Data sheet

6ES7315-2EH14-0AB0



SIMATIC S7-300 CPU 315-2 PN/DP, Central processing unit with 384 KB work memory, 1st interface MPI/DP 12 Mbit/s, 2nd interface Ethernet PROFINET, with 2-port switch, Micro Memory Card required

General information	
Firmware version	V3.2
Product function	
Isochronous mode	Yes; Via PROFIBUS DP or PROFINET interface
Engineering with	
 Programming package 	STEP 7 V5.5 or higher
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 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)	750 mA
Current consumption (in no-load operation), typ.	150 mA
Inrush current, typ.	4 A
l²t	1 A ² ·s
Power loss	
Power loss, typ.	4.65 W
Memory	
Work memory	
• integrated	384 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.	0.05 µs
for word operations, typ.	0.09 µs
for fixed point arithmetic, typ.	0.12 µs

for floating point arithmetic, typ.	0.45 μs
PU-blocks	
Number of blocks (total)	1 024; (DBs, FCs, FBs); the maximum number of loadable blocks can be reduced by the MMC used.
DB	,
Number, max.	1 024; Number range: 1 to 16000
• Size, max.	64 kbyte
FB	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
FC	
Number, max.	1 024; Number range: 0 to 7999
• Size, max.	64 kbyte
OB	
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 	6; OB 80, 82, 83, 85, 86, 87 (OB83 only for PROFINET IO)
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	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	Z 0 to Z 7
Counting range	
— adjustable	Yes
— lower limit	0
— upper limit	999
IEC counter	
present	Yes
• Type	SFB
Number	Unlimited (limited only by RAM capacity)
S7 times	
Number	256
Retentivity	
— adjustable	Yes
— lower limit	0
— upper limit	255
— preset	No retentivity
Time range	
— lower limit	10 ms
— upper limit	9 990 s
EC timer ● present	Yes
	Yes SFB Unlimited (limited only by RAM capacity)

Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	128 kbyte
Flag	
Size, max.	2 048 byte
Retentivity available	Yes; MB 0 to MB 2 047
Retentivity preset	MB 0 to MB 15
Number of clock memories	8; 1 memory byte
Data blocks	o, r. momory syste
Retentivity adjustable	Yes; via non-retain property on DB
Retentivity preset	Yes
Local data	100
• per priority class, max.	32 768 byte; Max. 2048 bytes per block
Address area	02 100 byte, wax. 2040 bytes per blook
I/O address area	
	2.049 byto
• Inputs	2 048 byte
Outputs Authority dead	2 048 byte
of which distributed	2 049 hyto
— Inputs	2 048 byte
— Outputs	2 048 byte
Process image	
• Inputs	2 048 byte
Outputs	2 048 byte
 Inputs, adjustable 	2 048 byte
 Outputs, adjustable 	2 048 byte
Inputs, default	128 byte
Outputs, default	128 byte
Subprocess images	
Number of subprocess images, max.	1; With PROFINET IO, the length of the user data is limited to 1600 bytes
Digital channels	
• Inputs	16 384
of which central	1 024
Outputs	16 384
— of which central	1 024
Analog channels	
Inputs	1 024
of which central	256
 Outputs 	1 024
— of which central	256
Hardware configuration	
Number of expansion units, max.	3
Number of DP masters	
• integrated	1
• 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	Voc
Hardware clock (real-time) retentive and symphosizable	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 period	Clock continues to run with the time at which the power failure occurred
Operating hours counter	
Number	1
Range of values	0 to 2^31 hours (when using SFC 101)
Granularity	1 h
• retentive	Yes; Must be restarted at each restart
Clock synchronization	
• supported	Yes
• to MPI, master	Yes
to MPI, slave	Yes
• to DP, master	Yes; With DP slave only slave clock
to DP, slave	Yes
in AS, master	Yes
• in AS, slave	Yes
 on Ethernet via NTP 	Yes; As client
Digital inputs	
Number of digital inputs	0
Digital outputs	
Number of digital outputs	0
Analog inputs	
Number of analog inputs	0
Analog outputs	0
Number of analog outputs	0
Interfaces	
Number of industrial Ethernet interfaces	1; 2 ports (switch) RJ45
Number of PROFINET interfaces	1; 2 ports (switch) RJ45
Number of RS 485 interfaces	1; Combined MPI / PROFIBUS DP
Number of RS 422 interfaces	0
1. Interface	
Interface type	Integrated RS 485 interface
Isolated	Integrated RS 485 interface Yes
Isolated Interface types	Yes
Isolated Interface types • RS 485	Yes
Isolated Interface types RS 485 Output current of the interface, max.	Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols	Yes Yes 200 mA
