## SIEMENS

## Data sheet

## 6ES7317-2AK14-0AB0



SIMATIC S7-300, CPU 317-2 DP, Central processing unit with 1 MB 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	V3.3
	V3.3
Engineering with	STED 7 op of V/5 5 + SD1 or STED 7 V/5 2 + SD1 or bigher with USD 202
Programming package	STEP 7 as of V5.5 + SP1 or STEP 7 V5.2 + SP1 or higher with HSP 202
Supply voltage	04114
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2 A min.
Mains buffering	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Repeat rate, min.	1s
Input current	
Current consumption (rated value)	870 mA
Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A
l²t	1 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	4.5 W
Memory	
Work memory	
integrated	1 024 kbyte
expandable	No
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
<ul> <li>Data management on MMC (after last programming),</li> </ul>	10 a
min.	
Backup	
present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.025 μs
for word operations, typ.	0.03 µs
for fixed point arithmetic, typ.	0.04 µs
for floating point arithmetic, typ.	0.16 µs
CPU-blocks	
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.

DB	
Number, max.	2 048; Number range: 1 to 16000
Size, max.	64 kbyte
	64 KDyte
FB	
• Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	2 048; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
<ul> <li>Number, max.</li> </ul>	see instruction list
• Size, max.	64 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	1; OB 1
<ul> <li>Number of time alarm OBs</li> </ul>	1; OB 10
<ul> <li>Number of delay alarm OBs</li> </ul>	2; OB 20, 21
Number of cyclic 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 of isochronous mode OBs	1; OB 61
Number of isochronous mode obs     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	
<ul> <li>per priority class</li> </ul>	16
<ul> <li>additional within an error OB</li> </ul>	4
Counters, timers and their retentivity	
S7 counter	
Number	512
Retentivity	
— adjustable	Yes
— preset	Z 0 to Z 7
Counting range	
<ul> <li>— counting range / of S7 counters / initial value</li> </ul>	0
— counting range / of S7 counters / full-scale value	999
IEC counter	
• present	Yes
•	SFB
• Type	
Number	Unlimited (limited only by RAM capacity)
S7 times	540
• Number	512
Retentivity	
— adjustable	Yes
— preset	No retentivity
Time range	
- time range / of the S7 timers / initial value	10 ms
- time range / of the S7 timers / full-scale value	9 990 s
IEC timer	
• present	Yes
• Туре	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	256 kbyte
Flag	200 10/10
-	4 006 byte
• 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	

	22.700 hiter May 2040 hiter per black
per priority class, max.  Address area	32 768 byte; Max. 2048 bytes per block
I/O address area	0.400 h.t.
<ul> <li>Inputs</li> <li>Outputs</li> </ul>	8 192 byte
of which distributed	8 192 byte
	8 102 hito
— Inputs — Outputs	8 192 byte 8 192 byte
Process image	o 192 Dyte
Inputs	8 192 byte
Outputs	8 192 byte
Inputs, adjustable	8 192 byte
Outputs, adjustable	8 192 byte
Inputs, default	256 byte
Outputs, default	256 byte
Subprocess images	200 byte
Number of subprocess images, max.	1
Digital channels	
Inputs	65 536
<ul> <li>Inputs</li> <li>— of which central</li> </ul>	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	200
Number of expansion units, max.	3
Number of DP masters	·
integrated	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
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature
<ul> <li>Deviation per day, max.</li> </ul>	10 s; Typ.: 2 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 period	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Number	4
Number/Number range	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1h
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

	Voo
• in AS, slave	Yes
on Ethernet via NTP Digital inputs	No
	0
Number of digital inputs	0
Digital outputs	0
Number of digital outputs	0
Analog inputs	0
Number of analog inputs	0
Analog outputs	0
Number of analog outputs Interfaces	0
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	
1. Interface	·
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
Output current of the interface, max.	200 mA
Protocols	
• MPI	Yes
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes; A DP slave at both interfaces simultaneously is not possible
<ul> <li>Point-to-point connection</li> </ul>	No
MPI	
Transmission rate, max.	12 Mbit/s
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; but via CP and loadable FB
— S7 communication, as server	Yes
PROFIBUS DP master	
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
Number of DP slaves, max.	124
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	No Vaci la blacka anti-
- S7 basic communication	Yes; I blocks only
<ul> <li>— S7 communication</li> <li>— S7 communication, as client</li> </ul>	Yes; Only server, configured on one side
	No Yes
— S7 communication, as server	Yes
— Equidistance — Isochronous mode	No
- SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
<ul> <li>— Activation deactivation of DP slaves</li> <li>— Number of DP slaves that can be simultaneously</li> </ul>	8
activated/deactivated, max.	
