6ES7317-2AK14-0AB0

## **Data sheet**



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	
<ul> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
<ul> <li>Repeat rate, min.</li> </ul>	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 <sup>2</sup> ·s
Power loss	
Power loss, typ.	4.5 W
Memory	
Work memory	
<ul><li>integrated</li></ul>	1 024 kbyte
expandable	No
Load memory	
<ul><li>Plug-in (MMC)</li></ul>	Yes
<ul><li>Plug-in (MMC), max.</li></ul>	8 Mbyte
<ul> <li>Data management on MMC (after last programming), min.</li> </ul>	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

Number of blocks (total)	2.040 /DDs FCs FDs) the requirement of leadable blacks con	
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.	
DB	zo roudou zy are mino dood.	
Number, max.	2 048; Number range: 1 to 16000	
• Size, max.	64 kbyte	
FB	<u> </u>	
Number, max.	2 048; Number range: 0 to 7999	
• Size, max.	64 kbyte	
FC		
<ul><li>Number, max.</li></ul>	2 048; Number range: 0 to 7999	
• Size, max.	64 kbyte	
OB		
Number, max.	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	
<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		
<ul> <li>per priority class</li> </ul>	16	
<ul> <li>additional within an error OB</li> </ul>	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		
— lower limit	0	
— upper limit	999	
EC 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	
EC timer		
• present	Yes	
• Type	SFB	
• Number	Unlimited (limited only by RAM capacity)	
ata areas and their retentivity		
Retentive data area (incl. timers, counters, flags), max.	256 kbyte	
recentive data area (inol. timers, counters, hays), max.	200 hbyto	

0:	4 000 h. +-
• 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	
<ul><li>Inputs</li></ul>	8 192 byte
<ul><li>Outputs</li></ul>	8 192 byte
of which distributed	
— Inputs	8 192 byte
— Outputs	8 192 byte
Process image	
• Inputs	8 192 byte
<ul><li>Outputs</li></ul>	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	1027
• Inputs	4 096
— of which central	256
Outputs	4 096
•	256
— of which central	250
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
<ul><li>integrated</li></ul>	2
• via CP	4
Number of operable FMs and CPs (recommended)	
• FM	8
• CP, PtP	8
• CP, LAN	10
Rack	
• Racks, max.	4
<ul> <li>Modules per rack, max.</li> </ul>	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
<ul> <li>PROFIBUS DP master</li> </ul>	Yes
<ul> <li>PROFIBUS DP slave</li> </ul>	Yes; A DP slave at both interfaces simultaneously is not possible
Point-to-point connection	No
MPI	
Transmission rate, max.	12 Mbit/s
Services	
<ul><li>— PG/OP communication</li></ul>	Yes
— Routing	Yes
<ul> <li>Global data communication</li> </ul>	Yes
<ul> <li>S7 basic communication</li> </ul>	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
<ul> <li>S7 communication, as server</li> </ul>	Yes
PROFIBUS 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
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     Ligaritation	No
— Isocrifonous mode  — SYNC/FREEZE	Yes
— OTNO/TILLEL	100

