## **SIEMENS**

## Data sheet

6ES7317-2AK14-0AB0

SIMATIC S7-300, CPU317-2 DP, CENTRAL PROCESSING UNIT WITH 1 MBYTE WORKING MEMORY, 1. INTERFACE MPI/DP 12MBIT/S, 2. INTERFACE DP-MASTER/SLAVE, MICRO MEMORY CARD NECESSARY



General information	
Hardware product version	01
Firmware version	V3.3
Engineering with	
Programming package	STEP 7 as of V5.5 + SP1 or STEP 7 V5.2 + SP1 or higher with HSP 202
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
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	
Mains/voltage failure stored energy time	5 ms
• Repeat rate, min.	1 s
Input current	
Current consumption (rated value)	870 mA

Owner to a constitution (in the least of the	400 4
Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A 1 A <sup>2</sup> ·s
rt	I A ··s
Power loss	
Power loss, typ.	4.5 W
Memory	
Work memory	
• integrated	1 024 kbyte
• expandable	No
<ul> <li>Size of retentive memory for retentive data blocks</li> </ul>	256 kbyte
Load memory	
• Plug-in (MMC)	Yes
• Plug-in (MMC), max.	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	10 y
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
warear saller y	
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
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	
Description	see instruction list
• Size, max.	64 kbyte
Number of free cycle OBs	1; OB 1
Number of time alarm OBs	1; OB 10

<ul> <li>Number of delay alarm OBs</li> </ul>	2; OB 20, 21
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	4; OB 32, 33, 34, 35
<ul> <li>Number of process alarm OBs</li> </ul>	1; OB 40
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3; OB 55, 56, 57
<ul> <li>Number of isochronous mode OBs</li> </ul>	1; OB 61
<ul> <li>Number of startup OBs</li> </ul>	1; OB 100
<ul> <li>Number of asynchronous error OBs</li> </ul>	5; OB 80, 82, 85, 86, 87
<ul> <li>Number of synchronous error OBs</li> </ul>	2; OB 121, 122
Nesting depth	
per priority class	16
<ul> <li>additional within an error OB</li> </ul>	4
Counters, timers and their retentivity	
S7 counter	

Counters, timers and their retentivity	
S7 counter	
Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— preset	Z 0 to Z 7
Counting range	
— lower limit	0
— upper limit	999
IEC counter	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	512
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	511
— 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)

