## **SIEMENS**

## **Data sheet**

6ES7317-6FF04-0AB0



SIMATIC S7-300, CPU 317F-2DP, Central processing unit with 1.5 MB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface DP master/slave Micro Memory Card required Can be used with software package S7 Distributed Safety V5.2 SP1 or higher

General information	
HW functional status	01
Firmware version	V3.3
Engineering with	
Programming package	STEP 7 V5.5 + SP1 or higher or STEP 7 V5.2 + SP1 or higher with HSP 202 + Distributed Safety
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.
Input current	
Current consumption (rated value)	870 mA
Current consumption (in no-load operation), typ.	120 mA
Inrush current, typ.	4 A
l²t	1 A <sup>2</sup> ·s
Power loss	
Power loss, typ.	4.5 W
Memory	
Work memory	
• integrated	1 536 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 a
Backup	
• present	Yes; Guaranteed by MMC (maintenance-free)
without battery	Yes; Program and data
CPU processing times	
for bit operations, typ.	0.025 μs
for word operations, typ.	0.03 μs
for fixed point arithmetic, typ.	0.04 μs
for floating point arithmetic, typ.	0.16 μs
CPU-blocks	
Number of blocks (total)	2 048; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	
Number, max.	2 048; Number range: 1 to 16000
• Size, max.	64 kbyte

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     Number of process classes OBs	4; OB 32, 33, 34, 35
Number of process alarm OBs     Number of DPV1 alarm OBs	1; OB 40
Number of BPV1 alarm OBs     Number of isochronous mode OBs	3; OB 55, 56, 57 1; OB 61
Number of startup OBs	1; OB 100
Number of startup Obs     Number of asynchronous error OBs	5; OB 80, 82, 85, 86, 87
Number of asynchronous error OBs     Number of synchronous error OBs	2; OB 121, 122
Nesting depth	, . <del>,</del>
• per priority class	16
additional within an error OB	4
Counters, timers and their retentivity	
S7 counter	
Number	512
Retentivity	
— adjustable	Yes
— 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	Voo
— adjustable	Yes
— preset Time range	No retentivity
— lower limit	10 ms
— lower limit — upper limit	9 990 s
IEC timer	
• present	Yes
• Type	SFB
• Number	Unlimited (limited only by RAM capacity)
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	256 kbyte
Flag	
• Size, max.	4 096 byte
Retentivity available	Yes; From MB 0 to MB 4 095
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	
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 8 192 byte
Outputs     of which distributed	8 192 byte
	8 192 byte
— Inputs	
— Outputs	8 192 byte
Process image	0.400 h.t-
• Inputs	8 192 byte
Outputs	8 192 byte
Inputs, adjustable     Outputs, adjustable	8 192 byte
Outputs, adjustable	8 192 byte
Inputs, default     Outputs, default	1 024 byte
Outputs, default	1 024 byte
Subprocess images	4
Number of subprocess images, max.  Digital shapes in a second subprocess.	1
Digital channels	05 500
• Inputs	65 536
— of which central	1 024
Outputs	65 536
— of which central	1 024
Analog channels	4.000
• 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.  Public of the control	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 period	the clock continues at the time of day it had when power was switched off
Operating hours counter	
Number	4
Number/Number range	
Number/Number range	0 to 3
Range of values	0 to 2^31 hours (when using SFC 101)
<ul><li>Range of values</li><li>Granularity</li></ul>	0 to 2^31 hours (when using SFC 101) 1 h
<ul><li>Range of values</li><li>Granularity</li><li>retentive</li></ul>	0 to 2^31 hours (when using SFC 101)
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> </ul> Clock synchronization	0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> </ul>	0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart Yes
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> <li>to MPI, master</li> </ul>	0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> </ul>	0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes Yes
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> <li>to DP, master</li> </ul>	0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes Yes Yes; With DP slave only slave clock
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> <li>to DP, master</li> <li>to DP, slave</li> </ul>	0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes Yes Yes Yes; With DP slave only slave clock Yes
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> <li>to DP, master</li> <li>to DP, slave</li> <li>in AS, master</li> </ul>	0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes Yes Yes Yes; With DP slave only slave clock Yes Yes
<ul> <li>Range of values</li> <li>Granularity</li> <li>retentive</li> <li>Clock synchronization</li> <li>supported</li> <li>to MPI, master</li> <li>to MPI, slave</li> <li>to DP, master</li> <li>to DP, slave</li> </ul>	0 to 2^31 hours (when using SFC 101) 1 h Yes; Must be restarted at each restart  Yes Yes Yes Yes Yes; With DP slave only slave clock Yes