<ul> <li>— Direct data exchange (slave-to-slave communication)</li> </ul>	Yes; as subscriber
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	
— Inputs, max.	244 byte

— Outputs, max.	244 byte
PROFIBUS DP slave	
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; Only with active interface
— Global data communication	No
<ul> <li>— S7 basic communication</li> </ul>	No
— S7 communication	Yes; Only server, configured on one side
<ul> <li>— S7 communication, as client</li> </ul>	No
— S7 communication, as server	Yes; Connection configured on one side only
<ul> <li>— Direct data exchange (slave-to-slave communication)</li> </ul>	Yes
— 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; A DP slave at both interfaces simultaneously is not possible
Point-to-point connection	No
PROFIBUS DP master	40 Mbil/a
Transmission rate, max.	12 Mbit/s
Number of DP slaves, max. Services	124
— 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; but via CP and loadable FB
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61
	Yes
- Activation/deactivation of DP slaves	Yes
<ul> <li>— Number of DP slaves that can be simultaneously activated/deactivated, max.</li> </ul>	8
— Direct data exchange (slave-to-slave	Yes; as subscriber
communication) — DPV1	Yes
Address area	
— Inputs, max.	8 192 byte
— Outputs, max.	8 192 byte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	
• GSD file	The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)
Transmission rate, max.	12 Mbit/s
<ul> <li>automatic baud rate search</li> </ul>	Yes; only with passive interface

I. Used table and data serve, max.     B2 byte      Bortwise            B4 byte data promunication            Routing           Routing           Routing           Routing           Routing          Routing          Routing          Routing          Routing          Routing          Routing          Routing          So and communication         No          So communication, as client         No, but via CP and loadable FB         No          So communication, as client         No, but via CP and loadable FB          Communication, as client         No          - Direct data scrimmunication          No          - Direct data scrimmunication          No          - Direct data scrimmunication         No          - Direct data scrimmunication          No           - Direct data scrimmunication         No         - Direct data scrimmunication          - Direct data scrimme         - Unuble         - Direct data scrimmunication         - PolOP communication         - Direct data scrimmunication         - PolOP communication         - Size of CD packets, maintifer, max.         B         - Rubriter of CD packets, maintifer, max.         B         - Rubriter of CD packets, maintifer, max.         B         - Size of CD packets, maintifer, max.         B         - Size of CD packets, maintifer, max.         - Size of CD packets, maintifer, max.         - Size of CD packets (r	Address area, max.	32
Bendes		
PGOP communication     Post, Only with active interface     Coloal data communication     No     ST basic communication     No     ST basic communication     No     ST basic communication     No     ST communication, as client     No, but via CP and foadable FB     ST communication     ST communic	·	52 byte
<ul> <li>- Roding</li> <li>- Sociality</li> <li>- Sociality</li></ul>		Yes
<ul> <li></li></ul>	C C	
<ul> <li></li></ul>		
<ul> <li>ST communication, as client</li> <li>ST communication, as server</li> <li>ST communication, as server</li> <li>ST communication, as server</li> <li>Derived data exchange (skew-bostove or DPV1)</li> <li>No</li> <li>Transfer memory</li> <li>Outputs</li> <li>Ou</li></ul>		
Direct data schange (alsor-to-slave 		
OPVI         No           Transfer memory        Inputs         244 byte          Inputs         244 byte           Protocols         Protocols           PROFisad         No           communication functions / beader         No           Communication functions / beader         Yes           PG/OP communication         Yes           Statistic functions / beader         Yes           Statistic functions / beader         Yes           Statistic functions / functions / for packets, max.         8           Number of CD packets, max.         8           Number of CD packets, max.         8           Number of CD packets, max.         8           Size of CD packets, function / S7 basic communication         Yes           User data per job, rimax.         25 byte           Size of CD packets, max.         76 byte           • User data per job, rimax.         76		
Transfer memory       244 byte         - Inputs       244 byte         - Oupufs       244 byte         Protocols       Protocols         PROFIsate       No         Communication functions / heador       Yes         Global data communication       Yes         Supported       Yes         Supported       Yes         Number of GD packets, max.       8         Number of GD packets, max.       8         Number of GD packets, max.       22 byte         Size of GD packets, max.       22 byte         Size of GD packets (of which consistent), max.       22 byte         Size of GD packets, max.       22 byte         Size of GD packets (of which consistent), max.       76 byte         • User data per job (of which consistent), max.       76 byte         * supported       Yes         • Size of GD packets, max.       76 byte         * Size of GD packets, max.       76 byte         • User data per job (of which consistent), max.       76 byte         * supported       Yes         • supported       Yes         • supported       Yes         • supported       Yes, via CP and loadable FB         • suported       Yes, via CP and load		1 55
