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 DC	Yes
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
l²t	0.5 A ² ·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 	10 y
programming), min.	
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPI I processing times	

CPO processing times		
	for bit operations, typ.	0.1 µs

for fixed point arithmetic, typ. for floating point arithmetic, typ. 3 µs SPU-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. BB Number, max. 1 023; Number band: 1 to 1023 16 kbyte FB Number, max. 1 024; Number range: 0 to 2047 16 kbyte FC Number, max. 1 024; Number range: 0 to 2047 16 kbyte FC Number, max. 1 024; Number range: 0 to 2047 16 kbyte FC Number, max. 1 024; Number range: 0 to 2047 16 kbyte 108 Number of leave and their retentivity 1 08 10 1 08 20 1 08 40 Number of sartup OBs		
for floating point arithmetic, typ. SPU-blocks Number of blocks (total) Number of blocks (total) Number, max. Size, max. 1 023; Number band: 1 to 1023 16 kbyte Number, max. Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 08 Size, max. 1 6 kbyte Size, max. 1 6 kbyte Size, max. 1 108 10 Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Number of process alarm OBs Number of process alarm OBs Number of process alarm OBs Number of startup OBs Number of startup OBs Number of startup OBs Number of synchronous error OBs	for word operations, typ.	0.2 µs
Number of places (botal) PU-blocks Number of blocks (total) Number, max. Size, max. 1 023; Number band: 1 to 1023 1 6 kbyte Number, max. Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 024; Number range: 0 to 2047 Size, max. 1 6 kbyte Number of free cycle OBs Size, max. 1 6 kbyte Size, max. Size, max. Size, max. Size, max. Size, max. Size, max. Size, ma	for fixed point arithmetic, typ.	2 µs
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loadable blocks can be reduced by the MMC being used. Number, max. 1 023; Number band: 1 to 1023 Size, max. 16 kbyte	CPU-blocks	
Number, max. Size, max. 1023; Number band: 1 to 1023 Size, max. 16 kbyte Number, max. 1024; Number range: 0 to 2047 Size, max. 16 kbyte OB Size, max. 16 kbyte Size, max. 16 kbyte Size, max. 16 kbyte Number of free cycle OBs 1; OB 1 Number of free cycle OBs 1; OB 10 Number of delay alarm OBs 1; OB 20 Number of cyclic interrupt OBs Number of oprocess alarm OBs Number of DPV1 alarm OBs Number of Startup OBs Number of synchronous error OBs Number of process alarm OBs Number of synchronous error OBs Number of synch	Number of blocks (total)	
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Number, max.	Number, max.	1 023; Number band: 1 to 1023
Number, max. Size, max. 1 024; Number range: 0 to 2047 16 kbyte FC Number, max. 1 024; Number range: 0 to 2047 16 kbyte Size, max. 16 k	• Size, max.	16 kbyte
• Size, max. • Number, max. • Size, max. 1 024; Number range: 0 to 2047 • Size, max. 1 6 kbyte • Size, max. 1 6 kbyte • Size, max. 1 6 kbyte • Size, max. 1 6 kbyte • Size, max. 1 7 08 1 • Number of free cycle OBs • Number of time alarm OBs • Number of delay alarm OBs • Number of delay alarm OBs • Number of cyclic interrupt OBs • Number of process alarm OBs • Number of process alarm OBs • Number of startup OBs • Number of startup OBs • Number of startup OBs • Number of asynchronous error OBs • Number of synchronous error OBs • N	FB	
FC	Number, max.	1 024; Number range: 0 to 2047
Number, max. Size, max. 10 24; Number range: 0 to 2047 Size, max. 16 kbyte Size, max. 16 kbyte 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 asynchronous error OBs 1; OB 80 Number of synchronous error OBs 1; OB 80 Number of synchronous error OBs 2; OB 121, 122 Nesting depth ● per priority class ● additional within an error OB 4 Counters, timers and their retentivity S7 counter Number Retentivity — adjustable — lower limit — upper limit — up	• Size, max.	16 kbyte
● Size, max. 16 kbyte ● 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 asynchronous 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 — udgustable Yes — lower limit 0 — udgustable Yes — lower limit 0	FC	
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 Size, max. Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Number of process alarm OBs Number of DPV1 alarm OBs Number of startup OBs Number of synchronous error OBs Number of synchronous error OBs Number of synchronous error OBs OB 100 Number of synchronous error OBs Number of synchronous error OB Per priority class additional within an error OB Counters, timers and their retentivity Sounter Number Number 256 Retentivity — adjustable — upper limit — upper limit — upper limit — preset Counting range — adjustable — adjustable — lower limit 0 — ouver limit 0 	• Size, max.	16 kbyte
Number of free cycle OBs Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Number of cyclic interrupt OBs Number of process alarm OBs Number of DPV1 alarm OBs Number of DPV1 alarm OBs Number of startup OBs Number of asynchronous error OBs Number of synchronous error OBs Nesting depth oper priority class additional within an error OB Number Soounters, timers and their retentivity Number	ОВ	
Number of time alarm OBs Number of delay alarm OBs Number of cyclic interrupt OBs Number of process alarm OBs Number of process alarm OBs Number of DPV1 alarm OBs Number of startup OBs Number of startup OBs Number of synchronous error OB Number of synchronous error OBs Number of sy	• Size, max.	16 kbyte
 Number of delay alarm OBs Number of cyclic interrupt OBs Number of process alarm OBs Number of DPV1 alarm OBs Number of startup OBs Number of startup OBs Number of asynchronous error OBs Number of synchronous error OBs Per priority class additional within an error OB Number Number Number Retentivity — adjustable — lower limit — upper limit — preset Counting range — adjustable — lower limit 0 — adjustable — adjustable — lower limit 0 — lower limit 0 — lower limit 0 	 Number of free cycle OBs 	1; OB 1
Number of cyclic interrupt OBs Number of process alarm OBs Number of process alarm OBs Number of DPV1 alarm OBs Number of startup OBs Number of synchronous error OB Number of synchronous error OBs Number of synchronous error OB	 Number of time alarm OBs 	1; OB 10
Number of process alarm OBs Number of DPV1 alarm OBs Number of Startup OBs Number of startup OBs Number of saynchronous error OBs Number of synchronous error OBs Nesting depth per priority class additional within an error OB Counters, timers and their retentivity To counter Number Adjustable Lower limit Dupper limit Dup	 Number of delay alarm OBs 	1; OB 20
 Number of DPV1 alarm OBs Number of startup OBs Number of asynchronous error OBs Number of synchronous error OBs Number of synchronous error OBs Number of synchronous error OBs Per priority class additional within an error OB additional within an error OB Number Number Number Adjustable lower limit upper limit preset Counting range adjustable prese Augustable preset Number Number O Upper limit Upper lim	 Number of cyclic interrupt OBs 	1; OB 35
 Number of startup OBs Number of asynchronous error OBs Number of synchronous error OBs Number of synchronous error OBs Number of synchronous error OBs Per priority class additional within an error OB additional within an error OB value Number Number Number Retentivity adjustable lower limit upper limit upper limit adjustable yes preset Counting range adjustable padjustable preset Number 255 preset Number Pes lower limit o o	 Number of process alarm OBs 	1; OB 40
 Number of asynchronous error OBs Number of synchronous error OBs 2; OB 121, 122 Nesting depth per priority class additional within an error OB additional within an error OB Number Number Number Retentivity — adjustable — lower limit — upper limit — preset 8 Counting range — adjustable — adjustable — preset Number 255 — preset Number 256 Number Pes — lower limit O 	 Number of DPV1 alarm OBs 	3; OB 55, 56, 57
Number of synchronous error OBs 2; OB 121, 122 Nesting depth per priority class additional within an error OB 250 Counters, timers and their retentivity 57 counter Number Adjustable Lower limit Louper limi	Number of startup OBs	1; OB 100
Nesting depth • per priority class • additional within an error OB Counters, timers and their retentivity S7 counter • Number • Number 256 Retentivity — adjustable — lower limit — upper limit — upper limit — preset Counting range — adjustable — lower limit 0 - upper limit 0 - upper limit 0 - upper limit 0 - upper limit 0 - upper limit 0 - upper limit 0 - upper limit 0	 Number of asynchronous error OBs 	1; OB 80
 per priority class additional within an error OB Counters, timers and their retentivity S7 counter Number Pes Retentivity — adjustable — lower limit — upper limit — preset Counting range — adjustable — adjustable — lower limit 0 — yes — preset 8 Counting range — adjustable — lower limit 0 	 Number of synchronous error OBs 	2; OB 121, 122
additional within an error OB Counters, timers and their retentivity S7 counter Number Number adjustable lower limit upper limit preset Counting range adjustable adjustable preset Number Yes Counting range adjustable lower limit O Yes O O O O O O O O O O O O O	Nesting depth	
Counters, timers and their retentivity S7 counter Number 256 Retentivity - adjustable - lower limit 0 - upper limit 255 - preset 8 Counting range - adjustable - lower limit 0 Outpus 8 Counting range - adjustable - lower limit 0	• per priority class	8
S7 counter ● Number Retentivity — adjustable — lower limit — upper limit — upper limit — preset Counting range — adjustable — lower limit 0 Yes 0 Yes 0 O O O O O O O O O O O O	 additional within an error OB 	4
 Number Retentivity — adjustable — lower limit — upper limit — preset Counting range — adjustable — lower limit 0 0 	Counters, timers and their retentivity	
Retentivity — adjustable Yes — lower limit 0 — upper limit 255 — preset 8 Counting range — adjustable Yes — lower limit 0	S7 counter	
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— lower limit 0 — upper limit 255 — preset 8 Counting range — adjustable Yes — lower limit 0	Retentivity	
— upper limit 255 — preset 8 Counting range — adjustable Yes — lower limit 0	— adjustable	Yes
— preset 8 Counting range — adjustable Yes — lower limit 0	— lower limit	0
Counting range — adjustable Yes — lower limit 0	— upper limit	255
— adjustable— lower limitYes0	— preset	8
— lower limit 0	Counting range	
	— adjustable	Yes
— upper limit 999	— 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 in total	all
Flag	all
Number, max.	2 048 byte
Retentivity available	Yes; MB 0 to MB 2 047
 Retentivity preset 	IVIB U TO IVIB 15
Retentivity preset Number of clock memories	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Number of clock memories Data blocks	8; 1 memory byte
Number of clock memoriesData blocksRetentivity adjustable	8; 1 memory byte Yes; via non-retain property on DB
 Number of clock memories Data blocks Retentivity adjustable Retentivity preset 	8; 1 memory byte
Number of clock memoriesData blocksRetentivity adjustable	8; 1 memory byte Yes; via non-retain property on DB
 Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. 	8; 1 memory byte Yes; via non-retain property on DB Yes
 Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. 	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510
Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. Address area	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510 2 kbyte
Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. Address area I/O address area	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510
Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. Address area I/O address area Inputs	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510 2 kbyte
Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. Address area I/O address area Inputs Outputs	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510 2 kbyte
Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. Address area I/O address area Inputs Outputs of which distributed	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510 2 kbyte 2 kbyte
Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. Address area I/O address area Inputs Outputs of which distributed — Inputs	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510 2 kbyte 2 kbyte 2 kbyte
Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. Address area I/O address area Inputs Outputs of which distributed — Inputs — Outputs	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510 2 kbyte 2 kbyte 2 kbyte
 Number of clock memories Data blocks Retentivity adjustable Retentivity preset Local data per priority class, max. Address area I/O address area Inputs Outputs of which distributed — Inputs — Outputs Process image 	8; 1 memory byte Yes; via non-retain property on DB Yes 1 024 byte; per block max. 510 2 kbyte 2 kbyte 2 kbyte 2 kbyte

• 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
to DP, slavein AS, masterin AS, slave	

• on Ethernet via NTP	No
Digital inputs	
integrated channels (DI)	0
Digital outputs	
integrated channels (DO)	0
Analog inputs integrated channels (AI)	0
integrated charmers (Ai)	O
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
Physics	RS 485
Isolated	No
Power supply to interface (15 to 30 V DC), 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
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), 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
Communication functions	

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

PG/OP communication

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
7 message functions	

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	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher with HW update
Programming	
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

last modified: 11/10/2018