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	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0
Number of RS 485 interfaces	2
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
<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
— S7 communication, as server	Yes
PROFIBUS DP master	
<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
Number of DP slaves, max.	124
Services	
— PG/OP communication	Yes
— Routing	Yes
— Global data communication	No
— S7 basic communication	Yes; I blocks only
— S7 communication	Yes; Only server, configured on one side
— S7 communication, as client	No Yea
— S7 communication, as server	Yes
— Equidistance	Yes No
Isochronous mode     SYNC/FREEZE	Yes
— SYNC/FREEZE      — Activation/deactivation of DP slaves	Yes
— Number of DP slaves that can be simultaneously activated/deactivated, max.	8
Direct data exchange (slave-to-slave communication)	Yes; as subscriber
— DPV1	Yes
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	

<ul> <li>Transmission rate, max.</li> </ul>	12 Mbit/s
automatic baud rate search	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
<ul> <li>S7 basic communication</li> </ul>	No
— S7 communication	Yes; Only server, configured on one side
<ul> <li>S7 communication, as client</li> </ul>	No
— S7 communication, as server	Yes; Connection configured on one side only
Direct data exchange (slave-to-slave)	Yes
communication)	
— DPV1	No
Transfer memory	
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	Integrated RS 485 interface
Isolated	Yes
Interface types	
• RS 485	Yes
Output current of the interface, max.	200 mA
Protocols	255 1111
• MPI	No
PROFIBUS DP master	Yes
PROFIBUS DP slave	Yes; A DP slave at both interfaces simultaneously is not possible
	No
Point-to-point connection     PROFIBUS DP master	NO
	12 Mbit/s
Transmission rate, max.  Alumbar of DD clause, may.	
Number of DP slaves, max.	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; but via CP and loadable FB
<ul> <li>S7 communication, as server</li> </ul>	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61
— SYNC/FREEZE	Yes
<ul> <li>Activation/deactivation of DP slaves</li> </ul>	Yes
<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
PROFIBUS DP slave	
• GSD file	The latest GSD file is available on the Internet (http://www.siemens.com/profibus-gsd)
• Transmission rate, max.	12 Mbit/s
automatic baud rate search	Yes; only with passive interface
Address area, max.	32
User data per address area, max.	32 byte
p extract street than	