inputs     244 byte      Outputs     244 byte       Prococots     244 byte       Prococots     PGOP communication functions / heador       PGOP communication functions / heador     Yes       Obtain faceour routing     Yes       Obtain faceour routing     Yes       Obtain faceour routing     Yes       Obtain faceour routing     Yes       Number of GD packets, max.     8       Number of GD packets, remainter, max.     8       Number of GD packets, remainter, max.     8       Sitze of GD packets, for which consistent), max.     8       Sitze of GD packet (of which consistent), max.     28 byte       Sitze of GD packet (of which consistent), max.     76 byte       Vier data per job, max.     76 byte       • User data per job, max.     76 bytes (with X_SEND or X_RCV): 64 bytes (with X_PUT or X_GET as server)       • supported     Yes       • so communication     Yes       Storomatic communication     Yes       • user data per job, max.     76 bytes (with X_SEND or X_RCV): 64 bytes (with X_PUT or X_GET as server)       • so communication     Yes       • user data per job, max.     76 bytes (with X_GET and coadable FB       • so communication     31       • use data per job, max.     32       • use datin (G communication     31	— DPV1	No
− Outputs         244 byte           PROCIsafe         No           Communication functions / basker         PROCP communication           PSOP communication         Yes           Data record routing         Yes           Called latis communication         Yes           • supported         Yes           • Number of CD posches, max.         8           • Number of CD packets, transmitter, max.         8           • Number of CD packets, reac.         22 byte           • Size of CD packets, reac.         22 byte           • User data per job (which consistent), max.         76 byte? 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)           • User data per job, max.         Yes           • as client         Yes: Yac QP and loadable FD           • User data per job, max.         SECEFCs of S7 Communication           • supported         Yes; Yac QP and loadable FD           • usable for PG communication, min.         1           - reserved for OPG	Transfer memory	
Prochade         No           PROFisade         No           Communication functions / header         PGOP communication           PGOP communication         Yes           Data record routing         Yes           School data communication         Yes           Number of GD packets, max.         8           Number of GD packets, transmitter, max.         8           Number of GD packets, receiver, max.         8           Size of GD packets, transmitter, max.         2 byte           Size of GD packets, transmitter, max.         76 byte           Size of GD packets, transmitter, max.         2 byte           Size of GD packets, transmitter, max.         76 byte           Ves         Size of GD packets, transmitter, max.         76 byte           Ves         Size of GD packets, transmitter, max.         76 byte           Ves         Size of GD packets, transmitter, max.         76 byte           Size of GD packets, transmitter, max.         76 byte         70 byte           Size of GD packets, transmitter, max.         76 byte         70 byte           Size of tab per job, max.         76 byte         70 and loadable FB           Supported         Yes, Via CP and loadable FC           Number of Communication         31	— Inputs	244 byte
PROFisale         No           communication         Yes           Data record routing         Yes           Global data communication         Yes           • supported         Yes           • Number of GD pockets, max.         8           • Number of GD packets, max.         8           • Size of GD packets, max.         8           • Size of GD packets, max.         8           • Size of GD packets, receiver, max.         8           • Size of GD packets, receiver, max.         22 byte           • Size of GD packets, max.         22 byte           • Size of GD packets, max.         22 byte           • Size of GD packets, max.         76 byte           • User data per job, max.         76 byte           • User data per job, max.         76 byte           • supported         Yes           • as server         Yes           • as server         Yes           • as server         Yes           • usported         Yes, via CP and loadable FB           • usported         Yes, via CP and loadable FC           Number of GD communication         1           • usable for PC communication         1           • adjustable for PC communication, min.         1 </td <td>— Outputs</td> <td>244 byte</td>	— Outputs	244 byte
Communication functions / header           PGCPC communication         Yes           Global data communication         Yes           Supported         Yes           Number of GD packets, max.         8           Size of GD packets, receiver, max.         8           Size of GD packet (of which consistent), max.         22 byte           Size of GD packet (of which consistent), max.         22 byte           Size of GD packet (of which consistent), max.         76 byte; 75 bytes(communication           • User data per job (of which consistent), max.         76 byte; 75 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET           sis server         Yes           • as server         Yes           • as server         Yes           • as client         Yes; via CP and loadable FB           • User data per job, max.         See onime help of STE-PT (shared parameters of the SFBs/FBs and of the SFCommunication           • supported         Yes; via CP and loadable FC           Number of connections         22           • usable for PG communication         1           - adjustable for PG communication         1	Protocols	
PG/OP communication         Yes           Data record routing         Yes           Clobal data communication         Yes           • supported         Yes           • Number of GD packets, max.         8           • Number of GD packets, transmitter, max.         8           • Number of GD packets, transmitter, max.         8           • Size of GD packets, max.         8           • Size of GD packets, max.         22 byte           • Size of GD packets, max.         22 byte           • Size of GD packets, max.         76 byte           • User data per job, max.         76 byte           • User data per job, max.         76 byte           • Supported         Yes           • supported         Yes           • supported         Yes           • supported         Yes           • as client         Yes; Via CP and loadable FB           • use data per job, max.         See online help of STEP 7 (shared parameters of the SFBa/FBs and of the SFCAFCs of ST Communication           • usable for PG communication         1           • usable for PG communication         1           • usable for PG communication         1           - adjustable for PG communication, min.         1           - adjustable for PG co	PROFIsafe	No