I/O address area           • Inputs         8 192 byte           • Outputs         8 192 byte           of which distributed         — Inputs           — Outputs         8 192 byte           Process image         — Inputs           • Inputs         8 192 byte           • Outputs         8 192 byte           • Inputs, adjustable         8 192 byte           • Inputs, adjustable         8 192 byte           • Inputs, default         256 byte           • Outputs, default         256 byte           • Number of subprocess images, max.         1           Digital channels         1           • Inputs         65 536           — of which central         1 024           • Outputs         65 536           — of which central         1 024           • Outputs         65 536           — of which central         1 024           • Outputs         65 536           — of which central         256           • Inputs         4 096           — of which central         256           • Outputs         4 096           — of which central         256           • Outputs         4 096           —	notoutive data area in total	All may OFC I/D
Number, max.     Retentivity available     Retentivity preset     Retentivity preset     Number of clock memories     Number of clock memories     Number of clock memories     Number max.     Size, max.     Retentivity available     Number max.     Size, max.     Retentivity available     Retentiv		All, Illax. 200 ND
Retentivity available     Retentivity preset     Number of clock memories     Number of clock memories     Number, max.     Size, max.     Retentivity adjustable     Retentivity preset     Number, max.     Retentivity adjustable     Retentivity preset     Retentivity adjustable     Reten		4 000 h. t.
Retentivity preset     Number of clock memories     Number of clock memories     Number, max.     Size, max.     Retentivity adjustable     Petentivity adjustable     Per priority class, max.     Size, max.     Petentivity preset     Petentivity		
Number of clock memories     Number, max.		
Data blocks  • Number, max. 2 048; Number range: 1 to 16000 • Size, max. 64 kbyte • Retentivity adjustable 7ess via non-retain property on DB • Retentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • Petentivity preset 7ess via non-retain property on DB • 192 byte • 100 puts 8 192 byte • 100 puts, adjustable 100 puts 100		
Number, max.     Size, max.     Size, max.     Retentivity adjustable     Retentivity preset     Retentivity adjustable     Retentivity preset     Retentivity adjustable     Retentivity preset     Ret	Number of clock memories	8; 1 memory byte
• Size, max. • Retentivity adjustable • Retentivity preset  Pes  Local data  • per priority class, max.  32 768 byte; Max. 2048 bytes per block  Address area  I/O address area  • linputs • Outputs • New thich distributed  — Inputs • linputs • 1 192 byte • Outputs • 1 192 byte • Outputs, adjustable • 1 192 byte • Outputs, adjustable • 1 192 byte • Outputs, default • 1 192 byte • Outputs, default • 1 192 byte • Number of subprocess images, max.  I Digital channels • Inputs — of which central • Outputs — of which central	Data blocks	
Retentivity adjustable     Retentivity preset     Retentive presented pres	<ul><li>Number, max.</li></ul>	2 048; Number range: 1 to 16000
• Retentivity preset  Local data  • per priority class, max.  32 768 byte; Max. 2048 bytes per block  Address area  1/O address area  • Inputs • Outputs • Outputs • Number of subprocess images • Number of subprocess images, max.  • Inputs • Outputs • Outputs • Outputs, default • Outputs • Inputs • Inputs • Inputs • Inputs • Of which central • Outputs • Outputs • Of which central • Outputs • Inputs • Outputs • Ou	• Size, max.	64 kbyte
Local data	<ul> <li>Retentivity adjustable</li> </ul>	Yes; via non-retain property on DB
Poer priority class, max.  Address area  I/O address area  I/	<ul> <li>Retentivity preset</li> </ul>	Yes
Address area  **VO address area  **I/O address area  **Outputs  **Outputs, adjustable  **Outputs, adjustable  **Outputs, adjustable  **Outputs, adjustable  **Outputs, default  **Outputs	Local data	
Inputs	• per priority class, max.	32 768 byte; Max. 2048 bytes per block
Inputs     Outputs     Outputs, adjustable     Outputs, adjustable     Outputs, adjustable     Outputs, default     Outputs     of byte  Inputs     Outputs     of subprocess images, max.  I Digital channels     Inputs     of which central     1 024     Outputs     of which central     1 024  Analog channels     Inputs     of which central     1 024  Analog channels     Inputs     of which central     256     Outputs     of which central	Address area	
Outputs     of which distributed         — Inputs         — Outputs         8 192 byte         — Outputs  Process image  Inputs         8 192 byte  Outputs  Inputs         8 192 byte  Outputs  Inputs         8 192 byte  Outputs  Inputs, adjustable  Outputs, adjustable  Outputs, adjustable  Inputs, default  Inputs, default  Inputs, default  Inputs, default  Inputs  I	I/O address area	
of which distributed  — Inputs — Outputs 8 192 byte  Process image  Inputs Outputs 8 192 byte  Outputs  Number of subprocess images, max.  Inputs Outputs Outputs Outputs Outputs, adjustable Outputs, default Outputs Outpu	• Inputs	8 192 byte
Inputs	Outputs	8 192 byte
Process image  ● Inputs 8 192 byte  ● Outputs 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  ● Number of subprocess images, max. 1  Digital channels  ● Inputs 65 536  — of which central 1 024  ● Outputs — of which central 1 024  Analog channels  ● Inputs 65 536 — of which central 1 024  Analog channels  ● Inputs 4 096 — of which central 256  ● Outputs 4 096 — of which central 256  ● Outputs 4 096 — of which central 256	of which distributed	
Process image	— Inputs	8 192 byte
	— Outputs	8 192 byte
Outputs     Inputs, adjustable     Inputs, adjustable     Outputs, adjustable     Inputs, default     Outputs, default     Outputs, default     Outputs, default     Outputs, default     Outputs of subprocess images     Number of subprocess images, max.      Number of subprocess images, max.      Inputs	Process image	
	• Inputs	8 192 byte
Outputs, adjustable	Outputs	8 192 byte
	Inputs, adjustable	8 192 byte
Outputs, default     Subprocess images	Outputs, adjustable	8 192 byte
● Outputs, default         256 byte           Subprocess images         1           ● Number of subprocess images, max.         1           Digital channels         65 536           — of which central         1 024           ● Outputs         65 536           — of which central         1 024           Analog channels         4 096           — of which central         256           ● Outputs         4 096           — of which central         256	Inputs, default	256 byte
Subprocess images  Number of subprocess images, max.  Digital channels  Inputs Outputs Outputs Of which central  Outputs Of which central  Outputs Outputs Of which central  Outputs O	•	256 byte
<ul> <li>Number of subprocess images, max.</li> <li>Digital channels</li> <li>Inputs</li> <li>Of which central</li> <li>Outputs</li> <li>of which central</li> <li>1 024</li> <li>Outputs</li> <li>of which central</li> <li>1 024</li> <li>Analog channels</li> <li>Inputs</li> <li>of which central</li> <li>Outputs</li> <li>Outputs</li> <li>of which central</li> <li>Outputs</li> <li>of which central</li> <li>256</li> <li>Hardware configuration</li> </ul>		
Digital channels         ● Inputs       65 536         — of which central       1 024         ● Outputs       65 536         — of which central       1 024         Analog channels       4 096         — of which central       256         ● Outputs       4 096         — of which central       256		1
● 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		
— 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		65 536
Outputs		1 024
— of which central       1 024         Analog channels       4 096         — of which central       256         ● Outputs       4 096         — of which central       256         Hardware configuration		
Analog channels  Inputs  Outputs  Outputs  Of which central  Analog channels  4 096  4 096  4 096  Outputs  Of which central  256  Hardware configuration	•	
<ul> <li>Inputs <ul> <li>4 096</li> <li>of which central</li> <li>Outputs</li> <li>of which central</li> </ul> </li> <li>Hardware configuration</li> </ul>		
<ul> <li>— of which central</li> <li>● Outputs</li> <li>— of which central</li> <li>256</li> <li>4 096</li> <li>256</li> </ul> Hardware configuration		4 096
Outputs  Of which central  Hardware configuration  4 096  256  256		
— of which central 256  Hardware configuration		
Hardware configuration		
	— or which certifal	
Number of expansion units, max.	Hardware configuration	
	Number of expansion units, max.	3