Services  - PG/OP communication - Routing - Global data communication - S7 basic communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 - No  Transfer memory - Inputs - Outputs - Outputs - Outputs - Outputs - PG/OP communication - Supported - No  Size of Op packets, max Number of GD packets, max Number of GD packets, max Size of GD packet (of which consistent), max Size of GD packet (of which consistent), max Size data per job, max User data per job (of which consistent), max St communication - Supported - St communication - Supported - Communication - Communic	
- Routing Yes; Only with active interface - Global data communication No - S7 basic 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) - DPV1 No - DPV1 No - Inputs 244 byte - Outputs 244 byte - Outputs 244 byte - Outputs 244 byte - Outputs Yes - Ormunication functions / header - PG/OP communication - Supported Yes - Number of GD loops, max Number of GD packets, max Number of GD packets, max Number of GD packets, receiver, max Size of GD packets, max Size of GD packets, max Size of GD packets, max Communication (Fig. 1) - Communication (Fig. 2) - Communication (Fig. 2) - Communication (Fig. 3) - Communication (Fig. 3) - Communication (Fig. 4) - Communication (Fig.	
- Global data communication - S7 basic communication - S7 communication - S7 communication - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 - DPV1 - No  Transfer memory - Inputs - Outputs - Outputs - Outputs - Outputs - PG/OP communication - Supported - Number of GD loops, max Number of GD packets, max Number of GD packets, max Number of GD packets, max Size of GD pa	
- S7 basic communication - S7 communication - S7 communication, as client - S7 communication, as client - S7 communication, as client - S7 communication, as server - Direct data exchange (slave-to-slave communication) - DPV1 - DPV1 - DPV1 - No  Transfer memory - Inputs - Outputs - Outputs - Outputs - Outputs - Outputs - Outputs - PROFIsafe - No  Communication functions / header  PG/OP communication - supported - Number of GD loops, max Number of GD packets, transmitter, max Number of GD packets, transmitter, max Number of GD packets, receiver, max Size of GD packets, ma	
- 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) - DPV1 No  Transfer memory - Inputs 244 byte - Outputs 244 byte  Protocols  PROFIsafe No  Communication functions / header  PG/OP communication  • supported Yes • Number of GD packets, max. • Number of GD packets, transmitter, max. • Number of GD packets, transmitter, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max.  S7 basic communication  • communication function / S7 basic communication • Communication function / S7 basic communication	
— S7 communication, as client — S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1  Transfer memory — Inputs — Outputs — Outputs  Protocols  PROFIsafe  PG/OP communication  • supported • Number of GD packets, max. • Number of GD packets, max. • Number of GD packets, max. • Size of GD packet, for which consistent), max.  S7 basic communication function / S7 basic communication • communication function / S7 basic communication • User data per job, (of which consistent), max.  S7 communication  No; but via CP and loadable FB  Yes  Yes  Yes  244 byte  244 byte  No  No  Communication functions / header  Yes  No  S8  S8  S9  S9  S9  S9  S9  S9  S9  S9	
— S7 communication, as server — Direct data exchange (slave-to-slave communication) — DPV1 No  Transfer memory — Inputs — Outputs — Outputs — Outputs — Ves  PROFIsafe  No  communication functions / header  PG/OP communication  Pata record routing Global data communication  • supported • Number of GD loops, max. • Number of GD packets, transmitter, max. • Number of GD packets, max. • Number of GD packets, receiver, max. • Size of GD packet (of which consistent), max.  S7 basic communication  • communication function / S7 basic communication  • user data per job, 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_G server)  S7 communication	
Direct data exchange (slave-to-slave communication) DPV1 No  Transfer memory Inputs 244 byte Outputs 244 byte  Protocols  PROFIsafe No  communication functions / header  PG/OP communication  • supported Yes • Number of GD loops, max. • Number of GD packets, max. • Number of GD packets, max. • Number of GD packets, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max.  ST basic communication  • communication  • communication  Yes  8  8  8  8  9  10  10  10  10  10  10  10  10  10	
communication)	
DPV1 No  Transfer memory Inputs 244 byte Outputs 244 byte  Protocols  PROFIsafe No  communication functions / header  PG/OP communication  Yes  Global data communication  • supported Yes • 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 packet, feceiver, max. • Size of GD packet (of which consistent), max.  ST basic communication  • communication function / S7 basic communication • User data per job, max. • User data per job (of which consistent), max.  S7 communication  S7 communication	
Transfer memory  Inputs Outputs  244 byte  Protocols  PROFIsafe  PG/OP communication functions / header  PG/OP communication  • supported • Number of GD loops, max. • Number of GD packets, transmitter, max. • Number of GD packets, receiver, max. • Number of GD packets, receiver, max. • Size of GD packet (of which consistent), max.  • Size of GD packet (of which consistent), max.  ST basic communication  • User data per job, 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_G as server)  ST communication	
Inputs Outputs -	
PROFIsafe PROFIsafe PG/OP communication functions / header  PG/OP communication  Data record routing Psupported 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 (of which consistent), max.  Size of GD packet (of which consistent), max.  Puser data per job, max. Strommunication  Ves Strommunication	
PROFIsafe PG/OP communication PG/OP communication Pata record routing Pes 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. Size of GD packets, max. Size of GD packets, max. Size of GD packet (of which consistent), max. Pisage of GD packet (of whic	
PROFIsafe  communication functions / header  PG/OP communication  Data record routing  (Sideal 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. Size of GD packet (of which consistent), max.  Solve of GD packet (of which consistent),	