Data record routing         Yes           Global data communication         *           • supported         Yes           • Number of GD packets, max.         8           • Number of GD packets, receiver, max.         8           • Size of GD packets, receiver, max.         22 byte           • Size of GD packets, receiver, max.         8           • Size of GD packets, receiver, max.         22 byte           • Size of GD packets, max.         22 byte           • Size of GD packets, max.         76 byte, 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)           • User data per job, for which consistent), max.         76 byte, 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)           • Signomunication         Yes           • as server         Yes           • as server         Yes           • usable for PG communication         SfCerFCs of S7 Communication)           • subported         Yes; via CP and loadable FC           Number of connections         31           • usable for PG communication, min.         1           - reserved for OP communicatio	communication functions / header	
Global data communication       Yes         • Number of GD packets, max.       8         • Size of GD packets, max.       8         • Size of GD packets, max.       22 byte         • Size of GD packets, max.       22 byte         Size of GD packets, max.       22 byte         Size of GD packets, max.       76 byte         • User data per job, (of which consistent), max.       76 byte         • User data per job, (of which consistent), max.       76 byte         * supported       Yes         • as server       Yes         • as properded       Yes         • supported       Yes (via CP and loadable FB         • User data per job, max.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFC-SFCs of S7 Communication)         • Supported       Yes; via CP and loadable FC         Number of onections       32         • usable for PG communication       1         - reserved for PG communication, min.       1         - adjustable for PG communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for	PG/OP communication	Yes
Global data communication         Yes           • Number of GD posk, max.         8           • Number of GD packets, max.         8           • Size of GD packets, max.         8           • Size of GD packets, max.         22 byte           Size of GD packets, max.         22 byte           Size of GD packets, max.         76 byte           • User data per job, max.         76 byte           • User data per job (of which consistent), max.         76 byte           • supported         Yes           • as server         Yes, via CP and loadable FB           • User data per job, max.         32           St compatible communication         32           • usable for PG communication         31           • usable for PG communication         1           - reserved for PG communication, min.         1           - adjustable for PG communication, min.	Data record routing	Yes
Number of GD loops, max.     8     Number of GD packets, max.     8     Number of GD packets, transmitter, max.     8     Number of GD packets, transmitter, max.     8     Number of GD packets, transmitter, max.     8     Size of GD packets, transmitter, max.     8     Size of GD packets, transmitter, max.     22 byte     S7 basic communication     Ves     ormmunication function / S7 basic communication     Ves     ves		
• Number of GD loops, max.     8       • Number of GD packets, max.     8       • Number of GD packets, transmitter, max.     8       • Size of GD packets, receiver, max.     8       • Size of GD packets, receiver, max.     22 byte       • Size of GD packets, max.     22 byte       S7 basic communication function / S7 basic communication     Yes       • User data per job. max.     76 byte       • User data per job. max.     76 byte       • User data per job. max.     76 byte.       • usable for PG communication     1       • usable for PG communication     1       - reserved for PG communication     1       - adjustable for OP communication     1       - reserved for PG comm	supported	Yes
• Number of GD packets, max.       8         • Number of GD packets, transmitter, max.       8         • Size of GD packets, max.       22 byte         Size of GD packets, max.       22 byte         Size of GD packets, max.       22 byte         Size of GD packets, max.       76 byte         • ommunication function / S7 basic communication       Yes         • User data per job, max.       76 byte         • User data per job (of which consistent), max.       76 byte         • User data per job, max.       76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)         Stommunication       Yes         • user data per job, max.       Yes         • use dient       Yes; via CP and loadable FB         • user data per job, max.       Secompatible communication         • use of the PG communication       31         • use of the PG communication       1         • usable for PG communication       1         - reserved for PG communication, max.       31         • usable for PG communication, max.       31         • usable for OP communication, max.       31		8
• Number of GD packets, treativer, max.       8         • Number of GD packets, receiver, max.       8         • Size of GD packet, for smax.       22 byte         • Size of GD packet, for which consistent), max.       22 byte         ST basic communication       Yes         • communication function / ST basic communication       Yes         • User data per job, max.       76 byte, 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)         ST communication       Yes         • supported       Yes         • as a server       Yes         • as client       Yes; Via CP and loadable FB         • Juser data per job, max.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCS of S7 Communication)         St compatible communication       Yes; via CP and loadable FC         • Usable for PG communication       31         - reserved for PG communication       1         - adjustable for PG communication       31         - reserved for OP communication       1         - adjustable for PG communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for S7 basic communication, min.       1         - adjustable for S7 basic		
• 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       Yes         • user data per job, max.       76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server).         S7 communication       Yes         • usported       Yes         • usported       Yes; Via CP and loadable FB         • server       Yes; Via CP and loadable FB         • supported       Yes; Via CP and loadable FC         • usported       Yes; via CP and loadable FC         Number of conneutication       32         • overall       32         • usable for PG communication       1         - reserved for PG communication       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for SP basic communication, min.       1         - adjustable for SP basic communication, min.       1		
• Size of GD packets, max.       22 byte         • Size of GD packet (of which consistent), max.       22 byte         S7 basic communication       Yes         • communication function / S7 basic communication       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       Yes         • supported       Yes         • as server       Yes         • as client       Yes; Via CP and loadable FB         • User data per job, max.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of Communication)         S5 compatible communication       Yes; via CP and loadable FC         Number of connections       •         • usable for PG communication       31         - reserved for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication, max.       31         - reserved for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, max.       31         - reserved for S7 basic commu	-	
• Size of GD packet (of which consistent), max.       22 byte         S7 basic communication       Yes         • communication function / S7 basic communication       76 byte         • User data per job (of which consistent), max.       76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)         S7 communication       Yes         • supported       Yes         • as server       Yes         • as clent       Yes (Via CP and loadable FB         • User data per job, max.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         S5 compatible communication       Yes; via CP and loadable FC         • usable for PG communication       31         • overall       32         • usable for PG communication       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, min.       1         - adjustable for OP communication, max.       31         - reserved for OP communication, max.       31         - usable for OP communication, max.       31         - adjustable for OP communication, max.       31         - adjustable for OP communication, max.       31         - reserved for S7 basic communication, max.       30         - adjustable for S7 basic com	-	
S7 basic communication       Yes         • communication function / S7 basic communication       Yes         • 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 client       Yes; Via CP and loadable FB         • user data per job, max.       Se online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         S5 compatible communication       Yes; via CP and loadable FB         • user data per job, max.       Se online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         S1 compatible communication       1         • user data per job Communication       31         • usable for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for SP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for OP communication       31         • usable for S7 basic communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for S7 basic communication, min.       1         - adjustable for S7 basic communication, min.       1		•
• communication function / S7 basic communication       Yes         • User data per job, max.       76 byte;         • User data per job (of which consistent), max.       76 byte;         76 byte;       76 byte; (with X_SEND or X_RCV);         87 communication       Yes         • supported       Yes         • as server)       Yes         • as server       Yes         • as client       Yes; Via CP and loadable FB         • User data per job, max.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         S5 compatible communication       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         • usable for PG communication       31         • usable for PG communication       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, min.       31         - reserved for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for PG communication, min.       1         - adjustable for S7 basic communication       30         - reserved for S7 basic communication       30         - reserved for S7 basic communication       30         - adjustable for S7 basic commu		22.5510
• 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       as server)         • supported       Yes         • as clent       Secondable FB         • User data per job, max.       Secondable FB         • User data per job, max.       Secondable FB         • Supported       Yes; Via CP and loadable FB         • User data per job, max.       Secondable fC         Socompatible communication       Secondable FC         • supported       Yes; via CP and loadable FC         Number of connections       1         • overall       32         • overall       32         • overall       31         - reserved for PG communication       1         - adjustable for PG communication, min.       1         - reserved for OP communication       31         - reserved for OP communication, max.       31         - reserved for OP communication, max.       31         - reserved for OP communication, max.       31         - reserved for ST basic communication, max.       31         - reserved for ST basic communication       30         - reserved for ST basic comm		Yes