<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
— Number of DP slaves that can be	8
simultaneously activated/deactivated, max.	V 1 7
<ul> <li>— Direct data exchange (slave-to-slave communication)</li> </ul>	Yes; as subscriber
— DPV1	Yes
Address area	100
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	O Royle
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	2++ byte
Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
Address area, max.	32
<ul> <li>User data per address area, max.</li> </ul>	32 byte
Services	32 byte
— PG/OP communication	Yes
— Routing	Yes; Only with active interface
Global data communication	No
— S7 basic communication	No
— S7 basic communication  — S7 communication	Yes; Only server, configured on one side
— S7 communication  — S7 communication, as client	No
<ul><li>— S7 communication, as server</li><li>— Direct data exchange (slave-to-slave</li></ul>	Yes; Connection configured on one side only Yes
communication)	165
— DPV1	No
Transfer memory	
— Inputs	244 byte
·	244 byte
— Outputs	Z-T- byto
·	244 0910
2. Interface	
·	Integrated RS 485 interface Yes
2. Interface Interface type Isolated	Integrated RS 485 interface
2. Interface Interface type	Integrated RS 485 interface
2. Interface Interface type Isolated Interface types  • RS 485	Integrated RS 485 interface Yes
2. Interface Interface type Isolated Interface types	Integrated RS 485 interface Yes Yes
2. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.	Integrated RS 485 interface Yes Yes
2. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols	Integrated RS 485 interface Yes  Yes 200 mA
2. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI	Integrated RS 485 interface Yes  Yes 200 mA  No Yes
2. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master	Integrated RS 485 interface Yes  Yes 200 mA
2. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave	Integrated RS 485 interface Yes  Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible
2. Interface Interface type Isolated Interface types  • RS 485  • Output current of the interface, max.  Protocols  • MPI  • PROFIBUS DP master  • PROFIBUS DP slave  • Point-to-point connection	Integrated RS 485 interface Yes  Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible
2. Interface Interface type Isolated Interface types  RS 485 Output current of the interface, max.  Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection  PROFIBUS DP master	Integrated RS 485 interface Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible No
2. Interface Interface type Isolated Interface types  • 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.	Integrated RS 485 interface Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible No  12 Mbit/s
2. Interface Interface type Isolated Interface types  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.	Integrated RS 485 interface Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible No  12 Mbit/s
2. Interface Interface type Isolated Interface types  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	Integrated RS 485 interface Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible No  12 Mbit/s 124
2. Interface Interface type Isolated Interface types  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	Integrated RS 485 interface Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible No  12 Mbit/s 124  Yes
2. Interface Interface type Isolated Interface types  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	Integrated RS 485 interface Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible No  12 Mbit/s 124  Yes Yes
2. Interface Interface type Isolated Interface types  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	Integrated RS 485 interface Yes  Yes 200 mA  No Yes Yes; A DP slave at both interfaces simultaneously is not possible No  12 Mbit/s 124  Yes Yes No
2. Interface Interface type Isolated Interface types  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	Integrated RS 485 interface Yes  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 I blocks only
2. Interface Interface type Isolated Interface types  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	Integrated RS 485 interface Yes  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 Yos No Yes; I blocks only Yes; Only server, configured on one side
2. Interface Interface type Isolated Interface types  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.  Protocols  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	Integrated RS 485 interface Yes  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 Yes Yes Yes No Yes; I blocks only Yes; Only server, configured on one side No; but via CP and loadable FB
2. Interface Interface type Isolated Interface types  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 S7 communication, as client	Integrated RS 485 interface Yes  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
2. Interface Interface type Isolated Interface types  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 S7 communication, as client S7 communication, as server Equidistance	Integrated RS 485 interface Yes  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 Yes; Only server, configured on one side No; but via CP and loadable FB Yes
2. Interface Interface type Isolated Interface types  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.  Number of DP slaves, max.  PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server Equidistance Isochronous mode	Integrated RS 485 interface Yes  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
Interface type Isolated Interface types  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.  Number of DP slaves, max.  Periods  Profices  Prof	Integrated RS 485 interface Yes  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 Yes Yes Yes; OB 61 Yes
Interface type Isolated Interface types  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 S7 communication S7 communication, as client S7 communication, as server Equidistance Isochronous mode SYNC/FREEZE Activation/deactivation of DP slaves	Integrated RS 485 interface Yes  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 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 Yes Yes 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)
<ul> <li>Transmission rate, max.</li> </ul>	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	
<ul><li>— PG/OP communication</li></ul>	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
— S7 communication, as client	No; but via CP and loadable FB
— S7 communication, as server	Yes
<ul> <li>— Direct data exchange (slave-to-slave communication)</li> </ul>	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

<ul> <li>reserved for OP communication</li> </ul>	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.  A people for routing.	
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
— or 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
<del></del>	

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

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