SIEMENS

Data sheet 6ES7315-2AG10-0AB0

Spare part SIMATIC S7-300, CPU 315-2DP Central processing unit with MPI Integr. power supply 24 V DC Work memory 128 KB 2nd interface DP master/slave Micro Memory Card required

General information	
HW functional status	01
Firmware version	V2.6
Engineering with	
● Programming package	STEP 7 V5.2 + SP1 or higher with HW update
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Input current	
Current consumption (rated value)	0.8 A
Current consumption (in no-load operation), typ.	60 mA
Inrush current, typ.	2.5 A
I^2t	0.5 $A^2 \cdot s$
Power loss	
Power loss, typ.	2.5 W
Memory	
Work memory	
● integrated	128 kbyte; For program and data
● expandable	No
Load memory	
● Plug-in (MMC)	Yes
● Plug-in (MMC), max.	8 Mbyte
● Data management on MMC (after last programming), min.	10 y
Backup	
● present	Yes; Guaranteed by MMC (maintenance-free)
● without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.1 µs
for word operations, typ.	0.2 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	3 µs
CPU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs OBs, SDBs); the maximum number of loadable blocks can be reduced by the MMC being used.
DB	

● Number, max.	1 023; Number band: 1 to 1023
● Size, max.	16 kbyte
FB	
● Number, max.	1 024; Number range: 0 to 2047
● Size, max.	16 kbyte
FC	
● Number, max.	1 024; Number range: 0 to 2047
● Size, max.	16 kbyte
OB	
● 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 cyclic interrupt OBs	1; OB 35
● Number of process alarm OBs	1; OB 40
● Number of DPV1 alarm OBs	3; OB 55, 56, 57
● 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
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	8
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
— lower limit	0
— upper limit	255
— 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	
Retentive data area (incl. timers, counters, flags), max.	128 kbyte
Flag	
● Size, max.	2 048 byte
● Retentivity available	Yes; MB 0 to MB 2 047
● 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	
● per priority class, max.	1 024 byte; per block max. 510
Address area	
I/O address area	
● Inputs	2 kbyte
● Outputs	2 kbyte
of which distributed	
— Inputs	2 kbyte
— Outputs	2 kbyte
Process image	
● Inputs	128 byte
● Outputs	128 byte
Digital channels	
● Inputs	16 384
— of which central	1 024
● Outputs	16 384
— of which central	1 024
Analog channels	
● Inputs	1 024
— of which central	256
● Outputs	1 024
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
● integrated	1
● 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	
● Hardware clock (real-time)	Yes
● retentive and synchronizable	Yes
● Backup time	6 wk; At 40 °C ambient temperature
● Deviation per day, max.	10 s
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
● 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
● on Ethernet via NTP	No
Digital inputs	
integrated channels (DI)	0

Digital outputs	
integrated channels (DO)	0
Analog inputs	
integrated channels (AI)	0
Analog outputs	
integrated channels (AO)	0
Interfaces	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0
Number of RS 485 interfaces	1
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	No
Interface types	
● RS 485	Yes
● Output current of the interface, max.	200 mA
Protocols	
● MPI	Yes
● PROFIBUS DP master	No
● PROFIBUS DP slave	No
● Point-to-point connection	No
MPI	
● Number of connections	16
● Transmission rate, max.	187.5 kbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	Yes
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes
2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
● RS 485	Yes
● Output current of the interface, max.	200 mA
Protocols	
● MPI	No
● PROFIBUS DP master	Yes
● PROFIBUS DP slave	Yes
● Point-to-point connection	No
PROFIBUS DP master	
● Number of connections, max.	16
● Transmission rate, max.	12 Mbit/s
● Number of DP slaves, max.	124; Per station
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	No
— SYNC/FREEZE	Yes

— DPV1	Yes
Address area	
— Inputs, max.	2 048 byte
— Outputs, max.	2 048 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
● Number of connections	16
● GSD file	The latest GSD file is available at: http://www.siemens.com/profibus-gsd
● Transmission rate, max.	12 Mbit/s
● automatic baud rate search	Yes; only with passive interface
● Address area, max.	32
● User data per address area, max.	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; with interface active
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes
— Direct data exchange (slave-to-slave communication)	Yes
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
Protocols	
PROFIsafe	No
communication functions / header	
PG/OP communication	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.	64 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
● usable for routing	4
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.	40
Test commissioning functions	
Status block	Yes
Single step	Yes
Number of breakpoints	2
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
● Forcing, variables	Inputs, outputs
● Number of variables, max.	10
Diagnostic buffer	
● present	Yes
● Number of entries, max.	100
— adjustable	No
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	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
● User program protection/password protection	Yes
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	290 g

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