SIEMENS

Product 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	
Hardware product version	01
Firmware version	V2.0.0
Engineering with	
Programming package	STEP 7 V5.2 + SP1 or higher with HW update
Supply voltage	
24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
External protection for supply cables (recommendation)	2 A min.
Input current	
Current consumption (rated value)	0.6 A
Current consumption (in no-load operation), typ.	60 mA
Inrush current, typ.	2.5 A
I^2t	0.5 $A^2 \cdot s$

from supply voltage L+, max.	600 mA
Power losses	
Power loss, typ.	2.5 W
Backup battery	
Battery operation	
Backup time, max.	10 a ; At 40 °C ambient temperature
Memory	
Work memory	
integrated	64 kbyte
expandable	No
Load memory	
pluggable (MMC)	Yes
pluggable (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, min.	0.1 µs
for bit operations, max.	0.2 µs
for word operations, min.	0.2 µs
for fixed point arithmetic, min.	2 µs
for floating point arithmetic, min.	3 µs
CPU-blocks	
Number of blocks (total)	1024 ; (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 time 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
of which retentive without battery	
adjustable	Yes
preset	Z 0 to Z 7
Retentivity	
adjustable	Yes
Counting range	
adjustable	Yes
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	9990 s
IEC timer	
present	Yes
Type	SFB
Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
retentive data area, total	All (incl. memory bits, times, counters)
Flag	
Number, 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	
Number, max.	511 ; from DB1 to DB511
Size, max.	16 kbyte
Retentivity adjustable	No
Retentivity preset	Yes
Local data	
per priority class, max.	510 byte
Address area	
I/O address area	
Inputs	1 kbyte
Outputs	1 kbyte
Process image	
Inputs	128 byte
Outputs	128 byte

Digital channels	
Inputs	1024
Outputs	1024
Inputs, of which central	1024
Outputs, of which central	1024
Analog channels	
Inputs	256
Outputs	256
Inputs, of which central	256
Outputs, of which central	256
Hardware configuration	
Racks, max.	4
Modules per rack, max.	8
Number of DP masters	
integrated	0
via CP	4
Configuration / Number of FMs and CPs that can be operated (recommendation)	
FM	8
CP, point-to-point	8
CP, LAN	10
Time of day	
Clock	
Hardware clock (real-time clock)	Yes
battery-backed and synchronizable	Yes
Deviation per day, max.	10 s
Backup time	6 wk ; At 40 °C ambient temperature
Operating hours counter	
Number	1
Number/Number range	0
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 hour
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
1st interface	
Type of interface	Integrated RS 485 interface
Physics	RS 485
Isolated	No
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
MPI	Yes
DP master	No
DP slave	No
Point-to-point connection	No
MPI	
Number of connections	12
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
Transmission rate, max.	187.5 kbit/s
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, 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.	40
Test commissioning functions	
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
Force, variables	Inputs, outputs
Number of variables, max.	10
Status block	Yes
Single step	Yes
Number of breakpoints	2
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
programming	
Programming language	
LAD	Yes
FBD	Yes
STL	Yes
SCL	Yes
CFC	Yes
GRAPH	Yes
HiGraph®	Yes

Command set	see instruction list
Nesting levels	8
Software libraries	
System functions (SFC)	see instruction list
System function blocks (SFB)	see instruction list
Know-how protection	
User program protection/password protection	Yes
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weight	
Weight, approx.	280 g
Status	Jul 13, 2012