• 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.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of Communication)         S5 compatible communication       Seconspatible communication         • supported       Yes; via CP and loadable FC         Number of connections       • overall         • usable for PG communication       31         - reserved for PG communication, min.       1         - adjustable for PG communication, min.       1         - adjustable for OP communication, max.       31         - reserved for PG communication, min.       1         - adjustable for OP communication, max.       31         - reserved for S7 basic communication, max.       31         - usable for OP communication, max.       31         - usable for S7 basic communication, max.       31         - usable for S7 basic communication, max.       30         - reserved for S7 basic communication, max.       30         - usable for S7 basic communication, max.       30         - usable for S7 basic communication, m		
S7 communication     as server)       • supported     Yes       • as client     Yes; Via CP and loadable FB       • User data per job, max.     See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)       S5 compatible communication     See online help of STEP 7 (shared parameters of the SFBs/FBs and SFBs/FBs/FBs and SFBs/FBs/FBs/FBs/FBs/FBs/FBs/FBs/FBs/FBs/		•
• supported       Yes         • as server       Yes         • as client       Yes; Via CP and loadable FB         • User data per job, max.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         S5 compatible communication       supported         • supported       Yes; via CP and loadable FC         Number of connections       vers; via CP and loadable FC         • overall       32         • usable for PG communication       1         - reserved for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication, min.       1         - adjustable for OP communication, max.       31         • usable for OP communication, max.       31         • usable for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for S7 basic communication       30         - reserved for S7 basic communication       0         - adjustable for S7 basic communication, max.       30         • usable for S7 basic communication, max.       30         • usable for S7 basic communication, max.       30         • usable for S7		
• as serverYes• as clientYes; Via CP and loadable FB• User data per job, max.See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs of S7 Communication)• S5 compatible communicationYes; via CP and loadable FC• supportedYes; via CP and loadable FC• Number of connections31- reserved for PG communication1- adjustable for PG communication, min.1- adjustable for PG communication, max.31- reserved for PG communication, max.31- adjustable for PG communication, min.1- adjustable for OP communication, min.1- adjustable for OP communication, min.1- adjustable for S7 basic communication, max.31• usable for S7 basic communication, max.30• usable for S7 basic communication, max.30• usable for S7 basic communication, max.30• usable for S7 basic communication, max.31• usable for S7 basic communication, max.30 <t< td=""><td>S7 communication</td><td></td></t<>	S7 communication	
• as client       Yes; Via CP and loadable FB         • User data per job, max.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         S5 compatible communication       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         S5 compatible communication       supported         • supported       Yes; via CP and loadable FC         Number of connections       32         • usable for PG communication       1         - reserved for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication, max.       31         • usable for OP communication, max.       31         - reserved for OP communication, max.       31         - reserved for OP communication, max.       31         - adjustable for OP communication, min.       1         - adjustable for OP communication, max.       31         • usable for S7 basic communication, max.	supported	Yes
• User data per job, max.       See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)         • supported       Yes; via CP and loadable FC         Number of connections       32         • usable for PG communication       31         - reserved for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication, max.       31         - reserved for OP communication, max.       31         - adjustable for OP communication, min.       1         - adjustable for OP communication, max.       31         • usable for OP communication, min.       1         - reserved for OP communication, min.       1         - adjustable for OP communication, max.       31         • usable for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for S7 basic communication       0         - adjustable for S7 basic communication, max.       30         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14; X2 as DP Master max. 24; X1 as DP S	• as server	Yes
SFCs/FCs of \$7 Communication)       S5 compatible communication       • supported       Yes; via CP and loadable FC       Number of connections       • overall       1       - reserved for PG communication       1       - adjustable for PG communication, min.       - adjustable for PG communication, max.       31       - adjustable for PG communication, max.       31       - adjustable for OP communication, max.       31       - reserved for OP communication       1       - adjustable for OP communication       1       - adjustable for OP communication       1       - reserved for OP communication, max.       31       - reserved for OP communication, min.       - adjustable for OP communication, min.       - adjustable for OP communication, max.       31       • usable for S7 basic communication       0       - adjustable for S7 basic communication       0       - adjustable for S7 basic communication, max.       30       • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.       14; X2 as DP Master max. 24; X2 as DP Slave (active) max.       14; X2 as DP Master max. 24; X1 as DP Slave (active) max.       14; X2 as DP Master	• as client	Yes; Via CP and loadable FB
S5 compatible communication         • supported       Yes; via CP and loadable FC         Number of connections       32         • overall       32         • usable for PG communication       1         - reserved for PG communication       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication       1         - reserved for OP communication, min.       1         - adjustable for OP communication, min.       1         - reserved for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, max.       31         • usable for S7 basic communication       0         - reserved for S7 basic communication       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, min.       1         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, min.       1 <td< td=""><td>• User data per job, max.</td><td></td></td<>	• User data per job, max.	
• supported       Yes; via CP and loadable FC         Number of connections         • overall       32         • usable for PG communication       31         - reserved for PG communication       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication, max.       31         - reserved for OP communication, max.       31         - usable for OP communication       1         - adjustable for OP communication, max.       31         - reserved for OP communication, min.       1         - adjustable for OP communication, max.       31         - usable for S7 basic communication, max.       31         - usable for S7 basic communication       0         - reserved for S7 basic communication       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, max.       30         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.         • usable for login stations for message functions, max.       32;		SFCs/FCs of S7 Communication)
Number of connections       32         • overall       32         • usable for PG communication       31         - reserved for PG communication       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication, max.       31         • usable for OP communication       1         - reserved for OP communication       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, min.       1         - adjustable for S7 basic communication, max.       31         • usable for S7 basic communication, max.       31         • usable for S7 basic communication       0         - reserved for S7 basic communication       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, max.       30         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14         S7 message functions       32; Depending on the configured connections for PG/OP and S7 basic communicati	·	
• overall       32         • usable for PG communication       31         - reserved for PG communication       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication       31         • usable for OP communication       31         - reserved for OP communication       1         - adjustable for OP communication, max.       31         • usable for OP communication, min.       1         - adjustable for OP communication, max.       31         • usable for S7 basic communication, max.       31         • usable for S7 basic communication       0         - reserved for S7 basic communication, min.       0         - adjustable for S7 basic communication, max.       30         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.         14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14       14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14		Yes; via CP and loadable FC
• usable for PG communication         31           - reserved for PG communication         1           - adjustable for PG communication, min.         1           - adjustable for PG communication, max.         31           • usable for OP communication, max.         31           • usable for OP communication         31           - reserved for OP communication         1           - adjustable for OP communication, max.         31           • usable for OP communication, min.         1           - adjustable for OP communication, max.         31           • usable for S7 basic communication, max.         31           • usable for S7 basic communication         0           - reserved for S7 basic communication, min.         0           - adjustable for S7 basic communication, min.         0           - adjustable for S7 basic communication, min.         0           - adjustable for S7 basic communication, max.         30           • usable for s7 basic communication, max.         31           • usable for routing         X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP M		00
- reserved for PG communication       1         - adjustable for PG communication, min.       1         - adjustable for PG communication, max.       31         • usable for OP communication       31         - reserved for OP communication       1         - adjustable for OP communication       1         - adjustable for OP communication       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, max.       31         • usable for S7 basic communication       30         - reserved for S7 basic communication, min.       0         - adjustable for S7 basic communication, max.       30         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP Slave		
adjustable for PG communication, min.1 adjustable for PG communication, max.31• usable for OP communication31 reserved for OP communication1 adjustable for OP communication, min.1 adjustable for OP communication, max.31 adjustable for OP communication, max.31 adjustable for OP communication, max.31 adjustable for S7 basic communication30 reserved for S7 basic communication0 adjustable for S7 basic communication, min.0 adjustable for S7 basic communication, min.0 adjustable for S7 basic communication, max.30 usable for S7 basic communication, max.30 adjustable for S7 basic communication, max.30 usable for routingX1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14; X2 as DP Slave (active) max. 14; X2 as DP Slave (active) max. 14; X2 as DP Slave (active) max. 		
- adjustable for PG communication, max.31• usable for OP communication31- reserved for OP communication1- adjustable for OP communication, min.1- adjustable for OP communication, max.31• usable for S7 basic communication, max.30- reserved for S7 basic communication0- adjustable for S7 basic communication, min.0- adjustable for S7 basic communication0- adjustable for S7 basic communication, min.0- adjustable for S7 basic communication, min.0- adjustable for S7 basic communication, max.30* usable for S7 basic communication, max.30- adjustable for S7 basic communication, max.1S7 message functionsX1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.Yumber of login stations for message functions, max.32; Depending on the configured connections for PG/OP and S7 basic communication		
• usable for OP communication31- reserved for OP communication1- adjustable for OP communication, min.1- adjustable for OP communication, max.31• usable for S7 basic communication30- reserved for S7 basic communication0- adjustable for S7 basic communication, min.0- adjustable for S7 basic communication0- adjustable for S7 basic communication, min.0- adjustable for S7 basic communication, min.0- adjustable for S7 basic communication, max.30• usable for s7 basic communication, max.30• usable for routingX1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14S7 message functions32; Depending on the configured connections for PG/OP and S7 basic communication	•	
- reserved for OP communication       1         - adjustable for OP communication, min.       1         - adjustable for OP communication, max.       31         • usable for S7 basic communication       30         - reserved for S7 basic communication       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, max.       30         • usable for S7 basic communication, max.       30         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.         14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14       32; Depending on the configured connections for PG/OP and S7 basic communication	-	
• usable for S7 basic communication       30         - reserved for S7 basic communication       0         - adjustable for S7 basic communication, min.       0         - adjustable for S7 basic communication, max.       30         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max.         S7 message functions       32; Depending on the configured connections for PG/OP and S7 basic communication	-	
reserved for S7 basic communication       0         adjustable for S7 basic communication, min.       0         adjustable for S7 basic communication, max.       30         • usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14         S7 message functions       32; Depending on the configured connections for PG/OP and S7 basic communication	-	
• usable for routing       X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) max. 14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14         S7 message functions       32; Depending on the configured connections for PG/OP and S7 basic communication	-	
14; X2 as DP Master max. 24; X2 as DP Slave (active) max. 14         S7 message functions         Number of login stations for message functions, max.       32; Depending on the configured connections for PG/OP and S7 basic communication	-	
S7 message functions           Number of login stations for message functions, max.         32; Depending on the configured connections for PG/OP and S7 basic communication	usable for routing	
Number of login stations for message functions, max.       32; Depending on the configured connections for PG/OP and S7 basic communication	S7 message functions	
communication		32; Depending on the configured connections for PG/OP and S7 basic
Process diagnostic messages Yes		
	Process diagnostic messages	Yes

simultaneously active Alarm-S blocks, max.	300
Test commissioning functions	300
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	7
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.	500
— adjustable	No
— of which powerfail-proof	100; Only the last 100 entries are retained
Number of entries readable in RUN, max.	499
— adjustable	Yes; From 10 to 499
— preset	10
Service data	
test-/initiation function / service data readable	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
configuration / header	
Configuration software	
• STEP 7	Yes; STEP 7 V5.5 + SP1 or higher or STEP 7 V5.3 + SP2 or higher with HSP
	203
STEP 7 Lite	No
configuration / programming / header	
Command set	see instruction list
Nesting levels	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
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	
	125 mm
Depth	125 mm 130 mm
Depth	