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI	Yes Yes 200 mA Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master	Yes Yes 200 mA Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave	Yes Yes 200 mA Yes Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection	Yes Yes 200 mA Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI	Yes Yes 200 mA Yes Yes Yes Yes No
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max.	Yes Yes 200 mA Yes Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services	Yes Yes 200 mA Yes Yes Yes Yes No 12 Mbit/s
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication	Yes Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing	Yes Yes 200 mA Yes Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication	Yes Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication	Yes Yes 200 mA Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication	Yes Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication S7 communication, as client	Yes Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server	Yes Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication, as client S7 communication, as server	Yes Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication Routing S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Transmission rate, max.	Yes Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max.	Yes Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication R7 basic communication S7 communication S7 communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services	Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication	Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication Routing	Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
Isolated Interface types RS 485 Output current of the interface, max. Protocols MPI PROFIBUS DP master PROFIBUS DP slave Point-to-point connection MPI Transmission rate, max. Services PG/OP communication Routing Global data communication S7 basic communication S7 communication S7 communication S7 communication, as client S7 communication, as server PROFIBUS DP master Transmission rate, max. Number of DP slaves, max. Services PG/OP communication	Yes 200 mA Yes Yes Yes Yes Yes No 12 Mbit/s Yes Yes Yes Yes Yes Yes Yes Yes Yes Y

— S7 communication	Yes
 — S7 communication, as client 	No
 S7 communication, as server 	Yes
— Equidistance	Yes
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
— SYNC/FREEZE	Yes
Activation/deactivation of DP slaves	Yes
Number of DP slaves that can be	8
simultaneously activated/deactivated, max.	
 Direct data exchange (slave-to-slave communication) 	Yes; as subscriber
— DPV1	Yes
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data per DP slave	
— Inputs, max.	244 byte
— Outputs, max.	244 byte
PROFIBUS DP slave	2.7.3,10
Transmission rate, max.	12 Mbit/s
Transmission rate, max. 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
— S7 communication, as client	No
— S7 communication, as server	Yes; Connection configured on one side only
· ·	Yes
Direct data exchange (slave-to-slave communication)	165
— DPV1	No
Transfer memory	140
	244 byta
— Inputs	244 byte
— Outputs	244 byte
2. Interface	
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes; 10/100 Mbit/s
Autonegotiation	Yes
Autocrossing	Yes
Change of IP address at runtime, supported	Yes
Interface types	
• RJ 45 (Ethernet)	Yes
, ,	2
Number of ports integrated quiteb	
integrated switch	Yes
Protocols	
• MPI	No
PROFINET IO Controller	V AI : II I II IO D : 1 II III
	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality Yes; Also simultaneously with IO Controller functionality
PROFINET IO DevicePROFINET CBA	
	Yes; Also simultaneously with IO Controller functionality
PROFINET CBA	Yes; Also simultaneously with IO Controller functionality Yes
PROFINET CBAPROFIBUS DP masterPROFIBUS DP slave	Yes; Also simultaneously with IO Controller functionality Yes No No
PROFINET CBAPROFIBUS DP masterPROFIBUS DP slaveOpen IE communication	Yes; Also simultaneously with IO Controller functionality Yes No No Yes; Via TCP/IP, ISO on TCP, and UDP
PROFINET CBAPROFIBUS DP masterPROFIBUS DP slave	Yes; Also simultaneously with IO Controller functionality Yes No No

Transmission rate, max.	100 Mbit/s
Services	
— PG/OP communication	Yes
— Routing	Yes
3	
— S7 communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32
— Isochronous mode	Yes; OB 61; isochronous mode can only be used alternatively on PROFIBUS DP or PROFINET IO
— IRT	Yes
— Shared device	Yes
— Prioritized startup	Yes
 Number of IO devices with prioritized startup, max. 	32
	128
Number of connectable IO Devices, max.	