PG/OP communication PG/OP communication  Yes  Data record routing 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, receiver, max. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max.  22 byte  S7 basic communication  • communication function / S7 basic communication • User data per job, max. • User data per job (of which consistent), max.  S7 communication  S7 communication	
PG/OP communication  Pes  Data record routing  Fes  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.  Size of GD packet (of which consistent) was.  Solved of GD packet (of which consistent) was.  Pes  Pes  Pes  Pes  Pes  Pes  Pes  P	
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.  • 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  • communication function / S7 basic communication  • User data per job, max.  • User data per job (of which consistent), max.  S7 communication  Yes  76 byte  76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_G as server)	
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. • Number of GD packets, receiver, max. • Size of GD packets, max. • Size of GD packet (of which consistent), max.  22 byte  S7 basic communication • communication function / S7 basic communication • User data per job, 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_G as server)	
<ul> <li>supported</li> <li>Number of GD loops, max.</li> <li>Number of GD packets, max.</li> <li>Number of GD packets, transmitter, max.</li> <li>Number of GD packets, receiver, max.</li> <li>Number of GD packets, receiver, max.</li> <li>Size of GD packets, max.</li> <li>Size of GD packet (of which consistent), max.</li> <li>Size of GD packet (of which consistent), max.</li> <li>22 byte</li> <li>S7 basic communication</li> <li>communication function / S7 basic communication</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>6 byte</li> <li>6 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_G as server)</li> </ul>	
<ul> <li>Number of GD loops, max.</li> <li>Number of GD packets, max.</li> <li>Number of GD packets, transmitter, max.</li> <li>Number of GD packets, transmitter, max.</li> <li>Number of GD packets, receiver, max.</li> <li>Size of GD packets, max.</li> <li>Size of GD packet (of which consistent), max.</li> <li>S7 basic communication</li> <li>communication function / S7 basic communication</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>T6 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_G as server)</li> </ul>	
<ul> <li>Number of GD packets, max.</li> <li>Number of GD packets, transmitter, max.</li> <li>Number of GD packets, receiver, max.</li> <li>Size of GD packets, max.</li> <li>Size of GD packet (of which consistent), max.</li> <li>S7 basic communication</li> <li>communication function / S7 basic communication</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>T6 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_G as server)</li> </ul>	
<ul> <li>Number of GD packets, transmitter, max.</li> <li>Number of GD packets, receiver, max.</li> <li>Size of GD packets, max.</li> <li>Size of GD packet (of which consistent), max.</li> <li>S7 basic communication</li> <li>communication function / S7 basic communication</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>57 byte</li> <li>byte</li> <li>byte</li> <li>67 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_G as server)</li> </ul>	
<ul> <li>Number of GD packets, receiver, max.</li> <li>Size of GD packets, max.</li> <li>Size of GD packet (of which consistent), max.</li> <li>S7 basic communication</li> <li>communication function / S7 basic communication</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>User data per job (of which consistent), max.</li> <li>S7 communication</li> <li>S7 communication</li> </ul>	
<ul> <li>Size of GD packets, max.</li> <li>Size of GD packet (of which consistent), max.</li> <li>S7 basic communication</li> <li>communication function / S7 basic communication</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> </ul>	
<ul> <li>Size of GD packet (of which consistent), max.</li> <li>S7 basic communication</li> <li>communication function / S7 basic communication</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>S7 communication</li> <li>S7 communication</li> <li>S7 communication</li> </ul> 22 byte Yes 76 byte 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_G as server) S7 communication	
S7 basic communication  • communication function / S7 basic communication  • User data per job, 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_G as server)  S7 communication	
<ul> <li>communication function / S7 basic communication</li> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>S7 communication</li> </ul> Yes 76 byte 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_G as server) S7 communication	
<ul> <li>User data per job, max.</li> <li>User data per job (of which consistent), max.</li> <li>56 byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_G as server)</li> <li>S7 communication</li> </ul>	
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_G as server)  S7 communication	
as server) S7 communication	
S7 communication	ET
• supported Yes	
• as server Yes	
• as client  Yes; Via CP and loadable FB	
• User data per job, max. See online help of STEP 7 (shared parameters of the SFBs/FBs and of the	
SFCs/FCs of S7 Communication)	
S5 compatible communication  Yes: via CR and leadable FC	
• supported Yes; via CP and loadable FC	
Number of connections	
• overall 32	
• usable for PG communication 31	
— reserved for PG communication 1	
— adjustable for PG communication, min.	
— adjustable for PG communication, max. 31	
• usable for OP communication 31	
— reserved for OP communication 1	
— adjustable for OP communication, min.	
— adjustable for OP communication, max.	
• usable for S7 basic communication 30	
— reserved for S7 basic communication 0	
— adjustable for S7 basic communication, min.	
— adjustable for S7 basic communication, max. 30	
• usable for routing X1 as a MPI, max. 10; X1 as DP Master max. 24; X1 as DP Slave (active) r	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	

