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
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
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
Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A
l²t	1 A ² ·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
 Data management on MMC (after last programming), min. 	10 y
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

PU-blocks	0.040 (DD FO FD) ::
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	50 roddodd 57 tho mino dodd.
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	
Number, max.	see instruction list
• Size, max.	64 kbyte
 Number of free cycle OBs 	1; OB 1
 Number of time alarm OBs 	1; OB 10
 Number of delay alarm OBs 	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 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	
per priority class	16
additional within an error OB	4
ounters, 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	201021
— lower limit	0
	0
— upper limit	999
EC counter	Von
• present	Yes
• Type	SFB
Number S7 times	Unlimited (limited only by RAM capacity)
S7 times	F40
Number	512
Retentivity	V.
— 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)
ata areas and their retentivity	
	256 kbyte

• 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	V
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	
I/O address area	
• Inputs	8 192 byte
• Outputs	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
• Inputs	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	65 536
— of which central	1 024
Analog channels	
• Inputs	4 096
— of which central	256
Outputs	4 096
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
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	
Hardware clock (real-time)	Yes
retentive and synchronizable	Yes
Backup time	6 wk; At 40 °C ambient temperature
 Deviation per day, max. 	10 s; Typ.: 2 s
Behavior of the clock following POWER-ON	Clock continues running after POWER OFF
Behavior of the clock following expiry of backup	the clock continues at the time of day it had when power was switched
period	off
Operating hours counter	
• Number	4
 Number/Number range 	0 to 3
 Range of values 	0 to 2^31 hours (when using SFC 101)

• Cronularity	1 h
Granularity	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	V
• 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	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Analog outputs	
Number of analog outputs	0
Interfaces	
	0
Number of DDOFINET interfaces	0
Number of PROFINET interfaces	0 2: Combined MDL / DDOFIDLIS DD and DDOFIDLIS DD
Number of RS 485 interfaces	2; Combined MPI / PROFIBUS DP and PROFIBUS DP
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• 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
Point-to-point connection	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	
Transmission rate, max.	12 Mbit/s
 Number of DP slaves, max. 	124
Services	
— 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
— S7 communication, as server	Yes
— Equidistance	Yes
Ligaritation Ligaritation Ligaritation Ligaritation	No
— Isocrifonous mode — SYNC/FREEZE	Yes
— OTNO/TILLEL	100

 Activation/deactivation of DP slaves 	Yes
Number of DP slaves that can be	8
simultaneously activated/deactivated, max.	Var. as subsasibas
 — Direct data exchange (slave-to-slave communication) 	Yes; as subscriber
— DPV1	Yes
Address area	100
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	2110,10
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
S7 basic communication	No
— S7 communication	Yes; Only server, configured on one side
S7 communication, as client	No
— S7 communication, as server	Yes; Connection configured on one side only
Direct data exchange (slave-to-slave)	Yes
communication)	100
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
Interface types • RS 485	Yes
• RS 485	Yes
RS 485Output current of the interface, max.	Yes
RS 485 Output current of the interface, max. Protocols	Yes 200 mA
 RS 485 Output current of the interface, max. Protocols MPI 	Yes 200 mA No
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master 	Yes 200 mA No Yes
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes
RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services — PG/OP communication — Routing	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes Yes No
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes Yes Yes Yes No Yes; I blocks only
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes Yes Yes Yes Yes No Yes; I blocks only Yes; Only server, configured on one side
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Equidistance 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Equidistance Isochronous mode Protocols	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes Yes; OB 61
 RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server Equidistance Isochronous mode SYNC/FREEZE 	Yes 200 mA No Yes Yes; A DP slave at both interfaces simultaneously is not possible No 12 Mbit/s 124 Yes Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB Yes Yes Yes Yes; OB 61 Yes

DD1/4	V
— DPV1	Yes
Address area	0.400 hyda
— Inputs, max.	8 192 byte
Outputs, max. User data per DP slave	8 192 byte
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	244 0910
• 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
 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
— S7 basic communication	No
— 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
 — Direct data exchange (slave-to-slave communication) 	Yes
— DPV1	No
Transfer memory	INO
— Inputs	244 byte
— Outputs	244 byte
Protocols	244 0910
PROFIsafe	No
	140
communication tunctions / hoader	
communication functions / header	Voc
PG/OP communication	Yes Ves
PG/OP communication Data record routing	Yes Yes
PG/OP communication Data record routing Global data communication	Yes
PG/OP communication Data record routing Global data communication • supported	Yes Yes
PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max.	Yes Yes 8
PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max.	Yes Yes 8 8
PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max.	Yes Yes 8 8 8
PG/OP communication 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, receiver, max.	Yes Yes 8 8 8 8
PG/OP communication Data record routing Global data communication • supported • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, transmitter, max.	Yes Yes 8 8 8
PG/OP communication 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, receiver, max. • Size of GD packets, max.	Yes Yes 8 8 8 22 byte
PG/OP communication 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, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max.	Yes Yes 8 8 8 22 byte
PG/OP communication 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, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication	Yes Yes 8 8 8 8 22 byte 22 byte
PG/OP communication 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, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • supported	Yes Yes 8 8 8 8 22 byte 22 byte
PG/OP communication 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, receiver, max. • Size of GD packets, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max. S7 basic communication • supported • User data per job, max.	Yes Yes 8 8 8 8 22 byte 22 byte Yes 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or
PG/OP communication 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, receiver, max. • Size of GD packets, 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.	Yes Yes 8 8 8 8 22 byte 22 byte Yes 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or
PG/OP communication 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, receiver, max. • Size of GD packets, 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.	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server)
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • supported • as server	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes Yes Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max.	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes; Via CP and loadable FB
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max.	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes Yes Yes Ye
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max. S5 compatible communication • supported	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes Yes Yes; Via CP and loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and of
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max. S5 compatible communication • supported • supported	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes Yes Yes Ye
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max. S5 compatible communication • supported Number of connections • overall	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes 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) Yes; via CP and loadable FC
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max. S5 compatible communication • supported Number of connections • overall • usable for PG communication	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes 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) Yes; via CP and loadable FC
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max. S5 compatible communication • supported Number of connections • overall • usable for PG communication — reserved for PG communication	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes 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) Yes; via CP and loadable FC 32 31 1
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max. S5 compatible communication • supported Number of connections • overall • usable for PG communication — reserved for PG communication, min.	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes Yes Yes Yes Yes Ye
PG/OP communication 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, receiver, max. • Size of GD packets, 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. S7 communication • supported • as server • as client • User data per job, max. S5 compatible communication • supported Number of connections • overall • usable for PG communication — reserved for PG communication	Yes Yes 8 8 8 22 byte 22 byte Yes 76 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Yes Yes Yes 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) Yes; via CP and loadable FC 32 31 1 1

 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
•	30
adjustable for S7 basic communication, 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
Variables	Inputs, outputs, memory bits, DB, times, counters
Number of variables, max.	30
- of which status variables, max. - of which status variables, max.	30
of which status variables, max. — of which control variables, max.	14
— of which control variables, max.	14
• Forcing	Yes
_	
Forcing, variables Number of variables, may	Inputs, outputs 10
Number of variables, max. Diagnostic buffer.	10
Diagnostic buffer	Yes
Present Number of entries, may	500
Number of entries, max.	
— 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	V
• can be read out	Yes
Ambient conditions	
Ambient temperature during operation	0 °C
• min.	
• max.	60 °C
configuration / header	
Configuration software	V 0777 7 V 7 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
• 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
System functions (SFC)	see instruction list
System function blocks (SFB)	see instruction list
Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	Yes
— GRAPH	Yes
	

— HiGraph®	Yes
Know-how protection	
 User program protection/password protection 	Yes
 Block encryption 	Yes; With S7 block Privacy
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	360 g

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