— Of which IO devices with IRT, max.	64
— of which in line, max.	64
 Number of IO Devices with IRT and the option "high flexibility" 	128
— of which in line, max.	61
 Number of connectable IO Devices for RT, max. 	128
— of which in line, max.	128
Activation/deactivation of IO Devices	Yes
Number of IO Devices that can be	8
simultaneously activated/deactivated, max.	
 IO Devices changing during operation (partner ports), supported 	Yes
Number of IO Devices per tool, max.	8
Device replacement without swap medium	Yes
— Send cycles	250 μs, 500 μs,1 ms; 2 ms, 4 ms (not in the case of IRT with "high
	flexibility" option)
— Updating time	250 μs to 512 ms (depending on the operating mode, see Manual "S7 300 CPU 31xC and CPU 31x, technical Data" for more details)
Address area	
— Inputs, max.	2 kbyte
— Outputs, max.	2 kbyte
User data consistency, max.	1 024 byte
FINET IO Device	
Services	
— PG/OP communication	Vas
	Yes
— Routing	Yes
— S7 communication	Yes; With loadable FBs, max. configurable connections: 14, max. number of instances: 32
— Isochronous mode	No
— IRT	Yes
— PROFlenergy	Yes; With SFB 73 / 74 prepared for loadable PROFlenergy standard for I-Device
— Shared device	Yes
 Number of IO Controllers with shared device, 	2
max.	
Transfer memory	
— Inputs, max.	1 440 byte; Per IO Controller with shared device
— Outputs, max.	1 440 byte; Per IO Controller with shared device
Submodules	, , , , , , , , , , , , , , , , , , , ,
— Number, max.	64
	1 024 byte
— User data her submodule may	1 OZ 1 Dyto
— User data per submodule, max. FINET CBA	
	Yes

Number of connections, max.	8
Local port numbers used at the system end	0, 20, 21, 23, 25, 80, 102, 135, 161, 443, 8080, 34962, 34963, 34964, 65532, 65533, 65534, 65535
Keep-alive function, supported	Yes

 User data per job, max. See online help of STEP 7 (shared parameters of the SFBs/FBs and of the SFCs/FCs of S7 Communication) S5 compatible communication supported Yes; via CP and loadable FC PROFINET CBA (at set setpoint communication load) Setpoint for the CPU communication load Number of remote interconnection partners Number of functions, master/slave 	 Keep-alive function, supported 	Yes
Redundancy mode Media redundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP — Number of connections, max. — Data length for connection type 01H, max. — Several passive connections per port, supported • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length for connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. • UDP — Number of connections, max. — Data length, max. • UDP — Number of Connections, max. — Data length, max. • Ves: via integrated PROFINET interface and loadable FBs • Ves: via integrated PROFINET interface and loadable FBs • Ves: via integrated PROFINET interface and loadable FBs • Ves: via integrated PROFINET interface and loadable FBs • Ves: via integrated PROFINET interface and loadable FBs • Ves: via integrated PROFINET interface and loadable FBs • Ves: via integrated PROFINET interface and loadable FBs • Ves: via integrated PROFINET interface and loadable FBs • Number of HTTP clients • Supported • Ves • Number of GD packets, max. • Size of GD packets, max. • Size of GD packets, receiver, max. • Size of GD packets, re	Protocols	
Media retundancy — Switchover time on line break, typ. — Number of stations in the ring, max. Open IE communication • TCP/IP • TOP/IP • Number of connections, max. — Data length for connection type 01H, max. — Deata length for connection type 11H, max. — several passive connections per port. supported • ISO-on-TCP (RFC1006) — Number of connections, max. — Data length, max. — Supported — User-defined websites — Number of HTTP clients — Sommunication functions PG/Op communication — Supported — Supported — Supported — Size of GD packets, max. — Number of GD packets, max. — Number of GD packets, max. — Size of GD packets, max. — Size of GD packets, receiver, max. — Size of GD packets, receiver, max. — Size of GD packets, foceiver, max.	Redundancy mode	
- Number of stations in the ring, max. Open IE communication *TCP/P - Number of connections, max. - Data length for connection type 11H, max. - Data length for connection by pe 11H, max. - Several passive connections per port, supported *ISO-on-TCP (RPC1006) - Number of connections, max. - Data length, max. - Ves * Supported - User-defined websites • Number of Data length, max. - Number of		
- Number of stations in the ring, max. Open IE communication *TCP/P - Number of connections, max. - Data length for connection type 11H, max. - Data length for connection by pe 11H, max. - Several passive connections per port, supported *ISO-on-TCP (RPC1006) - Number of connections, max. - Data length, max. - Ves * Supported - User-defined websites • Number of Data length, max. - Number of	Switchover time on line break, typ.	200 ms; PROFINET MRP
TCP/IP Number of connections, max. Data length for connection type 11H, max. Data length for connection type 11H, max. Several passive connections per port, supported ISO-on-TCP (RFC106) Number of connections, max. Data length, max. Data length max. Pes Ves Ves Ves Ves Ves Ves Ves Ves Ves V		50
- Number of connections, max Data length for connection type 01H, max Data length for connection type 01H, max several passive connections per port, supported ISO-on-TCP (RFC1006) - Number of connections, max Data length, max Ves - Number of Connections, max Number of HTTP clients - Second data communication - Supported - Number of GD packets, max Number of GD packets, max Number of GD packets, receiver, max Size of GD packets, receiver, max Size of GD packet (of which consistent), max Size of GD packet (of		
- Data length for connection type 01H, max Data length for connection type 11H, max several passive connections per port, supported ISO-on-TOP (RFC1006) - Number of connections, max Data length, max Supported - User-defined websites - User-defined websites - Number of HTTP clients - Sommunication - Supported - Number of GD packets, max Size of GD pack	• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs
Data length for connection type 11H, max several passive connections per port, supported • ISO-on-TCP (RFC1006) Number of connections, max Data length, max Steported Supported	 Number of connections, max. 	8
several passive connections per port, supported ISO-on-TCP (RFC1006) Number of connections, max Data length, max. Web server Supported	 Data length for connection type 01H, max. 	1 460 byte
supported ISO-on-TCP (RFC1006) Number of connections, max. Data length, max. Data length, max. UDP Number of connections, max. Data length, max. Data length, max. Data length, max. Data length, max. 1472 byte Ves: via integrated PROFINET interface and loadable FBs Number of connections, max. Ves: via integrated PROFINET interface and loadable FBs Number of connections, max. Ves Supported Ves Number of HTTP clients Communication functions PG/OP communication Ves Global data communication Number of GD packets, 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. Ves Size of GD packet (of which consistent), max. Ves To byte (Fb bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Sourced Ves Ves Sourced Ves Se conline help of STEP 7 (shared parameters of the SFBs/FBs and on the SFCs/FCs of S7 Communication Ves: via integrated PROFINET interface and loadable FB Ves Se conline help of STEP 7 (shared parameters of the SFBs/FBs and on the SFCs/FCs of S7 Communication Ves: via integrated PROFINET interface and loadable FB Ves Se conline help of STEP 7 (shared parameters of the SFBs/FBs and on the SFCs/FCs of S7 Communication) Soupported Ves; via integrated PROFINET interface and loadable FB Ves: via integrated PROFINET interface and loadable FB or via CP an loadable FB Se conline help of STEP 7 (shared parameters of the SFBs/FBs and on the SFCs/FCs of S7 Communication) Soupported Soupported Soupported Soupported Number of cPU communication load Number of remote interconnection partners Number of functions, master/slave 30	 Data length for connection type 11H, max. 	32 768 byte
- Number of connections, max Data length, max. - UDP - Number of connections, max Data length, max. - Supported - User-defined websites - Number of HTTP clients - Supported - Number of GD loops, max Number of GD loops, max Number of GD packets, max Number of GD packets, trensmitter, max Number of GD packets, trensmitter, max Number of GD packets, receiver, max Size of GD packets, for which consistent), max. - Size of GD packets, for which consistent), max. - Size of GD packets, max Size of GD packets, receiver, max Size of GD packets, max Size of GD packets, receiver, max Size of GD packets, max Size of GD packets, receiver, max Size of GD packets, max Size of GD packets, receiver, max Siz		Yes
- Data length, max. • UDP - Number of connections, max Data length, max. - Ves • Supported • User defined websites • Ves • Number of HTTP clients - Communication functions PG/OP communication Pess • Number of GD packets, max. • Size of GD packet (of which consistent), max. • Size of GD packet (of which consistent), max. Size of GD packet (of which consistent), max. - Size of Supported • User data per job (of which consistent), max. - Ves - Size of Supported • Supported • User data per job (of which consistent), max. - Ves - Size of Supported • Supported	• ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs
UDP Number of connections, max. Data length, max. 1 472 byte Web server supported User-defined websites Number of HTTP clients Communication functions PG/OP communication supported Number of GD loops, max. Number of GD packets, max. Number of GD packets, receiver, max. Size of GD packet, max. Size of GD packet, max. Size of GD packet (of which consistent), max. Syber data per job, max. User data per job (of which consistent), max. FG byte; 76 bytes (with X_SEND or X_RCV); 64 bytes (with X_PUT or X_GET as server) Scompatible communication Stomported Supported Supporte	 Number of connections, max. 	8