Otation blank	Variable to O street the reserve
Status block	Yes; Up to 2 simultaneously
Single step	Yes
Number of breakpoints	4
Status/control	V
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
Number of variables, max.	30
— of which status variables, max.	30
— of which control variables, max.	14
Forcing	V
• Forcing	Yes
Forcing, variables	Inputs, outputs
Number of variables, max.  Diagraphia buffer.	10
Diagnostic buffer	V
• present	Yes
Number of entries, max.	500
— adjustable	No
— of which powerfail-proof	100; Only the last 100 entries are retained
Number of entries readable in RUN, max.	499
— adjustable	Yes; From 10 to 499
— preset	10
Service data	V
• can be read out	Yes
Ambient conditions	
Ambient temperature during operation	0.00
• min.	0 °C
• max.	60 °C
configuration / header	
Configuration software	Variable 7.V5.5 + OD4 as higher as OTED 7.V5.0 + OD0 as higher with LIOD
• 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
<ul> <li>Nesting levels</li> </ul>	
-	8
System functions (SFC)	see instruction list
<ul><li>System functions (SFC)</li><li>System function blocks (SFB)</li></ul>	
<ul><li>System functions (SFC)</li><li>System function blocks (SFB)</li><li>Programming language</li></ul>	see instruction list see instruction list
<ul> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>LAD</li> </ul>	see instruction list see instruction list Yes
<ul> <li>System functions (SFC)</li> <li>System function blocks (SFB)</li> <li>Programming language</li> <li>— LAD</li> <li>— FBD</li> </ul>	see instruction list see instruction list Yes Yes
System functions (SFC) System function blocks (SFB)  Programming language  LAD  FBD  STL	see instruction list see instruction list  Yes Yes Yes
System functions (SFC) System function blocks (SFB)  Programming language  LAD  FBD  STL  SCL	see instruction list see instruction list  Yes Yes Yes Yes Yes
System functions (SFC) System function blocks (SFB)  Programming language  LAD  FBD  STL  SCL  CFC	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes
System functions (SFC) System function blocks (SFB)  Programming language  LAD  FBD  STL  SCL  CFC  GRAPH	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes
System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes
System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
System functions (SFC) System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®  Know-how protection  • User program protection/password protection	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
System functions (SFC) System function blocks (SFB)  Programming language  LAD FBD STL SCL CFC GRAPH HiGraph®  Know-how protection User program protection/password protection Block encryption	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
System functions (SFC) System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®  Know-how protection  • User program protection/password protection • Block encryption  Dimensions	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
System functions (SFC) System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®  Know-how protection  • User program protection/password protection • Block encryption  Dimensions  Width	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
System functions (SFC) System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®  Know-how protection  • User program protection/password protection • Block encryption  Dimensions  Width  Height	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
System functions (SFC) System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®  Know-how protection  • User program protection/password protection • Block encryption  Dimensions  Width  Height  Depth	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
System functions (SFC) System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®  Know-how protection  • User program protection/password protection • Block encryption  Dimensions  Width Height Depth  Weights	see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
System functions (SFC) System function blocks (SFB)  Programming language  — LAD — FBD — STL — SCL — CFC — GRAPH — HiGraph®  Know-how protection  • User program protection/password protection • Block encryption  Dimensions  Width  Height  Depth	see instruction list see instruction list  Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye