0 to MB 255
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• FM 8		4
	Number of operable FMs and CPs (recommended)	
• CP, PtP 8		
	• CP, PtP	8

Rack Image: Control of the second	• CP, LAN	10	
• 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; Typ: 2 s • Behavior of the clock following POWER-ON Clock continues running after POWER OFF • Behavior of the clock following explip of backup Clock continues run with the ime at which the power failure occurred Operating hours counter 1 Number • Number 1 Ock *31 hours (when using SFC 101) • Cranularity 1 hour • retentive • retentive Yes; Must be restarted at each restart Clock synchronization Yes • to MPI, master Yes • to MPI, slave Yes • in AS, master Yes • in AS, master Yes • Number of digital inputs 0 Digital inputs 0 Analog inputs 0 Analog inputs 0 Analog inputs 0 Number of analog outputs 0			
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Time of day Clock Hardware clock (real-time) Yes retentive and synchronizable Seckup time Behavior of the clock following POWER-ON Clock continues running after POWER OFF Behavior of the clock following expiry of backup period clock continues to run with the time at which the power failure occurred Operating hours counter Number Number Number Range of values Ot 2*31 hours (when using SFC 101) Granularity thour retentive Ves to MPI, master Yes to MPI, master Yes No Supported Yes Yes No Digital inputs O Digital outputs O Analog inputs O Analog outputs Number of analog inputs O Number of analog outputs O Number of industrial Ethernet interfaces Number of industrial Ethernet interfaces Number of industrial Ethernet interfaces Number of Reades Number of industrial Ethernet interfaces 			
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 to MPI, slave to MPI, slave in AS, master in AS, slave No Digital inputs Number of digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0 Number of analog inputs 0 Analog outputs 0 Number of analog outputs 0 Number of analog outputs 0 Interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface	• supported	Yes	
• in AS, master Yes • in AS, slave No Digital inputs 0 Number of digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0 Number of analog inputs 0 Analog outputs 0 Number of analog outputs 0 Interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface	• to MPI, master	Yes	
• in AS, slave No Digital inputs 0 Number of digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0 Number of analog inputs 0 Analog outputs 0 Number of analog outputs 0 Interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface	● to MPI, slave	Yes	
Digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0 Number of analog inputs 0 Analog outputs 0 Number of analog outputs 0 Interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0	● in AS, master	Yes	
Number of digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0 Analog outputs 0 Analog outputs 0 Number of analog outputs 0 Interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface 0	● in AS, slave	No	
Number of digital inputs 0 Digital outputs 0 Number of digital outputs 0 Analog inputs 0 Number of analog inputs 0 Analog outputs 0 Number of analog outputs 0 Interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface 0	Digital inputs		
Number of digital outputs 0 Analog inputs 0 Number of analog inputs 0 Analog outputs 0 Number of analog outputs 0 Interfaces 0 Number of RS 485 interfaces 0 Number of RS 422 interfaces 0 1. Interface 0		0	
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Analog outputs 0 Number of analog outputs 0 Interfaces 0 Number of industrial Ethernet interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface 0			
Number of analog outputs 0 Interfaces 0 Number of industrial Ethernet interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface 1	Number of analog inputs	U	
Interfaces Number of industrial Ethernet interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface 1			
Number of industrial Ethernet interfaces 0 Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface 1	Number of analog outputs	0	
Number of RS 485 interfaces 1; MPI Number of RS 422 interfaces 0 1. Interface 1	Interfaces		
Number of RS 422 interfaces 0 1. Interface 0	Number of industrial Ethernet interfaces	0	
1. Interface	Number of RS 485 interfaces	1; MPI	
	Number of RS 422 interfaces	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
Functionality	
• MPI	Yes
 PROFIBUS DP master 	No
PROFIBUS DP slave	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
Communication functions	
PG/OP communication	Yes
Data record routing	No
Global data communication	Yes
• supported	
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 (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
- reserved for S7 basic communication	0
 adjustable for S7 basic communication, 	0
min.	
— adjustable for S7 basic communication,	8
max.	
S7 message functions	
Number of login stations for manager 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	
	basic communication
Process diagnostic messages simultaneously active Alarm-S blocks, max.	basic communication Yes
Process diagnostic messages	basic communication Yes
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions	basic communication Yes 300
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block	basic communication Yes 300 Yes; Up to 2 simultaneously
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step	basic communication Yes 300 Yes; Up to 2 simultaneously Yes
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints	basic communication Yes 300 Yes; Up to 2 simultaneously Yes
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control	basic communication Yes 300 Yes; Up to 2 simultaneously Yes 4
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable	basic communication Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables	basic communication Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max.	basic communication Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30
Process diagnostic messages simultaneously active Alarm-S blocks, max. Test commissioning functions Status block Single step Number of breakpoints Status/control • Status/control variable • Variables • Number of variables, max. — of which status variables, max.	basic communication Yes 300 Yes; Up to 2 simultaneously Yes 4 Yes Inputs, outputs, memory bits, DB, times, counters 30 30

Forcing	
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

— can be set	Yes; From 10 to 499
— preset	10
Service data	
can be read out	Yes
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes; File E239877
FM approval	Yes; CofC 3028431
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
• ATEX	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	70 °C; = Tmax; 60 °C @ UL/cUL, ATEX and FM use
Ambient temperature during storage/transportation	
● min.	-40 °C
• max.	70 °C
Extended ambient conditions	
 relative to ambient temperature-atmospheric pressure-installation altitude 	Tmin Tmax at 1080 hPa 795 hPa (-1000 m +2000 m) // Tmin (Tmax - 10K) at 795 hPa 658 hPa (+2000 m +3500 m) // Tmin (Tmax - 20K) at 658 hPa 540 hPa (+3500 m +5000 m)
Relative humidity	,
 With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
 — against biologically active substances / conformity with EN 60721-3-3 	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— against chemically active substances /	Yes; Class 3C4 incl. salt spray according to EN 60068-2-52
conformity with EN 60721-3-3	(degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
— against mechanically active substances /	Yes; Class 3S4 incl. sand, dust. The supplied connector covers
conformity with EN 60721-3-3	must remain on the unused interfaces during operation!
Configuration	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher with HW update
Programming	
Command set	see instruction list
Nesting levels	8
-	

instruction list
; With S7 block Privacy
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