Number of DP masters	
• integrated	2
• via CP	4
Number of operable FMs and CPs (recommended)	*
• FM	8
	8
• CP, PtP	10
• CP, LAN	10
Rack	4
• Racks, max.	
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; Typ.: 2 s
<ul> <li>Behavior of the clock following POWER-ON</li> </ul>	Clock continues running after POWER OFF
<ul> <li>Behavior of the clock following expiry of backup</li> </ul>	Clock continues to run with the time at which the power failure
period	occurred
Operating hours counter	
<ul><li>Number</li></ul>	4
<ul><li>Number/Number range</li></ul>	0 to 3
<ul><li>Range of values</li></ul>	0 to 2^31 hours (when using SFC 101)
Granularity	1 hour
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
● to MPI, master	Yes
• to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
• to DP, slave	Yes
• in AS, master	Yes
• in AS, slave	Yes
• on Ethernet via NTP	No
Digital inputs	
Digital inputs  Number of digital inputs	0
Trained of digital inputs	
Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0

Analog outputs	
Number of analog outputs	0
Interfaces	
Number of industrial Ethernet 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
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
• MPI	Yes
PROFIBUS DP master	Yes
<ul> <li>PROFIBUS DP slave</li> </ul>	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
<ul> <li>Global data communication</li> </ul>	Yes
— S7 basic communication	Yes
— S7 communication	Yes; Only server, configured on one side
<ul> <li>— S7 communication, as client</li> </ul>	No; but via CP and loadable FB
— S7 communication, as server	Yes
DP master	
Transmission rate, max.	12 Mbit/s
<ul><li>Number of DP slaves, max.</li></ul>	124
Services	
— PG/OP communication	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
<ul> <li>S7 communication, as client</li> </ul>	No
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	No
— SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
/ total attorn a captivation of Dr. Slaves	

