SIEMENS

Product data sheet 6ES7315-2AH14-0AB0

SIMATIC S7-300,
CPU 315-2DP CPU WITH MPI INTERFACE INTEGRATED 24 V DC POWER SUPPLY 256 KBYTE WORKING MEMORY 2. INTERFACE DP-MASTER/SLAVE MICRO MEMORY CARD NECESSARY

General information	
Hardware product version	01
Firmware version	V3.3
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP7 V5.2 + SP1 or higher with HSP 218
Supply voltage	
24 V DC	Yes
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
External protection for supply cables (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)	850 mA
Current consumption (in no-load operation), typ.	150 mA
Inrush current, typ.	3.5 A
I^2t	1 $A^2 \cdot s$
Power losses	
Power loss, typ.	4.5 W
Memory	
Work memory	
integrated	256 kbyte
expandable	No
Size of retentive memory for retentive data blocks	128 kbyte
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.	0.05 µs
for word operations, min.	0.09 µs
for fixed point arithmetic, min.	0.12 µs
for floating point arithmetic, min.	0.45 µs
CPU-blocks	
Number of blocks (total)	1024 ; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
Number, max.	1024 ; Number range: 1 to 16000
Size, max.	64 kbyte
FB	
Number, max.	1024 ; Number range: 0 to 7999
Size, max.	64 kbyte
FC	

Number, max.	1024 ; 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 time interrupt OBs	4 ; OB 32, 33, 34, 35
Number of process alarm OBs	1 ; OB 40
Number of DPV1 alarm OBs	3 ; OB 55, 56, 57
Number isochronous mode OBs	1 ; OB 61
Number of startup OBs	1 ; OB 100
Number of asynchronous error OBs	5 ; OB 80, 82, 85, 86, 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
lower limit	0
upper limit	255
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
lower limit	0
upper limit	255
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, 128 KB max.
Flag	
Number, max.	2048 byte
Retentivity available	Yes ; MB 0 to MB 2047
Retentivity preset	MB 0 to MB 15
Number of clock memories	8 ; 1 memory byte
Data blocks	
Number, max.	1024 ; Number range: 1 to 16000
Size, max.	64 kbyte
Retentivity adjustable	Yes ; via non-retain property on DB
Retentivity preset	Yes
Local data	
per priority class, max.	32 kbyte ; Max. 2 KB per block
Address area	
I/O address area	
Inputs	2048 byte
Outputs	2048 byte
of which, distributed	

Inputs	2048 byte
Outputs	2048 byte
Process image	
Inputs	2048 byte
Outputs	2048 byte
Inputs, adjustable	2048 byte
Outputs, adjustable	2048 byte
Inputs, default	128 byte
Outputs, default	128 byte
Subprocess images	
Number of subprocess images, max.	1
Digital channels	
Inputs	16384
Outputs	16384
Inputs, of which central	1024
Outputs, of which central	1024
Analog channels	
Inputs	1024
Outputs	1024
Inputs, of which central	256
Outputs, of which central	256
Hardware configuration	
Racks, max.	4
Modules per rack, max.	8
Expansion devices, max.	3
Number of DP masters	
integrated	1
via CP	4
Number of operable FMs and CPs (recommended)	
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 ; Typ.: 2 s
Backup time	6 wk ; At 40 °C ambient temperature
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	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
to DP, master	Yes ; With DP slave only slave clock
to DP, slave	Yes
in AS, master	Yes
in AS, slave	No
Interfaces	
Number of USB interfaces	0
Number of parallel interfaces	0
Number of 20 mA interfaces (TTY)	0
Number of RS 232 interfaces	0
Number of RS 422 interfaces	0
Number of other interfaces	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	
Services	
PG/OP communication	Yes
Routing	Yes
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
Transmission rate, max.	187.5 kbit/s
2nd interface	
Type of interface	Integrated RS 485 interface
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
MPI	No
DP master	Yes
DP slave	Yes
Local Operating Network	No
DP master	
Services	
PG/OP communication	Yes
Routing	Yes
Global data communication	No
S7 basic communication	Yes ; I blocks only
S7 communication	Yes ; Only server, configured on one side
S7 communication, as client	No

S7 communication, as server	Yes
Equidistance mode support	Yes
Isochronous mode	Yes ; OB 61
SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
Number of DP slaves that can be simultaneously activated/deactivated, max.	8
DPV1	Yes
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124 ; Per station
Address area	
Inputs, max.	2048 byte
Outputs, max.	2048 byte
User data per DP slave	
Inputs, max.	244 byte
Outputs, max.	244 byte
DP slave	
Services	
PG/OP communication	Yes
Routing	Yes ; Only with active interface
Global data communication	No
S7 basic communication	No
S7 communication	Yes ; Only server, configured on one side
S7 communication, as client	No
S7 communication, as server	Yes
Direct data exchange (slave-to-slave communication)	Yes
DPV1	No
GSD file	The latest GSD file is available at: http://www.siemens.de/profibus-gsd
Transmission rate, max.	12 Mbit/s
Automatic baud rate search	Yes ; only with passive interface
Transfer memory	
Inputs	244 byte

Outputs	244 byte
Address area, max.	32
User data per address area, max.	32 byte
Isochronous mode	
Isochronous operation (application synchronized up to terminal)	Yes
Communication functions	
PG/OP communication	Yes
Data record routing	Yes
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 (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	16
usable for PG communication	15
reserved for PG communication	1

Adjustable for PG communication, min.	1
Adjustable for PG communication, max.	15
usable for OP communication	15
reserved for OP communication	1
adjustable for OP communication, min.	1
adjustable for OP communication, max.	15
usable for S7 basic communication	12
Reserved for S7 basic communication	0
adjustable for S7 basic communication, min.	0
adjustable for S7 basic communication, max.	12
S7 message functions	
Number of login stations for message functions, max.	16 ; 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/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 ; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
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.	
adjustable	Yes ; From 10 to 499
preset	10
Service data	
Can be read out	Yes
Ambient conditions	
Operating temperature	
Min.	0 °C
max.	60 °C
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
Block encryption	Yes ; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm

Weight	
Weight, approx.	290 g
Status	Sep 28, 2012