- Number of connections, max Data length, max. - Data length, max. 1 472 byte Web server * supported * User-defined websites * Yes * Number of HTTP clients Communication functions PG/OP communication Pata record routing Global data communication * supported * Number of GD loops, max. * Number of GD packets, max. * Number of GD packets, transmitter, max. * Number of GD packets, max. * Number of GD packets, max. * Size of GD packets, max. * Size of GD packets, max. * Size of GD packet, feceiver, max. * Size of GD packet (of which consistent), max. * Size of GD packet (of which consistent), max. * Size of GD packet, max. * Si	Data length, max.	32 768 byte
Data length, max. Web server		Yes; via integrated PROFINET interface and loadable FBs
Supported Supported User-defined websites Ves User-defined websites Number of HTTP clients S Communication functions PG/OP communication Pagore Data record routing Global data communication supported Number of GD loops, max. Number of GD packets, max. Number of GD packets, transmitter, max. Number of GD packets, transmitter, max. Size of GD packets, max. Size of GD packets, max. Size of GD packet, max. Size of GD packet (of which consistent), max. Size of	— Number of connections, max.	8
Supported User-defined websites Number of HTTP clients FG/OP communication PG/OP communication PG/OP communication PG/OP communication Supported Number of GD loops, max. Number of GD packets, max. Number of GD packets, receiver, max. Number of GD packets, receiver, max. Size of GD packets, max. Size of SD packets, max. Size of SD packets, receiver, max. Size of SD packets, receiver, max.		1 472 byte
Output of HTTP clients Output of HTTP clients Output of HTTP clients Output of Communication PG/OP communication Paragraph of 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. Size of GD packet (of which consistent), max. Size of GD packet (of which consistent), max. Supported Ves User data per job, max. Veser data per job (of which consistent), max. So communication Supported Yes as server As client Supported Yes as a client Vesival integrated PROFINET interface and loadable FB or via CP an loadable FB User data per job, max. See online help of STEP 7 (shared parameters of the SFBs/FBs and on the SFCs/FCs of S7 Communication) S5 compatible communication supported Yes; via integrated PROFINET interface and loadable FB or via CP an loadable FB See online help of STEP 7 (shared parameters of the SFBs/FBs and on the SFCs/FCs of S7 Communication) S5 compatible communication Supported Yes; via CP and loadable FC PROFINET CBA (at set setpoint communication load) Number of remote interconnection partners Number of functions, master/slave	Web server	
Number of HTTP clients PG/OP communication PG/OP communication Pegrop	• supported	Yes
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PROFINET CBA (at set setpoint communication load) • Setpoint for the CPU communication load • Number of remote interconnection partners • Number of functions, master/slave 30	S5 compatible communication	
 Setpoint for the CPU communication load Number of remote interconnection partners Number of functions, master/slave 30 	• supported	Yes; via CP and loadable FC
 Number of remote interconnection partners Number of functions, master/slave 32 30 	PROFINET CBA (at set setpoint communication load)	
• Number of functions, master/slave 30	 Setpoint for the CPU communication load 	50 %
	 Number of remote interconnection partners 	32
Total of all master/slave connections 1 000	 Number of functions, master/slave 	30
▼ Fotal of all filaster/slave confidentions 1 000	 Total of all master/slave connections 	1 000
 Data length of all incoming connections master/slave, max. 4 000 byte 		4 000 byte
 Data length of all outgoing connections 4 000 byte master/slave, max. 		4 000 byte

 Number of device-internal and PROFIBUS interconnections 	500
Data length of device-internal und PROFIBUS interconnections, max.	4 000 byte
Data length per connection, max.	1 400 byte
Remote interconnections with acyclic transmission	1 400 byte
— Sampling interval, min.	500 ms
Number of incoming interconnections	100
Number of integrating interconnections	100
Data length of all incoming interconnections,	2 000 byte
max.	2 000 byte
 Data length of all outgoing interconnections, max. 	2 000 byte
 Data length per connection, max. 	1 400 byte
Remote interconnections with cyclic transmission	
 Transmission frequency: Transmission interval, min. 	10 ms
	200
Number of incoming interconnections	200 200
Number of outgoing interconnections Data length of all incoming interconnections.	
