SIEMENS

Data sheet

6ES7316-2AG00-0AB0

*** SPARE PART*** SIMATIC S7-300, CPU 316-2DP CPU WITH INTEGRATED 24 V DC POWER SUPPLY, 128 KBYTE WORKING MEMORY 2ND INTERF. DP-MASTER/SLAVE

Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	1 000 mA
Inrush current, typ.	8 A
Power loss	
Power loss, max.	8 W
Memory	
Work memory	
• integrated	128 kbyte; 128 KB / 42K instructions RAM (integrated)
Load memory	
 expandable FEPROM 	Yes; Flash-EPROM
• expandable FEPROM, max.	4 Mbyte
• integrated RAM, max.	192 kbyte
Backup	
• present	Yes
• with battery	Yes; all blocks
• without battery	Yes; 4 KB: bit memory, counter, times and data
CPU processing times	
for bit operations, typ.	0.3 µs
for bit operations, max.	0.6 µs
for word operations, typ.	1 µs
for fixed point arithmetic, typ.	2 µs
for floating point arithmetic, typ.	50 µs
for timer/counter operations, typ.	12 µs
CPU-blocks	
DB	
 Number, max. 	511
• Size, max.	16 kbyte
FB	
• Number, max.	256

FC 256 • Size, max. 266 • Description see instruction list • Size, max. 16 kbyte • Number of free cycle OBs 1; 0B 10 • Number of free cycle OBs 1; 0B 10 • Number of server OBs 1; 0B 35 • Number of startup OBs 1; 0B 40 • Number of startup OBs 1; 0B 100 • Number, functs and their retentivity 8 Counters. 8 • Number 64 of which retentive with battery - - can be set Yes - lower limit 0 - upper limit 0 - upper limit 0 - upper limit 0 - upper limit 128 of which retentive with battery - - adjustable Yes - lower limit 0 - upper limit 128 of which retentive with battery - - adjustable Yes - lower limit 0 - upper limit 127 of whi	• Size, max.	16 kbyte
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lower limit 0 upper limit 127 Time range lower limit lower limit 10 ms	of which retentive without battery	
- upper limit 127 Time range 10 ms	— adjustable	Yes
Time range — lower limit 10 ms	— lower limit	0
— lower limit 10 ms	— upper limit	127
	Time range	
— upper limit 9 990 s	— lower limit	10 ms
	— upper limit	9 990 s

Data areas and their retentivity	
Flag	
• Number, max.	256 byte
Retentivity available	Yes; MB 0 to MB 255
 of which retentive with battery 	0 to 2 047 (M 0.0 to M 255.7, adjustable)
 of which retentive without battery 	0 to 2 047 (M 0.0 to M 255.7, adjustable)
Address area	
I/O address area	
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	128
Hardware configuration	2
Number of expansion units, max.	3 PGs/PCs with STEP 7 connectable via MPI interface
connectable programming devices/PCs	64
Number of modules per DP slave interface, max. Number of DP masters	04
integrated	1
• via CP	1; CP 342-5
Number of operable FMs and CPs (recommended)	1, 01 342-0
• FM	8
	4
• CP, PtP	4 2
• CP, LAN	2
Rack	32
 Modules per rack, max. 	02
Time of day	
Clock	
 Hardware clock (real-time) 	Yes
Interfaces	

MPI

• Cable length, max.

9 100 m; without repeaters: 50 m; with 2 repeaters: 1100 m; with 10 repeaters in series: 9100 m; via fiber optic cable: 23.8 km (with 16 star hubs or OLMs)

Functionality Yes MPI Yes Number of nodes, max. 32 • Transmission rate, min. 19.2 kbit/s • Transmission rate, max. 187.5 kbit/s Services - - PGVOP communication Yes - Global data communication Yes - S7 basic communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication Yes - PROFIBUS DP master Yes • PROFIBUS DP master Yes • PROFIBUS DP slave Yes DP master Yes - Lequidistance Yes - Activation/deactivation of DP slaves Yes - Direct data exchange (slave-to-slave communication) Yes - Oticet data exchange (slave-to-slave communication) Yes - User data per DP slave, max. 124 Services - - User data per DP slave, max. 244 byte Communication functions Yes FG/OP communication Yes • Supported Yes S7 basic communication Yes • supported Yes S7 communication Yes S7 communication Yes	1. Interface	
MPI • Number of nodes, max. 32 • Transmission rate, min. 19.2 kbit/s • Transmission rate, max. 187.5 kbit/s Services - - PG/OP communication Yes - Global data communication Yes - S7 basic communication Yes - S7 communication Yes - S7 communication Yes PROFIBUS DP master Yes • PROFIBUS DP slave Yes • PROFIBUS DP slaves Yes • PROFIBUS DP slaves, max. 124 Services - - Equidistance Yes - Direct data exchange (slave-to-slave yes) Yes; transmitter and receiver communication of DP slaves Yes; transmitter and receiver - User data per DP slave, max. 244 byte Communication functions Yes FG/OP communication Yes S7 basic communication Yes supported Yes S7 basic communication Yes S7 basic communication Yes supported Yes S7 basic communication Y	Functionality	
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PG/OP communication Yes Global data communication Yes S7 communication Yes	• Transmission rate, max.	187.5 kbit/s
Global data communicationYes	Services	
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	— Global data communication	Yes
2. Interface Functionality • PROFIBUS DP master • PROFIBUS DP slave DP master • Number of DP slaves, max. Services - Equidistance - Activation/deactivation of DP slaves Yes - Direct data exchange (slave-to-slave communication) User data per DP slave - User data per DP slave, max. 244 byte Communication functions PG/OP communication • supported Yes S7 basic communication • supported Yes S7 communication • supported Yes S7 communication • supported Yes S7 communication • supported Yes S5 compatible communication • supported Yes	— S7 basic communication	Yes
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supported Yes; via loadable blocks	• as server	Yes
	S5 compatible communication	
Standard communication (FMS)	supported	Yes; via loadable blocks
	Standard communication (FMS)	

• supported	Yes; via loadable blocks
Number of connections	
• overall	
— of which dynamic	8
— of which static	4
Configuration	
Configuration software	
• STEP 7	Yes; V5.0
Programming	
 Command set 	Binary logic operations, bracketed operations, result allocation, saving, counting, loading, transferring, comparing, shifting, rotating, complementation, calling blocks, fixed point arithmetic, floating point arithmetic, jump functions
Nesting levels	8
 Program organization 	Linear, structured
 System functions (SFC) 	Interrupt and error processing, copy data, clock functions, diagnostic functions, module parameterization, operating mode transitions
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Software libraries	
— Process diagnostics	Yes
— Software controller	Yes; depending on the required memory space and the resulting execution time
Know-how protection	
 User program protection/password protection 	Yes
Cycle time monitoring	
• lower limit	1 ms
• upper limit	6 000 ms
• adjustable	Yes
• preset	150 ms
Dimensions	
Width	80 mm
Height	125 mm
Depth	130 mm
Weights	

Weight, approx.

last modified:

530 g; Memory card 16 g

03/23/2017