Number of DP slaves that can be	8
simultaneously activated/deactivated, max.  — Direct data exchange (slave-to-slave	Yes; As subscriber
communication)	100,770 300001001
— 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
DP slave	
Transmission rate, max.	12 Mbit/s
<ul> <li>automatic baud rate search</li> </ul>	Yes; only with passive interface
<ul> <li>Address area, max.</li> </ul>	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte
Services	
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
<ul> <li>Global data communication</li> </ul>	No
— S7 basic communication	No
— S7 communication	Yes; Only server, configured on one side
<ul> <li>S7 communication, as client</li> </ul>	No
<ul> <li>S7 communication, as server</li> </ul>	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
Physics	RS 485
Isolated	Yes
Power supply to interface (15 to 30 V DC), max.	200 mA
Functionality	
• MPI	No
<ul> <li>PROFIBUS DP master</li> </ul>	Yes
PROFIBUS DP slave	Yes; A DP slave at both interfaces simultaneously is not possible
<ul> <li>Point-to-point connection</li> </ul>	No
DP master	
• Transmission rate, max.	12 Mbit/s

<ul><li>Number of DP slaves, max.</li></ul>	124
Services	
<ul><li>— PG/OP communication</li></ul>	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	No
<ul> <li>S7 basic communication</li> </ul>	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
<ul> <li>S7 communication, as client</li> </ul>	No; but via CP and loadable FB
— S7 communication, as server	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61
— SYNC/FREEZE	Yes
<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
<ul> <li>Number of DP slaves that can be simultaneously activated/deactivated, max.</li> </ul>	8
<ul> <li>Direct data exchange (slave-to-slave communication)</li> </ul>	Yes; As subscriber
— 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
P slave	
• GSD file	The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)
• Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
<ul> <li>Address area, max.</li> </ul>	32
• User data per address area, max.	32 byte
Services	
<ul><li>— PG/OP communication</li></ul>	Yes
— Routing	Yes; Only with active interface
<ul> <li>Global data communication</li> </ul>	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; but via CP and loadable FB
<ul> <li>S7 communication, as server</li> </ul>	Yes
<ul> <li>Direct data exchange (slave-to-slave communication)</li> </ul>	Yes
— DPV1	No

