## **SIEMENS**

## **Data sheet**

6ES7317-2AJ10-0AB0



\*\*\*Spare part\*\*\* SIMATIC S7-300, CPU 317-2DP, Central processing unit with 512 KB work memory, 1st interface MPI/DP 12 Mbit/s, 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	2 A min.
(recommendation)	
nput current	
Current consumption (rated value)	850 mA
Current consumption (in no-load operation), typ.	100 mA
Inrush current, typ.	2.5 A
l²t	1 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	4 W
lemory	
Work memory	
integrated	512 kbyte
<ul><li>expandable</li></ul>	No
Load memory	
<ul><li>Plug-in (MMC)</li></ul>	Yes
<ul><li>Plug-in (MMC), max.</li></ul>	8 Mbyte
<ul> <li>Data management on MMC (after last</li> </ul>	10 y
programming), min.	
Backup	
<ul><li>present</li></ul>	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.05 μs
for word operations, typ.	0.2 μs
for fixed point arithmetic, typ.	0.2 μs
for floating point arithmetic, typ.	1 µs
CPU-blocks	
Number of blocks (total)	2 048; (DBs, FCs, FBs OBs, SDBs); the maximum number of loadable blocks can be reduced by the MMC being used.
DB	
Number, max.	2 047; Number band: 1 to 2047
Size, max.	64 kbyte