 Data length of all incoming interconnections, max. 	2 000 byte
 Data length of all outgoing interconnections, max. 	2 000 byte
 Data length per connection, max. 	450 byte
HMI variables via PROFINET (acyclic)	·
Number of stations that can log on for HMI variables (PN OPC/iMap)	3; 2x PN OPC/1x iMap
— HMI variable updating	500 ms
Number of HMI variables	200
 Data length of all HMI variables, max. 	2 000 byte
PROFIBUS proxy functionality	
— supported	Yes
Number of linked PROFIBUS devices	16
 Data length per connection, max. 	240 byte; Slave-dependent
Number of connections	
overall	16
 usable for PG communication 	15
— reserved for PG communication	1
— adjustable for PG communication, min.	1
adjustable for PG communication, max.	15
usable for OP communication	15
reserved for OP communication	1
adjustable for OP communication, min.	1
adjustable for OP communication, min. — adjustable for OP communication, max.	15
-	14
usable for S7 basic communication recovered for S7 basic communication	
— reserved for S7 basic communication	0
— adjustable for S7 basic communication, min.	0
— adjustable for S7 basic communication, max.	14
• usable for S7 communication	14
— reserved for S7 communication	0
— adjustable for S7 communication, min.	0
— adjustable for S7 communication, max.	14
• total number of instances, max.	32
usable for routing	X1 as MPI: max. 10; X1 as DP master: max. 24; X1 as DP slave (active): max. 14; X2 as PROFINET: 24 max.
S7 message functions	
Number of login stations for message functions, max.	16; 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.	30
of which status variables, max. — of which control variables, max.	14
Forcing	17
• Forcing	Yes
Forcing, variables	Inputs, outputs
Number of variables, max.	10
Diagnostic buffer	
• present	Yes
Number of entries, max.	500
— adjustable	No
— of which powerfail-proof	100; Only the last 100 entries are retained
Number of entries readable in RUN, max.	499
— adjustable	Yes; From 10 to 499
— preset	10
Service data	
• can be read out	Yes
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	60 °C
Configuration	
Configuration software	
• STEP 7	Yes; V5.5 or higher
Programming	
Programming • Command set	see instruction list
Command set	see instruction list
Command setNesting levels	
Command setNesting levelsSystem functions (SFC)	8 see instruction list
Command setNesting levels	8
 Command set Nesting levels System functions (SFC) System function blocks (SFB) 	8 see instruction list
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language 	8 see instruction list see instruction list
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD 	8 see instruction list see instruction list Yes
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD 	8 see instruction list see instruction list Yes Yes
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL 	8 see instruction list see instruction list Yes Yes Yes
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL 	8 see instruction list see instruction list Yes Yes Yes Yes
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language — LAD — FBD — STL — SCL — CFC 	8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH 	8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes
 Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® 	8 see instruction list see instruction list Yes Yes Yes Yes Yes Yes Yes Yes
Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection	8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection User program protection/password protection	8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Command set Nesting levels System functions (SFC) System function blocks (SFB) Programming language LAD FBD STL SCL CFC GRAPH HiGraph® Know-how protection Block encryption	8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Command set Nesting levels 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	8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Command set Nesting levels 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	8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Command set Nesting levels 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	8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Command set Nesting levels 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	8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye
Command set Nesting levels 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	8 see instruction list Yes Yes Yes Yes Yes Yes Yes Yes Yes Ye