Inputs Outputs -	Transfer memory	
Communication functions PG/OP communication Pata record routing Ves  Global data communication  * supported * Number of GD loops, max.  * Number of GD packets, max.  * Number of GD packets, transmitter, max.  * Number of GD packets, transmitter, max.  * Number of GD packets, receiver, max.  * Size of GD packets, max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * User data per job, max.  * User data per job, max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Size of GD packet (of which consistent), max.  * Usable for OP communication, min.  * Adjustable for OP communication  * OP Communic	— Inputs	244 byte
PG/OP communication  Pata record routing  Global data communication  * supported  Number of GD loops, max.  Number of GD packets, max.  Number of GD packets, transmitter, max.  Number of GD packets, receiver, max.  Size of GD packets, max.  Size of GD	— Outputs	244 byte
PG/OP communication  Pata record routing  Global data communication  Supported  Number of GD loops, max.  Number of GD packets, max.  Number of GD packets, transmitter, max.  Number of GD packets, transmitter, max.  Number of GD packets, max.  Size of GD packets, max.  Paramax.  Size of GD packets, max.  Size of GD packets, max.	Communication functions	
Data record routing  Global data communication  • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Size of GD packets, receiver, max. • Size of GD packet (of which consistent), max.  S7 basic communication • supported • User data per job, max. • User data per job (of which consistent), max.  76 byte • As server • as client • User data per job, max. • Socompatible communication • supported • As server • as client • User data per job, max.  S5 compatible communication • supported • Syevia CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  S5 compatible communication • supported  Yes; via CP and loadable FC  Number of connections • overall • usable for PG communication — reserved for PG communication — adjustable for PG communication — adjustable for PG communication — reserved for PG communication — reserved for OP communication — adjustable for PG communication — adjustable for PG communication — adjustable for PG communication — reserved for PS basic communication — reserved for S7 basic communication		Yes
Global data communication  • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, transmitter, max. • Number of GD packets, transmitter, max. • Size of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max.  22 byte  57 basic communication  • supported • User data per job, max. • User data per job (of which consistent), max.  57 communication  • supported • user data per job, max. • Size of GD packet (of which consistent), max.  57 communication  • supported • Sea server • as client • User data per job, max. • User data per job, max.  • User data per job, max.  • Sea conline 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  • overall • usable for PG communication • reserved for PG communication — adjustable for PG communication, min. — adjustable for PG communication — reserved for PG communication — reserved for OP communication — reserved for OP communication — adjustable for OP communication, min. — reserved for S7 basic communication		
Number of GD loops, max.  Number of GD packets, max.  Number of GD packets, transmitter, max.  Number of GD packets, transmitter, max.  Number of GD packets, receiver, max.  Size of GD packets, max.  Size of GD packet (of which consistent), max.  Yes  Size of GD packet (of which consistent), max.  Pusported  Supported  Supporte		
Number of GD loops, max.  Number of GD packets, max.  Number of GD packets, transmitter, max.  Number of GD packets, transmitter, max.  Number of GD packets, receiver, max.  Size of GD packets, max.  Size of GD packet (of which consistent), max.  Yes  Size of GD packet (of which consistent), max.  Size of GD packet (of which consistent), max.  Size of GD packet (of which consistent), max.  Number of GD packets, max.  Yes  Size of GD packet (of which consistent), max.  Yes  Static communication  Supported  Ves  Ves  Ves  Ves  Ves  Ves  Ves  V	• supported	Yes
Number of GD packets, max.  Number of GD packets, transmitter, max.  Number of GD packets, receiver, max.  Size of GD packets, max.  Size of GD packets, max.  Size of GD packet (of which consistent), max.  Yes  supported  Supported  User data per job, max.  User data per job (of which consistent), max.  Yes  as server  as server  as client  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  Stompatible communication  supported  yes; via CP and loadable FB  See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  Stompatible communication  overall  usable for PG communication  reserved for PG communication  adjustable for PG communication, min.  adjustable for PG communication  reserved for OP communication  adjustable for OP communication  reserved for OP communication  adjustable for OP communication  adjustable for OP communication  adjustable for OP communication  reserved for OP communication  adjustable for OP communication  reserved for S7 basic communication  output  12		8
Number of GD packets, transmitter, max.  Number of GD packets, receiver, max.  Size of GD packets, max.  Size of GD packet (of which consistent), max.  Yes  To basic communication  Supported  User data per job, max.  Supported  Su		8
Number of GD packets, receiver, max. Size of GD packets, max. Size of GD packet (of which consistent), max.  Yes  Stroughted User data per job, max. Supported Stroughted Strou	·	8
Size of GD packets, max. Size of GD packet (of which consistent), max.  Size of GD packet (of which consistent), max.  Supported  Supported  User data per job, max. User data per job (of which consistent), max.  Solution of the Server  Solution	·	8