Number, max.   2 048; Number range: 0 to 2047	FB	
Size, max		2 048; Number range: 0 to 2047
Number max		
● Size, max.  ● Size, max.  ● Size, max.  ■ Number of free cycle OBs ■ Number of time alarm OBs ■ Number of delay aterm OBs ■ Number of cycle interrupt OBs ■ Number of cycle interrupt OBs ■ Number of cycle interrupt OBs ■ Number of process alarm OBs ■ Number of process alarm OBs ■ Number of process alarm OBs ■ Number of spice interrupt OBs ■ Number of size of provide interrupt OBs ■ Number of size of superior obs ■ Number of size of superior obs ■ Number of size of superior obs ■ Number of sartupt OBs ■ Number of superior obs ■ Number observed observ	FC	
Size, max.   64 kbyte	<ul><li>Number, max.</li></ul>	2 048; Number range: 0 to 2047
Size. max.   64 kbyte		64 kbyte
Number of time alarm OBs     Number of delay alarm OBs     Number of oydic interrupt OBs     Number of process alarm OBs     Number of process alarm OBs     Number of process alarm OBs     Number of savpronous mode OBs     Number of isacthronous mode OBs     Number of savpronous error OBs     Number of saynchronous error OBs     Number of saynchronous error OBs     Number of synchronous error OBs     Number of State	•	
Number of cyclic interrupt OBs Number of process alarm OBs Number of process alarm OBs Number of process alarm OBs Number of isacthronous mode OBs Number of isacthronous mode OBs Number of sarythronous error OBs Number of sarythronous error OBs Number of synchronous error OBs Number of synchronous error OBs Number of synchronous error OBs Nesting depth  Per priority class diditional within an error OB  Nesting depth  Per priority class Depth of the company of the c		
Number of process alarm OBs     Number of IPV1 alarm OBs     Number of startup OBs     Number of startup OBs     Number of synchronous error OBs     Number of Synchrono		
Number of DPV1 alarm OBs Number of sechronous mod OBs Number of sechronous error OBs Number of synchronous error OBs Number of synchronous error OBs OPERATION OF SYNCHRONOUS OF SYNCHRO		
Number of Isacrituro DBs		
Number of startup OBs		
• Number of saynchronous 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 • Auditional within an error OB • Auditional within an error OB • Auditional within an error OB • Number • Number • Number • Number • Number • Number • Lower limit • Lower lim		
Petr priority class   16		
• per priority class   • additional within an error OB	-	
additional within an error OB  Counters, timers and their retentivity  7 counter  Number Retentivity  - adjustable - lower limit - preset		
### ST counter    Number	per priority class	16
Number	additional within an error OB	4
Number	Counters, timers and their retentivity	
Retentivity	S7 counter	
— adjustable         Yes           — lower limit         0           — upper limit         511           — preset         2 0 to Z 7           Counting range         Yes           — adjustable         Yes           — lower limit         0           — upper limit         999           IEC counter           ● present         Yes           ● Type         SFB           ● Number         SFB           ● Number         512           Retentivity         Yes           — lower limit         0           — upper limit         511           — upper limit         511           — upper limit         9 990 s           IEC timer           ● present         Yes           ● Type         SFB           ● Number         Yes           ● Number         Yes           ● Packentivity area         4 996 byte           ● Retentivity available         Yes, From MB 0 to MB 4 095           ● Retentivity preset         MB 0 to MB 15           Number of clock memories         1, 1 memory byte           Data blocks           Local data	Number	512
lower limit upper limit 511 upper limit 999 adjustable 999 upper limit 9990 upper limit 999	Retentivity	
upper limit		
Preset		
Counting range		
adjustable		Z 0 to Z 7
— lower limit		V
Form   Figure   Fi		
Present		
present Type Number Number  Number  Number  Number  Adjustable Louer limit Lo		555
• Type • Number • Number Number S7 times  • Number  • Number S12 Retentivity  — adjustable — lower limit — upper limit — preset — lower limit — preset — No retentivity  Time range — lower limit — upper limit — upper limit — yeset — lower limit — upper limit — yeset — lower limit — upper limit — yeses — lower limit — upper limit — yeses — lower limit — upper limit — yeses — lower limit — upper limit — yes		Yes
Number Unlimited (limited only by RAM capacity)  S7 times  Number 512 Retentivity  - adjustable Yes - lower limit 0	·	
● Number  ● Number Retentivity		Unlimited (limited only by RAM capacity)
Retentivity  - adjustable Yes - lower limit 0 - upper limit 511 - preset No retentivity  Time range - lower 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. 256 kbyte  Flag  • Size, max. 4 096 byte • Retentivity available Yes; From MB 0 to MB 4 095 • Retentivity preset MB 0 to MB 15 • Number of clock memories 8; 1 memory byte  Data blocks • Retentivity adjustable • Retentivity adjustable • Retentivity preset Yes; via non-retain property on DB • Retentivity preset Yes  Local data	S7 times	
- adjustable Yes - lower limit 0 - upper limit 511 - preset No retentivity  Time range - lower 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. 256 kbyte  Flag • Size, max. 4 096 byte • Retentivity available Yes; From MB 0 to MB 4 095 • 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	Number	512
lower limit upper limit upper limit preset lower limit lower limit lower limit lower limit lower limit upper limit	Retentivity	
- upper limit - preset No retentivity  Time range - lower limit - upper limit 9 990 s  IEC timer  • present • Type • Number • Number  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag • Size, max. • Retentivity available • Retentivity preset • Number of clock memories  Data blocks • Retentivity adjustable • Retentivity preset • Retentivity preset • Retentivity adjustable • Retentivity preset	— adjustable	Yes
— preset  Time range — lower limit — upper limit  9 990 s  IEC timer  • present • present • Type • Number • Number  Patentivity  Retentive data area (incl. timers, counters, flags), max. Flag  • Size, max. • Retentivity available • Retentivity preset • Number of clock memories  Patentivity adjustable • Retentivity approach • Retentivity adjustable • Retentivity preset • Retentivity adjustable • Retentivity preset		
Time range  lower limit		
lower limit	·	No retentivity
— upper limit 9 9 990 s  IEC timer	-	10 mg
IEC timer		
<ul> <li>present</li> <li>Type</li> <li>Number</li> <li>Unlimited (limited only by RAM capacity)</li> </ul> Data areas and their retentivity Retentive data area (incl. timers, counters, flags), max. Flag <ul> <li>Size, max.</li> <li>Retentivity available</li> <li>Retentivity available</li> <li>Retentivity preset</li> <li>Number of clock memories</li> </ul> Data blocks <ul> <li>Retentivity adjustable</li> <li>Retentivity preset</li> <li>Retentivity preset</li> </ul> Petentivity preset <ul> <li>Retentivity preset</li> <li>Retentivity preset</li> <li>Retentivity preset</li> </ul> Yes; via non-retain property on DB <ul> <li>Retentivity preset</li> </ul> Yes <ul> <li>Local data</li> </ul>		3 330 3
Type Number Unlimited (limited only by RAM capacity)  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag Size, max. Retentivity available Retentivity preset Number of clock memories  Data blocks Retentivity adjustable Retentivity adjustable Retentivity preset Retentivity adjustable Retentivity preset Retentivity preset Retentivity preset Retentivity preset Retentivity adjustable Retentivity preset  Local data		Yes
Number  Unlimited (limited only by RAM capacity)  Data areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Retentivity available Retentivity preset Retentivity preset Number of clock memories  Pata blocks  Retentivity adjustable Retentivity preset Retentivity preset  Retentivity adjustable Retentivity preset Retentivity preset Retentivity preset Retentivity adjustable Retentivity preset Retentivity preset  Number of clock memories Retentivity preset Retentivity adjustable Retentivity preset  Yes; via non-retain property on DB Retentivity preset  Yes  Local data	·	
Pata areas and their retentivity  Retentive data area (incl. timers, counters, flags), max.  Flag  Size, max. Retentivity available Retentivity preset Number of clock memories  Pata blocks Retentivity adjustable Retentivity adjustable Retentivity preset Retentivity preset Retentivity preset Retentivity adjustable Retentivity preset		
Retentive data area (incl. timers, counters, flags), max.  Flag  Size, max. Retentivity available Retentivity preset Number of clock memories  Pata blocks Retentivity adjustable Retentivity adjustable Retentivity preset Yes; via non-retain property on DB Retentivity preset Yes  Local data		
Flag  Size, max. Retentivity available Retentivity preset Retentivity preset Number of clock memories  Pata blocks Retentivity adjustable Retentivity preset Retentivity preset  Retentivity adjustable Retentivity preset Yes; via non-retain property on DB Retentivity preset Yes  Local data		256 kbyte
<ul> <li>Size, max.</li> <li>Retentivity available</li> <li>Retentivity preset</li> <li>Number of clock memories</li> <li>Data blocks</li> <li>Retentivity adjustable</li> <li>Retentivity preset</li> <li>Yes; From MB 0 to MB 4 095</li> <li>8; 1 memory byte</li> <li>Data blocks</li> <li>Retentivity adjustable</li> <li>Retentivity preset</li> <li>Yes; via non-retain property on DB</li> <li>Retentivity preset</li> <li>Yes</li> </ul>		
<ul> <li>Retentivity available</li> <li>Retentivity preset</li> <li>Number of clock memories</li> <li>Namber of clock memories</li> <li>Retentivity adjustable</li> <li>Retentivity adjustable</li> <li>Retentivity preset</li> <li>Retentivity preset</li> <li>Yes</li> </ul>		4 096 byte
<ul> <li>Retentivity preset</li> <li>Number of clock memories</li> <li>1 memory byte</li> <li>Data blocks</li> <li>Retentivity adjustable</li> <li>Retentivity preset</li> <li>Retentivity preset</li> <li>Yes; via non-retain property on DB</li> <li>Yes</li> </ul>	·	
<ul> <li>Number of clock memories</li> <li>Data blocks</li> <li>Retentivity adjustable</li> <li>Retentivity preset</li> <li>Local data</li> </ul> 8; 1 memory byte Yes; via non-retain property on DB Yes		
Data blocks  • Retentivity adjustable • Retentivity preset  Local data  • Retentivity adjustable Yes; via non-retain property on DB Yes		8; 1 memory byte
• Retentivity preset  Local data  Yes		
Local data	Retentivity adjustable	Yes; via non-retain property on DB
	Retentivity preset	Yes
per priority class max     1 024 byte	Local data	
10210910	<ul><li>per priority class, max.</li></ul>	1 024 byte