Size of GD packet (of which consistent), max.  Streamunication  Supported User data per job, max. User data per job (of which consistent), max.  Streamunication  Streamunicati	·	22 byte
S7 basic communication  • supported • User data per job, max. • User data per job (of which consistent), max.  • 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  • supported  • as server  • as client  • 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  Yes; via CP and loadable FC  Number of connections  • overall  • usable for PG communication  — reserved for PG communication, min.  — adjustable for PG communication, min.  — adjustable for PG communication  — reserved for OP communication  — adjustable for OP communication, min.  — adjustable for OP communication, max.  • usable for S7 basic communication  — reserved for S7 basic communication	•	
User data per job, max.  User data per job (of which consistent), max.  To byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Sommunication  Supported  supported  as server  as client  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)  Sommunication  supported  Yes; via CP and loadable FB  Ves; via CP and loadable FC  Number of connections  overall  usable for PG communication  adjustable for PG communication  adjustable for PG communication, min.  adjustable for PG communication  reserved for OP communication  adjustable for OP communication, min.  adjustable for OP communication of the SFCs/FCs bytes (with X_SEND Description of SF basic communication)  adjustable for OP communication of the SFCs/FCs bytes (with X_SEND Description of SFCs) as server)		
User data per job, max.  User data per job (of which consistent), max.  User data per job (of which consistent), max.  Fo byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Ves  supported  sa server  Yes  as client  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  vesupported  Yes; via CP and loadable FC  Number of connections  overall  usable for PG communication  reserved for PG communication  adjustable for PG communication, min.  adjustable for PG communication  reserved for OP communication  adjustable for OP communication  adjustable for OP communication, min.  usable for S7 basic communication  reserved for S7 basic communication  reserved for S7 basic communication  output  Description  To byte (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	• supported	Yes
X_PUT or X_GET as server)  S7 communication  • supported • as server • as client • 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  • supported  Yes; Via CP and loadable FB  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  • overall • usable for PG communication — reserved for PG communication — adjustable for PG communication, min. — adjustable for PG communication — reserved for OP communication — adjustable for OP communication, min. — adjustable for OP communication, min. — adjustable for OP communication, max.  • usable for S7 basic communication — reserved for S7 basic communication 0	• •	76 byte
supported     as server     as client     Ves; Via CP and loadable FB     See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication)  S5 compatible communication     supported     Yes; via CP and loadable FC  Number of connections      overall     susable for PG communication     - reserved for PG communication     - adjustable for PG communication, min.     - adjustable for OP communication     - reserved for OP communication     - adjustable for OP communication, min.     - adjustable for OP communication of the SFCs/FCs of ST basic communication of the SFCs/FCs of ST bas	• User data per job (of which consistent), max.	
as server as client 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  ves; via CP and loadable FC  Number of connections  overall susable for PG communication  reserved for PG communication  adjustable for PG communication, min. adjustable for PG communication  reserved for OP communication  adjustable for OP communication  adjustable for OP communication  reserved for OP communication  adjustable for OP communication, min.  adjustable for OP communication, min.  adjustable for OP communication, min.  adjustable for OP communication, max.  usable for S7 basic communication  reserved for S7 basic communication  o	S7 communication	
as client 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 Yes; via CP and loadable FC  Number of connections  overall susable for PG communication - reserved for PG communication - adjustable for PG communication, min adjustable for PG communication, max.  usable for OP communication - reserved for OP communication - adjustable for OP communication - reserved for S7 basic communication - reserved for S7 basic communication 0	• 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)  S5 compatible communication  supported  Yes; via CP and loadable FC  Number of connections  overall  usable for PG communication  reserved for PG communication  adjustable for PG communication, min.  adjustable for PG communication, max.  usable for OP communication  reserved for OP communication  adjustable for OP communication  adjustable for OP communication  adjustable for OP communication, min.  adjustable for OP communication, min.  adjustable for OP communication, max.  usable for S7 basic communication  reserved for S7 basic communication  o  reserved for S7 basic communication  o	• as server	Yes