Address area	
I/O address area	
• Inputs	8 192 byte
• Outputs	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
• Inputs	2 048 byte
<ul><li>Outputs</li></ul>	2 048 byte
<ul> <li>Inputs, adjustable</li> </ul>	2 048 byte
<ul> <li>Outputs, adjustable</li> </ul>	2 048 byte
<ul> <li>Inputs, default</li> </ul>	256 byte
Outputs, default	256 byte
Subprocess images	
Number of subprocess images, max.	1
Digital channels	
• Inputs	65 536
— of which central	1 024
Outputs	65 536
— of which central	1 024
Analog channels	
• Inputs	4 096
— of which central	256
Outputs	4 096
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
<ul><li>integrated</li></ul>	2
• 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	
<ul> <li>Hardware clock (real-time)</li> </ul>	Yes
<ul> <li>retentive and synchronizable</li> </ul>	Yes
Backup time	6 wk; At 40 °C ambient temperature
<ul> <li>Deviation per day, max.</li> </ul>	10 s
<ul> <li>Behavior of the clock following POWER-ON</li> </ul>	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup      To reind	the clock continues at the time of day it had when power was switched
period  Operating hours counter	off
Operating hours counter	4
Number	4
Number/Number range     Panga of values	0 to 3
Range of values     Crapularity	0 to 2^31 hours (when using SFC 101)
Granularity     retentive	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization • supported	Yes
to MPI, master	Yes
• to MPI, master • to MPI, slave	Yes
• to DP, master	
	Yes; With DP slave only slave clock Yes
<ul><li>to DP, slave</li><li>in AS, master</li></ul>	Yes
■ III AO, IIIaolei	
	Voc
• in AS, slave	Yes
	Yes No

integrated channels (DI)	0
Digital outputs	
integrated channels (DO)	0
	0
Analog inputs	0
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	2; Combined MPI / PROFIBUS DP and PROFIBUS DP
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	V.
RS 485      Output current of the interface, may	Yes
Output current of the interface, max.  Protocols	200 mA
Protocols  • MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
Point-to-point connection	No
MPI	
Number of connections	32
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	Yes
— S7 basic communication	Yes
— S7 communication	Yes
— S7 communication, as client	No
— S7 communication, as server	Yes
PROFIBUS DP master  • Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124
Services	127
— PG/OP communication	Yes
— Routing	Yes
Global data communication	No
<ul> <li>S7 basic communication</li> </ul>	Yes; I blocks only
— S7 communication	Yes
<ul> <li>— S7 communication, as client</li> </ul>	No
<ul> <li>S7 communication, as server</li> </ul>	Yes
— Equidistance	Yes
— Isochronous mode	No
— SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
<ul> <li>Number of DP slaves that can be simultaneously activated/deactivated, max.</li> </ul>	4
— DPV1	Yes
Address area	
— Inputs, max.	8 096 byte
— Outputs, max.	8 096 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
Address area, max.	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte

Sarvicas	
Services  — PG/OP communication	Yes
— Routing	Yes; Only with active interface
— Global data communication	No
— S7 basic communication	No
— S7 communication	Yes
<ul> <li>S7 communication, as client</li> </ul>	No
<ul> <li>S7 communication, as server</li> </ul>	Yes
Direct data exchange (slave-to-slave)	Yes
communication)	A.I.
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
<ul> <li>Output current of the interface, max.</li> </ul>	200 mA
Protocols	
• MPI	No
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes
Point-to-point connection	No
PROFIBUS DP master	110
Number of connections, max.	32
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max.	124 124
Services	12T
— PG/OP communication	Yes
	Yes
— Routing	
— Global data communication	No Year I blooks only
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes
— S7 communication, as client	No
<ul> <li>S7 communication, as server</li> </ul>	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61
— SYNC/FREEZE	Yes
<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
— DPV1	Yes
Address area	
— Inputs, max.	8 096 byte
— Outputs, max.	8 096 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
Number of connections	32
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	0_ 2 <sub>J</sub> .0
— PG/OP communication	Yes
— Routing	Yes; with interface active
— Global data communication	No No
— S7 basic communication	No Voc
— S7 communication	Yes
<ul> <li>— S7 communication, as client</li> </ul>	No
	V
— S7 communication, as server      — Direct data exchange (slave-to-slave	Yes Yes

communication) — DPV1	No
Transfer memory	NO
— Inputs	244 byte
— Outputs	244 byte
Protocols	211 byte
PROFIsafe	No
communication functions / header	NO
	Vec
PG/OP communication	Yes No
Data record routing Global data communication	INO
supported	Yes
Number of GD loops, max.	8
Number of GD packets, max.	8
Number of GD packets, transmitter, max.	8
<ul> <li>Number of GD packets, receiver, max.</li> </ul>	8
<ul> <li>Size of GD packets, max.</li> </ul>	22 byte
<ul> <li>Size of GD packet (of which consistent), max.</li> </ul>	22 byte
S7 basic communication	
• supported	Yes
User data per job, max.	76 byte
<ul> <li>User data per job (of which consistent), max.</li> </ul>	76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or
	X_GET as server)
S7 communication	V
• supported	Yes
• as server	Yes
as client      User data per job may	Yes; Via CP and loadable FB
<ul><li>User data per job, max.</li><li>User data per job (of which consistent), max.</li></ul>	180 byte; With PUT/GET
S5 compatible communication	160 byte; as server
supported	Yes; via CP and loadable FC
Number of connections	res, via or and loadable re
overall	32
usable for PG communication	31
reserved for PG communication	1
<ul> <li>adjustable for PG communication, min.</li> </ul>	1
<ul> <li>adjustable for PG communication, max.</li> </ul>	31
<ul> <li>usable for OP communication</li> </ul>	31
<ul> <li>reserved for OP communication</li> </ul>	1
<ul> <li>adjustable for OP communication, min.</li> </ul>	1
<ul> <li>adjustable for OP communication, max.</li> </ul>	31
<ul> <li>usable for S7 basic communication</li> </ul>	30
<ul> <li>reserved for S7 basic communication</li> </ul>	0
<ul> <li>adjustable for S7 basic communication, min.</li> </ul>	0
<ul> <li>adjustable for S7 basic communication, max.</li> </ul>	30
usable for routing	8
S7 message functions	
Number of login stations for message functions, max.	32; Depending on the configured connections for PG/OP and S7 basic communication
Process diagnostic messages	Yes
simultaneously active Alarm-S blocks, max.	60
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
<ul> <li>Number of variables, max.</li> </ul>	30
— of which status variables, max.	30
— of which control variables, max.	14
Forcing  • Forcing	Voc
	Yes

<ul> <li>Forcing, variables</li> </ul>	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
Number of entries, max.	100
— adjustable	No
— of which powerfail-proof	100
configuration / header	
Configuration software	
• STEP 7	Yes; V5.2 SP1 or higher with HW update
configuration / programming / header	
Command set	see instruction list
<ul> <li>Nesting levels</li> </ul>	8
<ul> <li>System functions (SFC)</li> </ul>	see instruction list
<ul> <li>System function blocks (SFB)</li> </ul>	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
— HiGraph®	Yes
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
Dimensions	
Width	80 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	460 g
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