and of the SFCs/FCs of S7 Communication)  S5 compatible communication  supported  Yes; via CP and loadable FC  Number of connections  overall  overall  usable for PG communication  reserved for PG communication  adjustable for PG communication, min.  adjustable for PG communication, max.  usable for OP communication  reserved for OP communication  adjustable for OP communication  adjustable for OP communication, min.  adjustable for OP communication, min.  adjustable for OP communication, min.  adjustable for OP communication, max.  usable for S7 basic communication  reserved for S7 basic communication  o	• as client	Yes; Via CP and loadable FB
supported     Yes; via CP and loadable FC  Number of connections      overall     usable for PG communication     — reserved for PG communication     — adjustable for PG communication, min.     — adjustable for PG communication, max.      usable for OP communication     — reserved for OP communication     — adjustable for OP communication     — adjustable for OP communication     — adjustable for OP communication, min.     — adjustable for OP communication, max.      usable for S7 basic communication     — reserved for S7 basic communication     0	• User data per job, max.	· · · · · · · · · · · · · · · · · · ·
Number of connections  • overall  • usable for PG communication  — reserved for PG communication  — adjustable for PG communication, min.  — adjustable for PG communication, max.  • usable for OP communication  — reserved for OP communication  — adjustable for OP communication  — adjustable for OP communication, min.  — adjustable for OP communication, min.  — adjustable for OP communication, max.  • usable for S7 basic communication  — reserved for S7 basic communication  0	S5 compatible communication	
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<ul> <li>usable for PG communication</li> <li>— reserved for PG communication</li> <li>— adjustable for PG communication, min.</li> <li>— adjustable for PG communication, max.</li> <li>usable for OP communication</li> <li>— reserved for OP communication</li> <li>— adjustable for OP communication, min.</li> <li>— adjustable for OP communication, min.</li> <li>— adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>— reserved for S7 basic communication</li> <li>0</li> </ul>	Number of connections	
<ul> <li>reserved for PG communication</li> <li>adjustable for PG communication, min.</li> <li>adjustable for PG communication, max.</li> <li>usable for OP communication</li> <li>reserved for OP communication</li> <li>adjustable for OP communication, min.</li> <li>adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>0</li> </ul>	• overall	32
<ul> <li>adjustable for PG communication, min.</li> <li>adjustable for PG communication, max.</li> <li>usable for OP communication</li> <li>reserved for OP communication</li> <li>adjustable for OP communication, min.</li> <li>adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>0</li> </ul>	<ul> <li>usable for PG communication</li> </ul>	31
<ul> <li>adjustable for PG communication, max.</li> <li>usable for OP communication</li> <li>reserved for OP communication</li> <li>adjustable for OP communication, min.</li> <li>adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>0</li> </ul>	<ul> <li>reserved for PG communication</li> </ul>	1
<ul> <li>usable for OP communication</li> <li>reserved for OP communication</li> <li>adjustable for OP communication, min.</li> <li>adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>0</li> </ul>	<ul> <li>adjustable for PG communication, min.</li> </ul>	1
<ul> <li>reserved for OP communication</li> <li>adjustable for OP communication, min.</li> <li>adjustable for OP communication, max.</li> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>0</li> </ul>	— adjustable for PG communication, max.	31
<ul> <li>— adjustable for OP communication, min.</li> <li>— adjustable for OP communication, max.</li> <li>• usable for S7 basic communication</li> <li>— reserved for S7 basic communication</li> <li>0</li> </ul>	<ul> <li>usable for OP communication</li> </ul>	31
<ul> <li>— adjustable for OP communication, max.</li> <li>• usable for S7 basic communication</li> <li>— reserved for S7 basic communication</li> <li>0</li> </ul>	<ul> <li>reserved for OP communication</li> </ul>	1
<ul> <li>usable for S7 basic communication</li> <li>reserved for S7 basic communication</li> <li>0</li> </ul>	— adjustable for OP communication, min.	1
— reserved for S7 basic communication 0	— adjustable for OP communication, max.	31
Tools for or basic communication	<ul> <li>usable for S7 basic communication</li> </ul>	30
— adjustable for S7 basic communication, 0	— reserved for S7 basic communication	0
min.		0

— adjustable for S7 basic communication,	30
max.  ■ 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	
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.	300
Test commissioning functions	
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	
Status/control variable	Yes
<ul> <li>Variables</li> </ul>	Inputs, outputs, memory bits, DB, times, counters
<ul> <li>Number of variables, max.</li> </ul>	30
— of which status variables, max.	30
<ul> <li>of which control variables, max.</li> </ul>	14
Forcing	
• Forcing	Yes
• Forcing, variables	Inputs, outputs
<ul><li>Number of variables, max.</li></ul>	10
Diagnostic buffer	
• present	Yes
<ul><li>Number of entries, max.</li></ul>	500
— adjustable	No
— of which powerfail-proof	100; Only the last 100 entries are retained
<ul> <li>Number of entries readable in RUN, max.</li> </ul>	499
— can be set	Yes; From 10 to 499
— preset	10
Service data	
• can be read out	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
Configuration	
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
Programming	
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	
User program protection/password protection	Yes
Block encryption	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	360 g

12/06/2016

last modified: